Diagrams and algebraic expressions at order 4 in BMBPT

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Valid diagrams: 568
2N valid diagrams: 568
2N canonical diagrams for the energy: 82
2N canonical diagrams for a generic operator only: 48
2N non-canonical diagrams: 438

Contents

1 Time-structure diagrams

1.1 Tree diagrams

Time-structure diagram T1:

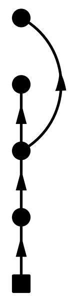
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1}$$

Resummation power: 1

Number of related Feynman diagrams: 205.

Related Feynman diagrams: 568, 567, 566, 565, 564, 562, 561, 560, 559, 558, 555, 554, 553, 552, 551, 548, 547, 544, 542, 540, 536, 533, 530, 526, 525, 524, 523, 522, 519, 517, 516, 515, 509, 508, 504, 503, 502, 501, 491, 488, 481, 476, 475, 464, 460, 458, 452, 451, 450, 449, 447, 446, 445, 444, 434, 430, 429, 428, 416, 412, 410, 407, 405, 403, 398, 396, 394, 393, 392, 388, 385, 382, 380, 379, 378, 375, 373, 367, 363, 362, 361, 359, 358, 357, 350, 347, 346, 340, 338, 332, 331, 330, 329, 328, 313, 308, 302, 296, 293, 280, 279, 278, 276, 275, 263, 262, 254, 252, 251, 250, 246, 245, 242, 240, 219, 214, 209, 206, 201, 200, 199, 192, 187, 182, 173, 172, 168, 166, 165, 161, 159, 151, 147, 146, 144, 141, 139, 137, 135, 130, 129, 128, 127, 126, 125, 121, 119, 118, 117, 116, 115, 114, 113, 112, 111, 108, 106, 105, 104, 103, 102, 96, 94, 92, 91, 88, 87, 86, 82, 81, 80, 79, 76, 75, 74, 73, 70, 69, 68, 67, 66, 65, 64, 62, 59, 54, 53, 51, 50, 47, 46, 45, 39, 38, 37, 36, 32, 26, 25, 23, 17, 15, 11, 6, 3.

Time-structure diagram T2:



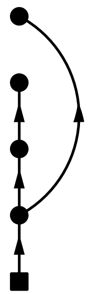
$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3a_4} \tag{2}$$

Resummation power: 2

Number of related Feynman diagrams: 44.

Related Feynman diagrams: 563, 550, 541, 537, 531, 527, 518, 477, 474, 462, 448, 420, 411, 387, 381, 377, 374, 368, 364, 360, 292, 261, 249, 247, 244, 215, 191, 188, 175, 171, 160, 149, 140, 136, 90, 85, 84, 35, 34, 31, 13, 10, 5, 2.

Time-structure diagram T3:



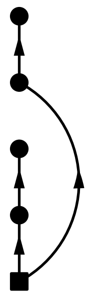
$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{3}$$

Resummation power: 3

Number of related Feynman diagrams: 66.

Related Feynman diagrams: 549, 538, 535, 490, 480, 479, 461, 433, 423, 422, 415, 414, 404, 386, 384, 383, 376, 372, 370, 369, 366, 341, 314, 311, 309, 303, 299, 295, 264, 260, 253, 248, 243, 241, 221, 217, 208, 196, 195, 194, 190, 189, 186, 185, 184, 181, 179, 178, 177, 167, 163, 162, 158, 150, 148, 143, 142, 89, 83, 33, 30, 14, 12, 9, 4, 1.

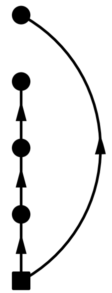
Time-structure diagram T4:



$$\mathrm{T4} = \frac{1}{(a_1 + a_2)a_2(a_3 + a_4)a_4} \tag{4}$$

Resummation power: 6
Number of related Feynman diagrams: 10.
Related Feynman diagrams: 546, 493, 486, 471, 467, 333, 283, 282, 211, 48.

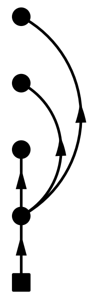
Time-structure diagram T5:



$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3a_4} \tag{5}$$

Resummation power: 4
Number of related Feynman diagrams: 19.
Related Feynman diagrams: 534, 532, 529, 465, 463, 459, 426, 424, 418, 413, 409, 342, 339, 304, 301, 297, 222, 218, 213.

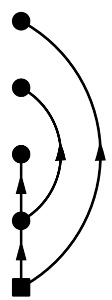
Time-structure diagram T6:



$$\mathrm{T6} = \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2 a_3 a_4} \tag{6}$$

Resummation power: 6
Number of related Feynman diagrams: 4.
Related Feynman diagrams: 478, 298, 193, 176.

Time-structure diagram T7:

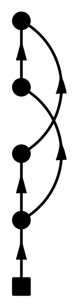


$$\mathrm{T7} = \frac{1}{(a_1 + a_2 + a_3)a_2 a_3 a_4} \tag{7}$$

Resummation power: 8
Number of related Feynman diagrams: 4.
Related Feynman diagrams: 421, 300, 294, 220.

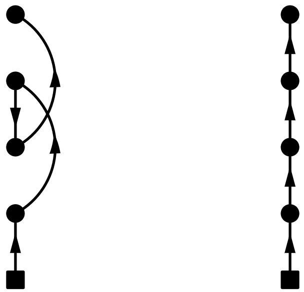
1.2 Non-tree diagrams

Time-structure diagram T8:



$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \quad (8)$$

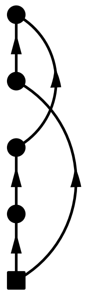
Equivalent tree diagrams: T1, T1.



Number of related Feynman diagrams: 40.

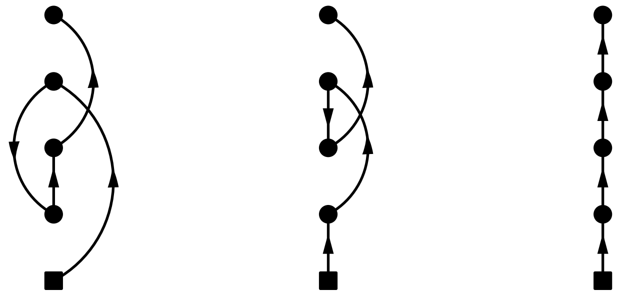
Related Feynman diagrams: 7, 16, 18, 27, 40, 52, 55, 71, 77, 93, 95, 97, 107, 120, 122, 138, 145, 164, 169, 202, 203, 204, 210, 216, 277, 281, 310, 351, 365, 371, 397, 399, 417, 431, 492, 520, 521, 528, 539, 545.

Time-structure diagram T9:



$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \quad (9)$$

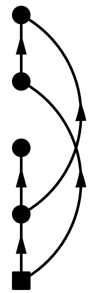
Equivalent tree diagrams: T1, T1, T1.



Number of related Feynman diagrams: 66.

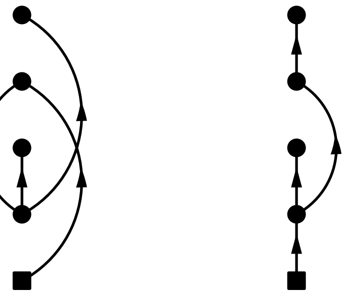
Related Feynman diagrams: 8, 20, 41, 42, 56, 60, 72, 98, 123, 153, 157, 170, 180, 197, 198, 205, 223, 224, 226, 228, 266, 267, 268, 272, 273, 274, 287, 305, 306, 312, 317, 319, 321, 322, 344, 348, 349, 352, 355, 389, 390, 391, 395, 402, 406, 408, 425, 427, 435, 436, 437, 439, 468, 470, 483, 484, 485, 487, 494, 495, 505, 506, 510, 511, 512, 543.

Time-structure diagram T10:



$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{10}$$

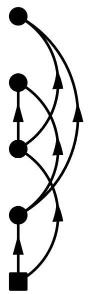
Equivalent tree diagrams: T2, T3.



Number of related Feynman diagrams: 40.

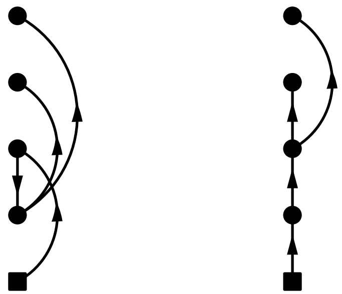
Related Feynman diagrams: 19, 21, 43, 99, 134, 152, 154, 174, 183, 207, 225, 227, 229, 233, 234, 237, 239, 255, 256, 258, 259, 284, 289, 290, 291, 307, 316, 318, 320, 343, 400, 401, 419, 432, 438, 455, 469, 489, 496, 500.

Time-structure diagram T11:



$$\mathrm{T11} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)a_3a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3a_4} \tag{11}$$

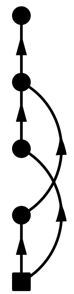
Equivalent tree diagrams: T2, T2.



Number of related Feynman diagrams: 18.

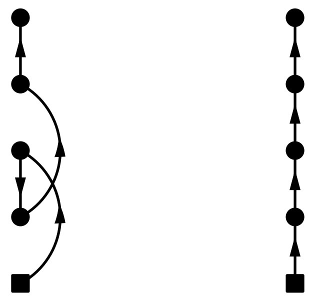
Related Feynman diagrams: 22, 24, 44, 49, 100, 101, 131, 133, 156, 212, 231, 286, 323, 326, 334, 443, 499, 556.

Time-structure diagram T12:



$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{12}$$

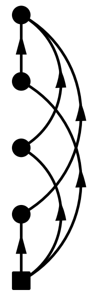
Equivalent tree diagrams: T1, T1.



Number of related Feynman diagrams: 44.

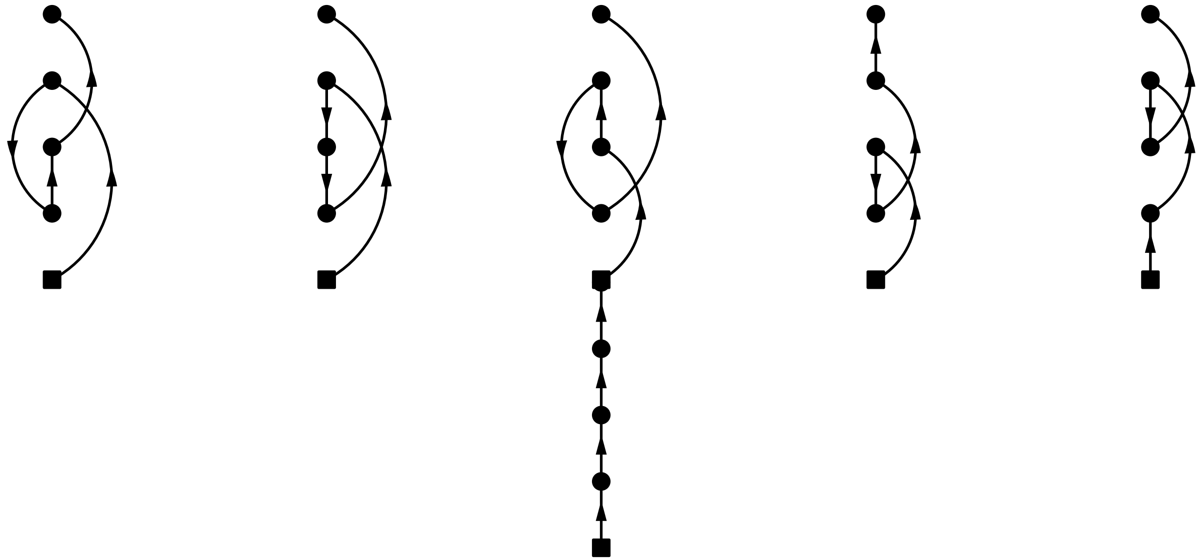
Related Feynman diagrams: 28, 29, 57, 58, 61, 63, 78, 109, 110, 124, 132, 155, 230, 232, 235, 236, 238, 257, 269, 270, 271, 285, 324, 325, 327, 335, 336, 345, 353, 354, 356, 440, 441, 442, 454, 456, 472, 473, 497, 498, 507, 513, 514, 557.

Time-structure diagram T13:



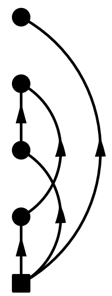
$$\mathrm{T13} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_4)(a_2 + a_1 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_1 + a_4)a_4} + \frac{}{(a_1 + a_3 + a_4)(a_2} \quad (13)$$

Equivalent tree diagrams: T1, T1, T1, T1, T1, T1.



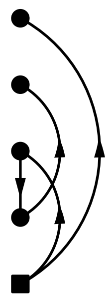
Number of related Feynman diagrams: 4.
Related Feynman diagrams: 265, 315, 466, 482.

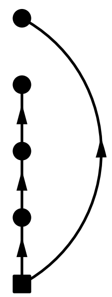
Time-structure diagram T14:



$$\mathrm{T14} = \frac{1}{(a_1+a_3)(a_2+a_1+a_3)a_3a_4} + \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{14}$$

Equivalent tree diagrams: T5, T5.





Number of related Feynman diagrams: 4.
Related Feynman diagrams: 288, 337, 453, 457.

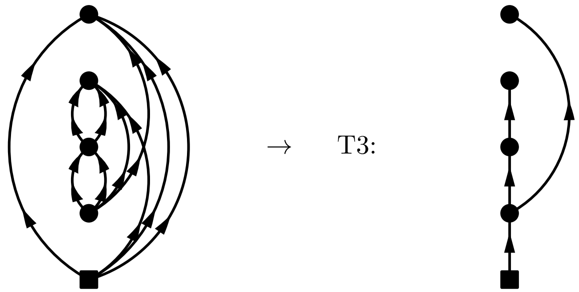
2 Two-body diagrams

2.1 Two-body energy canonical diagrams

Diagram 1:

$$\text{PO4.1} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_{10}k_7k_1} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9k_{10}}_{k_5k_6}} e^{-\tau_3 \epsilon_{k_1k_7k_9k}$$

$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_{10}k_7k_1} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_1k_7}\ \epsilon_{k_1k_7k_9k_{10}}\ \epsilon_{k_2k_3k_4k_8}} \tag{15}$$



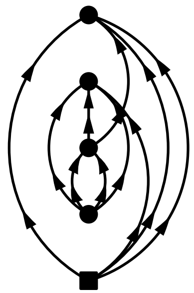
$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{16}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9k_{10}}_{k_5k_6}$$
$$a_3 = \epsilon_{k_1k_7k_9k_{10}}$$
$$a_4 = \epsilon_{k_2k_3k_4k_8}$$

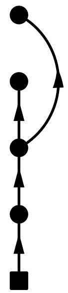
Diagram 2:

$$\text{PO4.2} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_7k_8k_1} \Omega^{04}_{k_{10}k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9k_{10}}_{k_5k_6}} e^{-\tau_3 \epsilon_{k_1k_7k_8k}$$

$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_7k_8k_1} \Omega^{04}_{k_{10}k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_1k_7k_8k_2k_3k_4}\ \epsilon_{k_1k_7k_8k_9}\ \epsilon_{k_2k_3k_4k_{10}}} \tag{17}$$



$\rightarrow$ T2:

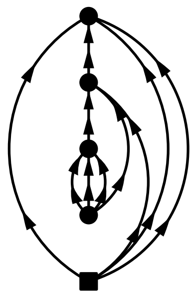


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{18}$$

$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon_{k_5 k_6}^{k_9 k_{10}}$$
$$a_3 = \epsilon_{k_1 k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_{10}}$$

Diagram 3:

$$\begin{aligned}\mathrm{PO4.3} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{13}_{k_9 k_5 k_6 k_7} \Omega^{13}_{k_{10} k_9 k_8 k_1} \Omega^{04}_{k_{10} k_2 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6 k_7 k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_5 k_6 k_7}} e^{-\tau_3 \epsilon^{k_{10}}_{k_1 k_8 k_9}} e^{-} \\ &= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{13}_{k_9 k_5 k_6 k_7} \Omega^{13}_{k_{10} k_9 k_8 k_1} \Omega^{04}_{k_{10} k_2 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6 k_7 k_1 k_8 k_2 k_3 k_4} \ \epsilon_{k_1 k_8 k_9 k_2 k_3 k_4} \ \epsilon_{k_2 k_3 k_4 k_{10}}}\end{aligned} \tag{19}$$



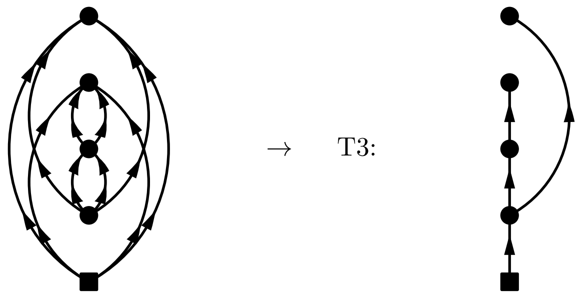
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{20}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_5k_6k_7}$$
$$a_3 = \epsilon^{k_{10}}_{k_1k_8k_9}$$
$$a_4 = \epsilon_{k_2k_3k_4k_{10}}$$

Diagram 4:

$$\begin{aligned} \mathrm{PO4.4} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^5} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9k_{10}}_{k_5k_6}} e^{-\tau_3 \epsilon_{k_1k_2k_9k_{10}}} e^{-\tau_4 \epsilon_{k_3k_4k_7}} \\ &= \frac{(-1)^4}{(2!)^5} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_1k_2}\ \epsilon_{k_1k_2k_9k_{10}}\ \epsilon_{k_3k_4k_7k_8}} \end{aligned} \tag{21}$$



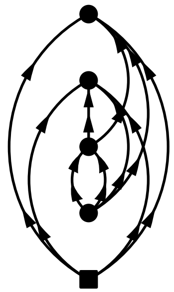
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{22}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9k_{10}}_{k_5k_6}$$
$$a_3 = \epsilon_{k_1k_2k_9k_{10}}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

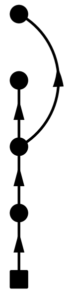
Diagram 5:

$$\mathrm{PO4.5} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_7k_1k_2} \Omega^{04}_{k_{10}k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9k_{10}}_{k_5k_6}} e^{-$$

$$= \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_9k_7k_1k_2} \Omega^{04}_{k_{10}k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_1k_2k_7k_3k_4k_8}\ \epsilon_{k_1k_2k_7k_9}\ \epsilon_{k_3k_4k_8k_{10}}} \tag{23}$$



$\rightarrow$ T2:



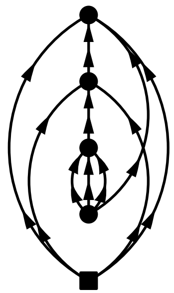
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{24}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9k_{10}}_{k_5k_6}$$
$$a_3 = \epsilon_{k_1k_2k_7k_9}$$
$$a_4 = \epsilon_{k_3k_4k_8k_{10}}$$

Diagram 6:

$$\mathrm{PO4.6} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{13}_{k_{10}k_9k_1k_2} \Omega^{04}_{k_{10}k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_5k_6k_7}} e^{-\tau_3 \epsilon^{k_{10}}_{k_1k_2k_9}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{13}_{k_{10}k_9k_1k_2} \Omega^{04}_{k_{10}k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_1k_2k_3k_4k_8}\ \epsilon_{k_1k_2k_9k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_{10}}} \tag{25}$$



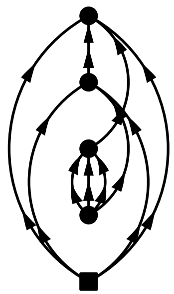
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{26}$$

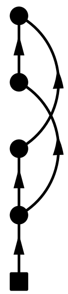
$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_5k_6k_7}$$
$$a_3 = \epsilon^{k_{10}}_{k_1k_2k_9}$$
$$a_4 = \epsilon_{k_3k_4k_8k_{10}}$$

Diagram 7:

$$\begin{aligned}\mathrm{PO4.7} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{13}_{k_{10}k_8k_1k_2} \Omega^{04}_{k_{10}k_9k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_5k_6k_7}} e^{-\tau_3\epsilon^{k_{10}}_{k_1k_2k_8}} \\ &= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{13}_{k_{10}k_8k_1k_2} \Omega^{04}_{k_{10}k_9k_3k_4} \Bigg[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_3k_4k_{10}}\ \epsilon_{k_5k_6k_7k_1k_2k_8k_3k_4}\ \epsilon_{k_3k_4k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_1k_2k_8k_3k_4}\ \epsilon_{k_1k_2k_8k_3k_4k_9}\ \epsilon} \end{aligned} \tag{27}$$



$\rightarrow$ T8:

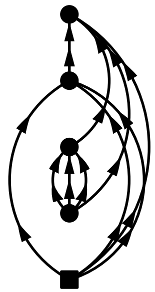


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{28}$$

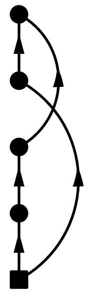
$$\begin{aligned} a_1 &= \epsilon^{k_5k_6k_7k_8} \\ a_2 &= \epsilon^{k_9}_{k_5k_6k_7} \\ a_3 &= \epsilon^{k_{10}}_{k_1k_2k_8} \\ a_4 &= \epsilon_{k_3k_4k_9k_{10}} \end{aligned}$$

Diagram 8:

$$\begin{aligned} \mathrm{PO4.8} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{13}_{k_{10}k_1k_2k_3} \Omega^{04}_{k_{10}k_9k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_5k_6k_7}} e^{-\tau_3\epsilon^{k_{10}}_{k_1k_2k_3}} e^{-} \\ = \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{13}_{k_{10}k_1k_2k_3} \Omega^{04}_{k_{10}k_9k_8k_4} \Bigg[\frac{1}{\epsilon_{k_4k_{10}}\ \epsilon_{k_5k_6k_7k_4k_8k_{10}}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_4k_8k_{10}}\ \epsilon_{k_5k_6k_7k_1k_2k_3k_4k_8}\ \epsilon_{k_4k_8k_9k_{10}}} + \end{aligned} \tag{29}$$



→ T9:

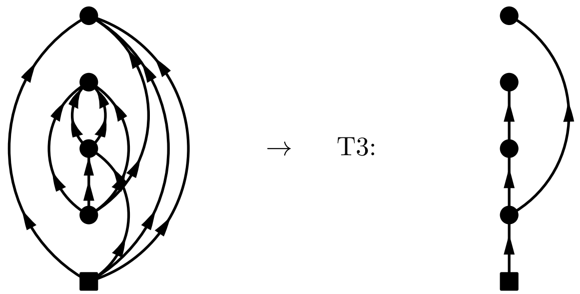


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{30}$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\
a_2 &= \epsilon^{k_9}_{k_5 k_6 k_7} \\
a_3 &= \epsilon^{k_{10}}_{k_1 k_2 k_3} \\
a_4 &= \epsilon_{k_4 k_8 k_9 k_{10}}
\end{aligned}
$$

Diagram 9:

$$
\begin{aligned}
\mathrm{PO4.9} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_{10}k_6k_7} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9k_{10}}_{k_1k_5}} e^{-\tau_3 \epsilon_{k_6k_7k_9k}} \\
= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_{10}k_6k_7} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_6k_7k_9k_{10}}\ \epsilon_{k_2k_3k_4k_8}} \qquad (31)
\end{aligned}
$$

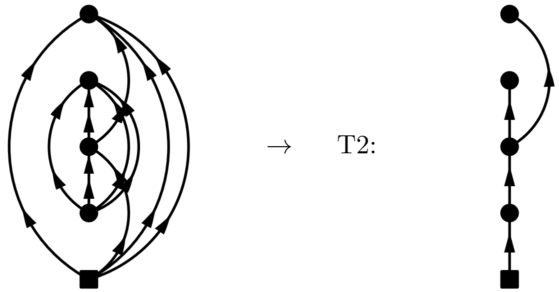


$$
\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \qquad (32)
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\
a_2 &= \epsilon^{k_9 k_{10}}_{k_1 k_5} \\
a_3 &= \epsilon_{k_6 k_7 k_9 k_{10}} \\
a_4 &= \epsilon_{k_2 k_3 k_4 k_8}
\end{aligned}
$$

Diagram 10:

$$\begin{aligned}
\mathrm{PO4.10} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_6k_7k_8} \Omega^{04}_{k_{10}k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9k_{10}}_{k_1k_5}} e^{-\tau_3\epsilon_{k_6k_7k_8k_9}} \\
&= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_6k_7k_8} \Omega^{04}_{k_{10}k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_7k_8k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}\ \epsilon_{k_2k_3k_4k_{10}}} \qquad (33)
\end{aligned}$$

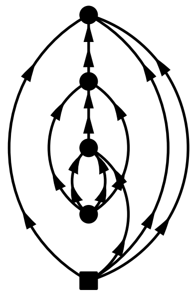


$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \qquad (34)$$

$$\begin{aligned}
a_1 &= \epsilon^{k_5k_6k_7k_8} \\
a_2 &= \epsilon^{k_9k_{10}}_{k_1k_5} \\
a_3 &= \epsilon_{k_6k_7k_8k_9} \\
a_4 &= \epsilon_{k_2k_3k_4k_{10}}
\end{aligned}$$

Diagram 11:

$$\begin{aligned}
\mathrm{PO4.11} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_9k_7k_8} \Omega^{04}_{k_{10}k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_1k_5k_6}} e^{-\tau_3\epsilon^{k_{10}}_{k_7k_8}} \\
&= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_9k_7k_8} \Omega^{04}_{k_{10}k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_7k_8k_2k_3k_4}\ \epsilon_{k_7k_8k_9k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_{10}}} \qquad (35)
\end{aligned}$$



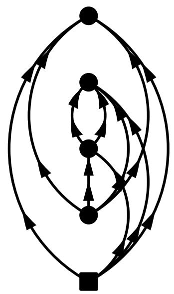
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{36}$$

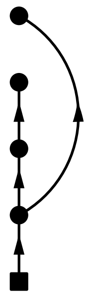
$$\begin{aligned} a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\ a_2 &= \epsilon^{k_9}_{k_1 k_5 k_6} \\ a_3 &= \epsilon^{k_{10}}_{k_7 k_8 k_9} \\ a_4 &= \epsilon_{k_2 k_3 k_4 k_{10}} \end{aligned}$$

Diagram 12:

$$\begin{aligned} \mathrm{PO4.12} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_{10}k_6k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9k_{10}}_{k_1k_5}} e^{-\tau_3\epsilon_{k_2k_6k_9}} \\ &= \frac{-(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_{10}k_6k_2} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_9k_{10}}_{k_1k_5k_3k_4k_7k_8}\ \epsilon_{k_2k_6k_9k_{10}}\ \epsilon_{k_3k_4k_7k_8}} \end{aligned} \tag{37}$$



$\rightarrow$ T3:

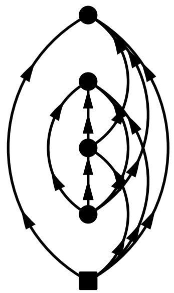


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{38}$$

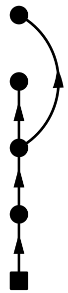
$$\begin{aligned} a_1 &= \epsilon^{k_5k_6k_7k_8} \\ a_2 &= \epsilon^{k_9k_{10}}_{k_1k_5} \\ a_3 &= \epsilon_{k_3k_4k_7k_8} \\ a_4 &= \epsilon_{k_2k_6k_9k_{10}} \end{aligned}$$

Diagram 13:

$$\begin{aligned} \mathrm{PO4.13} = &\lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_6k_7k_2} \Omega^{04}_{k_{10}k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9k_{10}}_{k_1k_5}} e \\ = &\frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_9k_6k_7k_2} \Omega^{04}_{k_{10}k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_2k_6k_7k_3k_4k_8}\ \epsilon_{k_2k_6k_7k_9}\ \epsilon_{k_3k_4k_8k_{10}}} \end{aligned} \tag{39}$$



$\rightarrow$ T2:



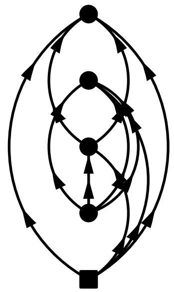
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{40}$$

$$\begin{aligned} a_1 &= \epsilon^{k_5k_6k_7k_8} \\ a_2 &= \epsilon^{k_9k_{10}}_{k_1k_5} \\ a_3 &= \epsilon_{k_2k_6k_7k_9} \\ a_4 &= \epsilon_{k_3k_4k_8k_{10}} \end{aligned}$$

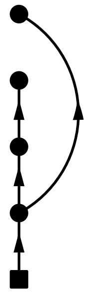
Diagram 14:

$$\text{PO4.14} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_6k_7k_8k_2} \Omega^{04}_{k_9k_{10}k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9k_{10}}_{k_1k_5}} e^{-\tau_3\epsilon_{k_2k_6k_7k_8}} e^{-\tau_4\epsilon_{k_3k}}$$

$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_5k_1} \Omega^{04}_{k_6k_7k_8k_2} \Omega^{04}_{k_9k_{10}k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_3k_4}\ \epsilon_{k_2k_6k_7k_8}\ \epsilon_{k_3k_4k_9k_{10}}} \tag{41}$$



$\rightarrow$ T3:



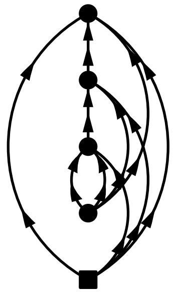
$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{42}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9k_{10}}_{k_1k_5}$$
$$a_3 = \epsilon_{k_3k_4k_9k_{10}}$$
$$a_4 = \epsilon_{k_2k_6k_7k_8}$$

Diagram 15:

$$\text{PO4.15} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_9k_7k_2} \Omega^{04}_{k_{10}k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_1k_5k_6}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_9k_7k_2} \Omega^{04}_{k_{10}k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_7k_3k_4k_8}\ \epsilon_{k_2k_7k_9k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_{10}}} \tag{43}$$



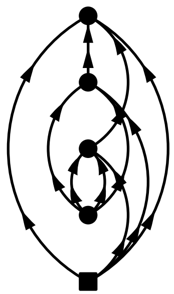
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{44}$$

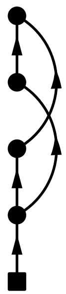
$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1 k_5 k_6}$$
$$a_3 = \epsilon^{k_{10}}_{k_2 k_7 k_9}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_{10}}$$

Diagram 16:

$$\begin{aligned} \mathrm{PO4.16} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_7k_8k_2} \Omega^{04}_{k_{10}k_9k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_5k_6}} e^{-\tau_3 \epsilon^{k_{10}}_{k_2k_7k_8}} \\ &= \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_7k_8k_2} \Omega^{04}_{k_{10}k_9k_3k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_3k_4k_{10}}\ \epsilon_{k_1k_5k_6k_2k_7k_8k_3k_4}\ \epsilon_{k_3k_4k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_7k_8k_3k_4}\ \epsilon_{k_2k_7k_8k_3k_4k_9}} \right. \end{aligned} \tag{45}$$



$\rightarrow$ T8:



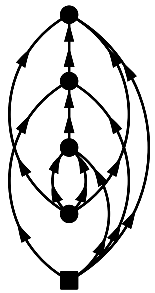
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{46}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1k_5k_6}$$
$$a_3 = \epsilon^{k_{10}}_{k_2k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4k_9k_{10}}$$

Diagram 17:

$$\mathrm{PO4.17} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_9k_2k_3} \Omega^{04}_{k_{10}k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_1k_5k_6}} e^{-\tau_3\epsilon^{k_{10}}_{k_2k_3k_9}} e$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_9k_2k_3} \Omega^{04}_{k_{10}k_7k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4k_7k_8}\ \epsilon_{k_2k_3k_9k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_{10}}} \tag{47}$$



$\rightarrow$ T1:

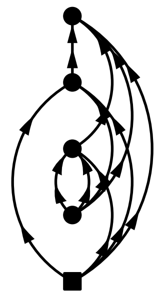
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{48}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1k_5k_6}$$
$$a_3 = \epsilon^{k_{10}}_{k_2k_3k_9}$$
$$a_4 = \epsilon_{k_4k_7k_8k_{10}}$$

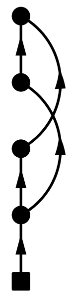
Diagram 18:

$$\mathrm{PO4.18} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_7k_2k_3} \Omega^{04}_{k_{10}k_9k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_1k_5k_6}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_7k_2k_3} \Omega^{04}_{k_{10}k_9k_8k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_4k_8k_{10}}\ \epsilon_{k_1k_5k_6k_2k_3k_7k_4k_8}\ \epsilon_{k_4k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_7k_4k_8}\ \epsilon_{k_2k_3k_7k_4k_8k_9}} \right. \tag{49}$$



$\rightarrow$ T8:



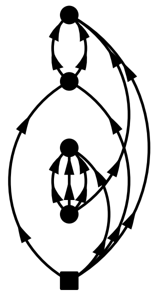
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{50}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1k_5k_6}$$
$$a_3 = \epsilon^{k_{10}}_{k_2k_3k_7}$$
$$a_4 = \epsilon_{k_4k_8k_9k_{10}}$$

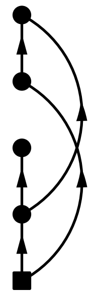
Diagram 19:

$$\mathrm{PO4.19} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{04}_{k_5k_6k_7k_1} \Omega^{22}_{k_9k_{10}k_2k_3} \Omega^{04}_{k_9k_{10}k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon_{k_1k_5k_6k_7}} e^{-\tau_3\epsilon^{k_9k_{10}}_{k_2k_3}} e^{-\tau_4\epsilon_{k_4k}}$$

$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{04}_{k_5k_6k_7k_1} \Omega^{22}_{k_9k_{10}k_2k_3} \Omega^{04}_{k_9k_{10}k_8k_4} \left[\frac{1}{\epsilon_{k_1k_4k_9k_{10}}\ \epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_2k_3k_4k_8}\ \epsilon_{k_4k_8k_9k_{10}}} \right] \tag{51}$$



$\rightarrow$ T10:



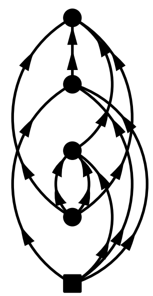
$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{52}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_1k_5k_6k_7}$$
$$a_3 = \epsilon^{k_9k_{10}}_{k_2k_3}$$
$$a_4 = \epsilon_{k_4k_8k_9k_{10}}$$

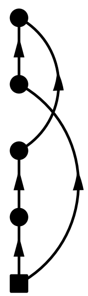
Diagram 20:

$$\mathrm{PO4.20} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_2k_3k_4} \Omega^{04}_{k_{10}k_9k_7k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_1k_5k_6}} e^{-\tau_3\epsilon^{k_{10}}_{k_2k_3}}$$

$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{13}_{k_{10}k_2k_3k_4} \Omega^{04}_{k_{10}k_9k_7k_8} \Bigg[\frac{1}{\epsilon_{k_1k_{10}}\ \epsilon_{k_1k_5k_6k_7k_8k_{10}}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_7k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_7k_8k_{10}}\ \epsilon_{k_1k_5k_6k_2k_3k_4k_7k_8}\ \epsilon_{k_7k_8k_9k_{10}}} \tag{53}$$



$\rightarrow$ T9:

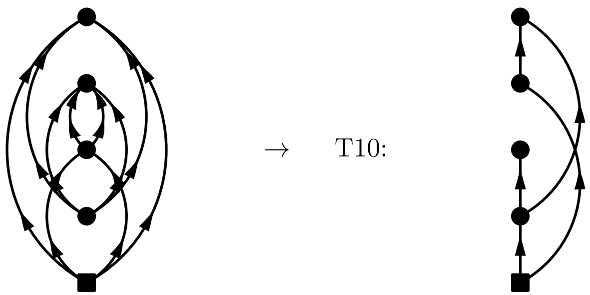


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{54}$$

$$\begin{aligned} a_1 &= \epsilon^{k_5k_6k_7k_8} \\ a_2 &= \epsilon^{k_9}_{k_1k_5k_6} \\ a_3 &= \epsilon^{k_{10}}_{k_2k_3k_4} \\ a_4 &= \epsilon_{k_7k_8k_9k_{10}} \end{aligned}$$

Diagram 21:

$$\begin{aligned} \mathrm{PO4.21} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^5} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9k_{10}}_{k_1k_2}} e^{-\tau_3\epsilon_{k_5k_6k_9k_{10}}} e^{-\tau_4\epsilon_{k_3k_4k} \cdots} \\ &= \frac{(-1)^4}{(2!)^5} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_9k_{10}k_5k_6} \Omega^{04}_{k_7k_8k_3k_4} \left[\frac{1}{\epsilon_{k_9k_{10}k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_9k_{10}}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_6}\ \epsilon_{k_5k_6k_9k_{10}}\ \epsilon_{k_3k_4k_7k_8}} \right] \end{aligned} \tag{55}$$

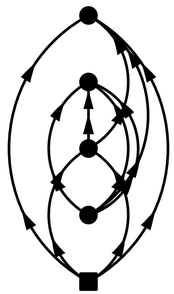


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{56}$$

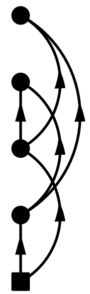
$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_3k_4k_7k_8}$$
$$a_3 = \epsilon^{k_9k_{10}}_{k_1k_2}$$
$$a_4 = \epsilon_{k_5k_6k_9k_{10}}$$

Diagram 22:

$$\mathrm{PO4.22} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_9k_5k_6k_7} \Omega^{04}_{k_{10}k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9k_{10}}_{k_1k_2}} e^{-\tau_3 \epsilon_{k_5k_6k_7}$$
$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_9k_5k_6k_7} \Omega^{04}_{k_{10}k_8k_3k_4} \left[\frac{1}{\epsilon_{k_9k_3k_4k_{10}}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_9}\ \epsilon_{k_3k_4k_8k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_6k_7k_3k_4k_8}\ \epsilon_{k_5k_6k_7k_9}\ \epsilon_{k_3k_4k_8k_{10}}} \right] \tag{57}$$



$\rightarrow$ T11:



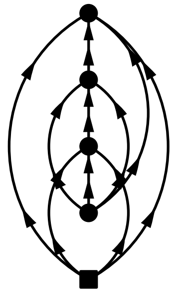
$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{58}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9k_{10}}_{k_1k_2}$$
$$a_3 = \epsilon_{k_5k_6k_7k_9}$$
$$a_4 = \epsilon_{k_3k_4k_8k_{10}}$$

Diagram 23:

$$\mathrm{PO4.23} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_9k_6k_7} \Omega^{04}_{k_{10}k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_1k_2k_5}} e^{\cdots}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_9k_6k_7} \Omega^{04}_{k_{10}k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_6k_7k_3k_4k_8}\ \epsilon_{k_6k_7k_9k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_{10}}} \tag{59}$$



$\rightarrow$ T1:

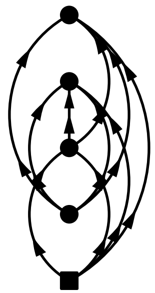
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{60}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1k_2k_5}$$
$$a_3 = \epsilon^{k_{10}}_{k_6k_7k_9}$$
$$a_4 = \epsilon_{k_3k_4k_8k_{10}}$$

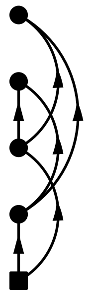
Diagram 24:

$$\mathrm{PO4.24} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_9k_5k_6k_3} \Omega^{04}_{k_{10}k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9k_{10}}_{k_1k_2}} e^{-\tau_3\epsilon_{k_3k_5k_6\cdots}}$$

$$= \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{22}_{k_9k_{10}k_1k_2} \Omega^{04}_{k_9k_5k_6k_3} \Omega^{04}_{k_{10}k_7k_8k_4} \left[\frac{1}{\epsilon_{k_3k_9k_4k_{10}}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_9}\ \epsilon_{k_4k_7k_8k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_5k_6k_4k_7k_8}\ \epsilon_{k_3k_5k_6k_9}\ \epsilon_{k_4k_7k_8k_{10}}} \right] \tag{61}$$



$\rightarrow$ T11:

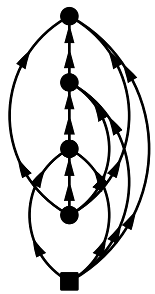


$$\text{T11} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)a_3 a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{62}$$

$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon^{k_9 k_{10}}_{k_1 k_2}$$
$$a_3 = \epsilon_{k_3 k_5 k_6 k_9}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_{10}}$$

Diagram 25:

$$\begin{aligned} \text{PO4.25} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_9k_6k_3} \Omega^{04}_{k_{10}k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_2k_5}} e^{-} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_9k_6k_3} \Omega^{04}_{k_{10}k_7k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_6k_4k_7k_8}\ \epsilon_{k_3k_6k_9k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_{10}}} \end{aligned} \tag{63}$$



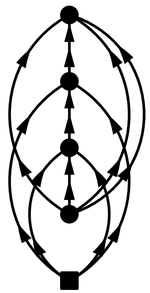
$\rightarrow$ T1:

$$
\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{64}
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\
a_2 &= \epsilon^{k_9}_{k_1 k_2 k_5} \\
a_3 &= \epsilon^{k_{10}}_{k_3 k_6 k_9} \\
a_4 &= \epsilon_{k_4 k_7 k_8 k_{10}}
\end{aligned}
$$

Diagram 26:

$$
\begin{aligned}
\mathrm{PO4.26} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_9k_3k_4} \Omega^{04}_{k_{10}k_6k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6 k_7 k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1 k_2 k_5}} e^{-\tau_3 \epsilon^{k_{10}}_{k_3 k_4 k}} \\
= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_9k_3k_4} \Omega^{04}_{k_{10}k_6k_7k_8}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6k_7k_8}\ \epsilon_{k_3k_4k_9k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_{10}}}
\end{aligned} \tag{65}
$$



$\rightarrow$ T1:

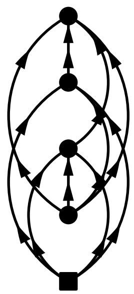
$$
\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{66}
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\
a_2 &= \epsilon^{k_9}_{k_1 k_2 k_5} \\
a_3 &= \epsilon^{k_{10}}_{k_3 k_4 k_9} \\
a_4 &= \epsilon_{k_6 k_7 k_8 k_{10}}
\end{aligned}
$$

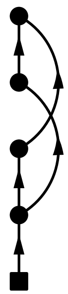
Diagram 27:

$$\mathrm{PO4.27} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_6k_3k_4} \Omega^{04}_{k_{10}k_9k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_2k_5}}$$

$$= \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{13}_{k_{10}k_6k_3k_4} \Omega^{04}_{k_{10}k_9k_7k_8} \Bigg[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_7k_8k_{10}}\ \epsilon_{k_1k_2k_5k_3k_4k_6k_7k_8}\ \epsilon_{k_7k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6k_7k_8}\ \epsilon_{k_3k_4k_6k_7k_8k_9}} \tag{67}$$



$\rightarrow$ T8:



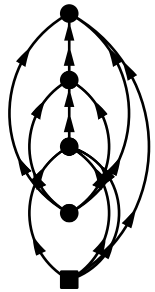
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{68}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1k_2k_5}$$
$$a_3 = \epsilon^{k_{10}}_{k_3k_4k_6}$$
$$a_4 = \epsilon_{k_7k_8k_9k_{10}}$$

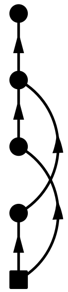
Diagram 28:

$$\mathrm{PO4.28} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{13}_{k_{10}k_9k_5k_6} \Omega^{04}_{k_{10}k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_2k_3}} e^{-\tau_3 \epsilon^{k_{10}}_{k_5k_6}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{13}_{k_{10}k_9k_5k_6} \Omega^{04}_{k_{10}k_7k_8k_4} \left[\frac{1}{\epsilon_{k_9k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_9k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_5k_6k_4k_7k_8}\ \epsilon_{k_5k_6k_9k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_{10}}} \right] \tag{69}$$



$\rightarrow$ T12:

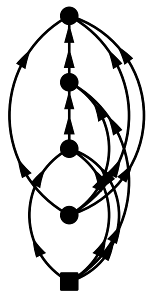


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{70}$$

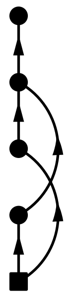
$$\begin{aligned} a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\ a_2 &= \epsilon^{k_9}_{k_1 k_2 k_3} \\ a_3 &= \epsilon^{k_{10}}_{k_5 k_6 k_9} \\ a_4 &= \epsilon_{k_4 k_7 k_8 k_{10}} \end{aligned}$$

Diagram 29:

$$\begin{aligned} \mathrm{PO4.29} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{13}_{k_{10}k_9k_5k_4} \Omega^{04}_{k_{10}k_6k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_2k_3}} e^{-\tau_3 \epsilon^{k_{10}}_{k_4k_5k_9}} \\ &= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{13}_{k_{10}k_9k_5k_4} \Omega^{04}_{k_{10}k_6k_7k_8} \left[\frac{1}{\epsilon_{k_4k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_9k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_4k_5k_6k_7k_8}\ \epsilon_{k_4k_5k_9k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_{10}}} \right] \end{aligned} \tag{71}$$



$\rightarrow$ T12:

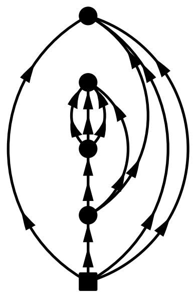


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{72}$$

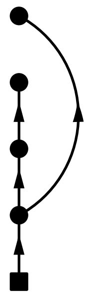
$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_1k_2k_3}^{k_9}$$
$$a_3 = \epsilon_{k_4k_5k_9}^{k_{10}}$$
$$a_4 = \epsilon_{k_6k_7k_8k_{10}}$$

Diagram 30:

$$\begin{aligned}\mathrm{PO4.30} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_9k_{10}k_6} \Omega^{04}_{k_7k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8k_9k_{10}}} e^{-\tau_3 \epsilon_{k_6k_8k_9k_{10}}} \\ &= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_9k_{10}k_6} \Omega^{04}_{k_7k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_6k_8k_9k_{10}}\ \epsilon_{k_2k_3k_4k_7}}\end{aligned} \tag{73}$$



$\rightarrow$ T3:



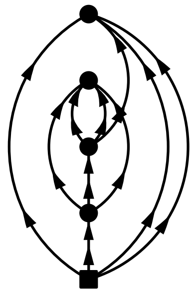
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{74}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8k_9k_{10}}$$
$$a_3 = \epsilon_{k_6k_8k_9k_{10}}$$
$$a_4 = \epsilon_{k_2k_3k_4k_7}$$

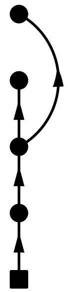
Diagram 31:

$$\mathrm{PO4.31} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_9k_6k_7} \Omega^{04}_{k_{10}k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5}^{k_8k_9k_{10}}} e^{-\tau_3\epsilon_{k_6k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_9k_6k_7} \Omega^{04}_{k_{10}k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}\ \epsilon_{k_2k_3k_4k_{10}}} \tag{75}$$



$\rightarrow$ T2:



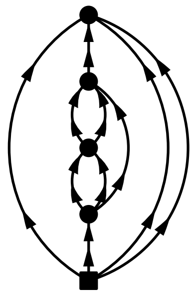
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{76}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8k_9k_{10}}$$
$$a_3 = \epsilon_{k_6k_7k_8k_9}$$
$$a_4 = \epsilon_{k_2k_3k_4k_{10}}$$

Diagram 32:

$$\mathrm{PO4.32} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_8k_9k_7} \Omega^{04}_{k_{10}k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3\epsilon_{k_7k_8k_9}^{k_{10}}} e^{-}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_8k_9k_7} \Omega^{04}_{k_{10}k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_7k_8k_9k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_{10}}} \tag{77}$$



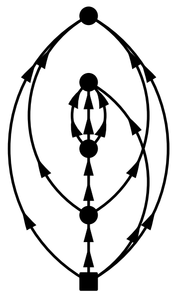
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{78}$$

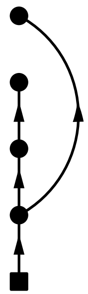
$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\ a_2 &= \epsilon_{k_5k_6}^{k_8k_9} \\ a_3 &= \epsilon_{k_7k_8k_9}^{k_{10}} \\ a_4 &= \epsilon_{k_2k_3k_4k_{10}} \end{aligned}$$

Diagram 33:

$$\begin{aligned} \mathrm{PO4.33} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_6k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5}^{k_8k_9k_{10}}} e^{-\tau_3\epsilon_{k_2k_8k_9k_{10}}} e^{-\tau_4\epsilon_{k_3} \\ &= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_6k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2}\ \epsilon_{k_2k_8k_9k_{10}}\ \epsilon_{k_3k_4k_6k_7}} \end{aligned} \tag{79}$$



$\rightarrow$ T3:

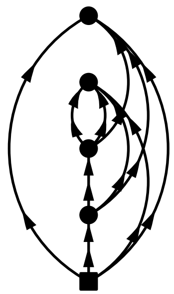


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{80}$$

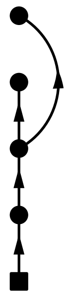
$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5 k_6 k_7} \\ a_2 &= \epsilon_{k_5}^{k_8 k_9 k_{10}} \\ a_3 &= \epsilon_{k_2 k_8 k_9 k_{10}} \\ a_4 &= \epsilon_{k_3 k_4 k_6 k_7} \end{aligned}$$

Diagram 34:

$$\begin{aligned} \mathrm{PO4.34} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{31}_{k_8 k_9 k_{10} k_5} \Omega^{04}_{k_8 k_9 k_6 k_2} \Omega^{04}_{k_{10} k_7 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8 k_9 k_{10}}} e \\ = \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{31}_{k_8 k_9 k_{10} k_5} \Omega^{04}_{k_8 k_9 k_6 k_2} \Omega^{04}_{k_{10} k_7 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_2 k_6 k_3 k_4 k_7}\ \epsilon_{k_2 k_6 k_8 k_9}\ \epsilon_{k_3 k_4 k_7 k_{10}}} \end{aligned} \tag{81}$$



$\rightarrow$ T2:

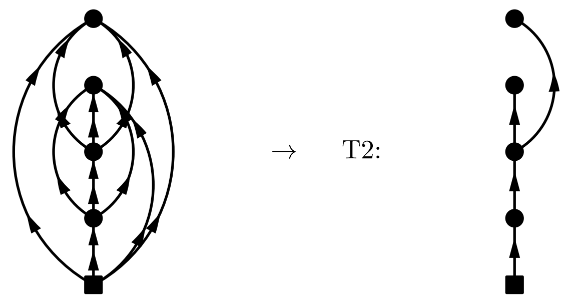


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{82}$$

$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5 k_6 k_7} \\ a_2 &= \epsilon_{k_5}^{k_8 k_9 k_{10}} \\ a_3 &= \epsilon_{k_2 k_6 k_8 k_9} \\ a_4 &= \epsilon_{k_3 k_4 k_7 k_{10}} \end{aligned}$$

Diagram 35:

$$
\begin{aligned}
\mathrm{PO4.35} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_6k_7k_2} \Omega^{04}_{k_9k_{10}k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8k_9k_{10}}} e^{-\tau_3 \epsilon_{k_2k_6k_7k_8}} \\
&= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_8k_6k_7k_2} \Omega^{04}_{k_9k_{10}k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_6k_7k_3k_4}\ \epsilon_{k_2k_6k_7k_8}\ \epsilon_{k_3k_4k_9k_{10}}}
\end{aligned} \tag{83}
$$

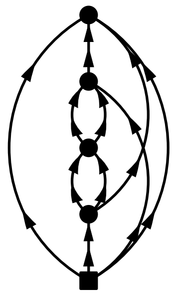


$$
\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{84}
$$

$$
\begin{aligned}
a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\
a_2 &= \epsilon_{k_5}^{k_8k_9k_{10}} \\
a_3 &= \epsilon_{k_2k_6k_7k_8} \\
a_4 &= \epsilon_{k_3k_4k_9k_{10}}
\end{aligned}
$$

Diagram 36:

$$
\begin{aligned}
\mathrm{PO4.36} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_8k_9k_2} \Omega^{04}_{k_{10}k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3 \epsilon_{k_2k_8k_9}^{k_{10}}} e^{-} \\
&= \frac{-(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_8k_9k_2} \Omega^{04}_{k_{10}k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_2k_3k_4k_7}\ \epsilon_{k_2k_8k_9k_3k_4k_7}\ \epsilon_{k_3k_4k_7k_{10}}}
\end{aligned} \tag{85}
$$



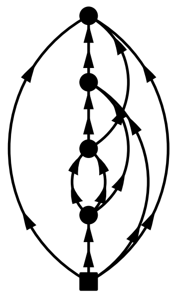
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{86}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_2 k_8 k_9}^{k_{10}}$$
$$a_4 = \epsilon_{k_3 k_4 k_7 k_{10}}$$

Diagram 37:

$$\begin{aligned}
\mathrm{PO4.37} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_5 k_6} \Omega^{13}_{k_{10} k_8 k_7 k_2} \Omega^{04}_{k_{10} k_9 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5 k_6}^{k_8 k_9}} e^{-\tau_3 \epsilon} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_5 k_6} \Omega^{13}_{k_{10} k_8 k_7 k_2} \Omega^{04}_{k_{10} k_9 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_2 k_7 k_3 k_4}\ \epsilon_{k_2 k_7 k_8 k_3 k_4 k_9}\ \epsilon_{k_3 k_4 k_9 k_{10}}}
\end{aligned} \tag{87}$$



$\rightarrow$ T1:

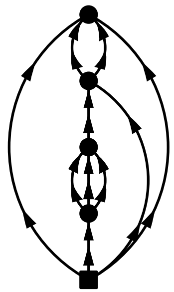
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{88}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6}^{k_8k_9}$$
$$a_3 = \epsilon_{k_2k_7k_8}^{k_{10}}$$
$$a_4 = \epsilon_{k_3k_4k_9k_{10}}$$

Diagram 38:

$$\mathrm{PO4.38} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{22}_{k_9k_{10}k_8k_2} \Omega^{04}_{k_9k_{10}k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6k_7}^{k_8}} e^{-\tau_3\epsilon_{k_2k_8}^{k_9k_{10}}} e^{-\tau_4\epsilon_{k_3k_4k_9k}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{22}_{k_9k_{10}k_8k_2} \Omega^{04}_{k_9k_{10}k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_2k_8k_3k_4}\ \epsilon_{k_3k_4k_9k_{10}}} \tag{89}$$



$\rightarrow$ T1:

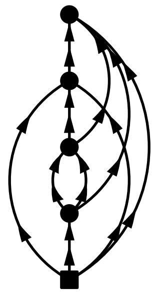
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{90}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6k_7}^{k_8}$$
$$a_3 = \epsilon_{k_2k_8}^{k_9k_{10}}$$
$$a_4 = \epsilon_{k_3k_4k_9k_{10}}$$

Diagram 39:

$$\mathrm{PO4.39} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_8k_2k_3} \Omega^{04}_{k_{10}k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3\epsilon}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_8k_2k_3} \Omega^{04}_{k_{10}k_9k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_2k_3k_4k_7}\ \epsilon_{k_2k_3k_8k_4k_7k_9}\ \epsilon_{k_4k_7k_9k_{10}}} \tag{91}$$



$\rightarrow$ T1:

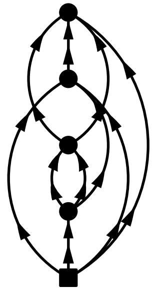
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{92}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6}^{k_8k_9}$$
$$a_3 = \epsilon_{k_2k_3k_8}^{k_{10}}$$
$$a_4 = \epsilon_{k_4k_7k_9k_{10}}$$

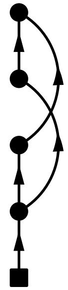
Diagram 40:

$$\mathrm{PO4.40} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_7k_2k_3} \Omega^{04}_{k_{10}k_8k_9k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3\epsilon_{k_2k_3k_7}^{k_{10}}} e^{-\tau_4}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_7k_2k_3} \Omega^{04}_{k_{10}k_8k_9k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_4k_{10}}\ \epsilon_{k_5k_6k_2k_3k_7k_4}\ \epsilon_{k_4k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_2k_3k_7k_4}\ \epsilon_{k_2k_3k_7k_4k_8k_9}\ \epsilon_{k_4k_8k_9k_{10}}} \right] \tag{93}$$



$\rightarrow$ T8:

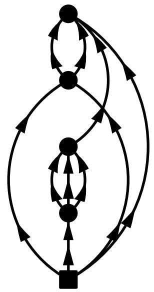


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{94}$$

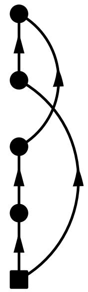
$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\ a_2 &= \epsilon_{k_5k_6}^{k_8k_9} \\ a_3 &= \epsilon_{k_2k_3k_7}^{k_{10}} \\ a_4 &= \epsilon_{k_4k_8k_9k_{10}} \end{aligned}$$

Diagram 41:

$$\begin{aligned} \mathrm{PO4.41} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{22}_{k_9k_{10}k_2k_3} \Omega^{04}_{k_9k_{10}k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6k_7}^{k_8}} e^{-\tau_3\epsilon_{k_2k_3}^{k_9k_{10}}} e^{-\tau_4\epsilon_{k_4k_8k_9k} \\ &= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{22}_{k_9k_{10}k_2k_3} \Omega^{04}_{k_9k_{10}k_8k_4} \Bigg[\frac{1}{\epsilon_{k_1k_4k_9k_{10}}\ \epsilon_{k_5k_6k_7k_4k_9k_{10}}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_4k_9k_{10}}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_4k_8k_9k_{10}} \end{aligned} \tag{95}$$



$\rightarrow$ T9:

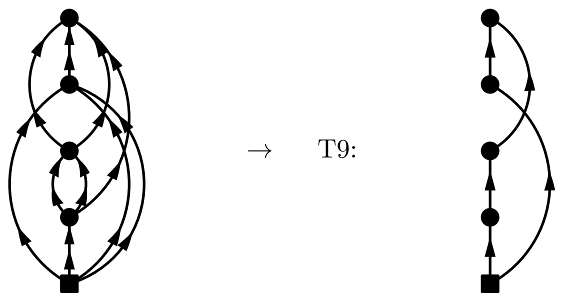


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{96}$$

$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\ a_2 &= \epsilon_{k_5k_6k_7}^{k_8} \\ a_3 &= \epsilon_{k_2k_3}^{k_9k_{10}} \\ a_4 &= \epsilon_{k_4k_8k_9k_{10}} \end{aligned}$$

Diagram 42:

$$\begin{aligned} \mathrm{PO4.42} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_2k_3k_4} \Omega^{04}_{k_{10}k_8k_9k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3 \epsilon_{k_2k_3k_4}^{k_{10}}} e^{-\cdots} \\ &= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{13}_{k_{10}k_2k_3k_4} \Omega^{04}_{k_{10}k_8k_9k_7} \Bigg[\frac{1}{\epsilon_{k_1k_{10}} \ \epsilon_{k_5k_6k_7k_{10}} \ \epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_7k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_6k_7k_{10}} \ \epsilon_{k_5k_6k_2k_3k_4k_7} \ \epsilon_{k_7k_8k_9k_{10}}} + \frac{\cdots}{\epsilon_{k_1k_2k_3}\cdots} \end{aligned} \tag{97}$$

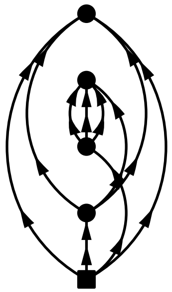


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{98}$$

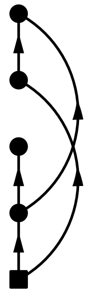
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_2 k_3 k_4}^{k_{10}}$$
$$a_4 = \epsilon_{k_7 k_8 k_9 k_{10}}$$

Diagram 43:

$$\begin{aligned}
\mathrm{PO4.43} = & \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_6k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2}^{k_8k_9k_{10}}} e^{-\tau_3\epsilon_{k_5k_8k_9k_{10}}} e^{-\tau_4\epsilon_{k_3}} \\
= & \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_{10}k_5} \Omega^{04}_{k_6k_7k_3k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}^{k_5k_8k_9k_{10}} \; \epsilon_{k_2}^{k_8k_9k_{10}} \; \epsilon_{k_1k_2k_3k_4} \; \epsilon_{k_3k_4k_6k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \; \epsilon_{k_2}^{k_8k_9k_{10}} \; \epsilon_{k_5k_8k_9k_{10}k_3k_4k_6k_7} \; \epsilon_{k_3k_4k_6k_7}} \right]
\end{aligned} \tag{99}$$



$\rightarrow$ T10:



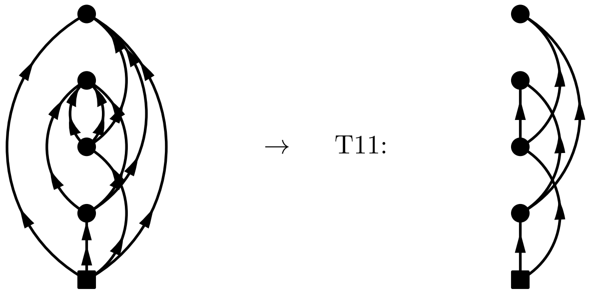
$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{100}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2}^{k_8 k_9 k_{10}}$$
$$a_3 = \epsilon_{k_5 k_8 k_9 k_{10}}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_7}$$

Diagram 44:

$$\mathrm{PO4.44} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_5k_6} \Omega^{04}_{k_{10}k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2}^{k_8k_9k_{10}}} e^{-\tau_3\epsilon_{k_5k_6k_8}}$$

$$= \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_5k_6} \Omega^{04}_{k_{10}k_7k_3k_4} \left[\frac{1}{\epsilon_{k_1k_8k_9k_3k_4k_{10}}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_8k_9}\ \epsilon_{k_3k_4k_7k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_5k_6k_8k_9}\ \epsilon_{k_3k_4k_7k_{10}}} \right] \tag{101}$$



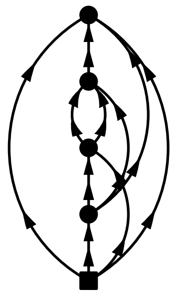
$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{102}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2}^{k_8k_9k_{10}}$$
$$a_3 = \epsilon_{k_5k_6k_8k_9}$$
$$a_4 = \epsilon_{k_3k_4k_7k_{10}}$$

Diagram 45:

$$\mathrm{PO4.45} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_9k_6} \Omega^{04}_{k_{10}k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2k_5}^{k_8k_9}} e^{-\tau_3\epsilon}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_9k_6} \Omega^{04}_{k_{10}k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_6k_8k_9k_3k_4k_7}\ \epsilon_{k_3k_4k_7k_{10}}} \tag{103}$$



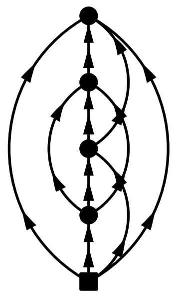
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{104}$$

$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\ a_2 &= \epsilon_{k_2k_5}^{k_8k_9} \\ a_3 &= \epsilon_{k_6k_8k_9}^{k_{10}} \\ a_4 &= \epsilon_{k_3k_4k_7k_{10}} \end{aligned}$$

Diagram 46:

$$\begin{aligned} \mathrm{PO4.46} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_6k_7} \Omega^{04}_{k_{10}k_9k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2k_5}^{k_8k_9}} e^{-\tau_3\epsilon \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_6k_7} \Omega^{04}_{k_{10}k_9k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_7k_3k_4}\ \epsilon_{k_6k_7k_8k_3k_4k_9}\ \epsilon_{k_3k_4k_9k_{10}}} \end{aligned} \tag{105}$$



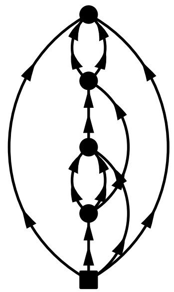
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{106}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_5}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_6 k_7 k_8}^{k_{10}}$$
$$a_4 = \epsilon_{k_3 k_4 k_9 k_{10}}$$

Diagram 47:

$$\mathrm{PO4.47} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{22}_{k_9 k_{10} k_8 k_7} \Omega^{04}_{k_9 k_{10} k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_5 k_6}^{k_8}} e^{-\tau_3 \epsilon_{k_7 k_8}^{k_9 k_{10}}} e^{-$$
$$= \frac{-(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{22}_{k_9 k_{10} k_8 k_7} \Omega^{04}_{k_9 k_{10} k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_5 k_6 k_7 k_3 k_4}\ \epsilon_{k_7 k_8 k_3 k_4}\ \epsilon_{k_3 k_4 k_9 k_{10}}} \tag{107}$$



$\rightarrow$ T1:

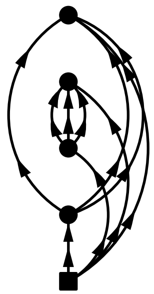
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{108}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_5 k_6}^{k_8}$$
$$a_3 = \epsilon_{k_7 k_8}^{k_9 k_{10}}$$
$$a_4 = \epsilon_{k_3 k_4 k_9 k_{10}}$$

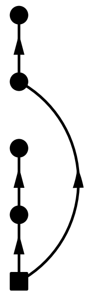
Diagram 48:

$$\mathrm{PO4.48} = \lim_{\tau\to\infty} \frac{(-1)^4}{2(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_{10}k_3} \Omega^{04}_{k_5k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2}^{k_8k_9k_{10}}} e^{-\tau_3 \epsilon_{k_3k_8k_9k_{10}}} e^{-\tau_4 \epsilon_{k_4k_5k_6k_7}}$$

$$= \frac{(-1)^4}{2(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_{10}k_3} \Omega^{04}_{k_5k_6k_7k_4}}{\epsilon_{k_1k_2}^{k_5k_6k_7k_8k_9k_{10}} \ \epsilon_{k_2}^{k_8k_9k_{10}} \ \epsilon_{k_3k_8k_9k_{10}k_4k_5k_6k_7} \ \epsilon_{k_4k_5k_6k_7}} \tag{109}$$



$\rightarrow$ T4:



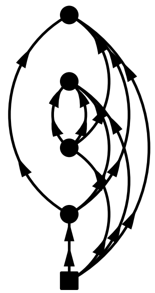
$$\mathrm{T4} = \frac{1}{(a_1+a_2)a_2(a_3+a_4)a_4} \tag{110}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2}^{k_8k_9k_{10}}$$
$$a_3 = \epsilon_{k_3k_8k_9k_{10}}$$
$$a_4 = \epsilon_{k_4k_5k_6k_7}$$

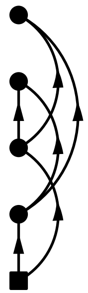
Diagram 49:

$$\mathrm{PO4.49} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_5k_3} \Omega^{04}_{k_{10}k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2}^{k_8k_9k_{10}}} e^{-\tau_3 \epsilon_{k_3k_5k_8}$$

$$= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{31}_{k_8k_9k_{10}k_2} \Omega^{04}_{k_8k_9k_5k_3} \Omega^{04}_{k_{10}k_6k_7k_4} \left[\frac{1}{\epsilon_{k_1k_3k_8k_9k_4k_{10}} \ \epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_3k_5k_8k_9} \ \epsilon_{k_4k_6k_7k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_2k_3k_5k_4k_6k_7} \ \epsilon_{k_3k_5k_8k_9} \ \epsilon_{k_4k_6k_7k_{10}}} \right] \tag{111}$$



$\rightarrow$ T11:

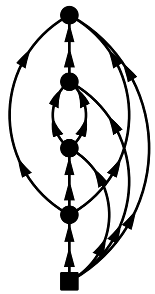


$$\mathrm{T11} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)a_3 a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{112}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2}^{k_8 k_9 k_{10}}$$
$$a_3 = \epsilon_{k_3 k_5 k_8 k_9}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_{10}}$$

Diagram 50:

$$\begin{aligned}\mathrm{PO4.50} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_5 k_2} \Omega^{13}_{k_{10} k_8 k_9 k_3} \Omega^{04}_{k_{10} k_6 k_7 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_5}^{k_8 k_9}} e^{-\tau_3 \epsilon_{k_3 k_8 k_9}^{k_{10}}} e^{-\tau_4 \cdots} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_5 k_2} \Omega^{13}_{k_{10} k_8 k_9 k_3} \Omega^{04}_{k_{10} k_6 k_7 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_5 k_3 k_4 k_6 k_7}\ \epsilon_{k_3 k_8 k_9 k_4 k_6 k_7}\ \epsilon_{k_4 k_6 k_7 k_{10}}}\end{aligned} \tag{113}$$



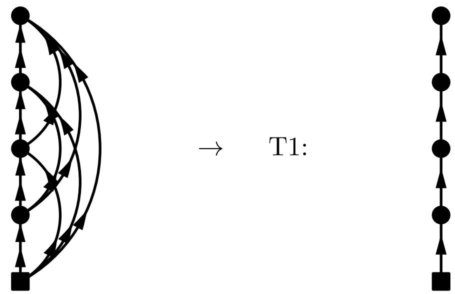
$\rightarrow$ T1:

$$
\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{114}
$$

$$
\begin{aligned}
a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\
a_2 &= \epsilon_{k_2k_5}^{k_8k_9} \\
a_3 &= \epsilon_{k_3k_8k_9}^{k_{10}} \\
a_4 &= \epsilon_{k_4k_6k_7k_{10}}
\end{aligned}
$$

Diagram 51:

$$
\begin{aligned}
\mathrm{PO4.51} = \lim_{\tau\to\infty} -(-1)^4 \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_6k_3} \Omega^{04}_{k_{10}k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau} \\
= -(-1)^4 \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_6k_3} \Omega^{04}_{k_{10}k_9k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_6k_4k_7}\ \epsilon_{k_3k_6k_8k_4k_7k_9}\ \epsilon_{k_4k_7k_9k_{10}}}
\end{aligned} \tag{115}
$$



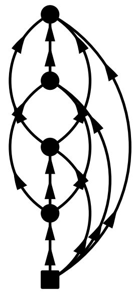
$$
\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{116}
$$

$$
\begin{aligned}
a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\
a_2 &= \epsilon_{k_2k_5}^{k_8k_9} \\
a_3 &= \epsilon_{k_3k_6k_8}^{k_{10}} \\
a_4 &= \epsilon_{k_4k_7k_9k_{10}}
\end{aligned}
$$

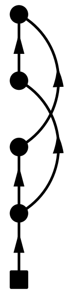
Diagram 52:

$$\mathrm{PO4.52} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_6k_7k_3} \Omega^{04}_{k_{10}k_8k_9k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8k_9}_{k_2k_5}} e^{-\tau_3\epsilon^{k_{10}}_{k_3k_6k_7}} e^{-\tau_4}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_6k_7k_3} \Omega^{04}_{k_{10}k_8k_9k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_4k_{10}}\ \epsilon_{k_2k_5k_3k_6k_7k_4}\ \epsilon_{k_4k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_6k_7k_4}\ \epsilon_{k_3k_6k_7k_4k_8k_9}\ \epsilon_{k_4k_8k_9k_{10}}} \right] \tag{117}$$



$\rightarrow$ T8:



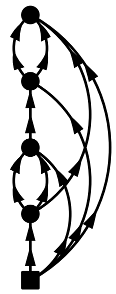
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{118}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon^{k_8k_9}_{k_2k_5}$$
$$a_3 = \epsilon^{k_{10}}_{k_3k_6k_7}$$
$$a_4 = \epsilon_{k_4k_8k_9k_{10}}$$

Diagram 53:

$$\mathrm{PO4.53} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{22}_{k_9k_{10}k_8k_3} \Omega^{04}_{k_9k_{10}k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8}_{k_2k_5k_6}} e^{-\tau_3\epsilon^{k_9k_{10}}_{k_3k_8}} e^{-\tau_4}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{22}_{k_9k_{10}k_8k_3} \Omega^{04}_{k_9k_{10}k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_3k_8k_4k_7}\ \epsilon_{k_4k_7k_9k_{10}}} \tag{119}$$



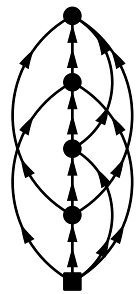
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{120}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_5 k_6}^{k_8}$$
$$a_3 = \epsilon_{k_3 k_8}^{k_9 k_{10}}$$
$$a_4 = \epsilon_{k_4 k_7 k_9 k_{10}}$$

Diagram 54:

$$\begin{aligned} \mathrm{PO4.54} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_3k_4} \Omega^{04}_{k_{10}k_9k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_5}^{k_8k_9}} e^{-\tau_3 \epsilon} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_8k_3k_4} \Omega^{04}_{k_{10}k_9k_6k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4k_6k_7}\ \epsilon_{k_3k_4k_8k_6k_7k_9}\ \epsilon_{k_6k_7k_9k_{10}}} \end{aligned} \tag{121}$$



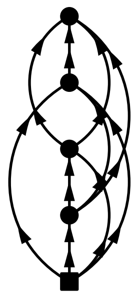
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{122}$$

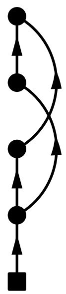
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5}^{k_8k_9}$$
$$a_3 = \epsilon_{k_3k_4k_8}^{k_{10}}$$
$$a_4 = \epsilon_{k_6k_7k_9k_{10}}$$

Diagram 55:

$$\begin{aligned}\mathrm{PO4.55} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_6k_3k_4} \Omega^{04}_{k_{10}k_8k_9k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2k_5}^{k_8k_9}} e^{-\tau_3\epsilon} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{13}_{k_{10}k_6k_3k_4} \Omega^{04}_{k_{10}k_8k_9k_7} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_7k_{10}}\ \epsilon_{k_2k_5k_3k_4k_6k_7}\ \epsilon_{k_7k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4k_6k_7}\ \epsilon_{k_3k_4k_6k_7k_8k_9}\ \epsilon_{k_7k_8k_9k_{10}}} \right]\end{aligned} \tag{123}$$



$\rightarrow$ T8:

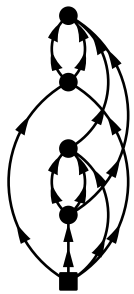


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{124}$$

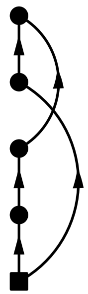
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_5}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_3 k_4 k_6}^{k_{10}}$$
$$a_4 = \epsilon_{k_7 k_8 k_9 k_{10}}$$

Diagram 56:

$$\mathrm{PO4.56} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{22}_{k_9 k_{10} k_3 k_4} \Omega^{04}_{k_9 k_{10} k_8 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_5 k_6}^{k_8}} e^{-\tau_3 \epsilon_{k_3 k_4}^{k_9 k_{10}}} e^{-$$
$$= \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{22}_{k_9 k_{10} k_3 k_4} \Omega^{04}_{k_9 k_{10} k_8 k_7} \Bigg[\frac{1}{\epsilon_{k_1 k_2 k_9 k_{10}}\ \epsilon_{k_2 k_5 k_6 k_7 k_9 k_{10}}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_7 k_8 k_9 k_{10}}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_5 k_6 k_7 k_9 k_{10}}\ \epsilon_{k_2 k_5 k_6 k_3 k_4 k_7}\ \epsilon_{k_7 k_8 k_9 k_{10}}} \qquad (125)$$



$\rightarrow$ T9:



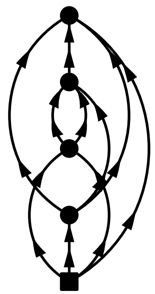
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (126)$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_5 k_6}^{k_8}$$
$$a_3 = \epsilon_{k_3 k_4}^{k_9 k_{10}}$$
$$a_4 = \epsilon_{k_7 k_8 k_9 k_{10}}$$

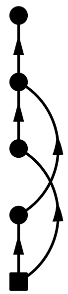
Diagram 57:

$$\mathrm{PO4.57} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{13}_{k_{10}k_8k_9k_5} \Omega^{04}_{k_{10}k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8k_9}_{k_2k_3}} e^{-\tau_3\epsilon^{k_{10}}_{k_5k_8k_9}} e^{-\tau_4}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{13}_{k_{10}k_8k_9k_5} \Omega^{04}_{k_{10}k_6k_7k_4} \left[\frac{1}{\epsilon_{k_1k_8k_9k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_8k_9k_4k_6k_7}\ \epsilon_{k_4k_6k_7k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4k_6k_7}\ \epsilon_{k_5k_8k_9k_4k_6k_7}\ \epsilon_{k_4k_6k_7k_{10}}} \right] \tag{127}$$



$\rightarrow$ T12:



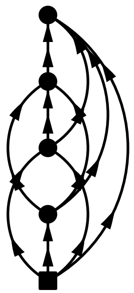
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{128}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon^{k_8k_9}_{k_2k_3}$$
$$a_3 = \epsilon^{k_{10}}_{k_5k_8k_9}$$
$$a_4 = \epsilon_{k_4k_6k_7k_{10}}$$

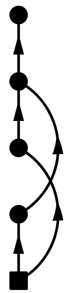
Diagram 58:

$$\mathrm{PO4.58} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{13}_{k_{10}k_8k_5k_6} \Omega^{04}_{k_{10}k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8k_9}_{k_2k_3}} e^{-\tau_3\epsilon}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{13}_{k_{10}k_8k_5k_6} \Omega^{04}_{k_{10}k_9k_7k_4} \left[\frac{1}{\epsilon_{k_1k_8k_4k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_8k_4k_7k_9}\ \epsilon_{k_4k_7k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_6k_4k_7}\ \epsilon_{k_5k_6k_8k_4k_7k_9}\ \epsilon_{k_4k_7k_9k_{10}}} \right] \tag{129}$$



$\rightarrow$ T12:

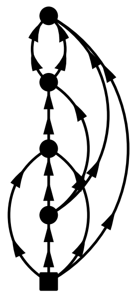


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{130}$$

$$\begin{aligned}
a_1 &= \epsilon_{k_1}^{k_5 k_6 k_7} \\
a_2 &= \epsilon_{k_2 k_3}^{k_8 k_9} \\
a_3 &= \epsilon_{k_5 k_6 k_8}^{k_{10}} \\
a_4 &= \epsilon_{k_4 k_7 k_9 k_{10}}
\end{aligned}$$

Diagram 59:

$$\begin{aligned}
\mathrm{PO4.59} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{22}_{k_9k_{10}k_8k_6} \Omega^{04}_{k_9k_{10}k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_3k_5}^{k_8}} e^{-\tau \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{22}_{k_9k_{10}k_8k_6} \Omega^{04}_{k_9k_{10}k_7k_4}}{\epsilon_{k_1k_2k_3k_4} \; \epsilon_{k_2k_3k_5k_6k_4k_7} \; \epsilon_{k_6k_8k_4k_7} \; \epsilon_{k_4k_7k_9k_{10}}}
\end{aligned} \tag{131}$$



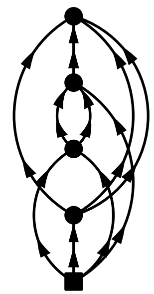
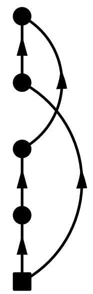
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{132}$$

$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\ a_2 &= \epsilon_{k_2k_3k_5}^{k_8} \\ a_3 &= \epsilon_{k_6k_8}^{k_9k_{10}} \\ a_4 &= \epsilon_{k_4k_7k_9k_{10}} \end{aligned}$$

Diagram 60:

$$\begin{aligned} \mathrm{PO4.60} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{13}_{k_{10}k_8k_9k_4} \Omega^{04}_{k_{10}k_5k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_3}^{k_8k_9}} e^{-\tau_3 \epsilon_{k_4k_8k_9}^{k_{10}}} e^{-\tau_4 \epsilon_{k_5k_6k_7k_1} \cdots} \\ &= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{13}_{k_{10}k_8k_9k_4} \Omega^{04}_{k_{10}k_5k_6k_7} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5k_6k_7}\ \epsilon_{k_4k_8k_9k_5k_6k_7}\ \epsilon_{k_5k_6k_7k_{10}}} + \frac{1}{\epsilon_{k_1k_4k_8k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_8k_9k_5k_6k_7}\ \epsilon_{k_5k_6k_7k_{10}}} \cdots \right. \end{aligned} \tag{133}$$

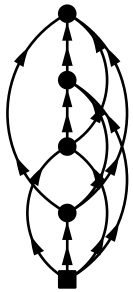
 $\rightarrow$ T9: 

$$\mathrm{T9} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{134}$$

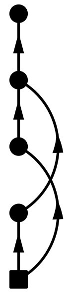
$$a_1 = \epsilon_{k_2 k_3}^{k_8 k_9}$$
$$a_2 = \epsilon_{k_4 k_8 k_9}^{k_{10}}$$
$$a_3 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_4 = \epsilon_{k_5 k_6 k_7 k_{10}}$$

Diagram 61:

$$\begin{aligned} \mathrm{PO4.61} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_2 k_3} \Omega^{13}_{k_{10} k_8 k_5 k_4} \Omega^{04}_{k_{10} k_9 k_6 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_3}^{k_8 k_9}} e^{-\tau_3 \epsilon} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_2 k_3} \Omega^{13}_{k_{10} k_8 k_5 k_4} \Omega^{04}_{k_{10} k_9 k_6 k_7} \left[\frac{1}{\epsilon_{k_1 k_4 k_8 k_9} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_4 k_5 k_8 k_6 k_7 k_9} \ \epsilon_{k_6 k_7 k_9 k_{10}}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_2 k_3 k_4 k_5 k_6 k_7} \ \epsilon_{k_4 k_5 k_8 k_6 k_7 k_9} \ \epsilon_{k_6 k_7 k_9 k_{10}}} \right] \end{aligned} \tag{135}$$



$\rightarrow$ T12:



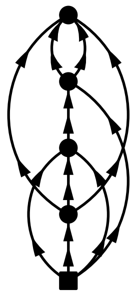
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{136}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_4 k_5 k_8}^{k_{10}}$$
$$a_4 = \epsilon_{k_6 k_7 k_9 k_{10}}$$

Diagram 62:

$$\mathrm{PO4.62} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{22}_{k_9k_{10}k_8k_4} \Omega^{04}_{k_9k_{10}k_6k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8}_{k_2k_3k_5}} e^{-\tau_3\epsilon^{k_9k_{10}}_{k_4k_8}} e^{-\tau_4 \cdots}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{22}_{k_9k_{10}k_8k_4} \Omega^{04}_{k_9k_{10}k_6k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4k_6k_7}\ \epsilon_{k_4k_8k_6k_7}\ \epsilon_{k_6k_7k_9k_{10}}} \tag{137}$$



$\rightarrow$ T1:

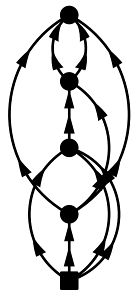
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{138}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon^{k_8}_{k_2k_3k_5}$$
$$a_3 = \epsilon^{k_9k_{10}}_{k_4k_8}$$
$$a_4 = \epsilon_{k_6k_7k_9k_{10}}$$

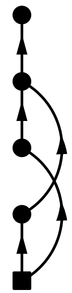
Diagram 63:

$$\mathrm{PO4.63} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{22}_{k_9k_{10}k_8k_5} \Omega^{04}_{k_9k_{10}k_6k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8}_{k_2k_3k_4}} e^{-\tau_3\epsilon^{k_9k_{10}}_{k_5k_8}} e \cdots$$

$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{22}_{k_9k_{10}k_8k_5} \Omega^{04}_{k_9k_{10}k_6k_7} \left[\frac{1}{\epsilon_{k_1k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_8k_6k_7}\ \epsilon_{k_6k_7k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5k_6k_7}\ \epsilon_{k_5k_8k_6k_7}\ \epsilon_{k_6k_7k_9k_{10}}} \right] \tag{139}$$



$\rightarrow$ T12:



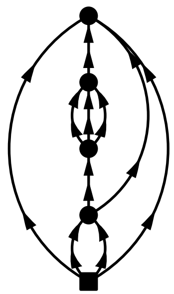
$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{140}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_3k_4}^{k_8}$$
$$a_3 = \epsilon_{k_5k_8}^{k_9k_{10}}$$
$$a_4 = \epsilon_{k_6k_7k_9k_{10}}$$

Diagram 64:

$$\text{PO4.64} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_8k_9} \Omega^{04}_{k_{10}k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1k_2}^{k_5k_6}} e^{-\tau_2\epsilon_{k_5}^{k_7k_8k_9}} e^{-\tau_3\epsilon_{k_7k_8k_9}^{k_{10}}} e^{-}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_8k_9} \Omega^{04}_{k_{10}k_6k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_7k_8k_9k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_{10}}} \tag{141}$$



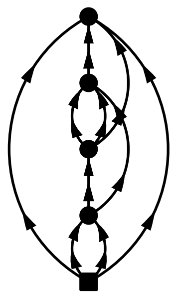
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{142}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_7 k_8 k_9}^{k_{10}}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_{10}}$$

Diagram 65:

$$\begin{aligned}\mathrm{PO4.65} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_8k_6} \Omega^{04}_{k_{10}k_9k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1k_2}^{k_5k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7k_8k_9}} e^{-\tau \\ &= \frac{-(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_8k_6} \Omega^{04}_{k_{10}k_9k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_6k_7k_8k_3k_4k_9}\ \epsilon_{k_3k_4k_9k_{10}}}\end{aligned} \tag{143}$$



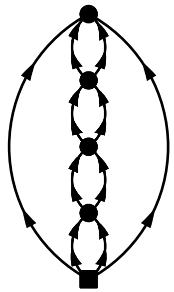
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{144}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_6 k_7 k_8}^{k_{10}}$$
$$a_4 = \epsilon_{k_3 k_4 k_9 k_{10}}$$

Diagram 66:

$$
\begin{aligned}
\mathrm{PO4.66} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^5} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{22}_{k_9k_{10}k_7k_8} \Omega^{04}_{k_9k_{10}k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3\epsilon^{k_9k_{10}}_{k_7k_8}} e^{-\tau_4\epsilon_{k_3k_4k_9k_{10}}} \\
&= \frac{(-1)^4}{(2!)^5} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{22}_{k_9k_{10}k_7k_8} \Omega^{04}_{k_9k_{10}k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_7k_8k_3k_4}\ \epsilon_{k_3k_4k_9k_{10}}}
\end{aligned} \tag{145}
$$



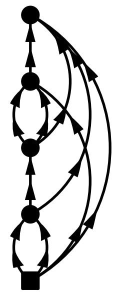
$\rightarrow$ T1:

$$
\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{146}
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_5k_6}_{k_1k_2} \\
a_2 &= \epsilon^{k_7k_8}_{k_5k_6} \\
a_3 &= \epsilon^{k_9k_{10}}_{k_7k_8} \\
a_4 &= \epsilon_{k_3k_4k_9k_{10}}
\end{aligned}
$$

Diagram 67:

$$
\begin{aligned}
\mathrm{PO4.67} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_8k_3} \Omega^{04}_{k_{10}k_9k_6k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_5}} e^{-\tau_3\epsilon} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_8k_3} \Omega^{04}_{k_{10}k_9k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_7k_8k_4k_6k_9}\ \epsilon_{k_4k_6k_9k_{10}}}
\end{aligned} \tag{147}
$$



$\rightarrow$ T1:

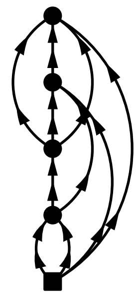
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{148}$$

$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7 k_8 k_9}_{k_5}$$
$$a_3 = \epsilon^{k_{10}}_{k_3 k_7 k_8}$$
$$a_4 = \epsilon_{k_4 k_6 k_9 k_{10}}$$

Diagram 68:

$$\mathrm{PO4.68} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{13}_{k_{10} k_7 k_6 k_3} \Omega^{04}_{k_{10} k_8 k_9 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_7 k_8 k_9}_{k_5}} e^{-\tau_3 \epsilon}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{13}_{k_{10} k_7 k_6 k_3} \Omega^{04}_{k_{10} k_8 k_9 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_3 k_6 k_4} \ \epsilon_{k_3 k_6 k_7 k_4 k_8 k_9} \ \epsilon_{k_4 k_8 k_9 k_{10}}} \tag{149}$$



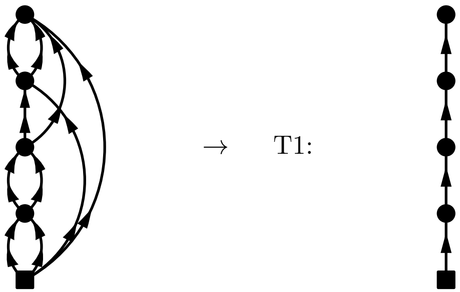
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{150}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_3 k_6 k_7}^{k_{10}}$$
$$a_4 = \epsilon_{k_4 k_8 k_9 k_{10}}$$

Diagram 69:

$$\begin{aligned}\mathrm{PO4.69} = &\lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_6} \Omega^{22}_{k_9 k_{10} k_7 k_3} \Omega^{04}_{k_9 k_{10} k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_5 k_6}^{k_7 k_8}} e^{-\tau_3 \epsilon_{k_3 k_7}^{k_9 k_{10}}} e^{-\tau_4 \epsilon_{k} \cdots} \\ = &\frac{-(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_6} \Omega^{22}_{k_9 k_{10} k_7 k_3} \Omega^{04}_{k_9 k_{10} k_8 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6 k_3 k_4} \ \epsilon_{k_3 k_7 k_4 k_8} \ \epsilon_{k_4 k_8 k_9 k_{10}}}\end{aligned} \tag{151}$$



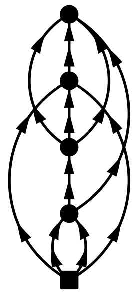
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{152}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5 k_6}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_3 k_7}^{k_9 k_{10}}$$
$$a_4 = \epsilon_{k_4 k_8 k_9 k_{10}}$$

Diagram 70:

$$\mathrm{PO4.70} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_3k_4} \Omega^{04}_{k_{10}k_8k_9k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_7k_8k_9}_{k_5}} e^{-\tau_3 \epsilon}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_7k_3k_4} \Omega^{04}_{k_{10}k_8k_9k_6}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_7k_6k_8k_9}\ \epsilon_{k_6k_8k_9k_{10}}} \tag{153}$$



$\rightarrow$ T1:

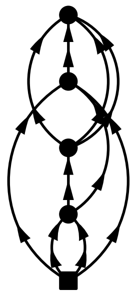
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{154}$$

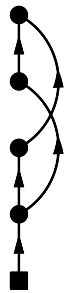
$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8k_9}_{k_5}$$
$$a_3 = \epsilon^{k_{10}}_{k_3k_4k_7}$$
$$a_4 = \epsilon_{k_6k_8k_9k_{10}}$$

Diagram 71:

$$\mathrm{PO4.71} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_6k_3k_4} \Omega^{04}_{k_{10}k_7k_8k_9} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_7k_8k_9}_{k_5}} e^{-\tau_3 \epsilon^{k_{10}}_{k_3k_4k_6}} e^{-}$$

$$= \frac{-(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{13}_{k_{10}k_6k_3k_4} \Omega^{04}_{k_{10}k_7k_8k_9} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_{10}}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_7k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_7k_8k_9}\ \epsilon_{k_7k_8k_9k_{10}}} \right] \tag{155}$$



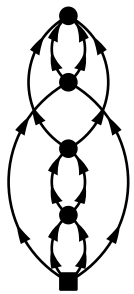
$\rightarrow$ T8: 

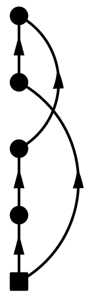
$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{156}$$

$$\begin{aligned} a_1 &= \epsilon^{k_5k_6}_{k_1k_2} \\ a_2 &= \epsilon^{k_7k_8k_9}_{k_5} \\ a_3 &= \epsilon^{k_{10}}_{k_3k_4k_6} \\ a_4 &= \epsilon_{k_7k_8k_9k_{10}} \end{aligned}$$

Diagram 72:

$$\begin{aligned} \text{PO4.72} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^5} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{22}_{k_9k_{10}k_3k_4} \Omega^{04}_{k_9k_{10}k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3 \epsilon^{k_9k_{10}}_{k_3k_4}} e^{-\tau_4 \epsilon_{k_7k_8k_9k_{10}}} \\ &= \frac{(-1)^4}{(2!)^5} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{22}_{k_9k_{10}k_3k_4} \Omega^{04}_{k_9k_{10}k_7k_8} \Bigg[\frac{1}{\epsilon^{k_5k_6}_{k_1k_2k_7k_8k_9k_{10}} \; \epsilon_{k_1k_2k_3k_4} \; \epsilon^{k_5k_6}_{k_1k_2k_3k_4k_7k_8} \; \epsilon_{k_7k_8k_9k_{10}}} + \frac{1}{\epsilon^{k_5k_6}_{k_1k_2k_7k_8k_9k_{10}} \; \epsilon_{k_1k_2k_9k_{10}} \; \epsilon_{k_1k_2k_3k_4} \; \epsilon_{k_7k_8k_9k_{10}}} \end{aligned} \tag{157}$$



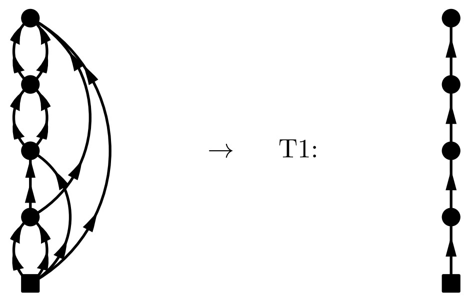
$\rightarrow$ T9: 

$$\mathrm{T9} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{158}$$

$$a_1 = \epsilon^{k_9 k_{10}}_{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_3 = \epsilon^{k_7 k_8}_{k_5 k_6}$$
$$a_4 = \epsilon_{k_7 k_8 k_9 k_{10}}$$

Diagram 73:

$$\begin{aligned}
\mathrm{PO4.73} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{22}_{k_9 k_{10} k_7 k_8} \Omega^{04}_{k_9 k_{10} k_6 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_3 k_5}} e^{-\tau_3 \epsilon^{k_9 k_{10}}_{k_7 k_8}} e^{-\tau_4 \epsilon_{k}} \\
&= \frac{-(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{22}_{k_9 k_{10} k_7 k_8} \Omega^{04}_{k_9 k_{10} k_6 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_3 k_5 k_4 k_6} \ \epsilon_{k_7 k_8 k_4 k_6} \ \epsilon_{k_4 k_6 k_9 k_{10}}}
\end{aligned} \tag{159}$$

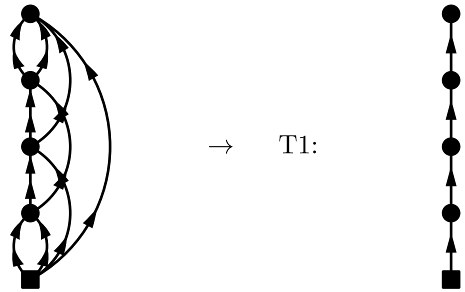


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{160}$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_5k_6}_{k_1k_2} \\
a_2 &= \epsilon^{k_7k_8}_{k_3k_5} \\
a_3 &= \epsilon^{k_9k_{10}}_{k_7k_8} \\
a_4 &= \epsilon_{k_4k_6k_9k_{10}}
\end{aligned}
$$

Diagram 74:

$$
\begin{aligned}
\mathrm{PO4.74} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{22}_{k_9k_{10}k_7k_6} \Omega^{04}_{k_9k_{10}k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_5}} e^{-\tau_3\epsilon^{k_9}_{k_6}} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{22}_{k_9k_{10}k_7k_6} \Omega^{04}_{k_9k_{10}k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_6k_7k_4k_8}\ \epsilon_{k_4k_8k_9k_{10}}} \qquad (161)
\end{aligned}
$$



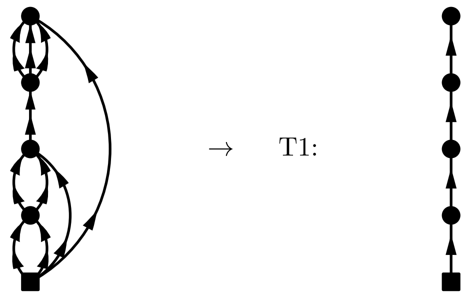
$$
\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (162)
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_5k_6}_{k_1k_2} \\
a_2 &= \epsilon^{k_7k_8}_{k_3k_5} \\
a_3 &= \epsilon^{k_9k_{10}}_{k_6k_7} \\
a_4 &= \epsilon_{k_4k_8k_9k_{10}}
\end{aligned}
$$

Diagram 75:

$$\mathrm{PO4.75} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_6k_3} \Omega^{31}_{k_8k_9k_{10}k_7} \Omega^{04}_{k_8k_9k_{10}k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7}_{k_3k_5k_6}} e^{-\tau_3\epsilon^{k_8k_9k_{10}}_{k_7}} e^{-\tau_4\epsilon_{k_4k_8k_9k}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_6k_3} \Omega^{31}_{k_8k_9k_{10}k_7} \Omega^{04}_{k_8k_9k_{10}k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_7k_4}\ \epsilon_{k_4k_8k_9k_{10}}} \tag{163}$$



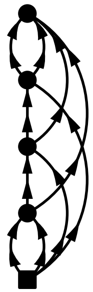
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{164}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7}_{k_3k_5k_6}$$
$$a_3 = \epsilon^{k_8k_9k_{10}}_{k_7}$$
$$a_4 = \epsilon_{k_4k_8k_9k_{10}}$$

Diagram 76:

$$\mathrm{PO4.76} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{22}_{k_9k_{10}k_7k_4} \Omega^{04}_{k_9k_{10}k_8k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_5}} e^{-\tau_3\epsilon}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{22}_{k_9k_{10}k_7k_4} \Omega^{04}_{k_9k_{10}k_8k_6}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_4k_6}\ \epsilon_{k_4k_7k_6k_8}\ \epsilon_{k_6k_8k_9k_{10}}} \tag{165}$$



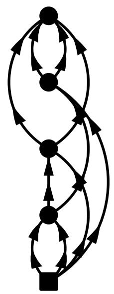
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{166}$$

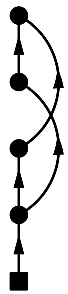
$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_3 k_5}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_4 k_7}^{k_9 k_{10}}$$
$$a_4 = \epsilon_{k_6 k_8 k_9 k_{10}}$$

Diagram 77:

$$\begin{aligned}\text{PO4.77} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{22}_{k_9 k_{10} k_6 k_4} \Omega^{04}_{k_9 k_{10} k_7 k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_3 k_5}^{k_7 k_8}} e^{-\tau_3 \epsilon_{k_4 k_6}^{k_9 k_{10}}} e^{-\tau_4 \epsilon_{k}} \\ &= \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{22}_{k_9 k_{10} k_6 k_4} \Omega^{04}_{k_9 k_{10} k_7 k_8} \left[\frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_3 k_5 k_9 k_{10}} \ \epsilon_{k_3 k_5 k_4 k_6} \ \epsilon_{k_7 k_8 k_9 k_{10}}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_3 k_5 k_4 k_6} \ \epsilon_{k_4 k_6 k_7 k_8} \ \epsilon_{k_7 k_8 k_9 k_{10}}} \right]\end{aligned} \tag{167}$$



$\rightarrow$ T8:

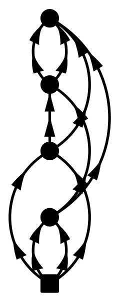


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{168}$$

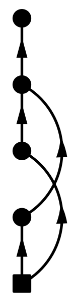
$$\begin{aligned}
a_1 &= \epsilon^{k_5k_6}_{k_1k_2}\\
a_2 &= \epsilon^{k_7k_8}_{k_3k_5}\\
a_3 &= \epsilon^{k_9k_{10}}_{k_4k_6}\\
a_4 &= \epsilon_{k_7k_8k_9k_{10}}
\end{aligned}$$

Diagram 78:

$$\begin{aligned}
\mathrm{PO4.78} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{22}_{k_9k_{10}k_7k_5} \Omega^{04}_{k_9k_{10}k_8k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3\epsilon}\\
&= \frac{-(-1)^4}{2(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{22}_{k_9k_{10}k_7k_5} \Omega^{04}_{k_9k_{10}k_8k_6} \left[\frac{1}{\epsilon_{k_1k_2k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7k_6k_8}\ \epsilon_{k_6k_8k_9k_{10}}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_5k_7k_6k_8}\ \epsilon_{k_6k_8k_9k_{10}}} \right]
\end{aligned} \tag{169}$$



→ T12:

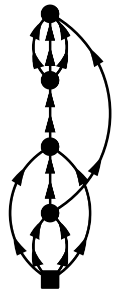


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{170}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_3 k_4}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_5 k_7}^{k_9 k_{10}}$$
$$a_4 = \epsilon_{k_6 k_8 k_9 k_{10}}$$

Diagram 79:

$$\begin{aligned}
\mathrm{PO4.79} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_3k_4} \Omega^{31}_{k_8k_9k_{10}k_7} \Omega^{04}_{k_8k_9k_{10}k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1k_2}^{k_5k_6}} e^{-\tau_2 \epsilon_{k_3k_4k_5}^{k_7}} e^{-\tau_3 \epsilon_{k_7}^{k_8k_9k_{10}}} e \\
&= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_3k_4} \Omega^{31}_{k_8k_9k_{10}k_7} \Omega^{04}_{k_8k_9k_{10}k_6}}{\epsilon_{k_1k_2k_3k_4} \; \epsilon_{k_3k_4k_5k_6} \; \epsilon_{k_7k_6} \; \epsilon_{k_6k_8k_9k_{10}}} \qquad (171)
\end{aligned}$$



$\rightarrow$ T1:

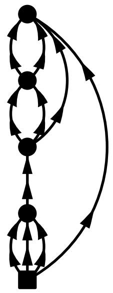
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (172)$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_3 k_4 k_5}^{k_7}$$
$$a_3 = \epsilon_{k_7}^{k_8 k_9 k_{10}}$$
$$a_4 = \epsilon_{k_6 k_8 k_9 k_{10}}$$

Diagram 80:

$$\mathrm{PO4.80} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{22}_{k_9k_{10}k_6k_7} \Omega^{04}_{k_9k_{10}k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3 \epsilon^{k_9k_{10}}_{k_6k_7}} e$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{22}_{k_9k_{10}k_6k_7} \Omega^{04}_{k_9k_{10}k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_6k_7k_4k_8}\ \epsilon_{k_4k_8k_9k_{10}}} \tag{173}$$



$\rightarrow$ T1:

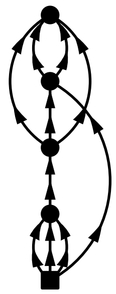
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{174}$$

$$a_1 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_3 = \epsilon^{k_9k_{10}}_{k_6k_7}$$
$$a_4 = \epsilon_{k_4k_8k_9k_{10}}$$

Diagram 81:

$$\mathrm{PO4.81} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{22}_{k_9k_{10}k_6k_4} \Omega^{04}_{k_9k_{10}k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3 \epsilon^{k_9k_{10}}_{k_4k_6}} e$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{22}_{k_9k_{10}k_6k_4} \Omega^{04}_{k_9k_{10}k_7k_8}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_4k_6k_7k_8}\ \epsilon_{k_7k_8k_9k_{10}}} \tag{175}$$



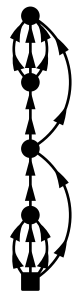
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{176}$$

$$a_1 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_3 = \epsilon^{k_9k_{10}}_{k_4k_6}$$
$$a_4 = \epsilon_{k_7k_8k_9k_{10}}$$

Diagram 82:

$$\begin{aligned}\mathrm{PO4.82} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{31}_{k_8k_9k_{10}k_6} \Omega^{04}_{k_8k_9k_{10}k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2\epsilon^{k_6k_7}_{k_4k_5}} e^{-\tau_3\epsilon^{k_8k_9k_{10}}_{k_6}} e^{-\tau_4} \\ &= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{31}_{k_8k_9k_{10}k_6} \Omega^{04}_{k_8k_9k_{10}k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5}\ \epsilon_{k_6k_7}\ \epsilon_{k_7k_8k_9k_{10}}}\end{aligned} \tag{177}$$



$\rightarrow$ T1:

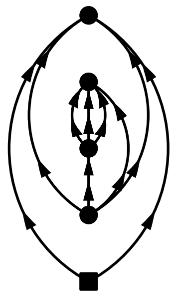
$$
\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{178}
$$

$$
\begin{aligned}
a_1 &= \epsilon_{k_1 k_2 k_3}^{k_5} \\
a_2 &= \epsilon_{k_4 k_5}^{k_6 k_7} \\
a_3 &= \epsilon_{k_6}^{k_8 k_9 k_{10}} \\
a_4 &= \epsilon_{k_7 k_8 k_9 k_{10}}
\end{aligned}
$$

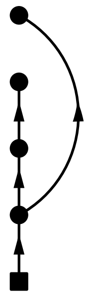
2.2 Two-body canonical diagrams for a generic operator only

Diagram 83:

$$
\begin{aligned}
\mathrm{PO4.83} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_3} \Omega^{04}_{k_7 k_8 k_9 k_4} \Omega^{04}_{k_5 k_6 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8 k_9}_{k_3}} e^{-\tau_3 \epsilon_{k_4 k_7 k_8 k_9}} e^{-} \\
= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_3} \Omega^{04}_{k_7 k_8 k_9 k_4} \Omega^{04}_{k_5 k_6 k_1 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_4 k_7 k_8 k_9}\ \epsilon_{k_1 k_2 k_5 k_6}}
\end{aligned} \tag{179}
$$



$\rightarrow$ T3:

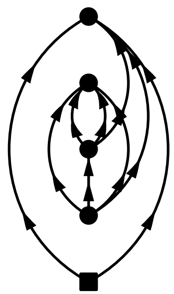


$$
\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{180}
$$

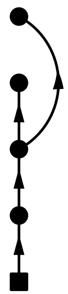
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7k_8k_9}$$
$$a_3 = \epsilon_{k_4k_7k_8k_9}$$
$$a_4 = \epsilon_{k_1k_2k_5k_6}$$

Diagram 84:

$$\text{PO4.84} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_8k_4k_5} \Omega^{04}_{k_9k_6k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon_{k_3}^{k_7k_8k_9}} e^{-\tau_3\epsilon_{k_4}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_8k_4k_5} \Omega^{04}_{k_9k_6k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_1k_2k_6}\ \epsilon_{k_4k_5k_7k_8}\ \epsilon_{k_1k_2k_6k_9}} \tag{181}$$



$\rightarrow$ T2:

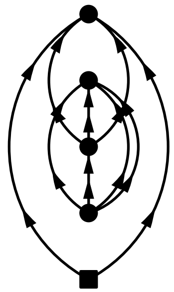


$$\text{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{182}$$

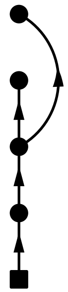
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7k_8k_9}$$
$$a_3 = \epsilon_{k_4k_5k_7k_8}$$
$$a_4 = \epsilon_{k_1k_2k_6k_9}$$

Diagram 85:

$$\begin{aligned}
\text{PO4.85} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_4k_5k_6} \Omega^{04}_{k_8k_9k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_3}} e^{-\tau_3\epsilon_{k_4k_5k_6k_7}} e^{-} \\
&= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_4k_5k_6} \Omega^{04}_{k_8k_9k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_6k_1k_2}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_1k_2k_8k_9}}
\end{aligned} \tag{183}$$



$\rightarrow$ T2:

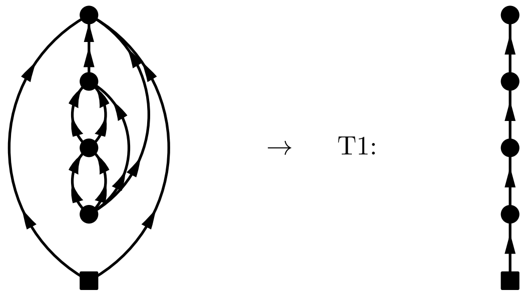


$$\text{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{184}$$

$$\begin{aligned}
a_1 &= \epsilon^{k_3k_4k_5k_6} \\
a_2 &= \epsilon^{k_7k_8k_9}_{k_3} \\
a_3 &= \epsilon_{k_4k_5k_6k_7} \\
a_4 &= \epsilon_{k_1k_2k_8k_9}
\end{aligned}$$

Diagram 86:

$$\begin{aligned}
\text{PO4.86} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_7k_8k_5} \Omega^{04}_{k_9k_6k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3\epsilon^{k_9}_{k_5k_7}} \\
&= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_7k_8k_5} \Omega^{04}_{k_9k_6k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_1k_2k_6}\ \epsilon_{k_5k_7k_8k_1k_2k_6}\ \epsilon_{k_1k_2k_6k_9}}
\end{aligned} \tag{185}$$

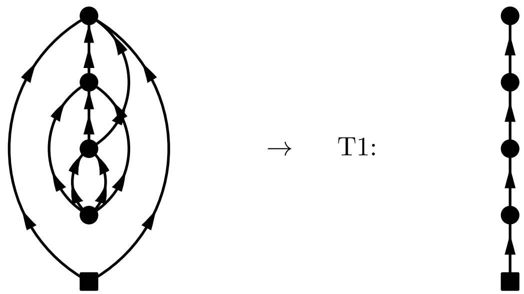


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{186}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_3 k_4}$$
$$a_3 = \epsilon^{k_9}_{k_5 k_7 k_8}$$
$$a_4 = \epsilon_{k_1 k_2 k_6 k_9}$$

Diagram 87:

$$\begin{aligned}\mathrm{PO4.87} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_3 k_4} \Omega^{13}_{k_9 k_7 k_5 k_6} \Omega^{04}_{k_9 k_8 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_3 k_4}} e^{-\tau_3 \epsilon^{k_9}_{k_5 k_6}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_3 k_4} \Omega^{13}_{k_9 k_7 k_5 k_6} \Omega^{04}_{k_9 k_8 k_1 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_6 k_1 k_2}\ \epsilon_{k_5 k_6 k_7 k_1 k_2 k_8}\ \epsilon_{k_1 k_2 k_8 k_9}}\end{aligned} \tag{187}$$

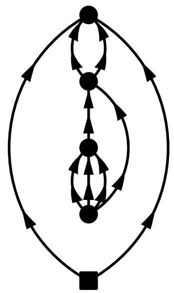


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{188}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_3 k_4}$$
$$a_3 = \epsilon^{k_9}_{k_5 k_6 k_7}$$
$$a_4 = \epsilon_{k_1 k_2 k_8 k_9}$$

Diagram 88:

$$\begin{aligned}\mathrm{PO4.88} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{22}_{k_8 k_9 k_7 k_6} \Omega^{04}_{k_8 k_9 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3 k_4 k_5}} e^{-\tau_3 \epsilon^{k_8 k_9}_{k_6 k_7}} e^{-\tau_4 \epsilon_{k}} \\ &= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{22}_{k_8 k_9 k_7 k_6} \Omega^{04}_{k_8 k_9 k_1 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_6 k_1 k_2}\ \epsilon_{k_6 k_7 k_1 k_2}\ \epsilon_{k_1 k_2 k_8 k_9}} \end{aligned} \tag{189}$$



$\rightarrow$ T1:

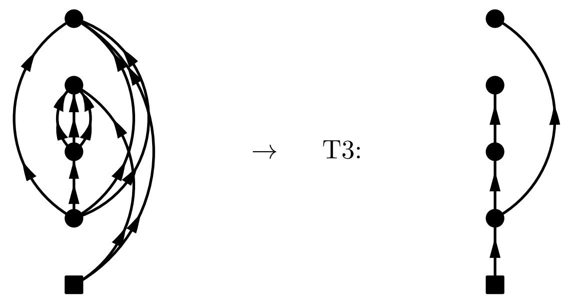
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{190}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3 k_4 k_5}$$
$$a_3 = \epsilon^{k_8 k_9}_{k_6 k_7}$$
$$a_4 = \epsilon_{k_1 k_2 k_8 k_9}$$

Diagram 89:

$$\mathrm{PO4.89} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_8k_9k_1} \Omega^{04}_{k_4k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_3}} e^{-\tau_3\epsilon_{k_1k_7k_8k_9}} e^{-\tau_4\epsilon_{k_2k_4k_5k_6}}$$

$$= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_8k_9k_1} \Omega^{04}_{k_4k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1}\ \epsilon_{k_1k_7k_8k_9}\ \epsilon_{k_2k_4k_5k_6}} \tag{191}$$



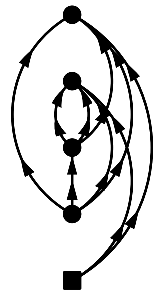
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{192}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8k_9}_{k_3}$$
$$a_3 = \epsilon_{k_1k_7k_8k_9}$$
$$a_4 = \epsilon_{k_2k_4k_5k_6}$$

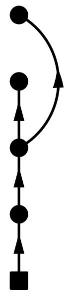
Diagram 90:

$$\mathrm{PO4.90} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_8k_4k_1} \Omega^{04}_{k_9k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_3}} e^{-\tau_3\epsilon_{k_1}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_3} \Omega^{04}_{k_7k_8k_4k_1} \Omega^{04}_{k_9k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_4k_2k_5k_6}\ \epsilon_{k_1k_4k_7k_8}\ \epsilon_{k_2k_5k_6k_9}} \tag{193}$$



$\rightarrow$ T2:

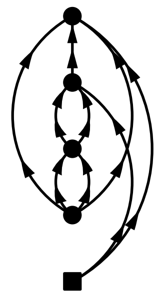


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{194}$$

$$\begin{aligned} a_1 &= \epsilon^{k_3 k_4 k_5 k_6} \\ a_2 &= \epsilon_{k_3}^{k_7 k_8 k_9} \\ a_3 &= \epsilon_{k_1 k_4 k_7 k_8} \\ a_4 &= \epsilon_{k_2 k_5 k_6 k_9} \end{aligned}$$

Diagram 91:

$$\begin{aligned} \mathrm{PO4.91} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_3 k_4} \Omega^{13}_{k_9 k_7 k_8 k_1} \Omega^{04}_{k_9 k_5 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_3 k_4}} e^{-\tau_3 \epsilon^{k_9}_{k_1 k_7 k_8}} e^{-\tau_4 \epsilon_{k_2 k_5 \ldots}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_3 k_4} \Omega^{13}_{k_9 k_7 k_8 k_1} \Omega^{04}_{k_9 k_5 k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_1 k_2 k_5 k_6}\ \epsilon_{k_1 k_7 k_8 k_2 k_5 k_6}\ \epsilon_{k_2 k_5 k_6 k_9}} \end{aligned} \tag{195}$$



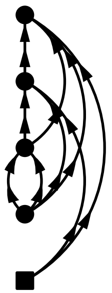
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{196}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_3 = \epsilon^{k_9}_{k_1k_7k_8}$$
$$a_4 = \epsilon_{k_2k_5k_6k_9}$$

Diagram 92:

$$\begin{aligned}\mathrm{PO4.92} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_7k_5k_1} \Omega^{04}_{k_9k_8k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k}_{k}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_7k_5k_1} \Omega^{04}_{k_9k_8k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_5k_2k_6}\ \epsilon_{k_1k_5k_7k_2k_6k_8}\ \epsilon_{k_2k_6k_8k_9}}\end{aligned} \tag{197}$$



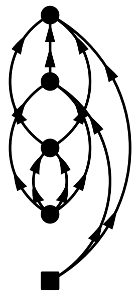
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{198}$$

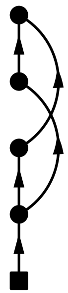
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_3 = \epsilon^{k_9}_{k_1k_5k_7}$$
$$a_4 = \epsilon_{k_2k_6k_8k_9}$$

Diagram 93:

$$
\begin{aligned}
\mathrm{PO4.93} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{04}_{k_9k_7k_8k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3\epsilon^{k_9}_{k_1k_5k_6}} e^{-\tau_4\epsilon_{k_2k_7}} \\
&= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{04}_{k_9k_7k_8k_2} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_9}\ \epsilon_{k_3k_4k_1k_5k_6k_2}\ \epsilon_{k_2k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_5k_6k_2}\ \epsilon_{k_1k_5k_6k_2k_7k_8}\ \epsilon_{k_2k_7k_8k_9}} \right]
\end{aligned} \tag{199}
$$



$\rightarrow$ T8:

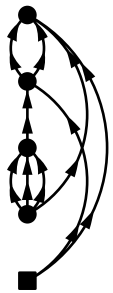


$$
\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{200}
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_3k_4k_5k_6} \\
a_2 &= \epsilon^{k_7k_8}_{k_3k_4} \\
a_3 &= \epsilon^{k_9}_{k_1k_5k_6} \\
a_4 &= \epsilon_{k_2k_7k_8k_9}
\end{aligned}
$$

Diagram 94:

$$
\begin{aligned}
\mathrm{PO4.94} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{22}_{k_8k_9k_7k_1} \Omega^{04}_{k_8k_9k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_3k_4k_5}} e^{-\tau_3\epsilon^{k_8k_9}_{k_1k_7}} e^{-\tau_4\epsilon_{k_2}} \\
&= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{22}_{k_8k_9k_7k_1} \Omega^{04}_{k_8k_9k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_1k_2k_6}\ \epsilon_{k_1k_7k_2k_6}\ \epsilon_{k_2k_6k_8k_9}}
\end{aligned} \tag{201}
$$



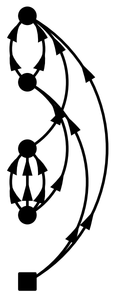
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{202}$$

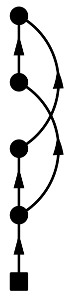
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3 k_4 k_5}$$
$$a_3 = \epsilon^{k_8 k_9}_{k_1 k_7}$$
$$a_4 = \epsilon_{k_2 k_6 k_8 k_9}$$

Diagram 95:

$$\begin{aligned} \mathrm{PO4.95} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{22}_{k_8 k_9 k_6 k_1} \Omega^{04}_{k_8 k_9 k_7 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3 k_4 k_5}} e^{-\tau_3 \epsilon^{k_8 k_9}_{k_1 k_6}} e^{-\tau_4 \epsilon_{k_2}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{22}_{k_8 k_9 k_6 k_1} \Omega^{04}_{k_8 k_9 k_7 k_2} \left[\frac{1}{\epsilon_{k_1 k_2} \;\; \epsilon_{k_3 k_4 k_5 k_2 k_8 k_9} \;\; \epsilon_{k_3 k_4 k_5 k_1 k_6 k_2} \;\; \epsilon_{k_2 k_7 k_8 k_9}} + \frac{1}{\epsilon_{k_1 k_2} \;\; \epsilon_{k_3 k_4 k_5 k_1 k_6 k_2} \;\; \epsilon_{k_1 k_6 k_2 k_7} \;\; \epsilon_{k_2 k_7 k_8 k_9}} \right] \end{aligned} \tag{203}$$



$\rightarrow$ T8:

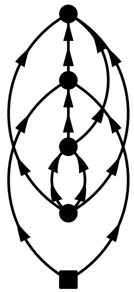


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{204}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3k_4k_5}$$
$$a_3 = \epsilon^{k_8k_9}_{k_1k_6}$$
$$a_4 = \epsilon_{k_2k_7k_8k_9}$$

Diagram 96:

$$\mathrm{PO4.96} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_7k_1k_2} \Omega^{04}_{k_9k_8k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3\epsilon^{k_9}_{k_1k_2}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_7k_1k_2} \Omega^{04}_{k_9k_8k_5k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2k_5k_6}\ \epsilon_{k_1k_2k_7k_5k_6k_8}\ \epsilon_{k_5k_6k_8k_9}} \tag{205}$$



$\rightarrow$ T1:

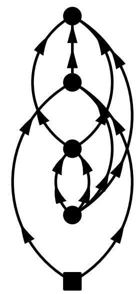
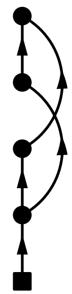
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{206}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_3 = \epsilon^{k_9}_{k_1k_2k_7}$$
$$a_4 = \epsilon_{k_5k_6k_8k_9}$$

Diagram 97:

$$\mathrm{PO4.97} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{04}_{k_9k_7k_8k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3 \epsilon^{k_9}_{k_1k_2}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{04}_{k_9k_7k_8k_6} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_6k_9}\ \epsilon_{k_3k_4k_1k_2k_5k_6}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2k_5k_6}\ \epsilon_{k_1k_2k_5k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_9}} \right] \tag{207}$$

 $\rightarrow$ T8: 

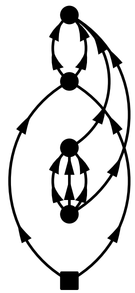
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{208}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_3 = \epsilon^{k_9}_{k_1k_2k_5}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

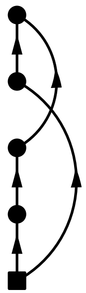
Diagram 98:

$$\mathrm{PO4.98} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{22}_{k_8k_9k_1k_2} \Omega^{04}_{k_8k_9k_7k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3k_4k_5}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_1k_2}} e^{-\tau_4 \epsilon_{k}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{22}_{k_8k_9k_1k_2} \Omega^{04}_{k_8k_9k_7k_6} \left[\frac{1}{\epsilon_{k_8k_9}\ \epsilon_{k_3k_4k_5k_6k_8k_9}\ \epsilon_{k_1k_2}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_6k_8k_9}\ \epsilon_{k_3k_4k_5k_1k_2k_6}\ \epsilon_{k_6k_7k_8k_9}} + \frac{}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_1k_2}} \right. \tag{209}$$



$\rightarrow$ T9:

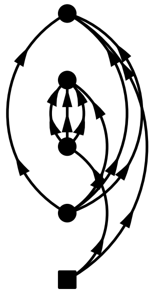


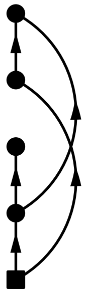
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{210}$$

$$\begin{aligned} a_1 &= \epsilon^{k_3k_4k_5k_6} \\ a_2 &= \epsilon^{k_7}_{k_3k_4k_5} \\ a_3 &= \epsilon^{k_8k_9}_{k_1k_2} \\ a_4 &= \epsilon_{k_6k_7k_8k_9} \end{aligned}$$

Diagram 99:

$$\begin{aligned} \mathrm{PO4.99} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_9k_3} \Omega^{04}_{k_4k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8k_9}_{k_1}} e^{-\tau_3 \epsilon_{k_3k_7k_8k_9}} e^{-\tau_4 \epsilon_{k_2k_4k_5k_6}} \\ &= \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_9k_3} \Omega^{04}_{k_4k_5k_6k_2} \left[\frac{1}{\epsilon^{k_3k_7k_8k_9}_{k_1k_2} \ \epsilon^{k_7k_8k_9}_{k_1} \ \epsilon_{k_1k_2} \ \epsilon_{k_2k_4k_5k_6}} + \frac{1}{\epsilon_{k_1k_2} \ \epsilon^{k_7k_8k_9}_{k_1} \ \epsilon_{k_3k_7k_8k_9k_2k_4k_5k_6} \ \epsilon_{k_2k_4k_5k_6}} \right] \end{aligned} \tag{211}$$



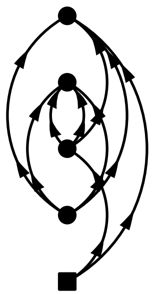
$\rightarrow$ T10: 

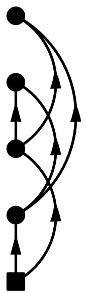
$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{212}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7k_8k_9}$$
$$a_3 = \epsilon_{k_3k_7k_8k_9}$$
$$a_4 = \epsilon_{k_2k_4k_5k_6}$$

Diagram 100:

$$\begin{aligned}\text{PO4.100} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_3k_4} \Omega^{04}_{k_9k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon_{k_1}^{k_7k_8k_9}} e^{-\tau_3\epsilon_{k_3k_4k_7k_8}} e^{-\tau \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_3k_4} \Omega^{04}_{k_9k_5k_6k_2} \left[\frac{1}{\epsilon_{k_7k_8k_2k_9}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_2k_5k_6k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2k_5k_6}\ \epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_2k_5k_6k_9}} \right]\end{aligned} \tag{213}$$



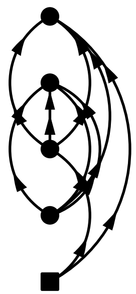
$\rightarrow$ T11: 

$$\mathrm{T11} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)a_3 a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{214}$$

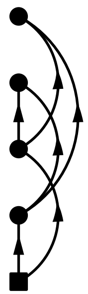
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_3 k_4 k_7 k_8}$$
$$a_4 = \epsilon_{k_2 k_5 k_6 k_9}$$

Diagram 101:

$$\begin{aligned}
\mathrm{PO4.101} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_1} \Omega^{04}_{k_7 k_3 k_4 k_5} \Omega^{04}_{k_8 k_9 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_1}^{k_7 k_8 k_9}} e^{-\tau_3 \epsilon_{k_3 k_4 k_5 k_7}} e^{-} \\
= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_1} \Omega^{04}_{k_7 k_3 k_4 k_5} \Omega^{04}_{k_8 k_9 k_6 k_2} \left[\frac{1}{\epsilon_{k_7 k_2 k_8 k_9} \ \epsilon_{k_1 k_2} \ \epsilon_{k_3 k_4 k_5 k_7} \ \epsilon_{k_2 k_6 k_8 k_9}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_1 k_3 k_4 k_5 k_2 k_6} \ \epsilon_{k_3 k_4 k_5 k_7} \ \epsilon_{k_2 k_6 k_8 k_9}} \right]
\end{aligned} \tag{215}$$



$\rightarrow$ T11:



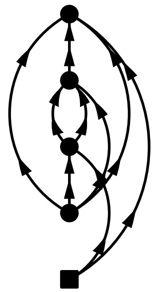
$$\mathrm{T11} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)a_3 a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{216}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_3 k_4 k_5 k_7}$$
$$a_4 = \epsilon_{k_2 k_6 k_8 k_9}$$

Diagram 102:

$$\mathrm{PO4.102} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_8k_4} \Omega^{04}_{k_9k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_3}} e^{-\tau_3 \epsilon^{k}_{k}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_8k_4} \Omega^{04}_{k_9k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2k_5k_6}\ \epsilon_{k_4k_7k_8k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_9}} \tag{217}$$



$\rightarrow$ T1:

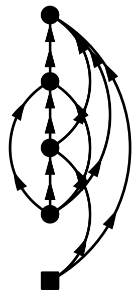
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{218}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_3}$$
$$a_3 = \epsilon^{k_9}_{k_4k_7k_8}$$
$$a_4 = \epsilon_{k_2k_5k_6k_9}$$

Diagram 103:

$$\mathrm{PO4.103} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_4k_5} \Omega^{04}_{k_9k_8k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_4k_5} \Omega^{04}_{k_9k_8k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_5k_2k_6}\ \epsilon_{k_4k_5k_7k_2k_6k_8}\ \epsilon_{k_2k_6k_8k_9}} \tag{219}$$



$\rightarrow$ T1:

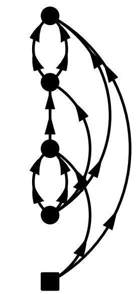
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{220}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_1 k_3}$$
$$a_3 = \epsilon^{k_9}_{k_4 k_5 k_7}$$
$$a_4 = \epsilon_{k_2 k_6 k_8 k_9}$$

Diagram 104:

$$\mathrm{PO4.104} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_1} \Omega^{22}_{k_8 k_9 k_7 k_5} \Omega^{04}_{k_8 k_9 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1 k_3 k_4}} e^{-\tau_3 \epsilon^{k}_{k}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_1} \Omega^{22}_{k_8 k_9 k_7 k_5} \Omega^{04}_{k_8 k_9 k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_4 k_5 k_2 k_6}\ \epsilon_{k_5 k_7 k_2 k_6}\ \epsilon_{k_2 k_6 k_8 k_9}} \tag{221}$$



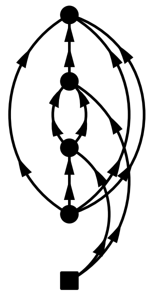
$\rightarrow$ T1:

$$T1 = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{222}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_3k_4}$$
$$a_3 = \epsilon^{k_8k_9}_{k_5k_7}$$
$$a_4 = \epsilon_{k_2k_6k_8k_9}$$

Diagram 105:

$$\begin{aligned} \mathrm{PO4.105} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_8k_2} \Omega^{04}_{k_9k_4k_5k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_3}} e^{-\tau_3\epsilon^{k_9}_{k_2k_7k_8}} e^{-\tau_4\epsilon_{k} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_8k_2} \Omega^{04}_{k_9k_4k_5k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4k_5k_6}\ \epsilon_{k_2k_7k_8k_4k_5k_6}\ \epsilon_{k_4k_5k_6k_9}} \end{aligned} \tag{223}$$



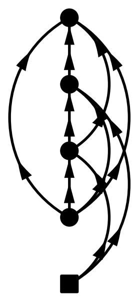
$\rightarrow$ T1:

$$T1 = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{224}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_3}$$
$$a_3 = \epsilon^{k_9}_{k_2k_7k_8}$$
$$a_4 = \epsilon_{k_4k_5k_6k_9}$$

Diagram 106:

$$\begin{aligned}\text{PO4.106} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_4k_2} \Omega^{04}_{k_9k_8k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_7k_4k_2} \Omega^{04}_{k_9k_8k_5k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4k_5k_6}\ \epsilon_{k_2k_4k_7k_5k_6k_8}\ \epsilon_{k_5k_6k_8k_9}} \end{aligned} \tag{225}$$



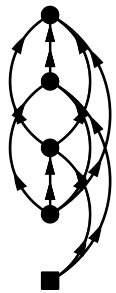
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{226}$$

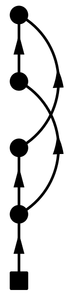
$$\begin{aligned} a_1 &= \epsilon^{k_3k_4k_5k_6} \\ a_2 &= \epsilon^{k_7k_8}_{k_1k_3} \\ a_3 &= \epsilon^{k_9}_{k_2k_4k_7} \\ a_4 &= \epsilon_{k_5k_6k_8k_9} \end{aligned}$$

Diagram 107:

$$\begin{aligned}\text{PO4.107} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_4k_5k_2} \Omega^{04}_{k_9k_7k_8k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_3}} e^{-\tau_3\epsilon^{k_9}_{k_2k}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{13}_{k_9k_4k_5k_2} \Omega^{04}_{k_9k_7k_8k_6} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_6k_9}\ \epsilon_{k_1k_3k_2k_4k_5k_6}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4k_5k_6}\ \epsilon_{k_2k_4k_5k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_9}} \right] \end{aligned} \tag{227}$$



$\rightarrow$ T8:

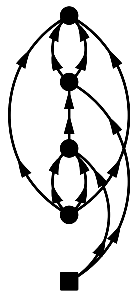


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{228}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_3}$$
$$a_3 = \epsilon^{k_9}_{k_2k_4k_5}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

Diagram 108:

$$\begin{aligned}\mathrm{PO4.108} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{22}_{k_8k_9k_7k_2} \Omega^{04}_{k_8k_9k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1k_3k_4}} e^{-\tau_3\epsilon^{k_8k_9}_{k_2k_7}} e^{-\tau_4\epsilon_{k_5} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{22}_{k_8k_9k_7k_2} \Omega^{04}_{k_8k_9k_5k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2k_5k_6}\ \epsilon_{k_2k_7k_5k_6}\ \epsilon_{k_5k_6k_8k_9}} \end{aligned} \tag{229}$$



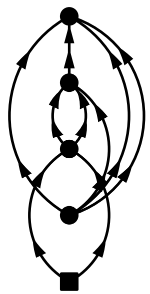
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{230}$$

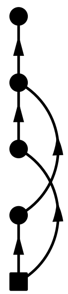
$$\begin{aligned}
a_1 &= \epsilon^{k_3 k_4 k_5 k_6} \\
a_2 &= \epsilon^{k_7}_{k_1 k_3 k_4} \\
a_3 &= \epsilon^{k_8 k_9}_{k_2 k_7} \\
a_4 &= \epsilon_{k_5 k_6 k_8 k_9}
\end{aligned}$$

Diagram 109:

$$\begin{aligned}
\mathrm{PO4.109} = &\lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_1 k_2} \Omega^{13}_{k_9 k_7 k_8 k_3} \Omega^{04}_{k_9 k_4 k_5 k_6} \int_0^{\tau} \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_1 k_2}} e^{-\tau_3 \epsilon^{k_9}_{k_3 k_7 k_8}} e^{-\tau_4 \cdots} \\
= &\frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_1 k_2} \Omega^{13}_{k_9 k_7 k_8 k_3} \Omega^{04}_{k_9 k_4 k_5 k_6} \left[\frac{1}{\epsilon_{k_7 k_8}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_7 k_8 k_4 k_5 k_6}\ \epsilon_{k_4 k_5 k_6 k_9}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_3 k_4 k_5 k_6}\ \epsilon_{k_3 k_7 k_8 k_4 k_5 k_6}\ \epsilon_{k_4 k_5 k_6 k_9}} \right]
\end{aligned} \tag{231}$$



$\rightarrow$ T12:

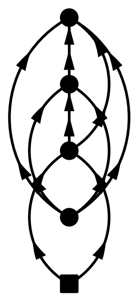


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{232}$$

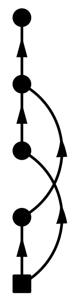
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon^{k_9}_{k_3k_7k_8}$$
$$a_4 = \epsilon_{k_4k_5k_6k_9}$$

Diagram 110:

$$\begin{aligned}
\text{PO4.110} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_3k_4} \Omega^{04}_{k_9k_8k_5k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon^{k_9}_{k_3k}} \\
&= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_3k_4} \Omega^{04}_{k_9k_8k_5k_6} \left[\frac{1}{\epsilon_{k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_7k_5k_6k_8}\ \epsilon_{k_5k_6k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_3k_4k_7k_5k_6k_8}\ \epsilon_{k_5k_6k_8k_9}} \right]
\end{aligned} \tag{233}$$



$\rightarrow$ T12:



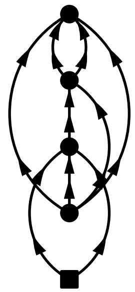
$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{234}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon^{k_9}_{k_3k_4k_7}$$
$$a_4 = \epsilon_{k_5k_6k_8k_9}$$

Diagram 111:

$$\mathrm{PO4.111} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_1k_2} \Omega^{22}_{k_8k_9k_7k_4} \Omega^{04}_{k_8k_9k_5k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_2k_3}} e^{-\tau_3 \epsilon^{k}_{k}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_1k_2} \Omega^{22}_{k_8k_9k_7k_4} \Omega^{04}_{k_8k_9k_5k_6}}{\epsilon_{k_1k_2} \; \epsilon_{k_1k_2k_3k_4k_5k_6} \; \epsilon_{k_4k_7k_5k_6} \; \epsilon_{k_5k_6k_8k_9}} \tag{235}$$



$\rightarrow$ T1:

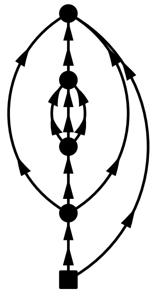
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{236}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_3}$$
$$a_3 = \epsilon^{k_8k_9}_{k_4k_7}$$
$$a_4 = \epsilon_{k_5k_6k_8k_9}$$

Diagram 112:

$$\mathrm{PO4.112} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_6k_7k_8} \Omega^{04}_{k_9k_4k_5k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_3}} e^{-\tau_3 \epsilon^{k_9}_{k_6k_7k_8}} e^{-\tau_4 \epsilon}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_6k_7k_8} \Omega^{04}_{k_9k_4k_5k_2}}{\epsilon_{k_1k_2} \; \epsilon_{k_3k_2k_4k_5} \; \epsilon_{k_6k_7k_8k_2k_4k_5} \; \epsilon_{k_2k_4k_5k_9}} \tag{237}$$



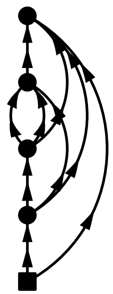
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{238}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_6k_7k_8}^{k_9}$$
$$a_4 = \epsilon_{k_2k_4k_5k_9}$$

Diagram 113:

$$\begin{aligned}\mathrm{PO4.113} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_6k_7k_4} \Omega^{04}_{k_9k_8k_5k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_3}^{k_6} \cdots} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_6k_7k_4} \Omega^{04}_{k_9k_8k_5k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_4k_6k_7k_2k_5k_8}\ \epsilon_{k_2k_5k_8k_9}}\end{aligned} \tag{239}$$



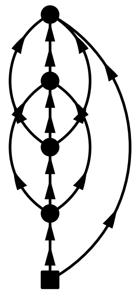
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{240}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_4 k_6 k_7}^{k_9}$$
$$a_4 = \epsilon_{k_2 k_5 k_8 k_9}$$

Diagram 114:

$$\begin{aligned}\mathrm{PO4.114} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_3} \Omega^{13}_{k_9 k_6 k_4 k_5} \Omega^{04}_{k_9 k_7 k_8 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k_4 k}^{k_9}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_3} \Omega^{13}_{k_9 k_6 k_4 k_5} \Omega^{04}_{k_9 k_7 k_8 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_2}\ \epsilon_{k_4 k_5 k_6 k_2 k_7 k_8}\ \epsilon_{k_2 k_7 k_8 k_9}} \end{aligned} \tag{241}$$



$\rightarrow$ T1:

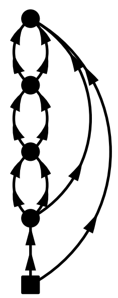
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{242}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_4 k_5 k_6}^{k_9}$$
$$a_4 = \epsilon_{k_2 k_7 k_8 k_9}$$

Diagram 115:

$$\text{PO4.115} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{04}_{k_8k_9k_5k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_3k_4}} e^{-\tau_3\epsilon^{k_8k_9}_{k_6k_7}} e^{-\tau_4\epsilon_{k_2k_5k_8}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{04}_{k_8k_9k_5k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_6k_7k_2k_5}\ \epsilon_{k_2k_5k_8k_9}} \tag{243}$$



$\rightarrow$ T1:

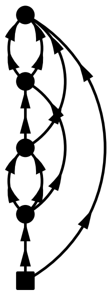
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{244}$$

$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_3k_4}$$
$$a_3 = \epsilon^{k_8k_9}_{k_6k_7}$$
$$a_4 = \epsilon_{k_2k_5k_8k_9}$$

Diagram 116:

$$\text{PO4.116} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{22}_{k_8k_9k_6k_5} \Omega^{04}_{k_8k_9k_7k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_3k_4}} e^{-\tau_3\epsilon^{k_8k}_{k_5k}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{22}_{k_8k_9k_6k_5} \Omega^{04}_{k_8k_9k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_5k_6k_2k_7}\ \epsilon_{k_2k_7k_8k_9}} \tag{245}$$



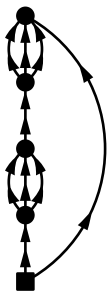
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{246}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}^{k_6k_7}$$
$$a_3 = \epsilon_{k_5k_6}^{k_8k_9}$$
$$a_4 = \epsilon_{k_2k_7k_8k_9}$$

Diagram 117:

$$\begin{aligned}\mathrm{PO4.117} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(3!)^2}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{31}_{k_3k_4k_5k_1}\Omega^{13}_{k_6k_3k_4k_5}\Omega^{31}_{k_7k_8k_9k_6}\Omega^{04}_{k_7k_8k_9k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}}e^{-\tau_2\epsilon_{k_3k_4k_5}^{k_6}}e^{-\tau_3\epsilon_{k_6}^{k_7k_8k_9}}e^{-\tau_4\epsilon_{k_2k_7k_8k_9}}\\ &= \frac{(-1)^4}{(3!)^2}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{31}_{k_3k_4k_5k_1}\Omega^{13}_{k_6k_3k_4k_5}\Omega^{31}_{k_7k_8k_9k_6}\Omega^{04}_{k_7k_8k_9k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_6k_2}\ \epsilon_{k_2k_7k_8k_9}}\end{aligned} \tag{247}$$



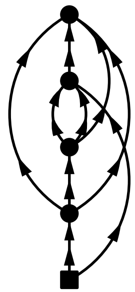
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{248}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3 k_4 k_5}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_2 k_7 k_8 k_9}$$

Diagram 118:

$$\begin{aligned}\mathrm{PO4.118} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_3} \Omega^{13}_{k_9 k_6 k_7 k_2} \Omega^{04}_{k_9 k_8 k_4 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k}^{k}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_3} \Omega^{13}_{k_9 k_6 k_7 k_2} \Omega^{04}_{k_9 k_8 k_4 k_5}}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_2 k_4 k_5} \ \epsilon_{k_2 k_6 k_7 k_4 k_5 k_8} \ \epsilon_{k_4 k_5 k_8 k_9}}\end{aligned} \tag{249}$$



$\rightarrow$ T1:

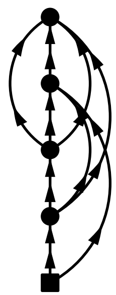
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{250}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_2 k_6 k_7}^{k_9}$$
$$a_4 = \epsilon_{k_4 k_5 k_8 k_9}$$

Diagram 119:

$$\mathrm{PO4.119} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_6k_4k_2} \Omega^{04}_{k_9k_7k_8k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_6k_4k_2} \Omega^{04}_{k_9k_7k_8k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_2k_4k_6k_5k_7k_8}\ \epsilon_{k_5k_7k_8k_9}} \tag{251}$$



$\rightarrow$ T1:

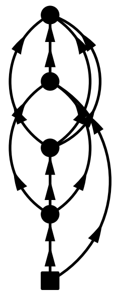
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{252}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_2k_4k_6}^{k_9}$$
$$a_4 = \epsilon_{k_5k_7k_8k_9}$$

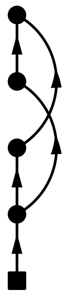
Diagram 120:

$$\mathrm{PO4.120} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_4k_5k_2} \Omega^{04}_{k_9k_6k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6k_7k_8}} e^{-\tau_3 \epsilon_{k_2k_4k_5}^{k_9}} e^{-\tau_4 \epsilon}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{13}_{k_9k_4k_5k_2} \Omega^{04}_{k_9k_6k_7k_8} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_9}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_2k_4k_5k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_9}} \right] \tag{253}$$



$\rightarrow$ T8:

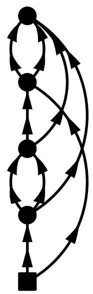


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{254}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_2 k_4 k_5}^{k_9}$$
$$a_4 = \epsilon_{k_6 k_7 k_8 k_9}$$

Diagram 121:

$$\begin{aligned}\mathrm{PO4.121} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_4} \Omega^{22}_{k_8 k_9 k_6 k_2} \Omega^{04}_{k_8 k_9 k_7 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3 k_4}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_2 k_6}^{k_8 k_9}} e \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_4} \Omega^{22}_{k_8 k_9 k_6 k_2} \Omega^{04}_{k_8 k_9 k_7 k_5}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_2 k_5}\ \epsilon_{k_2 k_6 k_5 k_7}\ \epsilon_{k_5 k_7 k_8 k_9}} \end{aligned} \tag{255}$$



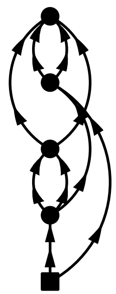
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{256}$$

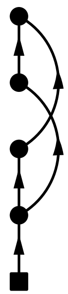
$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_3 k_4 k_5} \\ a_2 &= \epsilon_{k_3 k_4}^{k_6 k_7} \\ a_3 &= \epsilon_{k_2 k_6}^{k_8 k_9} \\ a_4 &= \epsilon_{k_5 k_7 k_8 k_9} \end{aligned}$$

Diagram 122:

$$\begin{aligned} \mathrm{PO4.122} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_4} \Omega^{22}_{k_8 k_9 k_5 k_2} \Omega^{04}_{k_8 k_9 k_6 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3 k_4}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_2 k_5}^{k_8 k_9}} e^{-\tau_4 \epsilon_{k_6 k_7 k_8}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_4} \Omega^{22}_{k_8 k_9 k_5 k_2} \Omega^{04}_{k_8 k_9 k_6 k_7} \left[\frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_8 k_9}\ \epsilon_{k_3 k_4 k_2 k_5}\ \epsilon_{k_6 k_7 k_8 k_9}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_2 k_5}\ \epsilon_{k_2 k_5 k_6 k_7}\ \epsilon_{k_6 k_7 k_8 k_9}} \right] \end{aligned} \tag{257}$$



$\rightarrow$ T8:

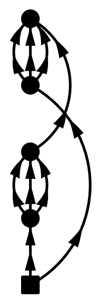


$$\mathrm{T8} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{258}$$

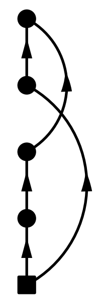
$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_3k_4}$$
$$a_3 = \epsilon^{k_8k_9}_{k_2k_5}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

Diagram 123:

$$\mathrm{PO4.123} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_5} \Omega^{31}_{k_7k_8k_9k_2} \Omega^{04}_{k_7k_8k_9k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6}_{k_3k_4k_5}} e^{-\tau_3 \epsilon^{k_7k_8k_9}_{k_2}} e^{-\tau_4 \epsilon_{k_6k_7k_8k_9}}$$
$$= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_5} \Omega^{31}_{k_7k_8k_9k_2} \Omega^{04}_{k_7k_8k_9k_6} \Bigg[\frac{1}{\epsilon_{k_1k_7k_8k_9}\ \epsilon_{k_3k_4k_5k_7k_8k_9}\ \epsilon_{k_1k_2}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_7k_8k_9}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon \cdots} \tag{259}$$



$\rightarrow$ T9:



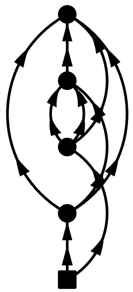
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{260}$$

$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_3k_4k_5}$$
$$a_3 = \epsilon^{k_7k_8k_9}_{k_2}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

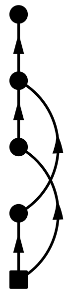
Diagram 124:

$$\mathrm{PO4.124} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_7k_3} \Omega^{04}_{k_9k_8k_4k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6k_7k_8}} e^{-\tau_3\epsilon_{k_3k}^{k_9}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_7k_3} \Omega^{04}_{k_9k_8k_4k_5} \left[\frac{1}{\epsilon_{k_1k_6k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_6k_7k_4k_5k_8}\ \epsilon_{k_4k_5k_8k_9}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_3k_6k_7k_4k_5k_8}\ \epsilon_{k_4k_5k_8k_9}} \right] \tag{261}$$



$\rightarrow$ T12:



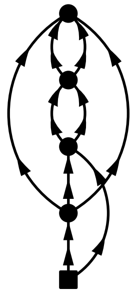
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{262}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_3k_6k_7}^{k_9}$$
$$a_4 = \epsilon_{k_4k_5k_8k_9}$$

Diagram 125:

$$\mathrm{PO4.125} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{04}_{k_8k_9k_4k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_2k_3}^{k_6k_7}} e^{-\tau_3\epsilon_{k_6k_7}^{k_8k_9}} e^{-\tau_4\epsilon_{k_4k_5k_8}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{04}_{k_8k_9k_4k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_6k_7k_4k_5}\ \epsilon_{k_4k_5k_8k_9}} \tag{263}$$



$\rightarrow$ T1: 

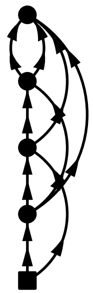
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{264}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_2k_3}^{k_6k_7}$$
$$a_3 = \epsilon_{k_6k_7}^{k_8k_9}$$
$$a_4 = \epsilon_{k_4k_5k_8k_9}$$

Diagram 126:

$$\mathrm{PO4.126} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{22}_{k_8k_9k_6k_4} \Omega^{04}_{k_8k_9k_7k_5} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{22}_{k_8k_9k_6k_4} \Omega^{04}_{k_8k_9k_7k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_6k_5k_7}\ \epsilon_{k_5k_7k_8k_9}} \tag{265}$$



$\rightarrow$ T1: 

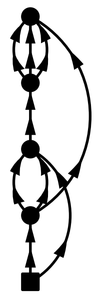
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{266}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_4 k_6}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_5 k_7 k_8 k_9}$$

Diagram 127:

$$\mathrm{PO4.127} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{13}_{k_6 k_3 k_4 k_2} \Omega^{31}_{k_7 k_8 k_9 k_6} \Omega^{04}_{k_7 k_8 k_9 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_2 k_3 k_4}^{k_6}} e^{-\tau_3 \epsilon_{k_6}^{k_7 k_8 k_9}} e^{-\tau_4 \epsilon$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{13}_{k_6 k_3 k_4 k_2} \Omega^{31}_{k_7 k_8 k_9 k_6} \Omega^{04}_{k_7 k_8 k_9 k_5}}{\epsilon_{k_1 k_2}\ \epsilon_{k_2 k_3 k_4 k_5}\ \epsilon_{k_6 k_5}\ \epsilon_{k_5 k_7 k_8 k_9}} \tag{267}$$



→ T1:

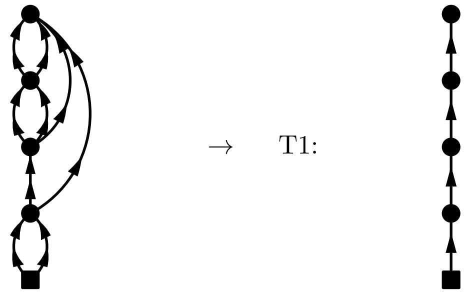
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{268}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_2 k_3 k_4}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_5 k_7 k_8 k_9}$$

Diagram 128:

$$\text{PO4.128} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{04}_{k_8k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_5k_6k_7}_{k_3}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_5k_6}} e$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{04}_{k_8k_9k_7k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_6k_4k_7}\ \epsilon_{k_4k_7k_8k_9}} \tag{269}$$



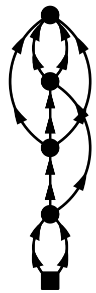
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{270}$$

$$a_1 = \epsilon^{k_3k_4}_{k_1k_2}$$
$$a_2 = \epsilon^{k_5k_6k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8k_9}_{k_5k_6}$$
$$a_4 = \epsilon_{k_4k_7k_8k_9}$$

Diagram 129:

$$\text{PO4.129} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{22}_{k_8k_9k_5k_4} \Omega^{04}_{k_8k_9k_6k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_5k_6k_7}_{k_3}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_4k_5}} e$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{22}_{k_8k_9k_5k_4} \Omega^{04}_{k_8k_9k_6k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_6k_7k_8k_9}} \tag{271}$$



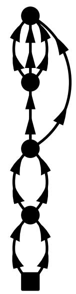
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{272}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_4 k_5}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_6 k_7 k_8 k_9}$$

Diagram 130:

$$\begin{aligned} \mathrm{PO4.130} &= \lim_{\tau \to \infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{22}_{k_5 k_6 k_3 k_4} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{04}_{k_7 k_8 k_9 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_3 k_4}^{k_5 k_6}} e^{-\tau_3 \epsilon_{k_5}^{k_7 k_8 k_9}} e^{-\tau_4 \epsilon_{k_6 k_7}} \\ &= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{22}_{k_5 k_6 k_3 k_4} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{04}_{k_7 k_8 k_9 k_6}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_5 k_6}\ \epsilon_{k_6 k_7 k_8 k_9}} \end{aligned} \tag{273}$$



$\rightarrow$ T1:

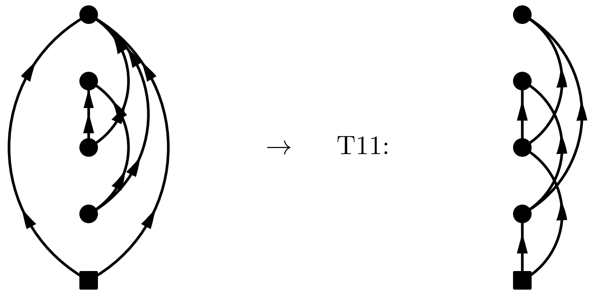
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{274}$$

$$\begin{aligned} a_1 &= \epsilon_{k_1k_2}^{k_3k_4} \\ a_2 &= \epsilon_{k_3k_4}^{k_5k_6} \\ a_3 &= \epsilon_{k_5}^{k_7k_8k_9} \\ a_4 &= \epsilon_{k_6k_7k_8k_9} \end{aligned}$$

2.3 Two-body non-canonical diagrams

Diagram 131:

$$\begin{aligned} \mathrm{PO4.131} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{02}_{k_5k_3}\Omega^{04}_{k_6k_4k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}} e^{-\tau_3\epsilon_{k_3k_5}} e^{-\tau_4\epsilon_{k_1k_2k_4k_6}} \\ = \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{02}_{k_5k_3}\Omega^{04}_{k_6k_4k_1k_2} \left[\frac{1}{\epsilon_{k_5k_1k_2k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_5}\ \epsilon_{k_1k_2k_4k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_3k_5}\ \epsilon_{k_1k_2k_4k_6}} \right] \end{aligned} \tag{275}$$

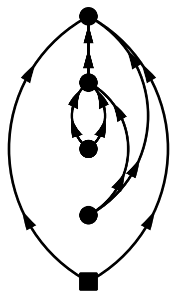


$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{276}$$

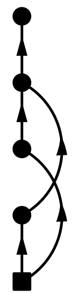
$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}$$
$$a_3 = \epsilon_{k_3 k_5}$$
$$a_4 = \epsilon_{k_1 k_2 k_4 k_6}$$

Diagram 132:

$$\begin{aligned}
\text{PO4.132} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_3} \Omega^{04}_{k_7k_4k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5k_6}} e^{-\tau_3 \epsilon^{k_7}_{k_3k_5k_6}} e^{-\tau_4 \epsilon_{k_1k_2k_4k_7}} \\
= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_3} \Omega^{04}_{k_7k_4k_1k_2} \left[\frac{1}{\epsilon_{k_5k_6k_1k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_5k_6k_1k_2k_4}\ \epsilon_{k_1k_2k_4k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_3k_5k_6k_1k_2k_4}\ \epsilon_{k_1k_2k_4k_7}} \right]
\end{aligned} \tag{277}$$



$\rightarrow$ T12:



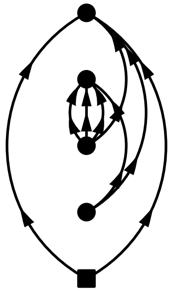
$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{278}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}$$
$$a_3 = \epsilon^{k_7}_{k_3 k_5 k_6}$$
$$a_4 = \epsilon_{k_1 k_2 k_4 k_7}$$

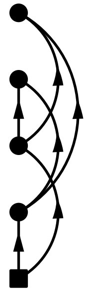
Diagram 133:

$$\mathrm{PO4.133} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{04}_{k_5 k_6 k_7 k_3} \Omega^{04}_{k_8 k_4 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k_3 k_5 k_6 k_7}} e^{-\tau_4 \epsilon_{k_1}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{04}_{k_5 k_6 k_7 k_3} \Omega^{04}_{k_8 k_4 k_1 k_2} \left[\frac{1}{\epsilon_{k_5 k_6 k_7 k_1 k_2 k_8} \ \epsilon_{k_1 k_2} \ \epsilon_{k_3 k_5 k_6 k_7} \ \epsilon_{k_1 k_2 k_4 k_8}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_1 k_2 k_4} \ \epsilon_{k_3 k_5 k_6 k_7} \ \epsilon_{k_1 k_2 k_4 k_8}} \right] \quad (279)$$



$\rightarrow$ T11:



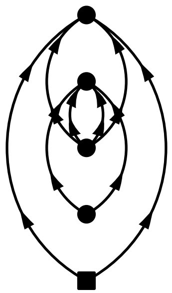
$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3 a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3 a_4} \quad (280)$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_3 k_5 k_6 k_7}$$
$$a_4 = \epsilon_{k_1 k_2 k_4 k_8}$$

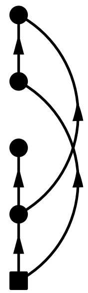
Diagram 134:

$$\mathrm{PO4.134} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{04}_{k_5 k_6 k_3 k_4} \Omega^{04}_{k_7 k_8 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k_3 k_4 k_5 k_6}} e^{-\tau_4 \epsilon_{k_1 k_2 k_7 k_8}}$$

$$= \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{04}_{k_5 k_6 k_3 k_4} \Omega^{04}_{k_7 k_8 k_1 k_2} \left[\frac{1}{\epsilon^{k_3 k_4} \ \epsilon^{k_3 k_4 k_5 k_6}_{k_1 k_2} \ \epsilon_{k_1 k_2} \ \epsilon_{k_1 k_2 k_7 k_8}} + \frac{1}{\epsilon^{k_3 k_4} \ \epsilon_{k_1 k_2} \ \epsilon_{k_3 k_4 k_5 k_6 k_1 k_2 k_7 k_8} \ \epsilon_{k_1 k_2 k_7 k_8}} \right] \quad (281)$$



$\rightarrow$ T10:

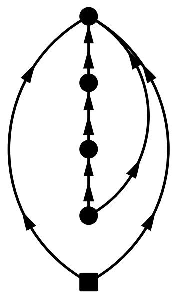


$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{282}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_3k_4}$$
$$a_3 = \epsilon_{k_3k_4k_5k_6}$$
$$a_4 = \epsilon_{k_1k_2k_7k_8}$$

Diagram 135:

$$\text{PO4.135} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{11}_{k_6k_5}\Omega^{04}_{k_6k_4k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_3}} e^{-\tau_3\epsilon^{k_6}_{k_5}} e^{-\tau_4\epsilon_{k_1k_2k_4k_6}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{11}_{k_6k_5}\Omega^{04}_{k_6k_4k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_5k_1k_2k_4}\ \epsilon_{k_1k_2k_4k_6}} \tag{283}$$



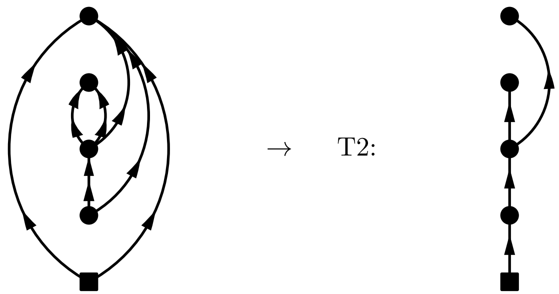
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{284}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_5}^{k_6}$$
$$a_4 = \epsilon_{k_1k_2k_4k_6}$$

Diagram 136:

$$\begin{aligned}\mathrm{PO4.136} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{02}_{k_5k_6} \Omega^{04}_{k_7k_4k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon_{k_3}^{k_5k_6k_7}} e^{-\tau_3\epsilon_{k_5k_6}} e^{-\tau_4\epsilon_{k_1k_2k_4k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{02}_{k_5k_6} \Omega^{04}_{k_7k_4k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2k_4k_7}}\end{aligned} \tag{285}$$



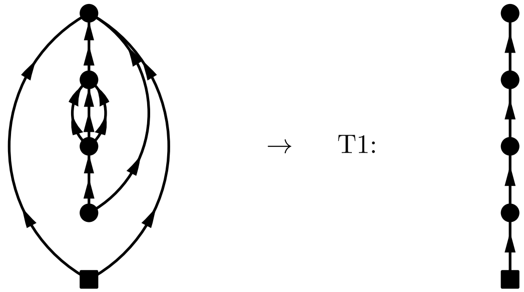
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{286}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5k_6k_7}$$
$$a_3 = \epsilon_{k_5k_6}$$
$$a_4 = \epsilon_{k_1k_2k_4k_7}$$

Diagram 137:

$$\mathrm{PO4.137} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{04}_{k_8k_4k_1k_2} \int_0^{\tau} \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5k_6k_7}_{k_3}} e^{-\tau_3 \epsilon^{k_8}_{k_5k_6k_7}} e^{-\tau_4 \epsilon_{k_1k_2k_4k}}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{04}_{k_8k_4k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_5k_6k_7k_1k_2k_4}\ \epsilon_{k_1k_2k_4k_8}} \tag{287}$$



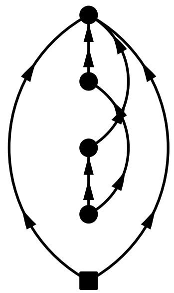
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{288}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_5k_6k_7}$$
$$a_4 = \epsilon_{k_1k_2k_4k_8}$$

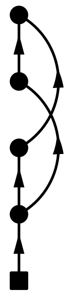
Diagram 138:

$$\mathrm{PO4.138} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_3} \Omega^{11}_{k_6k_4} \Omega^{04}_{k_6k_5k_1k_2} \int_0^{\tau} \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5}_{k_3}} e^{-\tau_3 \epsilon^{k_6}_{k_4}} e^{-\tau_4 \epsilon_{k_1k_2k_5k_6}}$$

$$= \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_3} \Omega^{11}_{k_6k_4} \Omega^{04}_{k_6k_5k_1k_2} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_6}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_1k_2k_5k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_4k_1k_2k_5}\ \epsilon_{k_1k_2k_5k_6}} \right] \tag{289}$$



$\rightarrow$ T8:

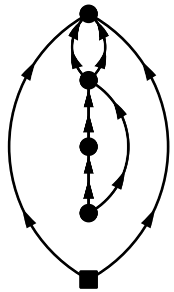


$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{290}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_4}^{k_6}$$
$$a_4 = \epsilon_{k_1k_2k_5k_6}$$

Diagram 139:

$$\begin{aligned}\text{PO4.139} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{04}_{k_6k_7k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon_{k_3}^{k_5}} e^{-\tau_3\epsilon_{k_4k_5}^{k_6k_7}} e^{-\tau_4\epsilon_{k_1k_2k_6k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{04}_{k_6k_7k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_4k_5k_1k_2}\ \epsilon_{k_1k_2k_6k_7}} \end{aligned} \tag{291}$$



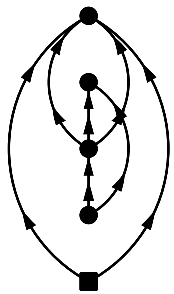
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{292}$$

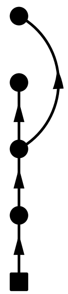
$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_4 k_5}^{k_6 k_7}$$
$$a_4 = \epsilon_{k_1 k_2 k_6 k_7}$$

Diagram 140:

$$\begin{aligned}
\mathrm{PO4.140} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{02}_{k_5 k_4} \Omega^{04}_{k_6 k_7 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_3}^{k_5 k_6 k_7}} e^{-\tau_3 \epsilon_{k_4 k_5}} e^{-\tau_4 \epsilon_{k_1 k_2 k_6 k_7}} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{02}_{k_5 k_4} \Omega^{04}_{k_6 k_7 k_1 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_1 k_2}\ \epsilon_{k_4 k_5}\ \epsilon_{k_1 k_2 k_6 k_7}}
\end{aligned} \tag{293}$$



$\rightarrow$ T2:

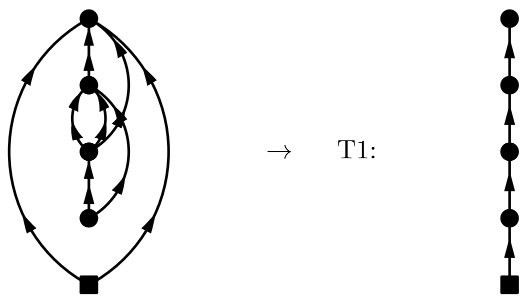


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{294}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_4 k_5}$$
$$a_4 = \epsilon_{k_1 k_2 k_6 k_7}$$

Diagram 141:

$$
\begin{aligned}
\text{PO4.141} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_6k_4} \Omega^{04}_{k_8k_7k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_3}} e^{-\tau_3\epsilon^{k_8}_{k_4k_5k_6}} e \\
&= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_6k_4} \Omega^{04}_{k_8k_7k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_4k_5k_6k_1k_2k_7}\ \epsilon_{k_1k_2k_7k_8}}
\end{aligned} \tag{295}
$$

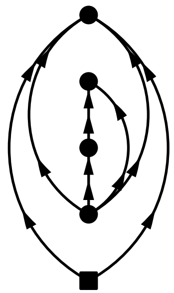


$$
\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{296}
$$

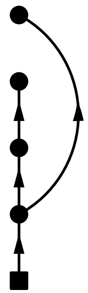
$$
\begin{aligned}
a_1 &= \epsilon^{k_3k_4} \\
a_2 &= \epsilon^{k_5k_6k_7}_{k_3} \\
a_3 &= \epsilon^{k_8}_{k_4k_5k_6} \\
a_4 &= \epsilon_{k_1k_2k_7k_8}
\end{aligned}
$$

Diagram 142:

$$
\begin{aligned}
\text{PO4.142} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{02}_{k_7k_4} \Omega^{04}_{k_5k_6k_1k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_3}} e^{-\tau_3\epsilon_{k_4k_7}} e^{-\tau_4\epsilon_{k_1k_2k_5k_6}} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{02}_{k_7k_4} \Omega^{04}_{k_5k_6k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon^{k_7}_{k_3k_1k_2k_5k_6}\ \epsilon_{k_4k_7}\ \epsilon_{k_1k_2k_5k_6}}
\end{aligned} \tag{297}
$$



$\rightarrow$ T3:

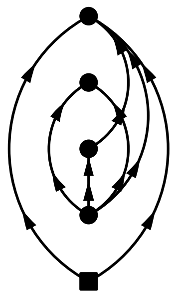


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{298}$$

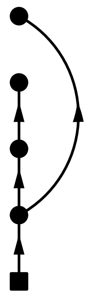
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7}$$
$$a_3 = \epsilon_{k_1 k_2 k_5 k_6}$$
$$a_4 = \epsilon_{k_4 k_7}$$

Diagram 143:

$$\begin{aligned} \mathrm{PO4.143} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{02}_{k_4 k_5} \Omega^{04}_{k_7 k_6 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_3}^{k_7}} e^{-\tau_3 \epsilon_{k_4 k_5}} e^{-\tau_4 \epsilon_{k_1 k_2 k_6 k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{02}_{k_4 k_5} \Omega^{04}_{k_7 k_6 k_1 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_1 k_2 k_6}\ \epsilon_{k_4 k_5}\ \epsilon_{k_1 k_2 k_6 k_7}} \end{aligned} \tag{299}$$



$\rightarrow$ T3:



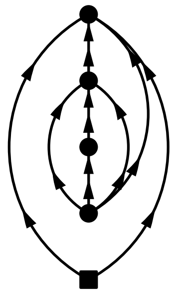
$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{300}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7}$$
$$a_3 = \epsilon_{k_1 k_2 k_6 k_7}$$
$$a_4 = \epsilon_{k_4 k_5}$$

Diagram 144:

$$\mathrm{PO4.144} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{13}_{k_8 k_7 k_4 k_5} \Omega^{04}_{k_8 k_6 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_3}^{k_7}} e^{-\tau_3 \epsilon_{k_4 k_5 k_7}^{k_8}} e^{-}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{13}_{k_8 k_7 k_4 k_5} \Omega^{04}_{k_8 k_6 k_1 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_1 k_2 k_6}\ \epsilon_{k_4 k_5 k_7 k_1 k_2 k_6}\ \epsilon_{k_1 k_2 k_6 k_8}} \tag{301}$$



$\rightarrow$ T1:

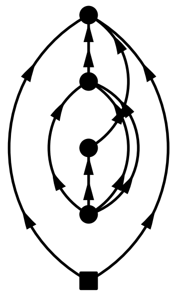
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{302}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7}$$
$$a_3 = \epsilon_{k_4 k_5 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_1 k_2 k_6 k_8}$$

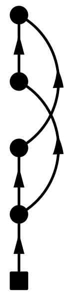
Diagram 145:

$$\mathrm{PO4.145} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{13}_{k_8k_4k_5k_6} \Omega^{04}_{k_8k_7k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3}} e^{-\tau_3 \epsilon^{k_8}_{k_4k_5k_6}} e^{-\tau_4 \epsilon_{k_1k_2k_7}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{13}_{k_8k_4k_5k_6} \Omega^{04}_{k_8k_7k_1k_2} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_8}\ \epsilon_{k_3k_4k_5k_6k_1k_2}\ \epsilon_{k_1k_2k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_6k_1k_2}\ \epsilon_{k_4k_5k_6k_1k_2k_7}\ \epsilon_{k_1k_2k_7k_8}} \right] \tag{303}$$



$\rightarrow$ T8:



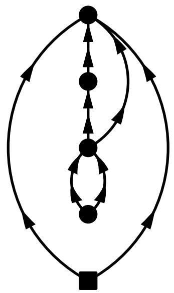
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{304}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_4k_5k_6}$$
$$a_4 = \epsilon_{k_1k_2k_7k_8}$$

Diagram 146:

$$\mathrm{PO4.146} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{11}_{k_7k_5} \Omega^{04}_{k_7k_6k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5k_6}_{k_3k_4}} e^{-\tau_3 \epsilon^{k_7}_{k_5}} e^{-\tau_4 \epsilon_{k_1k_2k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{11}_{k_7k_5} \Omega^{04}_{k_7k_6k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_5k_1k_2k_6}\ \epsilon_{k_1k_2k_6k_7}} \tag{305}$$



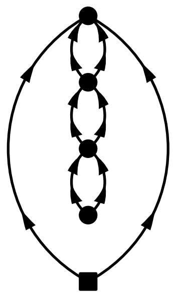
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{306}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_3 k_4}$$
$$a_3 = \epsilon^{k_7}_{k_5}$$
$$a_4 = \epsilon_{k_1 k_2 k_6 k_7}$$

Diagram 147:

$$\begin{aligned}\text{PO4.147} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5k_6}_{k_3k_4}} e^{-\tau_3 \epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_4 \epsilon_{k_1k_2k_7k_8}} \\ &= \frac{(-1)^4}{(2!)^4} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_5k_6k_1k_2}\ \epsilon_{k_1k_2k_7k_8}}\end{aligned} \tag{307}$$



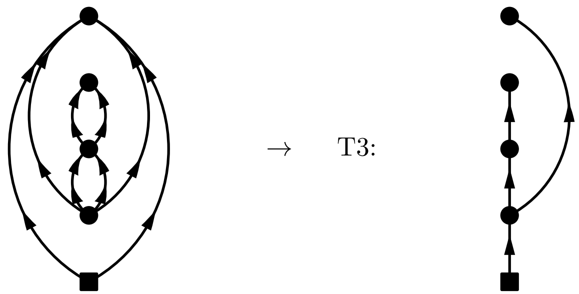
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{308}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_3k_4}$$
$$a_3 = \epsilon^{k_7k_8}_{k_5k_6}$$
$$a_4 = \epsilon_{k_1k_2k_7k_8}$$

Diagram 148:

$$\begin{aligned}\mathrm{PO4.148} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_5k_6k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3\epsilon_{k_7k_8}} e^{-\tau_4\epsilon_{k_1k_2k_5k_6}} \\ &= \frac{(-1)^4}{(2!)^4} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_5k_6k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon^{k_7k_8}_{k_3k_4}\ \epsilon_{k_7k_8}\ \epsilon^{k_7k_8}_{k_3k_4k_1k_2k_5k_6}}\end{aligned} \tag{309}$$

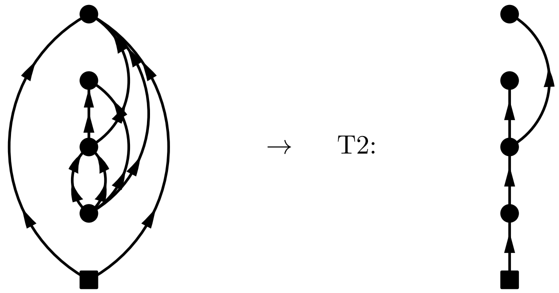


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{310}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_1k_2k_5k_6}$$
$$a_3 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 149:

$$
\begin{aligned}
\mathrm{PO4.149} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_5} \Omega^{04}_{k_8k_6k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3 \epsilon_{k_5k_7}} e \\
&= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_5} \Omega^{04}_{k_8k_6k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_1k_2k_6}\ \epsilon_{k_5k_7}\ \epsilon_{k_1k_2k_6k_8}}
\end{aligned} \tag{311}
$$

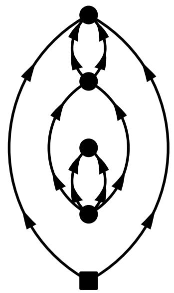


$$
\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{312}
$$

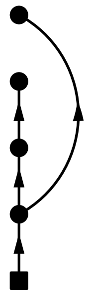
$$
\begin{aligned}
a_1 &= \epsilon^{k_3k_4k_5k_6} \\
a_2 &= \epsilon^{k_7k_8}_{k_3k_4} \\
a_3 &= \epsilon_{k_5k_7} \\
a_4 &= \epsilon_{k_1k_2k_6k_8}
\end{aligned}
$$

Diagram 150:

$$
\begin{aligned}
\mathrm{PO4.150} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_1k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon_{k_3k_4}} e^{-\tau_3 \epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_4 \epsilon_{k_1k_2k_7k_8}} \\
&= \frac{(-1)^4}{(2!)^4} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_1k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_6k_1k_2}\ \epsilon_{k_1k_2k_7k_8}}
\end{aligned} \tag{313}
$$



→ T3:

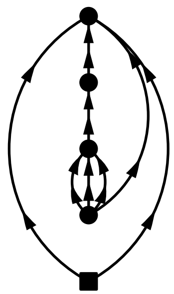


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{314}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_5 k_6}$$
$$a_3 = \epsilon_{k_1 k_2 k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 151:

$$\begin{aligned}\mathrm{PO4.151} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{11}_{k_8 k_7} \Omega^{04}_{k_8 k_6 k_1 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3 k_4 k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_7}} e^{-\tau_4 \epsilon_{k_1 k_2 k_6 k} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{11}_{k_8 k_7} \Omega^{04}_{k_8 k_6 k_1 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_1 k_2 k_6}\ \epsilon_{k_7 k_1 k_2 k_6}\ \epsilon_{k_1 k_2 k_6 k_8}}\end{aligned} \tag{315}$$



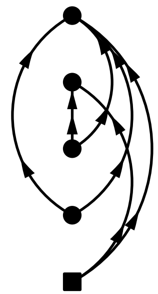
→ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{316}$$

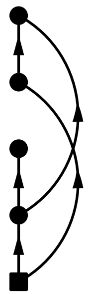
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3 k_4 k_5}$$
$$a_3 = \epsilon^{k_8}_{k_7}$$
$$a_4 = \epsilon_{k_1 k_2 k_6 k_8}$$

Diagram 152:

$$\begin{aligned}\mathrm{PO4.152} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{02}_{k_5 k_1} \Omega^{04}_{k_6 k_3 k_4 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}} e^{-\tau_3 \epsilon_{k_1 k_5}} e^{-\tau_4 \epsilon_{k_2 k_3 k_4 k_6}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{02}_{k_5 k_1} \Omega^{04}_{k_6 k_3 k_4 k_2} \left[\frac{1}{\epsilon^{k_3 k_4 k_6}_{k_1} \ \epsilon^{k_5 k_6} \ \epsilon_{k_1 k_5} \ \epsilon_{k_1 k_2}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon^{k_5 k_6} \ \epsilon_{k_1 k_5} \ \epsilon_{k_1 k_5 k_2 k_3 k_4 k_6}} \right]\end{aligned} \tag{317}$$



$\rightarrow$ T10:



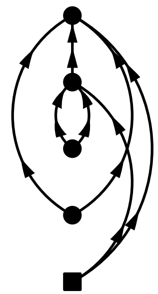
$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{318}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_3 k_4 k_6}$$
$$a_4 = \epsilon_{k_1 k_5}$$

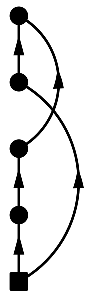
Diagram 153:

$$\text{PO4.153} = \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_5k_6k_1}\Omega^{04}_{k_7k_3k_4k_2}\int_0^{\tau}\mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5k_6}}e^{-\tau_3\epsilon^{k_7}_{k_1k_5k_6}}e^{-\tau_4\epsilon_{k_2k_3k_4k_7}}$$

$$= \frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_5k_6k_1}\Omega^{04}_{k_7k_3k_4k_2}\Bigg[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_7}}+\frac{1}{\epsilon_{k_1k_5k_6k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_7}}+\frac{1}{\epsilon_{k_2k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_1k_5k_6k_2}\ \epsilon_{k_2k_3}} \tag{319}$$



$\rightarrow$ T9:



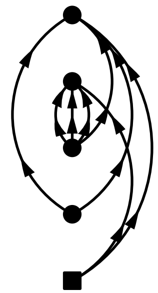
$$\text{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{320}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_5k_6}$$
$$a_3 = \epsilon^{k_3k_4}$$
$$a_4 = \epsilon_{k_2k_3k_4k_7}$$

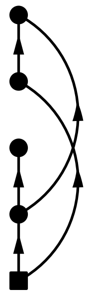
Diagram 154:

$$\text{PO4.154} = \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)(3!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{04}_{k_5k_6k_7k_1}\Omega^{04}_{k_8k_3k_4k_2}\int_0^{\tau}\mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5k_6k_7k_8}}e^{-\tau_3\epsilon_{k_1k_5k_6k_7}}e^{-\tau_4\epsilon_{k_2k_3k_4k_8}}$$

$$= \frac{-(-1)^4}{(2!)(3!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{04}_{k_5k_6k_7k_1}\Omega^{04}_{k_8k_3k_4k_2}\left[\frac{1}{\epsilon^{k_5k_6k_7}_{k_2}\ \epsilon^{k_5k_6k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_8}}+\frac{1}{\epsilon_{k_1k_2}\ \epsilon^{k_5k_6k_7k_8}\ \epsilon_{k_1k_5k_6k_7k_2k_3k_4k_8}\ \epsilon_{k_2k_3k_4k_8}}\right] \tag{321}$$



$\rightarrow$ T10:

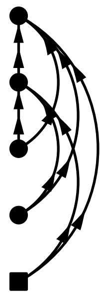


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{322}$$

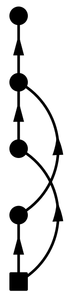
$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6k_7k_8}$$
$$a_3 = \epsilon_{k_1k_5k_6k_7}$$
$$a_4 = \epsilon_{k_2k_3k_4k_8}$$

Diagram 155:

$$\begin{aligned}\mathrm{PO4.155} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_3k_1} \Omega^{04}_{k_7k_6k_4k_2} \int_0^{\tau} \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}} e^{-\tau_3\epsilon^{k_7}_{k_1k_3k_5}} e^{-\tau_4\epsilon_{k_2}} \\ &= \frac{-(-1)^4}{2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_3k_1} \Omega^{04}_{k_7k_6k_4k_2} \left[\frac{1}{\epsilon_{k_1k_5k_2k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_5k_2k_4k_6}\ \epsilon_{k_2k_4k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_1k_3k_5k_2k_4k_6}\ \epsilon_{k_2k_4k_6k_7}} \right]\end{aligned} \tag{323}$$



$\rightarrow$ T12:

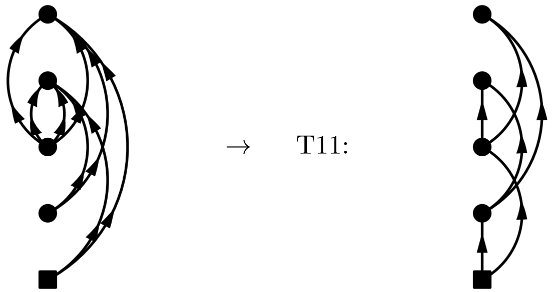


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{324}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}$$
$$a_3 = \epsilon^{k_7}_{k_1k_3k_5}$$
$$a_4 = \epsilon_{k_2k_4k_6k_7}$$

Diagram 156:

$$\begin{aligned} \mathrm{PO4.156} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{04}_{k_5k_6k_3k_1} \Omega^{04}_{k_7k_8k_4k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6k_7k_8}} e^{-\tau_3\epsilon_{k_1k_3k_5k_6}} e^{-\tau_4\epsilon_{k_2} \cdots} \\ &= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{04}_{k_5k_6k_3k_1} \Omega^{04}_{k_7k_8k_4k_2} \left[\frac{1}{\epsilon_{k_1k_5k_6k_2k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_5k_6}\ \epsilon_{k_2k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_1k_3k_5k_6}\ \epsilon_{k_2k_4k_7k_8}} \right] \end{aligned} \tag{325}$$

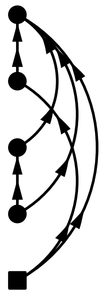


$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{326}$$

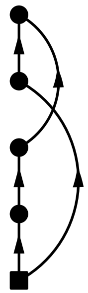
$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6k_7k_8}$$
$$a_3 = \epsilon_{k_1k_3k_5k_6}$$
$$a_4 = \epsilon_{k_2k_4k_7k_8}$$

Diagram 157:

$$\mathrm{PO4.157} = \lim_{\tau\to\infty}(-1)^4\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{11}_{k_6k_1}\Omega^{04}_{k_6k_5k_4k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5}_{k_3}}e^{-\tau_3\epsilon^{k_6}_{k_1}}e^{-\tau_4\epsilon_{k_2k_4k_5k_6}}$$
$$= (-1)^4\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{11}_{k_6k_1}\Omega^{04}_{k_6k_5k_4k_2}\left[\frac{1}{\epsilon^{k_3}_{k_2k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon^{k_3}_{k_1k_2k_5}\ \epsilon_{k_2k_4k_5k_6}}+\frac{1}{\epsilon^{k_3}_{k_2k_5k_6}\ \epsilon_{k_2k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_4k_5k_6}}+\frac{1}{\epsilon_{k_2k_6}\ \epsilon_{k_3k_2k_4k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_4k_5k_6}}\right] \tag{327}$$



$\rightarrow$ T9:

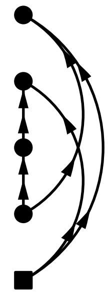


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{328}$$

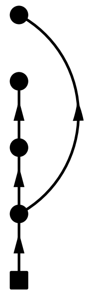
$$a_1 = \epsilon^{k_6}_{k_1}$$
$$a_2 = \epsilon^{k_3k_4}$$
$$a_3 = \epsilon^{k_5}_{k_3}$$
$$a_4 = \epsilon_{k_2k_4k_5k_6}$$

Diagram 158:

$$\mathrm{PO4.158} = \lim_{\tau\to\infty}-(-1)^4\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{02}_{k_5k_1}\Omega^{02}_{k_4k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5}_{k_3}}e^{-\tau_3\epsilon_{k_1k_5}}e^{-\tau_4\epsilon_{k_2k_4}}$$
$$= -(-1)^4\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{02}_{k_5k_1}\Omega^{02}_{k_4k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1}\ \epsilon_{k_1k_5}\ \epsilon_{k_2k_4}} \tag{329}$$



$\rightarrow$ T3:

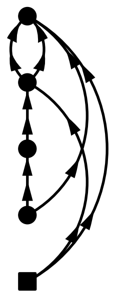


$$\text{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{330}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_1 k_5}$$
$$a_4 = \epsilon_{k_2 k_4}$$

Diagram 159:

$$\text{PO4.159} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_3} \Omega^{22}_{k_6 k_7 k_5 k_1} \Omega^{04}_{k_6 k_7 k_4 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_3}^{k_5}} e^{-\tau_3 \epsilon_{k_1 k_5}^{k_6 k_7}} e^{-\tau_4 \epsilon_{k_2 k_4 k_6 k_7}}$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_3} \Omega^{22}_{k_6 k_7 k_5 k_1} \Omega^{04}_{k_6 k_7 k_4 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_1 k_2 k_4}\ \epsilon_{k_1 k_5 k_2 k_4}\ \epsilon_{k_2 k_4 k_6 k_7}} \tag{331}$$



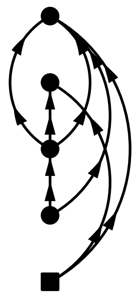
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{332}$$

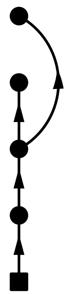
$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_1 k_5}^{k_6 k_7}$$
$$a_4 = \epsilon_{k_2 k_4 k_6 k_7}$$

Diagram 160:

$$\mathrm{PO4.160} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{02}_{k_5 k_1} \Omega^{04}_{k_6 k_7 k_4 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_3}^{k_5 k_6 k_7}} e^{-\tau_3 \epsilon_{k_1 k_5}} e^{-\tau_4 \epsilon_{k_2 k_4 k_6 k_7}}$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{02}_{k_5 k_1} \Omega^{04}_{k_6 k_7 k_4 k_2}}{\epsilon_{k_1 k_2} \; \epsilon_{k_3 k_1 k_2 k_4} \; \epsilon_{k_1 k_5} \; \epsilon_{k_2 k_4 k_6 k_7}} \tag{333}$$



$\rightarrow$ T2:

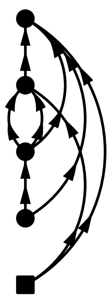


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{334}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_1 k_5}$$
$$a_4 = \epsilon_{k_2 k_4 k_6 k_7}$$

Diagram 161:

$$\begin{aligned}
\text{PO4.161} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{13}_{k_8k_5k_6k_1}\Omega^{04}_{k_8k_7k_4k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_3}}e^{-\tau_3\epsilon^{k_8}_{k_1k_5k_6}}e^{-} \\
&= \frac{(-1)^4}{(2!)}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{13}_{k_8k_5k_6k_1}\Omega^{04}_{k_8k_7k_4k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_1k_5k_6k_2k_4k_7}\ \epsilon_{k_2k_4k_7k_8}} \qquad (335)
\end{aligned}$$



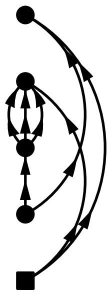
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (336)$$

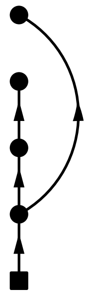
$$\begin{aligned}
a_1 &= \epsilon^{k_3k_4} \\
a_2 &= \epsilon^{k_5k_6k_7}_{k_3} \\
a_3 &= \epsilon^{k_8}_{k_1k_5k_6} \\
a_4 &= \epsilon_{k_2k_4k_7k_8}
\end{aligned}$$

Diagram 162:

$$\begin{aligned}
\text{PO4.162} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(3!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{04}_{k_5k_6k_7k_1}\Omega^{02}_{k_4k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_3}}e^{-\tau_3\epsilon_{k_1k_5k_6k_7}}e^{-\tau_4\epsilon_{k_2k_4}} \\
&= \frac{-(-1)^4}{(3!)}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{04}_{k_5k_6k_7k_1}\Omega^{02}_{k_4k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1}\ \epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_2k_4}} \qquad (337)
\end{aligned}$$



$\rightarrow$ T3:

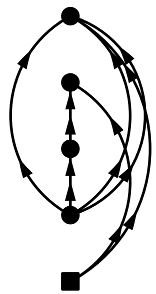


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{338}$$

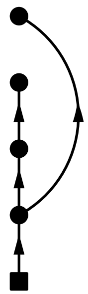
$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_1 k_5 k_6 k_7}$$
$$a_4 = \epsilon_{k_2 k_4}$$

Diagram 163:

$$\begin{aligned}\mathrm{PO4.163} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{02}_{k_7 k_1} \Omega^{04}_{k_4 k_5 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_3}^{k_7}} e^{-\tau_3 \epsilon_{k_1 k_7}} e^{-\tau_4 \epsilon_{k_2 k_4 k_5 k_6}} \\ &= \frac{-(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{02}_{k_7 k_1} \Omega^{04}_{k_4 k_5 k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon^{k_7}_{k_3 k_2 k_4 k_5 k_6}\ \epsilon_{k_1 k_7}\ \epsilon_{k_2 k_4 k_5 k_6}}\end{aligned} \tag{339}$$



$\rightarrow$ T3:

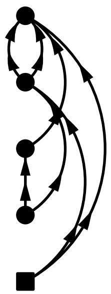


$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{340}$$

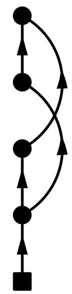
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7}$$
$$a_3 = \epsilon_{k_2k_4k_5k_6}$$
$$a_4 = \epsilon_{k_1k_7}$$

Diagram 164:

$$\begin{aligned}\text{PO4.164} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{22}_{k_6k_7k_4k_1}\Omega^{04}_{k_6k_7k_5k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon_{k_3}^{k_5}}e^{-\tau_3\epsilon_{k_1k_4}^{k_6k_7}}e^{-\tau_4\epsilon_{k_2k_5k_6k_7}} \\ &= \frac{(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{22}_{k_6k_7k_4k_1}\Omega^{04}_{k_6k_7k_5k_2}\left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_6k_7}\ \epsilon_{k_3k_1k_4k_2}\ \epsilon_{k_2k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_4k_2}\ \epsilon_{k_1k_4k_2k_5}\ \epsilon_{k_2k_5k_6k_7}}\right]\end{aligned} \tag{341}$$



$\rightarrow$ T8:

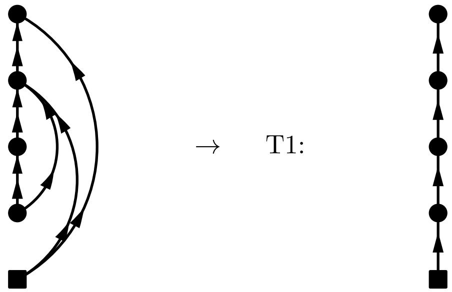


$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{342}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_1k_4}^{k_6k_7}$$
$$a_4 = \epsilon_{k_2k_5k_6k_7}$$

Diagram 165:

$$\begin{aligned}
\text{PO4.165} &= \lim_{\tau\to\infty}(-1)^4\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{13}_{k_6k_5k_4k_1}\Omega^{02}_{k_6k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5}_{k_3}}e^{-\tau_3\epsilon^{k_6}_{k_1k_4k_5}}e^{-\tau_4\epsilon_{k_2k_6}} \\
&= (-1)^4\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{13}_{k_6k_5k_4k_1}\Omega^{02}_{k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_4k_2}\ \epsilon_{k_1k_4k_5k_2}\ \epsilon_{k_2k_6}} \qquad (343)
\end{aligned}$$

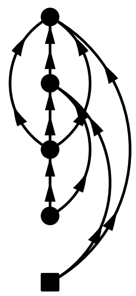


$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (344)$$

$$\begin{aligned}
a_1 &= \epsilon^{k_3k_4} \\
a_2 &= \epsilon^{k_5}_{k_3} \\
a_3 &= \epsilon^{k_6}_{k_1k_4k_5} \\
a_4 &= \epsilon_{k_2k_6}
\end{aligned}$$

Diagram 166:

$$\begin{aligned}
\text{PO4.166} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{13}_{k_8k_5k_4k_1}\Omega^{04}_{k_8k_6k_7k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_3}}e^{-\tau_3\epsilon^{k_8}_{k_1k_4k_5}}e^{-} \\
&= \frac{(-1)^4}{(2!)}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{13}_{k_8k_5k_4k_1}\Omega^{04}_{k_8k_6k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_4k_2}\ \epsilon_{k_1k_4k_5k_2k_6k_7}\ \epsilon_{k_2k_6k_7k_8}} \qquad (345)
\end{aligned}$$

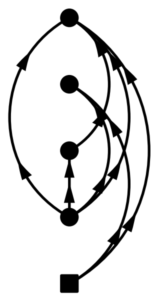
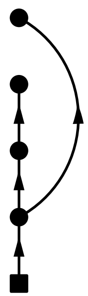
 $\rightarrow$ T1: 

$$\text{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{346}$$

$$\begin{aligned} a_1 &= \epsilon^{k_3 k_4} \\ a_2 &= \epsilon_{k_3}^{k_5 k_6 k_7} \\ a_3 &= \epsilon_{k_1 k_4 k_5}^{k_8} \\ a_4 &= \epsilon_{k_2 k_6 k_7 k_8} \end{aligned}$$

Diagram 167:

$$\begin{aligned} \text{PO4.167} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{02}_{k_4 k_1} \Omega^{04}_{k_7 k_5 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_3}^{k_7}} e^{-\tau_3 \epsilon_{k_1 k_4}} e^{-\tau_4 \epsilon_{k_2 k_5 k_6 k_7}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{02}_{k_4 k_1} \Omega^{04}_{k_7 k_5 k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3}^{k_7}\ \epsilon_{k_3 k_1 k_4}^{k_7}\ \epsilon_{k_2 k_5 k_6 k_7}} \end{aligned} \tag{347}$$

 $\rightarrow$ T3: 

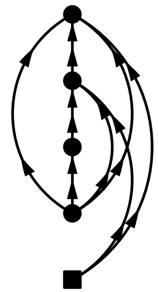
$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{348}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_4}$$
$$a_3 = \epsilon_{k_3}^{k_7}$$
$$a_4 = \epsilon_{k_2 k_5 k_6 k_7}$$

Diagram 168:

$$\mathrm{PO4.168} = \lim_{\tau \to \infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{13}_{k_8 k_7 k_4 k_1} \Omega^{04}_{k_8 k_5 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_3}^{k_7}} e^{-\tau_3 \epsilon_{k_1 k_4 k_7}^{k_8}} e^{-}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{13}_{k_8 k_7 k_4 k_1} \Omega^{04}_{k_8 k_5 k_6 k_2}}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_1 k_4 k_2 k_5 k_6} \ \epsilon_{k_1 k_4 k_7 k_2 k_5 k_6} \ \epsilon_{k_2 k_5 k_6 k_8}} \tag{349}$$



$\rightarrow$ T1:

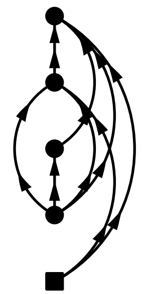
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{350}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7}$$
$$a_3 = \epsilon_{k_1 k_4 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_2 k_5 k_6 k_8}$$

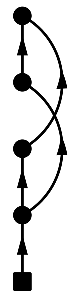
Diagram 169:

$$\text{PO4.169} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{13}_{k_8k_4k_5k_1} \Omega^{04}_{k_8k_7k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_3}} e^{-\tau_3\epsilon^{k_8}_{k_1k_4k_5}} e^{-}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{13}_{k_8k_4k_5k_1} \Omega^{04}_{k_8k_7k_6k_2} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_6k_8}\ \epsilon_{k_3k_1k_4k_5k_2k_6}\ \epsilon_{k_2k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_4k_5k_2k_6}\ \epsilon_{k_1k_4k_5k_2k_6k_7}\ \epsilon_{k_2k_6k_7k_8}} \right] \tag{351}$$



$\rightarrow$ T8:



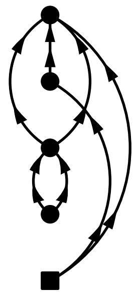
$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{352}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_1k_4k_5}$$
$$a_4 = \epsilon_{k_2k_6k_7k_8}$$

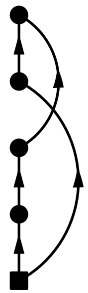
Diagram 170:

$$\text{PO4.170} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_3k_4}} e^{-\tau_3\epsilon^{k_7}_{k_1}} e^{-\tau_4\epsilon_{k_2k_5k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_5k_6k_2} \left[\frac{1}{\epsilon_{k_2k_7}\ \epsilon_{k_3k_4k_2k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_7}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_2k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_1k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_7}} \right] \tag{353}$$



$\rightarrow$ T9:

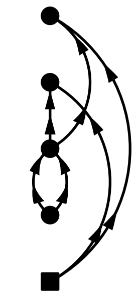


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{354}$$

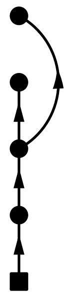
$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_3 k_4}$$
$$a_3 = \epsilon^{k_7}_{k_1}$$
$$a_4 = \epsilon_{k_2 k_5 k_6 k_7}$$

Diagram 171:

$$\begin{aligned} \mathrm{PO4.171} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_4} \Omega^{02}_{k_5 k_1} \Omega^{02}_{k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}_{k_3 k_4}} e^{-\tau_3 \epsilon_{k_1 k_5}} e^{-\tau_4 \epsilon_{k_2 k_6}} \\ &= \frac{-(-1)^4}{2(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_4} \Omega^{02}_{k_5 k_1} \Omega^{02}_{k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_1 k_2}\ \epsilon_{k_1 k_5}\ \epsilon_{k_2 k_6}} \end{aligned} \tag{355}$$



$\rightarrow$ T2:

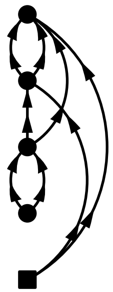


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{356}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_3 k_4}$$
$$a_3 = \epsilon_{k_1 k_5}$$
$$a_4 = \epsilon_{k_2 k_6}$$

Diagram 172:

$$\begin{aligned}
\mathrm{PO4.172} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_4} \Omega^{22}_{k_7 k_8 k_5 k_1} \Omega^{04}_{k_7 k_8 k_6 k_2} \int_0^{\tau} \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}_{k_3 k_4}} e^{-\tau_3 \epsilon^{k_7 k_8}_{k_1 k_5}} e^{-\tau_4 \epsilon_{k_2 k_6 k_7 k_8}} \\
&= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_4} \Omega^{22}_{k_7 k_8 k_5 k_1} \Omega^{04}_{k_7 k_8 k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_1 k_2}\ \epsilon_{k_1 k_5 k_2 k_6}\ \epsilon_{k_2 k_6 k_7 k_8}}
\end{aligned} \tag{357}$$



→ T1:

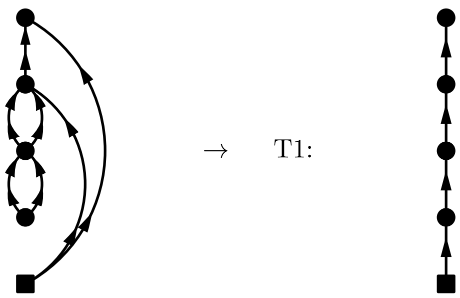
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{358}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_3 k_4}$$
$$a_3 = \epsilon^{k_7 k_8}_{k_1 k_5}$$
$$a_4 = \epsilon_{k_2 k_6 k_7 k_8}$$

Diagram 173:

$$\mathrm{PO4.173} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{02}_{k_7k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_3k_4}} e^{-\tau_3\epsilon^{k_7}_{k_1k_5k_6}} e^{-\tau_4\epsilon_{k_2k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{02}_{k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_1k_5k_6k_2}\ \epsilon_{k_2k_7}} \tag{359}$$



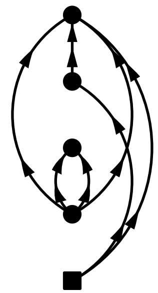
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{360}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_3k_4}$$
$$a_3 = \epsilon^{k_7}_{k_1k_5k_6}$$
$$a_4 = \epsilon_{k_2k_7}$$

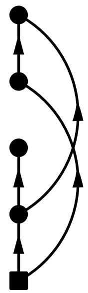
Diagram 174:

$$\mathrm{PO4.174} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon_{k_3k_4}} e^{-\tau_3\epsilon^{k_7}_{k_1}} e^{-\tau_4\epsilon_{k_2k_5k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_5k_6k_2} \left[\frac{1}{\epsilon^{k_3k_4k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon^{k_3k_4}_{k_1k_2}\ \epsilon_{k_2k_5k_6k_7}} + \frac{1}{\epsilon^{k_3k_4k_5k_6}\ \epsilon_{k_3k_4k_2k_5k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_5k_6k_7}} \right] \tag{361}$$



$\rightarrow$ T10:

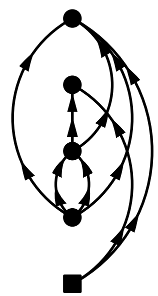


$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{362}$$

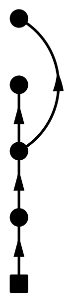
$$a_1 = \epsilon_{k_1}^{k_7}$$
$$a_2 = \epsilon^{k_3k_4k_5k_6}$$
$$a_3 = \epsilon_{k_3k_4}$$
$$a_4 = \epsilon_{k_2k_5k_6k_7}$$

Diagram 175:

$$\begin{aligned}\text{PO4.175} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_1} \Omega^{04}_{k_8k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3\epsilon_{k_1k_7}} e^{-\tau_4\epsilon_{k_2k_5k_6}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_1} \Omega^{04}_{k_8k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2k_5k_6}\ \epsilon_{k_1k_7}\ \epsilon_{k_2k_5k_6k_8}}\end{aligned} \tag{363}$$



$\rightarrow$ T2:

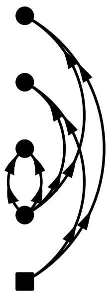


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{364}$$

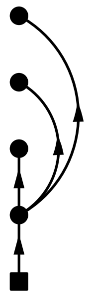
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_3 k_4}$$
$$a_3 = \epsilon_{k_1 k_7}$$
$$a_4 = \epsilon_{k_2 k_5 k_6 k_8}$$

Diagram 176:

$$\begin{aligned}\mathrm{PO4.176} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{02}_{k_3 k_4} \Omega^{02}_{k_5 k_1} \Omega^{02}_{k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_3 k_4}} e^{-\tau_3 \epsilon_{k_1 k_5}} e^{-\tau_4 \epsilon_{k_2 k_6}} \\ &= \frac{-(-1)^4}{2(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{02}_{k_3 k_4} \Omega^{02}_{k_5 k_1} \Omega^{02}_{k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_1 k_5}\ \epsilon_{k_2 k_6}}\end{aligned} \tag{365}$$



$\rightarrow$ T6:



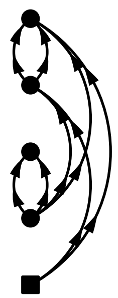
$$\mathrm{T6} = \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2 a_3 a_4} \tag{366}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_3 k_4}$$
$$a_3 = \epsilon_{k_1 k_5}$$
$$a_4 = \epsilon_{k_2 k_6}$$

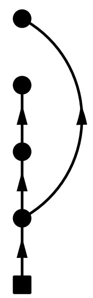
Diagram 177:

$$\mathrm{PO4.177} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{04}_{k_7k_8k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon_{k_3k_4}} e^{-\tau_3\epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_4\epsilon_{k_2k_6k_7}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{04}_{k_7k_8k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon^{k_7k_8}_{k_3k_4k_1k_5}\ \epsilon_{k_2k_6k_7k_8}} \tag{367}$$



$\rightarrow$ T3:



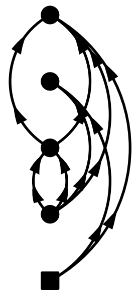
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{368}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_5}$$
$$a_3 = \epsilon_{k_3k_4}$$
$$a_4 = \epsilon_{k_2k_6k_7k_8}$$

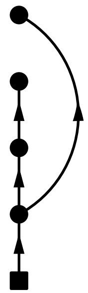
Diagram 178:

$$\mathrm{PO4.178} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_5k_1} \Omega^{04}_{k_7k_8k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_3\epsilon_{k_1k_5}} e^{-\tau_4\epsilon_{k_2k_6k_7}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_5k_1} \Omega^{04}_{k_7k_8k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon^{k_7k_8}_{k_3k_4}\ \epsilon^{k_7k_8}_{k_3k_4k_1k_5}\ \epsilon_{k_2k_6k_7k_8}} \tag{369}$$



$\rightarrow$ T3:

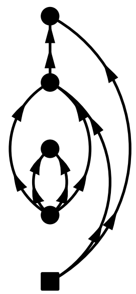


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{370}$$

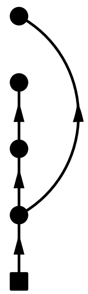
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_5}$$
$$a_3 = \epsilon_{k_3 k_4}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_2 k_6 k_7 k_8}$$

Diagram 179:

$$\begin{aligned}\mathrm{PO4.179} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{02}_{k_3 k_4} \Omega^{13}_{k_7 k_5 k_6 k_1} \Omega^{02}_{k_7 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon_{k_3 k_4}} e^{-\tau_3 \epsilon_{k_1 k_5 k_6}^{k_7}} e^{-\tau_4 \epsilon_{k_2 k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{02}_{k_3 k_4} \Omega^{13}_{k_7 k_5 k_6 k_1} \Omega^{02}_{k_7 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_1 k_5 k_6 k_2}\ \epsilon_{k_2 k_7}}\end{aligned} \tag{371}$$



$\rightarrow$ T3:

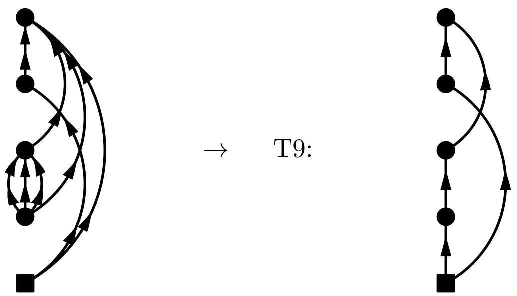


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{372}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_7}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 180:

$$\begin{aligned} \mathrm{PO4.180} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{11}_{k_8 k_1} \Omega^{04}_{k_8 k_7 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3 k_4 k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_1}} e^{-\tau_4 \epsilon_{k_2 k_6 k_7 k_8}} \\ &= \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{11}_{k_8 k_1} \Omega^{04}_{k_8 k_7 k_6 k_2} \Bigg[\frac{1}{\epsilon_{k_2 k_8} \ \epsilon_{k_3 k_4 k_5 k_2 k_6 k_8} \ \epsilon_{k_1 k_2} \ \epsilon_{k_2 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_4 k_5 k_2 k_6 k_8} \ \epsilon_{k_3 k_4 k_5 k_1 k_2 k_6} \ \epsilon_{k_2 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_4 k_5 k_1 k_2 k_6} \ \epsilon_{k_1}} \end{aligned} \tag{373}$$

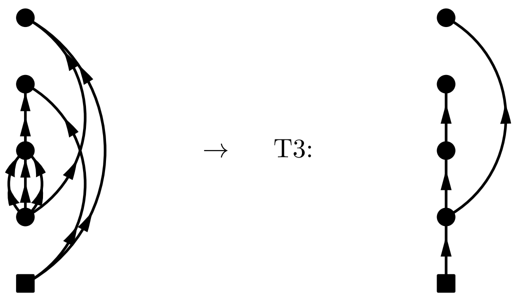


$$\mathrm{T9} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{374}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3k_4k_5}$$
$$a_3 = \epsilon^{k_8}_{k_1}$$
$$a_4 = \epsilon_{k_2k_6k_7k_8}$$

Diagram 181:

$$\begin{aligned}\text{PO4.181} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{02}_{k_7k_1} \Omega^{02}_{k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_3k_4k_5}} e^{-\tau_3\epsilon_{k_1k_7}} e^{-\tau_4\epsilon_{k_2k_6}} \\ &= \frac{-(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{02}_{k_7k_1} \Omega^{02}_{k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_1}\ \epsilon_{k_1k_7}\ \epsilon_{k_2k_6}} \end{aligned} \tag{375}$$


$\rightarrow$ T3:

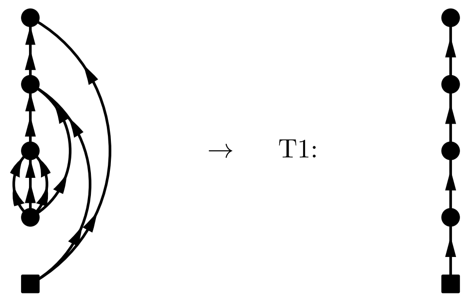
$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{376}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3k_4k_5}$$
$$a_3 = \epsilon_{k_1k_7}$$
$$a_4 = \epsilon_{k_2k_6}$$

Diagram 182:

$$\mathrm{PO4.182} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{13}_{k_8k_7k_6k_1} \Omega^{02}_{k_8k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3k_4k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_1k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_8}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_5} \Omega^{13}_{k_8k_7k_6k_1} \Omega^{02}_{k_8k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_1k_6k_2}\ \epsilon_{k_1k_6k_7k_2}\ \epsilon_{k_2k_8}} \tag{377}$$



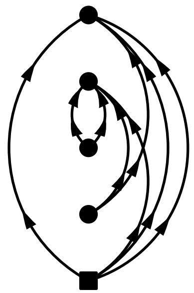
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{378}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3k_4k_5}$$
$$a_3 = \epsilon^{k_8}_{k_1k_6k_7}$$
$$a_4 = \epsilon_{k_2k_8}$$

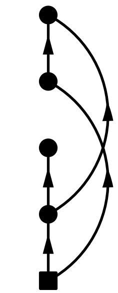
Diagram 183:

$$\mathrm{PO4.183} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{20}_{k_7k_8} \Omega^{04}_{k_7k_8k_5k_1} \Omega^{04}_{k_6k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}} e^{-\tau_3 \epsilon_{k_1k_5k_7k_8}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_6}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{20}_{k_7k_8} \Omega^{04}_{k_7k_8k_5k_1} \Omega^{04}_{k_6k_2k_3k_4} \left[\frac{1}{\epsilon_{k_1k_7k_8k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_7k_8}\ \epsilon_{k_2k_3k_4k_6}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5}\ \epsilon_{k_1k_5k_7k_8}\ \epsilon_{k_2k_3k_4k_6}} \right] \tag{379}$$



$\rightarrow$ T10:

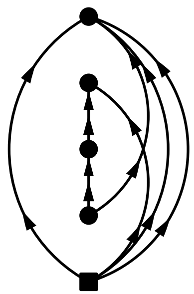


$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{380}$$

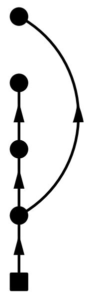
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_2 k_3 k_4 k_6}$$
$$a_3 = \epsilon^{k_7 k_8}$$
$$a_4 = \epsilon_{k_1 k_5 k_7 k_8}$$

Diagram 184:

$$\begin{aligned}\text{PO4.184} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_7k_1} \Omega^{04}_{k_6k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_5}} e^{-\tau_3 \epsilon_{k_1k_7}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_6}} \\ &= \frac{-(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_7k_1} \Omega^{04}_{k_6k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_1}\ \epsilon_{k_1k_7}\ \epsilon_{k_2k_3k_4k_6}}\end{aligned} \tag{381}$$



$\rightarrow$ T3:

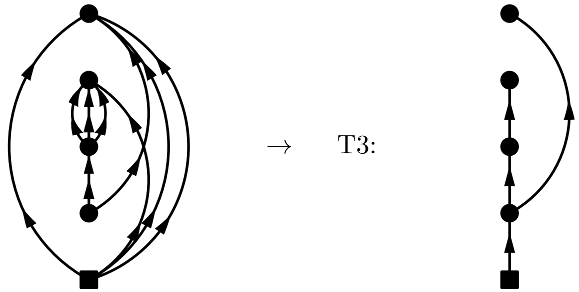


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{382}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_1k_7}$$
$$a_4 = \epsilon_{k_2k_3k_4k_6}$$

Diagram 185:

$$\begin{aligned}\mathrm{PO4.185} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{04}_{k_7k_8k_9k_1} \Omega^{04}_{k_6k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon_{k_5}^{k_7k_8k_9}} e^{-\tau_3\epsilon_{k_1k_7k_8k_9}} e^{-\tau_4\epsilon_{k_2k_3k_4k_6}} \\ &= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{04}_{k_7k_8k_9k_1} \Omega^{04}_{k_6k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7k_8k_9}_{k_5k_2k_3k_4k_6}\ \epsilon_{k_1k_7k_8k_9}\ \epsilon_{k_2k_3k_4k_6}}\end{aligned} \tag{383}$$



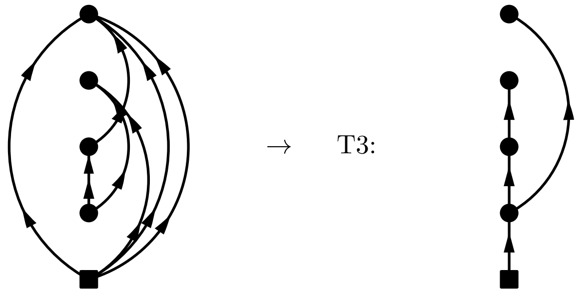
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{384}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7k_8k_9}$$
$$a_3 = \epsilon_{k_2k_3k_4k_6}$$
$$a_4 = \epsilon_{k_1k_7k_8k_9}$$

Diagram 186:

$$\text{PO4.186} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_6k_1} \Omega^{04}_{k_7k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_5}} e^{-\tau_3\epsilon_{k_1k_6}} e^{-\tau_4\epsilon_{k_2k_3k_4k_7}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_6k_1} \Omega^{04}_{k_7k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_1k_6}\ \epsilon_{k_2k_3k_4k_7}} \tag{385}$$



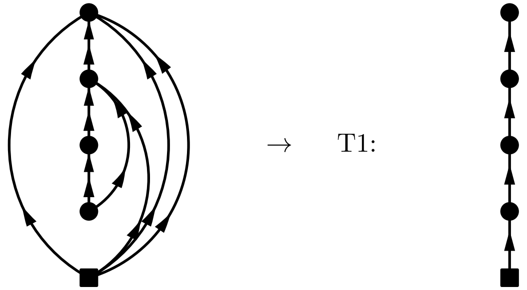
$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{386}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_5}$$
$$a_3 = \epsilon_{k_2k_3k_4k_7}$$
$$a_4 = \epsilon_{k_1k_6}$$

Diagram 187:

$$\text{PO4.187} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_7k_6k_1} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_5}} e^{-\tau_3\epsilon^{k_8}_{k_1k_6k_7}} e^{-\tau_4\epsilon_{k_2k_3k_4k_8}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_7k_6k_1} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_1k_6k_2k_3k_4}\ \epsilon_{k_1k_6k_7k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_8}} \tag{387}$$

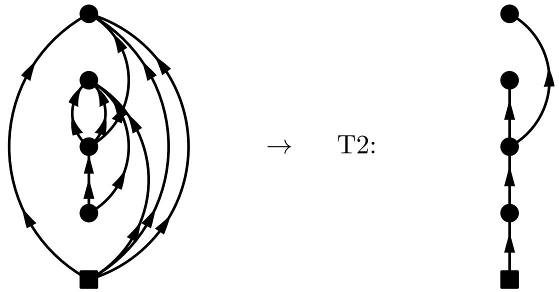


$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{388}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_5}$$
$$a_3 = \epsilon^{k_8}_{k_1k_6k_7}$$
$$a_4 = \epsilon_{k_2k_3k_4k_8}$$

Diagram 188:

$$\begin{aligned} \mathrm{PO4.188} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{31}_{k_7k_8k_9k_5}\Omega^{04}_{k_7k_8k_6k_1}\Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)e^{-\tau_1\epsilon^{k_5k_6}}e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_5}}e^{-\tau_3\epsilon_{k_1k_6k_7k_8}}e^{-\tau_4\epsilon_{k} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{31}_{k_7k_8k_9k_5}\Omega^{04}_{k_7k_8k_6k_1}\Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_1k_6k_2k_3k_4}\ \epsilon_{k_1k_6k_7k_8}\ \epsilon_{k_2k_3k_4k_9}} \end{aligned} \tag{389}$$

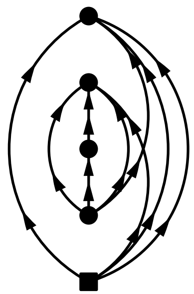


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{390}$$

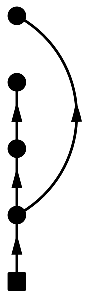
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_1 k_6 k_7 k_8}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_9}$$

Diagram 189:

$$\begin{aligned}
\mathrm{PO4.189} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{11}_{k_9 k_5} \Omega^{04}_{k_9 k_6 k_7 k_1} \Omega^{04}_{k_8 k_2 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6 k_7 k_8}} e^{-\tau_2 \epsilon_{k_5}^{k_9}} e^{-\tau_3 \epsilon_{k_1 k_6 k_7 k_9}} e^{-\tau_4 \epsilon} \\
= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{11}_{k_9 k_5} \Omega^{04}_{k_9 k_6 k_7 k_1} \Omega^{04}_{k_8 k_2 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_2 k_3 k_4 k_8}^{k_9} \ \epsilon_{k_1 k_6 k_7 k_9} \ \epsilon_{k_2 k_3 k_4 k_8}}
\end{aligned} \tag{391}$$



$\rightarrow$ T3:



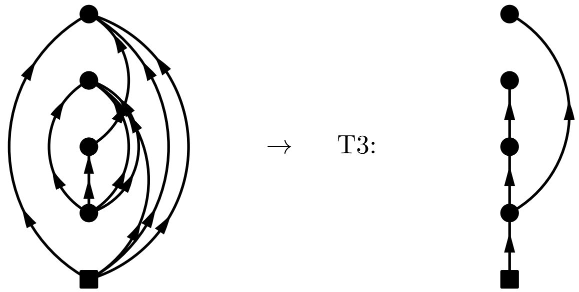
$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{392}$$

$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon_{k_5}^{k_9}$$
$$a_3 = \epsilon_{k_2 k_3 k_4 k_8}$$
$$a_4 = \epsilon_{k_1 k_6 k_7 k_9}$$

Diagram 190:

$$\text{PO4.190} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_5} \Omega^{04}_{k_6k_7k_8k_1} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_5}} e^{-\tau_3\epsilon_{k_1k_6k_7k_8}} e^{-\tau_4\epsilon_{k_2k_3k_4k_9}}$$

$$= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_5} \Omega^{04}_{k_6k_7k_8k_1} \Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_9}_{k_5}\ \epsilon^{k_9}_{k_5k_1k_6k_7k_8}\ \epsilon_{k_2k_3k_4k_9}} \tag{393}$$



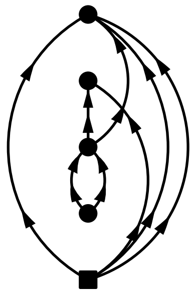
$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{394}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_1k_6k_7k_8}$$
$$a_3 = \epsilon^{k_9}_{k_5}$$
$$a_4 = \epsilon_{k_2k_3k_4k_9}$$

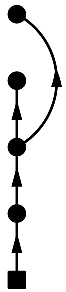
Diagram 191:

$$\text{PO4.191} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{02}_{k_7k_1} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3\epsilon_{k_1k_7}} e^{-\tau_4\epsilon_{k_2k_3k_4k_8}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{02}_{k_7k_1} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_1k_2k_3k_4}\ \epsilon_{k_1k_7}\ \epsilon_{k_2k_3k_4k_8}} \tag{395}$$



$\rightarrow$ T2:

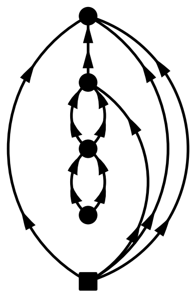


$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{396}$$

$$\begin{aligned} a_1 &= \epsilon^{k_5k_6} \\ a_2 &= \epsilon^{k_7k_8}_{k_5k_6} \\ a_3 &= \epsilon_{k_1k_7} \\ a_4 &= \epsilon_{k_2k_3k_4k_8} \end{aligned}$$

Diagram 192:

$$\begin{aligned} \mathrm{PO4.192} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_7k_8k_1} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3\epsilon^{k_9}_{k_1k_7k_8}} e^{-\tau_4\epsilon_{k_2k_3k_4k_9}} \\ &= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_7k_8k_1} \Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_1k_2k_3k_4}\ \epsilon_{k_1k_7k_8k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_9}} \end{aligned} \tag{397}$$



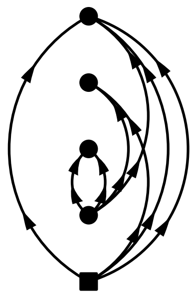
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{398}$$

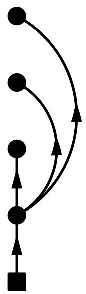
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_5k_6}$$
$$a_3 = \epsilon^{k_9}_{k_1k_7k_8}$$
$$a_4 = \epsilon_{k_2k_3k_4k_9}$$

Diagram 193:

$$\begin{aligned}\mathrm{PO4.193} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)(3!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{02}_{k_5k_6}\Omega^{02}_{k_7k_1}\Omega^{04}_{k_8k_2k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)e^{-\tau_1\epsilon^{k_5k_6k_7k_8}}e^{-\tau_2\epsilon_{k_5k_6}}e^{-\tau_3\epsilon_{k_1k_7}}e^{-\tau_4\epsilon_{k_2k_3k_4k_8}}\\ &= \frac{-(-1)^4}{(2!)(3!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{02}_{k_5k_6}\Omega^{02}_{k_7k_1}\Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_7}\ \epsilon_{k_2k_3k_4k_8}}\end{aligned} \tag{399}$$



$\rightarrow$ T6:



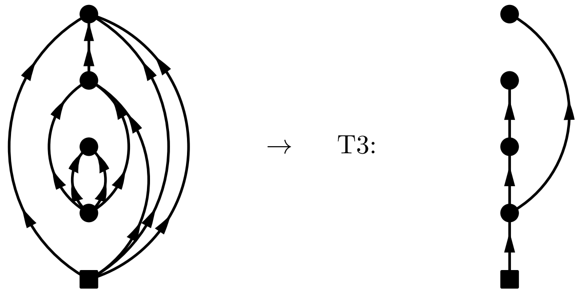
$$\mathrm{T6} = \frac{1}{(a_1+a_2+a_3+a_4)a_2a_3a_4} \tag{400}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_5k_6}$$
$$a_3 = \epsilon_{k_1k_7}$$
$$a_4 = \epsilon_{k_2k_3k_4k_8}$$

Diagram 194:

$$\text{PO4.194} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_9k_7k_8k_1} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon_{k_5k_6}} e^{-\tau_3\epsilon^{k_9}_{k_1k_7k_8}} e^{-\tau_4\epsilon_{k_2k_3k_4k_9}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_9k_7k_8k_1} \Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_7k_8k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_9}} \tag{401}$$



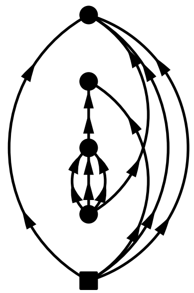
$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{402}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1k_7k_8}$$
$$a_3 = \epsilon_{k_2k_3k_4k_9}$$
$$a_4 = \epsilon_{k_5k_6}$$

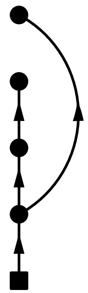
Diagram 195:

$$\text{PO4.195} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{02}_{k_9k_1} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon^{k_9}_{k_5k_6k_7}} e^{-\tau_3\epsilon_{k_1k_9}} e^{-\tau_4\epsilon_{k_2k_3k_4k_8}}$$

$$= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_7} \Omega^{02}_{k_9k_1} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_9}_{k_5k_6k_7k_2k_3k_4k_8}\ \epsilon_{k_1k_9}\ \epsilon_{k_2k_3k_4k_8}} \tag{403}$$



$\rightarrow$ T3:

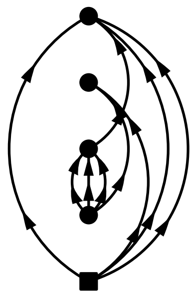


$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{404}$$

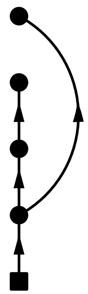
$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_5k_6k_7}$$
$$a_3 = \epsilon_{k_2k_3k_4k_8}$$
$$a_4 = \epsilon_{k_1k_9}$$

Diagram 196:

$$\begin{aligned}\text{PO4.196} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(3!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{13}_{k_9k_5k_6k_7}\Omega^{02}_{k_8k_1}\Omega^{04}_{k_9k_2k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)e^{-\tau_1\epsilon^{k_5k_6k_7k_8}}e^{-\tau_2\epsilon^{k_9}_{k_5k_6k_7}}e^{-\tau_3\epsilon_{k_1k_8}}e^{-\tau_4\epsilon_{k_2k_3k_4k_9}} \\ &= \frac{(-1)^4}{(3!)^2}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{13}_{k_9k_5k_6k_7}\Omega^{02}_{k_8k_1}\Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\;\epsilon^{k_9}_{k_5k_6k_7}\;\epsilon^{k_9}_{k_5k_6k_7k_1k_8}\;\epsilon_{k_2k_3k_4k_9}}\end{aligned} \tag{405}$$



$\rightarrow$ T3:

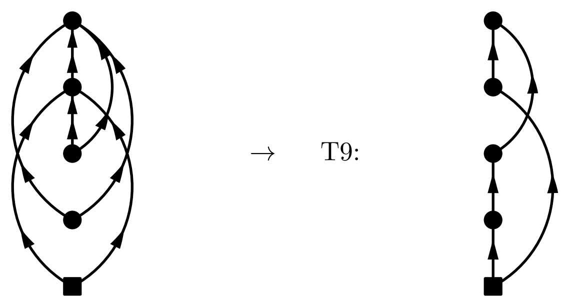


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{406}$$

$$\begin{aligned}
a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\
a_2 &= \epsilon_{k_1 k_8} \\
a_3 &= \epsilon_{k_5 k_6 k_7}^{k_9} \\
a_4 &= \epsilon_{k_2 k_3 k_4 k_9}
\end{aligned}$$

Diagram 197:

$$\begin{aligned}
\mathrm{PO4.197} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_1 k_2} \Omega^{04}_{k_7 k_6 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}} e^{-\tau_3 \epsilon^{k_7}_{k_1 k_2 k_5}} e^{-\tau_4 \epsilon_{k_3 k_4 k_6 k_7}} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_1 k_2} \Omega^{04}_{k_7 k_6 k_3 k_4} \Bigg[\frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_1 k_2 k_5 k_3 k_4 k_6}\ \epsilon_{k_3 k_4 k_6 k_7}} + \frac{1}{\epsilon_{k_1 k_2 k_5 k_6}\ \epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_5 k_3 k_4 k_6}\ \epsilon_{k_3 k_4 k_6 k_7}} + \frac{1}{\epsilon_{k_6 k_7}\ \epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_5 k_6}\ \epsilon_{k_3 k_4}}
\end{aligned} \tag{407}$$

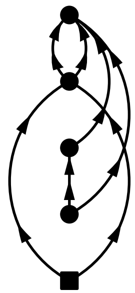


$$\mathrm{T9} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{408}$$

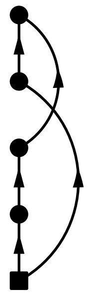
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_5}$$
$$a_3 = \epsilon^{k_3k_4}$$
$$a_4 = \epsilon_{k_3k_4k_6k_7}$$

Diagram 198:

$$\begin{aligned}\text{PO4.198} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{22}_{k_6k_7k_1k_2}\Omega^{04}_{k_6k_7k_5k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5}_{k_3}}e^{-\tau_3\epsilon^{k_6k_7}_{k_1k_2}}e^{-\tau_4\epsilon_{k_4k_5k_6k_7}}\\ &= \frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{22}_{k_6k_7k_1k_2}\Omega^{04}_{k_6k_7k_5k_4}\left[\frac{1}{\epsilon^{k_3}_{k_5k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon^{k_3}_{k_1k_2k_5}\ \epsilon_{k_4k_5k_6k_7}}+\frac{1}{\epsilon^{k_3}_{k_5k_6k_7}\ \epsilon_{k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5k_6k_7}}+\frac{1}{\epsilon_{k_6k_7}\ \epsilon_{k_3k_4k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5k_6k_7}}\right]\end{aligned} \tag{409}$$



$$\rightarrow \quad \text{T9:}$$

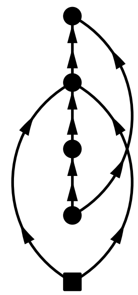


$$\text{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{410}$$

$$a_1 = \epsilon^{k_6k_7}_{k_1k_2}$$
$$a_2 = \epsilon^{k_3k_4}$$
$$a_3 = \epsilon^{k_5}_{k_3}$$
$$a_4 = \epsilon_{k_4k_5k_6k_7}$$

Diagram 199:

$$
\begin{aligned}
\text{PO4.199} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_3} \Omega^{13}_{k_6k_5k_1k_2} \Omega^{02}_{k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_3}} e^{-\tau_3\epsilon^{k_6}_{k_1k_2k_5}} e^{-\tau_4\epsilon_{k_4k_6}} \\
&= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_3} \Omega^{13}_{k_6k_5k_1k_2} \Omega^{02}_{k_6k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_1k_2k_5k_4}\ \epsilon_{k_4k_6}}
\end{aligned}
\tag{411}
$$



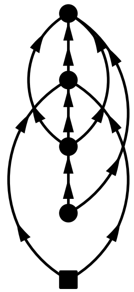
$\rightarrow$ T1:

$$
\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{412}
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_3k_4} \\
a_2 &= \epsilon^{k_5}_{k_3} \\
a_3 &= \epsilon^{k_6}_{k_1k_2k_5} \\
a_4 &= \epsilon_{k_4k_6}
\end{aligned}
$$

Diagram 200:

$$
\begin{aligned}
\text{PO4.200} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_1k_2} \Omega^{04}_{k_8k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_3}} e^{-\tau_3\epsilon^{k_8}_{k_1k_2k_5}} e^{-} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_1k_2} \Omega^{04}_{k_8k_6k_7k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_1k_2k_5k_4k_6k_7}\ \epsilon_{k_4k_6k_7k_8}}
\end{aligned}
\tag{413}
$$



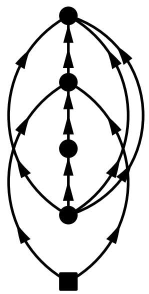
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{414}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6 k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_1 k_2 k_5}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 201:

$$\begin{aligned}\mathrm{PO4.201} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{13}_{k_8 k_7 k_1 k_2} \Omega^{04}_{k_8 k_4 k_5 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3}} e^{-\tau_3 \epsilon^{k_8}_{k_1 k_2 k_7}} e^{-\tau_4 \epsilon_{k_4 k_5 k_6 k}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{11}_{k_7 k_3} \Omega^{13}_{k_8 k_7 k_1 k_2} \Omega^{04}_{k_8 k_4 k_5 k_6}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_1 k_2 k_4 k_5 k_6}\ \epsilon_{k_1 k_2 k_7 k_4 k_5 k_6}\ \epsilon_{k_4 k_5 k_6 k_8}}\end{aligned} \tag{415}$$



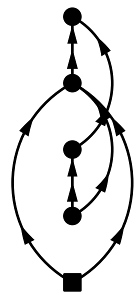
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{416}$$

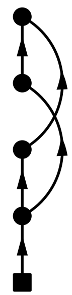
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_3}^{k_7}$$
$$a_3 = \epsilon_{k_1k_2k_7}^{k_8}$$
$$a_4 = \epsilon_{k_4k_5k_6k_8}$$

Diagram 202:

$$\begin{aligned}\mathrm{PO4.202} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{13}_{k_6k_4k_1k_2}\Omega^{02}_{k_6k_5}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon_{k_3}^{k_5}}e^{-\tau_3\epsilon_{k_1k_2k_4}^{k_6}}e^{-\tau_4\epsilon_{k_5k_6}} \\ &= \frac{-(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_3}\Omega^{13}_{k_6k_4k_1k_2}\Omega^{02}_{k_6k_5}\left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_6}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_5k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_1k_2k_4k_5}\ \epsilon_{k_5k_6}}\right]\end{aligned} \tag{417}$$



$\rightarrow$ T8:



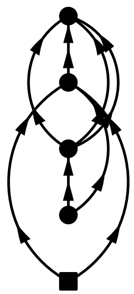
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{418}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_1k_2k_4}^{k_6}$$
$$a_4 = \epsilon_{k_5k_6}$$

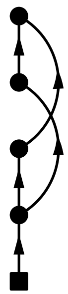
Diagram 203:

$$\mathrm{PO4.203} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_4k_1k_2} \Omega^{04}_{k_8k_5k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_3}} e^{-\tau_3\epsilon^{k_8}_{k_1k_2k_4}} e^{-\tau_4\epsilon_{k_5k_6k_7}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_4k_1k_2} \Omega^{04}_{k_8k_5k_6k_7} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_8}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4}\ \epsilon_{k_1k_2k_4k_5k_6k_7}\ \epsilon_{k_5k_6k_7k_8}} \right] \tag{419}$$



$\rightarrow$ T8:



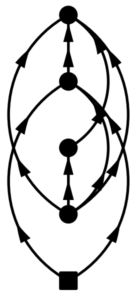
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{420}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_1k_2k_4}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

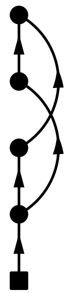
Diagram 204:

$$\mathrm{PO4.204} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{13}_{k_8k_4k_1k_2} \Omega^{04}_{k_8k_7k_5k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_3}} e^{-\tau_3\epsilon^{k_8}_{k_1k_2k_4}} e$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_3} \Omega^{13}_{k_8k_4k_1k_2} \Omega^{04}_{k_8k_7k_5k_6} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_5k_6k_8}\ \epsilon_{k_3k_1k_2k_4k_5k_6}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_1k_2k_4k_5k_6}\ \epsilon_{k_1k_2k_4k_5k_6k_7}\ \epsilon_{k_5k_6k_7k_8}} \right] \tag{421}$$



$\rightarrow$ T8:

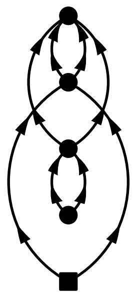


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{422}$$

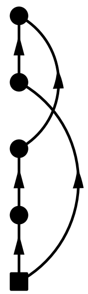
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_1k_2k_4}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 205:

$$\begin{aligned}\mathrm{PO4.205} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{04}_{k_7k_8k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_3k_4}} e^{-\tau_3\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_4\epsilon_{k_5k_6k_7k_8}} \\ &= \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{04}_{k_7k_8k_5k_6} \Bigg[\frac{1}{\epsilon_{k_7k_8}\ \epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_1k_2k_5k_6}\ \epsilon_{k_5k_6k_7k_8}} \end{aligned} \tag{423}$$



$\rightarrow$ T9:

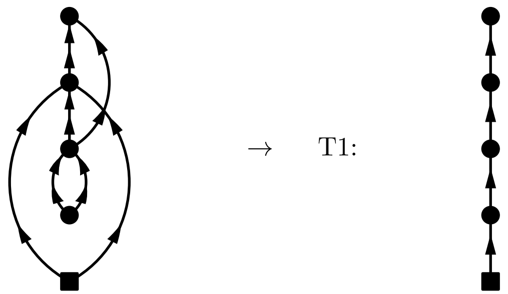


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{424}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_3k_4}^{k_5k_6}$$
$$a_3 = \epsilon_{k_1k_2}^{k_7k_8}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 206:

$$\begin{aligned}\mathrm{PO4.206} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_3k_4}} e^{-\tau_3\epsilon^{k_7}_{k_1k_2k_5}} e^{-\tau_4\epsilon_{k_6k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_4} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{02}_{k_7k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_1k_2}\ \epsilon_{k_1k_2k_5k_6}\ \epsilon_{k_6k_7}}\end{aligned} \tag{425}$$



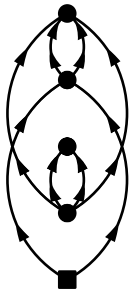
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{426}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_3k_4}^{k_5k_6}$$
$$a_3 = \epsilon_{k_1k_2k_5}^{k_7}$$
$$a_4 = \epsilon_{k_6k_7}$$

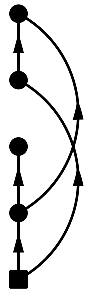
Diagram 207:

$$\text{PO4.207} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{04}_{k_7k_8k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon_{k_3k_4}} e^{-\tau_3\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_4\epsilon_{k_5k_6k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{04}_{k_7k_8k_5k_6} \left[\frac{1}{\epsilon^{k_5k_6k_7k_8}_{k_1k_2} \ \epsilon_{k_3k_4} \ \epsilon^{k_7k_8}_{k_1k_2} \ \epsilon_{k_1k_2}} + \frac{1}{\epsilon_{k_1k_2} \ \epsilon_{k_3k_4} \ \epsilon^{k_7k_8}_{k_1k_2} \ \epsilon_{k_3k_4k_5k_6k_7k_8}} \right] \tag{427}$$



$\rightarrow$ T10:



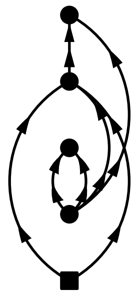
$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{428}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon_{k_5k_6k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4}$$

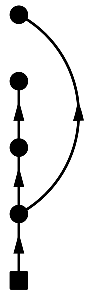
Diagram 208:

$$\text{PO4.208} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon_{k_3k_4}} e^{-\tau_3\epsilon^{k_7}_{k_1k_2k_5}} e^{-\tau_4\epsilon_{k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{02}_{k_3k_4} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{02}_{k_7k_6}}{\epsilon_{k_1k_2} \ \epsilon_{k_3k_4} \ \epsilon_{k_1k_2k_5k_6} \ \epsilon_{k_6k_7}} \tag{429}$$



$\rightarrow$ T3:

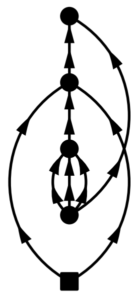


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{430}$$

$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_2 k_5}$$
$$a_3 = \epsilon_{k_6 k_7}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 209:

$$\begin{aligned}\mathrm{PO4.209} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{13}_{k_8 k_7 k_1 k_2} \Omega^{02}_{k_8 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3 k_4 k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_1 k_2 k_7}} e^{-\tau_4 \epsilon_{k_6 k} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{13}_{k_8 k_7 k_1 k_2} \Omega^{02}_{k_8 k_6}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_1 k_2 k_6}\ \epsilon_{k_1 k_2 k_7 k_6}\ \epsilon_{k_6 k_8}}\end{aligned} \tag{431}$$



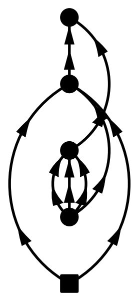
$\rightarrow$ T1:

$$T1 = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{432}$$

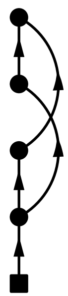
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3 k_4 k_5}$$
$$a_3 = \epsilon^{k_8}_{k_1 k_2 k_7}$$
$$a_4 = \epsilon_{k_6 k_8}$$

Diagram 210:

$$\begin{aligned}
\text{PO4.210} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{13}_{k_8 k_6 k_1 k_2} \Omega^{02}_{k_8 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_3 k_4 k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_1 k_2 k_6}} e^{-\tau_4 \epsilon_{k_7 \cdots}} \\
&= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_5} \Omega^{13}_{k_8 k_6 k_1 k_2} \Omega^{02}_{k_8 k_7} \left[\frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_8}\ \epsilon_{k_3 k_4 k_5 k_1 k_2 k_6}\ \epsilon_{k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_1 k_2 k_6}\ \epsilon_{k_1 k_2 k_6 k_7}\ \epsilon_{k_7 k_8}} \right]
\end{aligned} \tag{433}$$



$\rightarrow$ T8:

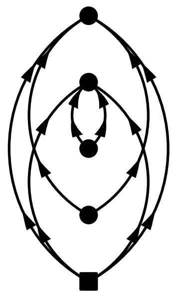


$$T8 = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{434}$$

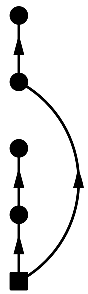
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_3k_4k_5}$$
$$a_3 = \epsilon^{k_8}_{k_1k_2k_6}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 211:

$$\begin{aligned}\mathrm{PO4.211} &= \lim_{\tau\to\infty}\frac{(-1)^4}{2(2!)^4}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{20}_{k_7k_8}\Omega^{04}_{k_7k_8k_1k_2}\Omega^{04}_{k_5k_6k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon^{k_5k_6}}e^{-\tau_2\epsilon^{k_7k_8}}e^{-\tau_3\epsilon_{k_1k_2k_7k_8}}e^{-\tau_4\epsilon_{k_3k_4k_5k_6}}\\ &= \frac{(-1)^4}{2(2!)^4}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{20}_{k_7k_8}\Omega^{04}_{k_7k_8k_1k_2}\Omega^{04}_{k_5k_6k_3k_4}}{\epsilon^{k_5k_6k_7k_8}\ \epsilon^{k_7k_8}\ \epsilon_{k_1k_2k_7k_8k_3k_4k_5k_6}\ \epsilon_{k_3k_4k_5k_6}}\end{aligned} \tag{435}$$



→ T4:



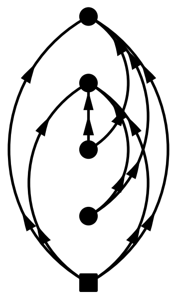
$$\mathrm{T4} = \frac{1}{(a_1+a_2)a_2(a_3+a_4)a_4} \tag{436}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}$$
$$a_3 = \epsilon_{k_1k_2k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4k_5k_6}$$

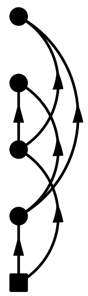
Diagram 212:

$$\mathrm{PO4.212} = \lim_{\tau\to\infty} \frac{-(-1)^4}{6(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{20}_{k_7k_8} \Omega^{04}_{k_7k_5k_1k_2} \Omega^{04}_{k_8k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}} e^{-\tau_3\epsilon_{k_1k_2k_5k_7}} e^{-\tau_4\epsilon_{k_3k_4k_6}}$$

$$= \frac{-(-1)^4}{6(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{20}_{k_7k_8} \Omega^{04}_{k_7k_5k_1k_2} \Omega^{04}_{k_8k_6k_3k_4} \left[\frac{1}{\epsilon_{k_1k_2k_7k_3k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_7}\ \epsilon_{k_3k_4k_6k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_1k_2k_5k_7}\ \epsilon_{k_3k_4k_6k_8}} \right] \tag{437}$$



$\rightarrow$ T11:



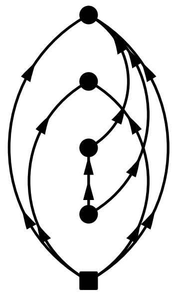
$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{438}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}$$
$$a_3 = \epsilon_{k_1k_2k_5k_7}$$
$$a_4 = \epsilon_{k_3k_4k_6k_8}$$

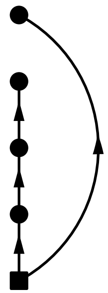
Diagram 213:

$$\mathrm{PO4.213} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_1k_2} \Omega^{04}_{k_7k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_5}} e^{-\tau_3\epsilon_{k_1k_2}} e^{-\tau_4\epsilon_{k_3k_4k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_1k_2} \Omega^{04}_{k_7k_6k_3k_4}}{\epsilon^{k_6k_7}_{k_1k_2}\ \epsilon^{k_7}_{k_5k_1k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_6k_7}} \tag{439}$$



$\rightarrow$ T5:

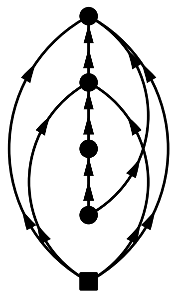


$$\text{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{440}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_1 k_2}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_7}$$

Diagram 214:

$$\begin{aligned}\text{PO4.214} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_7k_1k_2} \Omega^{04}_{k_8k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7}} e^{-\tau_3 \epsilon_{k_1k_2k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_3k_4k_6k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_7k_1k_2} \Omega^{04}_{k_8k_6k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_1k_2k_3k_4k_6}\ \epsilon_{k_1k_2k_7k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_8}}\end{aligned} \tag{441}$$



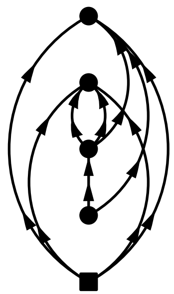
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{442}$$

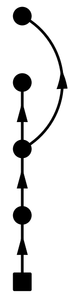
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_1 k_2 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_8}$$

Diagram 215:

$$\begin{aligned}\mathrm{PO4.215} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{04}_{k_7 k_8 k_1 k_2} \Omega^{04}_{k_9 k_6 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7 k_8 k_9}} e^{-\tau_3 \epsilon_{k_1 k_2 k_7 k_8}} e^{-\tau_4 \epsilon_{k_3} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{04}_{k_7 k_8 k_1 k_2} \Omega^{04}_{k_9 k_6 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \; \epsilon_{k_5 k_1 k_2 k_3 k_4 k_6} \; \epsilon_{k_1 k_2 k_7 k_8} \; \epsilon_{k_3 k_4 k_6 k_9}}\end{aligned} \tag{443}$$



$\rightarrow$ T2:

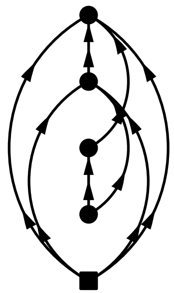


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{444}$$

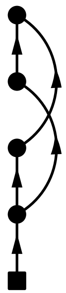
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_1 k_2 k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_9}$$

Diagram 216:

$$\begin{aligned}\mathrm{PO4.216} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_6k_1k_2} \Omega^{04}_{k_8k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_1k_2k_6}} e^{-\tau_4 \epsilon_{k_3k_4k_7k_8}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_6k_1k_2} \Omega^{04}_{k_8k_7k_3k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_3k_4k_8} \ \epsilon_{k_5k_1k_2k_6k_3k_4} \ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_1k_2k_6k_3k_4} \ \epsilon_{k_1k_2k_6k_3k_4k_7} \ \epsilon_{k_3k_4k_7k_8}} \right]\end{aligned} \tag{445}$$



$\rightarrow$ T8:

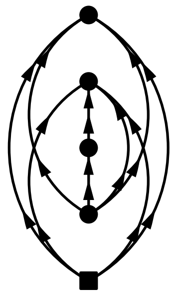


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{446}$$

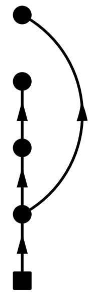
$$\begin{aligned} a_1 &= \epsilon^{k_5k_6} \\ a_2 &= \epsilon^{k_7}_{k_5} \\ a_3 &= \epsilon^{k_8}_{k_1k_2k_6} \\ a_4 &= \epsilon_{k_3k_4k_7k_8} \end{aligned}$$

Diagram 217:

$$\begin{aligned}\mathrm{PO4.217} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_5} \Omega^{04}_{k_9k_6k_1k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_5}} e^{-\tau_3 \epsilon_{k_1k_2k_6k_9}} e^{-\tau_4 \epsilon_{k_3} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_5} \Omega^{04}_{k_9k_6k_1k_2} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4} \ \epsilon^{k_9}_{k_5} \ \epsilon_{k_1k_2k_6k_9} \ \epsilon^{k_9}_{k_5k_3k_4k_7k_8}}\end{aligned} \tag{447}$$



$\rightarrow$ T3:

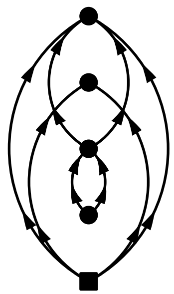


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{448}$$

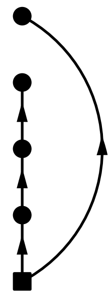
$$\begin{aligned} a_1 &= \epsilon^{k_5 k_6 k_7 k_8} \\ a_2 &= \epsilon_{k_3 k_4 k_7 k_8} \\ a_3 &= \epsilon_{k_5}^{k_9} \\ a_4 &= \epsilon_{k_1 k_2 k_6 k_9} \end{aligned}$$

Diagram 218:

$$\begin{aligned} \mathrm{PO4.218} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_6} \Omega^{02}_{k_1 k_2} \Omega^{04}_{k_7 k_8 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_5 k_6}} e^{-\tau_3 \epsilon_{k_1 k_2}} e^{-\tau_4 \epsilon_{k_3 k_4 k_7 k_8}} \\ &= \frac{(-1)^4}{(2!)^4} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_6} \Omega^{02}_{k_1 k_2} \Omega^{04}_{k_7 k_8 k_3 k_4}}{\epsilon^{k_7 k_8}_{k_1 k_2}\ \epsilon^{k_7 k_8}_{k_5 k_6 k_1 k_2}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_7 k_8}} \end{aligned} \tag{449}$$



$\rightarrow$ T5:

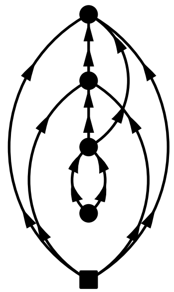


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{450}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_5 k_6}$$
$$a_3 = \epsilon_{k_1 k_2}$$
$$a_4 = \epsilon_{k_3 k_4 k_7 k_8}$$

Diagram 219:

$$\begin{aligned}\mathrm{PO4.219} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_6} \Omega^{13}_{k_9 k_7 k_1 k_2} \Omega^{04}_{k_9 k_8 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_5 k_6}} e^{-\tau_3 \epsilon^{k_9}_{k_1 k_2 k_7}} e^{-\tau_4 \epsilon_{k_3 k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_6} \Omega^{13}_{k_9 k_7 k_1 k_2} \Omega^{04}_{k_9 k_8 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6 k_1 k_2 k_3 k_4} \ \epsilon_{k_1 k_2 k_7 k_3 k_4 k_8} \ \epsilon_{k_3 k_4 k_8 k_9}}\end{aligned} \tag{451}$$



$\rightarrow$ T1:

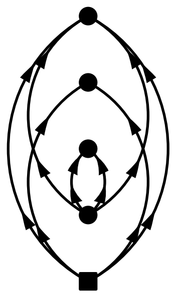
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{452}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_5 k_6}$$
$$a_3 = \epsilon^{k_9}_{k_1 k_2 k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

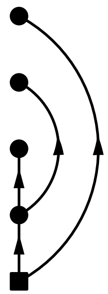
Diagram 220:

$$\mathrm{PO4.220} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{02}_{k_1k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon_{k_5k_6}} e^{-\tau_3\epsilon_{k_1k_2}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)^4} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{02}_{k_1k_2} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_7k_8}} \tag{453}$$



$\rightarrow$ T7:



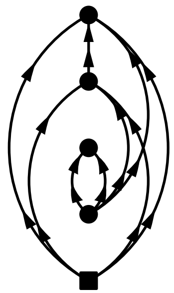
$$\mathrm{T7} = \frac{1}{(a_1+a_2+a_3)a_2a_3a_4} \tag{454}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_5k_6}$$
$$a_3 = \epsilon_{k_3k_4k_7k_8}$$
$$a_4 = \epsilon_{k_1k_2}$$

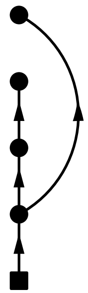
Diagram 221:

$$\mathrm{PO4.221} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_9k_7k_1k_2} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon_{k_5k_6}} e^{-\tau_3\epsilon^{k_9}_{k_1k_2k_7}} e^{-\tau_4\epsilon_{k_3}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_9k_7k_1k_2} \Omega^{04}_{k_9k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2k_7k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_9}} \tag{455}$$



$\rightarrow$ T3:

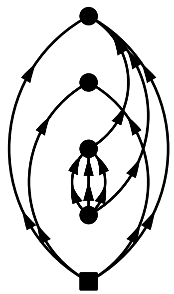


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{456}$$

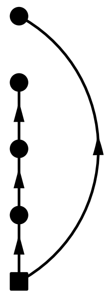
$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1 k_2 k_7}$$
$$a_3 = \epsilon_{k_3 k_4 k_8 k_9}$$
$$a_4 = \epsilon_{k_5 k_6}$$

Diagram 222:

$$\begin{aligned}\mathrm{PO4.222} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{13}_{k_9 k_5 k_6 k_7} \Omega^{02}_{k_1 k_2} \Omega^{04}_{k_9 k_8 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6 k_7 k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_5 k_6 k_7}} e^{-\tau_3 \epsilon_{k_1 k_2}} e^{-\tau_4 \epsilon_{k_3 k_4 k_8 k_9}} \\ &= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{13}_{k_9 k_5 k_6 k_7} \Omega^{02}_{k_1 k_2} \Omega^{04}_{k_9 k_8 k_3 k_4}}{\epsilon_{k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_3 k_4 k_8}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_8 k_9}} \end{aligned} \tag{457}$$



$\rightarrow$ T5:

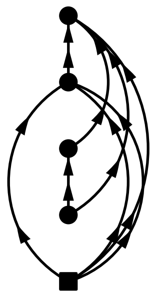


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{458}$$

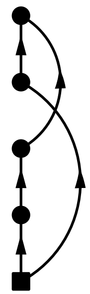
$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon^{k_9}_{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_3 k_4 k_8 k_9}$$
$$a_4 = \epsilon_{k_1 k_2}$$

Diagram 223:

$$\mathrm{PO4.223} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{11}_{k_7 k_5} \Omega^{13}_{k_8 k_1 k_2 k_3} \Omega^{04}_{k_8 k_7 k_6 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_1 k_2 k_3}} e^{-\tau_4 \epsilon_{k_4 k_6 k_7 k_8}}$$
$$= \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{11}_{k_7 k_5} \Omega^{13}_{k_8 k_1 k_2 k_3} \Omega^{04}_{k_8 k_7 k_6 k_4} \Bigg[\frac{1}{\epsilon_{k_4 k_8}\ \epsilon_{k_5 k_4 k_6 k_8}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_4 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_4 k_6 k_8}\ \epsilon_{k_5 k_1 k_2 k_3 k_4 k_6}\ \epsilon_{k_4 k_6 k_7 k_8}} + \frac{}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_1 k_2 k_3 k_4 k_6} \cdots} \tag{459}$$



$\rightarrow$ T9:

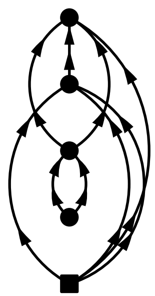


$$\mathrm{T9} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{460}$$

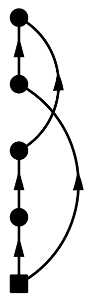
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_1 k_2 k_3}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 224:

$$\mathrm{PO4.224} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{04}_{k_9k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3 \epsilon^{k_9}_{k_1k_2k_3}} e^{-\tau_4 \epsilon_{k_4k_7k_8k_9}}$$
$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{04}_{k_9k_7k_8k_4} \Bigg[\frac{1}{\epsilon_{k_4k_9}\ \epsilon_{k_5k_6k_4k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_4k_9}\ \epsilon_{k_5k_6k_1k_2k_3k_4}\ \epsilon_{k_4k_7k_8k_9}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k}} \tag{461}$$



$\rightarrow$ T9:

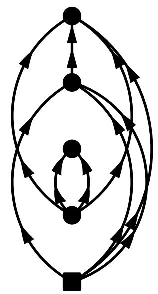


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{462}$$

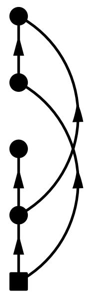
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5 k_6}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_1 k_2 k_3}^{k_9}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 225:

$$\text{PO4.225} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{04}_{k_9k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon_{k_5k_6}} e^{-\tau_3\epsilon^{k_9}_{k_1k_2k_3}} e^{-\tau_4\epsilon_{k_4k_7k_8k_9}}$$
$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_9k_1k_2k_3} \Omega^{04}_{k_9k_7k_8k_4} \left[\frac{1}{\epsilon_{k_4k_9}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2k_3k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_9}} \right] \tag{463}$$



$\rightarrow$ T10:

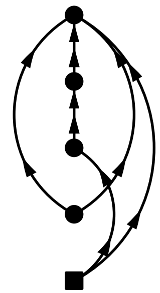


$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{464}$$

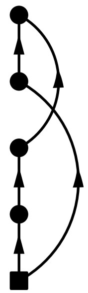
$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_5k_6}$$
$$a_3 = \epsilon^{k_9}_{k_1k_2k_3}$$
$$a_4 = \epsilon_{k_4k_7k_8k_9}$$

Diagram 226:

$$\text{PO4.226} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{04}_{k_6k_3k_4k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1}} e^{-\tau_3\epsilon^{k_6}_{k_5}} e^{-\tau_4\epsilon_{k_2k_3k_4k_6}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{04}_{k_6k_3k_4k_2} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_6}} + \frac{1}{\epsilon_{k_5k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_6}} + \frac{1}{\epsilon_{k_2k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_2}\ \epsilon_{k_2k_3k_4k_6}} \right] \tag{465}$$



$\rightarrow$ T9:

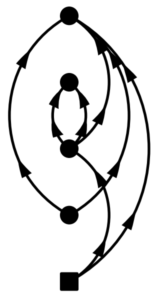


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{466}$$

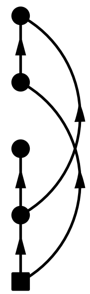
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6}$$
$$a_3 = \epsilon^{k_3 k_4}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_6}$$

Diagram 227:

$$\begin{aligned} \mathrm{PO4.227} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{04}_{k_7k_3k_4k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_3\epsilon_{k_5k_6}} e^{-\tau_4\epsilon_{k_2k_3k_4k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{04}_{k_7k_3k_4k_2} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_3k_4k_7}} + \frac{1}{\epsilon_{k_2k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_3k_4k_7}} \right] \end{aligned} \tag{467}$$



$\rightarrow$ T10:

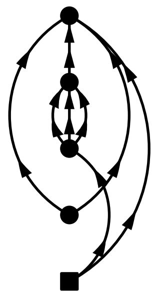


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{468}$$

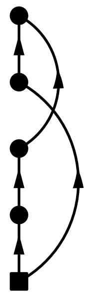
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6}$$
$$a_3 = \epsilon^{k_3 k_4}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_7}$$

Diagram 228:

$$\begin{aligned}\mathrm{PO4.228} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_7} \Omega^{04}_{k_8 k_3 k_4 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_3 \epsilon_{k_5 k_6 k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_2 k_3 k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_7} \Omega^{04}_{k_8 k_3 k_4 k_2} \Bigg[\frac{1}{\epsilon_{k_1 k_2 k_8}^{k_5 k_6 k_7}\ \epsilon_{k_1 k_2 k_3 k_4 k_8}^{k_5 k_6 k_7}\ \epsilon_{k_1 k_2}\ \epsilon_{k_2 k_3 k_4 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_3 k_4 k_8}^{k_5 k_6 k_7}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_3 k_4 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_2 k_3}} \end{aligned} \tag{469}$$



$\rightarrow$ T9:

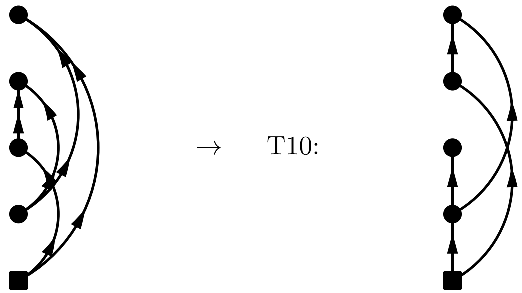


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{470}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_5 k_6 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_8}$$

Diagram 229:

$$\begin{aligned}\mathrm{PO4.229} &= \lim_{\tau\to\infty} (-1)^4 \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{02}_{k_5 k_3} \Omega^{02}_{k_4 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_1}^{k_5}} e^{-\tau_3 \epsilon_{k_3 k_5}} e^{-\tau_4 \epsilon_{k_2 k_4}} \\ &= (-1)^4 \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{02}_{k_5 k_3} \Omega^{02}_{k_4 k_2} \left[\frac{1}{\epsilon^{k_3 k_4} \ \epsilon_{k_1}^{k_4} \ \epsilon_{k_3 k_5} \ \epsilon_{k_1 k_2}} + \frac{1}{\epsilon^{k_3 k_4} \ \epsilon_{k_1 k_2} \ \epsilon_{k_3 k_5} \ \epsilon_{k_3 k_5 k_2 k_4}} \right] \end{aligned} \tag{471}$$



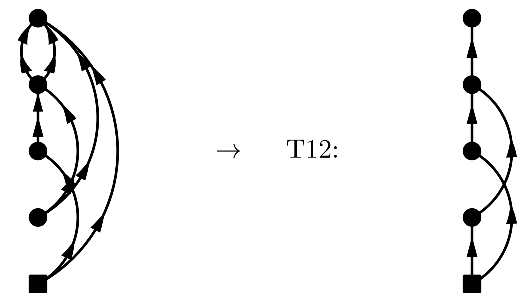
$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{472}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon^{k_3 k_4}$$
$$a_3 = \epsilon_{k_2 k_4}$$
$$a_4 = \epsilon_{k_3 k_5}$$

Diagram 230:

$$\text{PO4.230} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{22}_{k_6k_7k_5k_3}\Omega^{04}_{k_6k_7k_4k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1}} e^{-\tau_3\epsilon^{k_6k_7}_{k_3k_5}} e^{-\tau_4\epsilon_{k_2k_4k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{22}_{k_6k_7k_5k_3}\Omega^{04}_{k_6k_7k_4k_2} \left[\frac{1}{\epsilon_{k_5k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_5k_2k_4}\ \epsilon_{k_2k_4k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_3k_5k_2k_4}\ \epsilon_{k_2k_4k_6k_7}} \right] \quad (473)$$



→ T12:

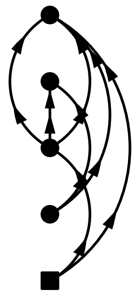
$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \quad (474)$$

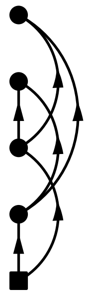
$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1}$$
$$a_3 = \epsilon^{k_6k_7}_{k_3k_5}$$
$$a_4 = \epsilon_{k_2k_4k_6k_7}$$

Diagram 231:

$$\text{PO4.231} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_3}\Omega^{04}_{k_6k_7k_4k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_3\epsilon_{k_3k_5}} e^{-\tau_4\epsilon_{k_2k_4k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_3}\Omega^{04}_{k_6k_7k_4k_2} \left[\frac{1}{\epsilon_{k_5k_2k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_5}\ \epsilon_{k_2k_4k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_3k_5}\ \epsilon_{k_2k_4k_6k_7}} \right] \quad (475)$$



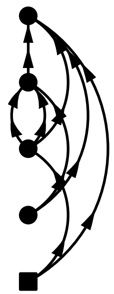
$\rightarrow$ T11: 

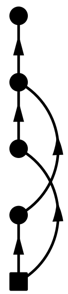
$$\text{T11} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)a_3 a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{476}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_3 k_5}$$
$$a_4 = \epsilon_{k_2 k_4 k_6 k_7}$$

Diagram 232:

$$\text{PO4.232} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_3} \Omega^{04}_{k_8 k_7 k_4 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_3 \epsilon_{k_3 k_5 k_6}^{k_8}} e$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_3} \Omega^{04}_{k_8 k_7 k_4 k_2} \left[\frac{1}{\epsilon_{k_5 k_6 k_2 k_7}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_5 k_6 k_2 k_4 k_7}\ \epsilon_{k_2 k_4 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_2 k_4}\ \epsilon_{k_3 k_5 k_6 k_2 k_4 k_7}\ \epsilon_{k_2 k_4 k_7 k_8}} \right] \tag{477}$$



$\rightarrow$ T12: 

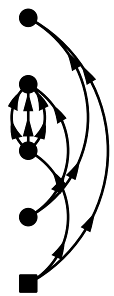
$$T12 = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{478}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_3k_5k_6}$$
$$a_4 = \epsilon_{k_2k_4k_7k_8}$$

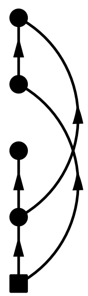
Diagram 233:

$$PO4.233 = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{04}_{k_5k_6k_7k_3} \Omega^{02}_{k_4k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_3\epsilon_{k_3k_5k_6k_7}} e^{-\tau_4\epsilon_{k_2k_4}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{04}_{k_5k_6k_7k_3} \Omega^{02}_{k_4k_2} \left[\frac{1}{\epsilon^{k_3k_5k_6k_7}_{k_1k_2} \ \epsilon^{k_5k_6k_7}_{k_1} \ \epsilon_{k_1k_2} \ \epsilon_{k_2k_4}} + \frac{1}{\epsilon_{k_1k_2} \ \epsilon^{k_5k_6k_7}_{k_1} \ \epsilon_{k_3k_5k_6k_7k_2k_4} \ \epsilon_{k_2k_4}} \right] \tag{479}$$



$\rightarrow$ T10:



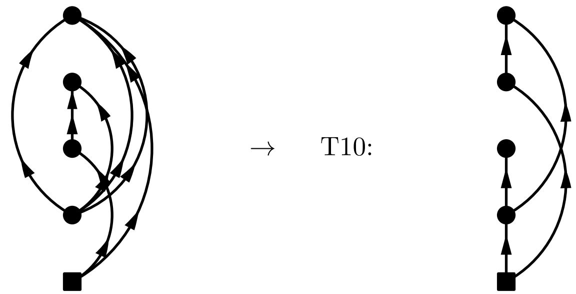
$$T10 = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{480}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_3 = \epsilon_{k_3k_5k_6k_7}$$
$$a_4 = \epsilon_{k_2k_4}$$

Diagram 234:

$$\mathrm{PO4.234} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_7k_3} \Omega^{04}_{k_4k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1}} e^{-\tau_3 \epsilon_{k_3k_7}} e^{-\tau_4 \epsilon_{k_2k_4k_5k_6}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_7k_3} \Omega^{04}_{k_4k_5k_6k_2} \left[\frac{1}{\epsilon^{k_3k_7}_{k_1k_2}\ \epsilon^{k_7}_{k_1}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_4k_5k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon^{k_7}_{k_1}\ \epsilon_{k_3k_7k_2k_4k_5k_6}\ \epsilon_{k_2k_4k_5k_6}} \right] \tag{481}$$



$\rightarrow$ T10:

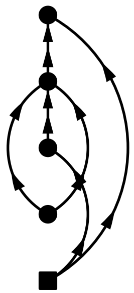
$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{482}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1}$$
$$a_3 = \epsilon_{k_3k_7}$$
$$a_4 = \epsilon_{k_2k_4k_5k_6}$$

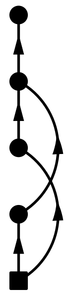
Diagram 235:

$$\mathrm{PO4.235} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_3k_4} \Omega^{02}_{k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5}_{k_1}} e^{-\tau_3 \epsilon^{k_6}_{k_3k_4k_5}} e^{-\tau_4 \epsilon_{k_2k_6}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_3k_4} \Omega^{02}_{k_6k_2} \left[\frac{1}{\epsilon_{k_5k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_2k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_2k_6}} \right] \tag{483}$$



$\rightarrow$ T12:

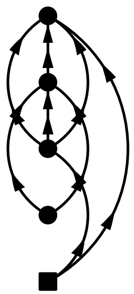


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{484}$$

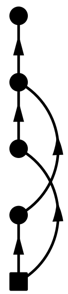
$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_1}^{k_5}$$
$$a_3 = \epsilon_{k_3 k_4 k_5}^{k_6}$$
$$a_4 = \epsilon_{k_2 k_6}$$

Diagram 236:

$$\begin{aligned} \mathrm{PO4.236} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_3 k_4} \Omega^{04}_{k_8 k_6 k_7 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_3 \epsilon_{k_3 k_4 k_5}^{k_8}} e^{-\tau_4 \epsilon_{k_2 k_6 k_7 k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_3 k_4} \Omega^{04}_{k_8 k_6 k_7 k_2} \left[\frac{1}{\epsilon_{k_5 k_2 k_6 k_7} \ \epsilon_{k_1 k_2} \ \epsilon_{k_3 k_4 k_5 k_2 k_6 k_7} \ \epsilon_{k_2 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_1 k_3 k_4 k_2} \ \epsilon_{k_3 k_4 k_5 k_2 k_6 k_7} \ \epsilon_{k_2 k_6 k_7 k_8}} \right] \end{aligned} \tag{485}$$



$\rightarrow$ T12:



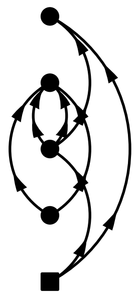
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{486}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_3 = \epsilon_{k_3k_4k_5}^{k_8}$$
$$a_4 = \epsilon_{k_2k_6k_7k_8}$$

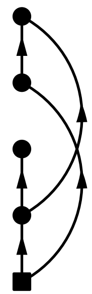
Diagram 237:

$$\mathrm{PO4.237} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{04}_{k_5k_6k_3k_4} \Omega^{02}_{k_7k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_3\epsilon_{k_3k_4k_5k_6}} e^{-\tau_4\epsilon_{k_2k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{04}_{k_5k_6k_3k_4} \Omega^{02}_{k_7k_2} \left[\frac{1}{\epsilon^{k_3k_4}\ \epsilon_{k_1k_2}^{k_3k_4k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_7}} + \frac{1}{\epsilon^{k_3k_4}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_6k_2k_7}\ \epsilon_{k_2k_7}} \right] \tag{487}$$



$\rightarrow$ T10:



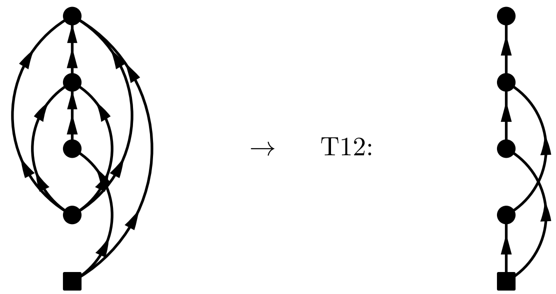
$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{488}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon^{k_3k_4}$$
$$a_3 = \epsilon_{k_3k_4k_5k_6}$$
$$a_4 = \epsilon_{k_2k_7}$$

Diagram 238:

$$\mathrm{PO4.238} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_3k_4} \Omega^{04}_{k_8k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1}} e^{-\tau_3\epsilon^{k_8}_{k_3k_4k_7}} e^{-\tau_4\epsilon_{k_2k_5k_6k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_3k_4} \Omega^{04}_{k_8k_5k_6k_2} \left[\frac{1}{\epsilon_{k_7k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_7k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2k_5k_6}\ \epsilon_{k_3k_4k_7k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_8}} \right] \tag{489}$$



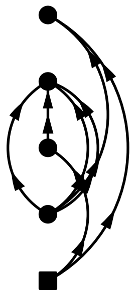
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{490}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_3k_4k_7}$$
$$a_4 = \epsilon_{k_2k_5k_6k_8}$$

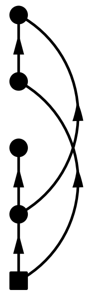
Diagram 239:

$$\mathrm{PO4.239} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_3k_4k_5} \Omega^{02}_{k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1}} e^{-\tau_3\epsilon_{k_3k_4k_5k_7}} e^{-\tau_4\epsilon_{k_2k_6}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_3k_4k_5} \Omega^{02}_{k_6k_2} \left[\frac{1}{\epsilon^{k_3k_4k_5k_6}\ \epsilon^{k_3k_4k_5k_7}_{k_1k_2}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_6}} + \frac{1}{\epsilon^{k_3k_4k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_7k_2k_6}\ \epsilon_{k_2k_6}} \right] \tag{491}$$



$\rightarrow$ T10:

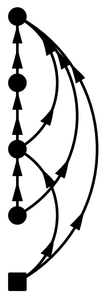


$$\text{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{492}$$

$$a_1 = \epsilon_{k_1}^{k_7}$$
$$a_2 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_3 = \epsilon_{k_3 k_4 k_5 k_7}$$
$$a_4 = \epsilon_{k_2 k_6}$$

Diagram 240:

$$\begin{aligned}\text{PO4.240} &= \lim_{\tau\to\infty} -(-1)^4 \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{11}_{k_7 k_5} \Omega^{04}_{k_7 k_6 k_4 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}_{k_1 k_3}} e^{-\tau_3 \epsilon^{k_7}_{k_5}} e^{-\tau_4 \epsilon_{k_2 k_4 k_6}} \\ &= -(-1)^4 \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{11}_{k_7 k_5} \Omega^{04}_{k_7 k_6 k_4 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_2 k_4}\ \epsilon_{k_5 k_2 k_4 k_6}\ \epsilon_{k_2 k_4 k_6 k_7}}\end{aligned} \tag{493}$$



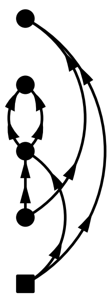
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{494}$$

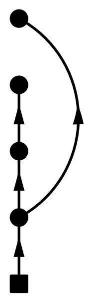
$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_1k_3}$$
$$a_3 = \epsilon^{k_7}_{k_5}$$
$$a_4 = \epsilon_{k_2k_4k_6k_7}$$

Diagram 241:

$$\begin{aligned}\mathrm{PO4.241} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{02}_{k_5k_6} \Omega^{02}_{k_4k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_1k_3}} e^{-\tau_3\epsilon_{k_5k_6}} e^{-\tau_4\epsilon_{k_2k_4}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{02}_{k_5k_6} \Omega^{02}_{k_4k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_4}}\end{aligned} \tag{495}$$



$\rightarrow$ T3:



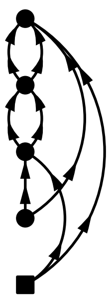
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{496}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_1k_3}$$
$$a_3 = \epsilon_{k_5k_6}$$
$$a_4 = \epsilon_{k_2k_4}$$

Diagram 242:

$$\text{PO4.242} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_4k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_1k_3}} e^{-\tau_3\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_4\epsilon_{k_2k_4k_7k_8}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_4k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_5k_6k_2k_4}\ \epsilon_{k_2k_4k_7k_8}} \tag{497}$$



$\rightarrow$ T1:

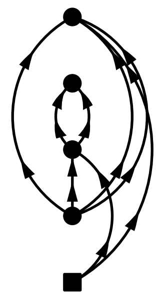
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{498}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_1k_3}$$
$$a_3 = \epsilon^{k_7k_8}_{k_5k_6}$$
$$a_4 = \epsilon_{k_2k_4k_7k_8}$$

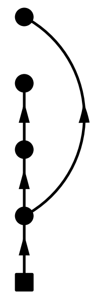
Diagram 243:

$$\text{PO4.243} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_4k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_3}} e^{-\tau_3\epsilon_{k_7k_8}} e^{-\tau_4\epsilon_{k_2k_4k_5k_6}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_4k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3}\ \epsilon_{k_7k_8}\ \epsilon_{k_2k_4k_5k_6}} \tag{499}$$



$\rightarrow$ T3:

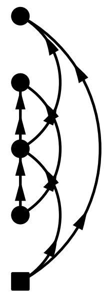


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{500}$$

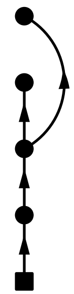
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_3}$$
$$a_3 = \epsilon_{k_7k_8}$$
$$a_4 = \epsilon_{k_2k_4k_5k_6}$$

Diagram 244:

$$\begin{aligned}\mathrm{PO4.244} &= \lim_{\tau\to\infty}(-1)^4 \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{22}_{k_5k_6k_3k_1}\Omega^{02}_{k_5k_4}\Omega^{02}_{k_6k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5k_6}_{k_1k_3}}e^{-\tau_3\epsilon_{k_4k_5}}e^{-\tau_4\epsilon_{k_2k_6}} \\ &= (-1)^4\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{22}_{k_5k_6k_3k_1}\Omega^{02}_{k_5k_4}\Omega^{02}_{k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2}\ \epsilon_{k_4k_5}\ \epsilon_{k_2k_6}}\end{aligned} \tag{501}$$



$\rightarrow$ T2:

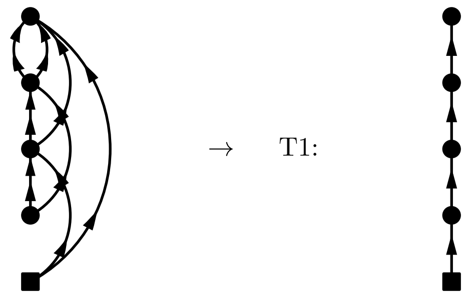


$$
\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{502}
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_3 k_4} \\
a_2 &= \epsilon^{k_5 k_6}_{k_1 k_3} \\
a_3 &= \epsilon_{k_4 k_5} \\
a_4 &= \epsilon_{k_2 k_6}
\end{aligned}
$$

Diagram 245:

$$
\begin{aligned}
\mathrm{PO4.245} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{22}_{k_7 k_8 k_5 k_4} \Omega^{04}_{k_7 k_8 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}_{k_1 k_3}} e^{-\tau_3 \epsilon^{k_7 k_8}_{k_4 k_5}} e^{-\tau_4 \epsilon_{k_2}} \\
&= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{22}_{k_7 k_8 k_5 k_4} \Omega^{04}_{k_7 k_8 k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_4 k_2}\ \epsilon_{k_4 k_5 k_2 k_6}\ \epsilon_{k_2 k_6 k_7 k_8}}
\end{aligned} \tag{503}
$$



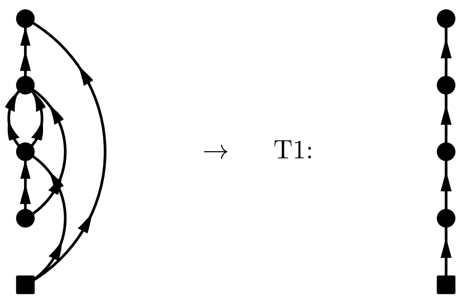
$$
\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{504}
$$

$$
\begin{aligned}
a_1 &= \epsilon^{k_3 k_4} \\
a_2 &= \epsilon^{k_5 k_6}_{k_1 k_3} \\
a_3 &= \epsilon^{k_7 k_8}_{k_4 k_5} \\
a_4 &= \epsilon_{k_2 k_6 k_7 k_8}
\end{aligned}
$$

Diagram 246:

$$\mathrm{PO4.246} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{13}_{k_7k_5k_6k_4} \Omega^{02}_{k_7k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5k_6}_{k_1k_3}} e^{-\tau_3 \epsilon^{k_7}_{k_4k_5k_6}} e^{-\tau_4 \epsilon_{k_2k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{13}_{k_7k_5k_6k_4} \Omega^{02}_{k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2}\ \epsilon_{k_4k_5k_6k_2}\ \epsilon_{k_2k_7}} \tag{505}$$



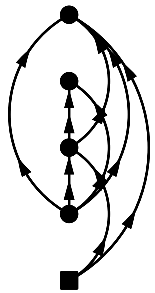
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{506}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_1k_3}$$
$$a_3 = \epsilon^{k_7}_{k_4k_5k_6}$$
$$a_4 = \epsilon_{k_2k_7}$$

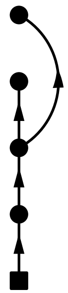
Diagram 247:

$$\mathrm{PO4.247} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{02}_{k_7k_4} \Omega^{04}_{k_8k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_3}} e^{-\tau_3 \epsilon_{k_4k_7}} e^{-}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_3k_1} \Omega^{02}_{k_7k_4} \Omega^{04}_{k_8k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2k_5k_6}\ \epsilon_{k_4k_7}\ \epsilon_{k_2k_5k_6k_8}} \tag{507}$$



$\rightarrow$ T2:

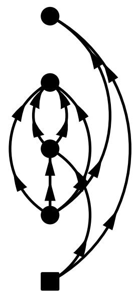


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{508}$$

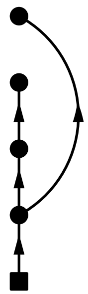
$$\begin{aligned} a_1 &= \epsilon^{k_3 k_4 k_5 k_6} \\ a_2 &= \epsilon^{k_7 k_8}_{k_1 k_3} \\ a_3 &= \epsilon_{k_4 k_7} \\ a_4 &= \epsilon_{k_2 k_5 k_6 k_8} \end{aligned}$$

Diagram 248:

$$\begin{aligned} \mathrm{PO4.248} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_3 k_1} \Omega^{04}_{k_7 k_8 k_4 k_5} \Omega^{02}_{k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_1 k_3}} e^{-\tau_3 \epsilon_{k_4 k_5 k_7 k_8}} e^{-\tau_4 \epsilon_{k_2 \cdots}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{22}_{k_7 k_8 k_3 k_1} \Omega^{04}_{k_7 k_8 k_4 k_5} \Omega^{02}_{k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_4 k_5}\ \epsilon_{k_4 k_5 k_7 k_8}\ \epsilon_{k_2 k_6}} \end{aligned} \tag{509}$$



$\rightarrow$ T3:

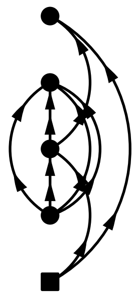


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{510}$$

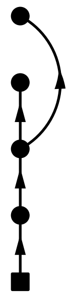
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_1k_3}^{k_7k_8}$$
$$a_3 = \epsilon_{k_4k_5k_7k_8}$$
$$a_4 = \epsilon_{k_2k_6}$$

Diagram 249:

$$\mathrm{PO4.249} = \lim_{\tau\to\infty}\frac{(-1)^4}{(3!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{40}_{k_3k_4k_5k_6}\Omega^{22}_{k_7k_8k_3k_1}\Omega^{04}_{k_7k_4k_5k_6}\Omega^{02}_{k_8k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)e^{-\tau_1\epsilon^{k_3k_4k_5k_6}}e^{-\tau_2\epsilon_{k_1k_3}^{k_7k_8}}e^{-\tau_3\epsilon_{k_4k_5k_6k_7}}e^{-\tau_4\epsilon_{k_2k_8}}$$
$$= \frac{(-1)^4}{(3!)}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{40}_{k_3k_4k_5k_6}\Omega^{22}_{k_7k_8k_3k_1}\Omega^{04}_{k_7k_4k_5k_6}\Omega^{02}_{k_8k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_5k_6k_2}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_2k_8}} \tag{511}$$



$\rightarrow$ T2:



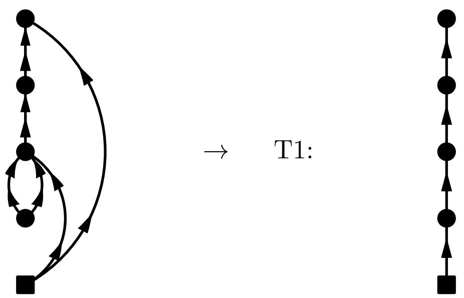
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{512}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_1k_3}^{k_7k_8}$$
$$a_3 = \epsilon_{k_4k_5k_6k_7}$$
$$a_4 = \epsilon_{k_2k_8}$$

Diagram 250:

$$\mathrm{PO4.250} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_4k_1} \Omega^{11}_{k_6k_5} \Omega^{02}_{k_6k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1k_3k_4}} e^{-\tau_3\epsilon^{k_6}_{k_5}} e^{-\tau_4\epsilon_{k_2k_6}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_4k_1} \Omega^{11}_{k_6k_5} \Omega^{02}_{k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2}\ \epsilon_{k_5k_2}\ \epsilon_{k_2k_6}} \tag{513}$$



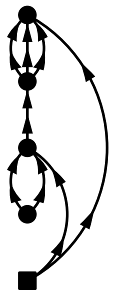
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{514}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1k_3k_4}$$
$$a_3 = \epsilon^{k_6}_{k_5}$$
$$a_4 = \epsilon_{k_2k_6}$$

Diagram 251:

$$\mathrm{PO4.251} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_4k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{04}_{k_6k_7k_8k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1k_3k_4}} e^{-\tau_3\epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_4\epsilon_{k_2k_6k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_4k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{04}_{k_6k_7k_8k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2}\ \epsilon_{k_5k_2}\ \epsilon_{k_2k_6k_7k_8}} \tag{515}$$



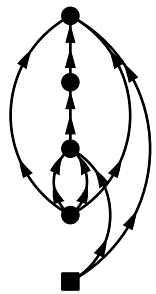
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{516}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1 k_3 k_4}$$
$$a_3 = \epsilon^{k_6 k_7 k_8}_{k_5}$$
$$a_4 = \epsilon_{k_2 k_6 k_7 k_8}$$

Diagram 252:

$$\begin{aligned}\mathrm{PO4.252} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{11}_{k_8k_7} \Omega^{04}_{k_8k_5k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1k_3k_4}} e^{-\tau_3\epsilon^{k_8}_{k_7}} e^{-\tau_4\epsilon_{k_2k_5k_6k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{11}_{k_8k_7} \Omega^{04}_{k_8k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2k_5k_6}\ \epsilon_{k_7k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_8}}\end{aligned} \tag{517}$$



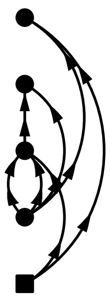
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{518}$$

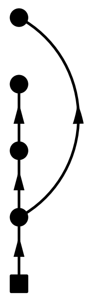
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_3k_4}$$
$$a_3 = \epsilon^{k_8}_{k_7}$$
$$a_4 = \epsilon_{k_2k_5k_6k_8}$$

Diagram 253:

$$\begin{aligned}\mathrm{PO4.253} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{02}_{k_7k_5} \Omega^{02}_{k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1k_3k_4}} e^{-\tau_3\epsilon_{k_5k_7}} e^{-\tau_4\epsilon_{k_2k_6}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{02}_{k_7k_5} \Omega^{02}_{k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_5}\ \epsilon_{k_5k_7}\ \epsilon_{k_2k_6}}\end{aligned} \tag{519}$$



$\rightarrow$ T3:

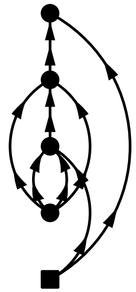


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3a_4} \tag{520}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_3k_4}$$
$$a_3 = \epsilon_{k_5k_7}$$
$$a_4 = \epsilon_{k_2k_6}$$

Diagram 254:

$$\begin{aligned}\text{PO4.254} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{13}_{k_8k_7k_5k_6} \Omega^{02}_{k_8k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_3k_4}} e^{-\tau_3 \epsilon^{k_8}_{k_5k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_4k_1} \Omega^{13}_{k_8k_7k_5k_6} \Omega^{02}_{k_8k_2}}{\epsilon_{k_1k_2} \ \epsilon_{k_1k_3k_4k_5k_6k_2} \ \epsilon_{k_5k_6k_7k_2} \ \epsilon_{k_2k_8}} \end{aligned} \tag{521}$$



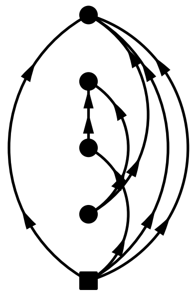
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{522}$$

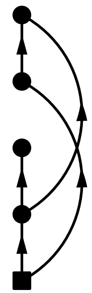
$$\begin{aligned} a_1 &= \epsilon^{k_3k_4k_5k_6} \\ a_2 &= \epsilon^{k_7}_{k_1k_3k_4} \\ a_3 &= \epsilon^{k_8}_{k_5k_6k_7} \\ a_4 &= \epsilon_{k_2k_8} \end{aligned}$$

Diagram 255:

$$\begin{aligned}\text{PO4.255} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_7k_5} \Omega^{04}_{k_6k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1}} e^{-\tau_3 \epsilon_{k_5k_7}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_6}} \\ &= \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_7k_5} \Omega^{04}_{k_6k_2k_3k_4} \left[\frac{1}{\epsilon^{k_5k_7}_{k_1k_2k_3k_4} \ \epsilon^{k_7}_{k_1} \ \epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_2k_3k_4k_6}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon^{k_7}_{k_1} \ \epsilon_{k_5k_7k_2k_3k_4k_6} \ \epsilon_{k_2k_3k_4k_6}} \right] \end{aligned} \tag{523}$$



$\rightarrow$ T10:

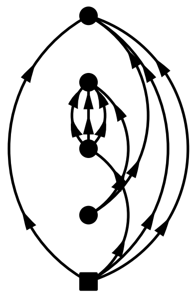


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{524}$$

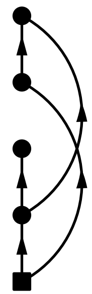
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7}$$
$$a_3 = \epsilon_{k_5k_7}$$
$$a_4 = \epsilon_{k_2k_3k_4k_6}$$

Diagram 256:

$$\begin{aligned}\mathrm{PO4.256} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(3!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{31}_{k_7k_8k_9k_1}\Omega^{04}_{k_7k_8k_9k_5}\Omega^{04}_{k_6k_2k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon^{k_5k_6}}e^{-\tau_2\epsilon_{k_1}^{k_7k_8k_9}}e^{-\tau_3\epsilon_{k_5k_7k_8k_9}}e^{-\tau_4\epsilon_{k_2k_3k_4k_6}}\\ &= \frac{(-1)^4}{(3!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{31}_{k_7k_8k_9k_1}\Omega^{04}_{k_7k_8k_9k_5}\Omega^{04}_{k_6k_2k_3k_4}\left[\frac{1}{\epsilon^{k_5k_7k_8k_9}_{k_1k_2k_3k_4}\ \epsilon^{k_7k_8k_9}_{k_1}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_6}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7k_8k_9}_{k_1}\ \epsilon_{k_5k_7k_8k_9k_2k_3k_4k_6}\ \epsilon_{k_2k_3k_4k_6}}\right]\end{aligned} \tag{525}$$



$\rightarrow$ T10:

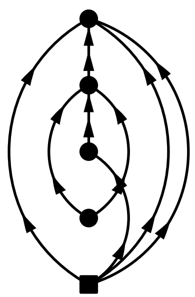


$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{526}$$

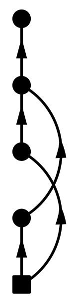
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_5 k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_6}$$

Diagram 257:

$$\begin{aligned}\mathrm{PO4.257} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_5k_6} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon_{k_1}^{k_7}} e^{-\tau_3 \epsilon_{k_5k_6k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_5k_6} \Omega^{04}_{k_8k_2k_3k_4} \left[\frac{1}{\epsilon_{k_7k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_8}} \right]\end{aligned} \tag{527}$$



$\rightarrow$ T12:



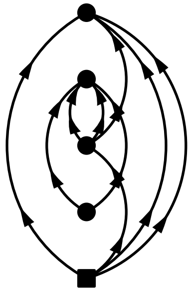
$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{528}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7}$$
$$a_3 = \epsilon_{k_5 k_6 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_8}$$

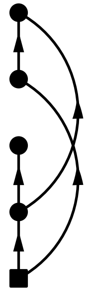
Diagram 258:

$$\text{PO4.258} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_5k_6} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon_{k_1}^{k_7k_8k_9}} e^{-\tau_3 \epsilon_{k_5k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_9}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_5k_6} \Omega^{04}_{k_9k_2k_3k_4} \left[\frac{1}{\epsilon^{k_5k_6}\ \epsilon^{k_5k_6k_7k_8}_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_9}} + \frac{1}{\epsilon^{k_5k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_8k_2k_3k_4k_9}\ \epsilon_{k_2k_3k_4k_9}} \right] \tag{529}$$



$$\rightarrow \quad \text{T10:}$$



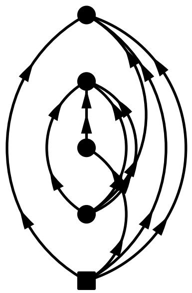
$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{530}$$

$$a_1 = \epsilon_{k_1}^{k_7k_8k_9}$$
$$a_2 = \epsilon^{k_5k_6}$$
$$a_3 = \epsilon_{k_5k_6k_7k_8}$$
$$a_4 = \epsilon_{k_2k_3k_4k_9}$$

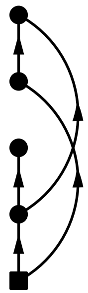
Diagram 259:

$$\text{PO4.259} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_1} \Omega^{04}_{k_9k_5k_6k_7} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon_{k_1}^{k_9}} e^{-\tau_3 \epsilon_{k_5k_6k_7k_9}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_8}}$$

$$= \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_1} \Omega^{04}_{k_9k_5k_6k_7} \Omega^{04}_{k_8k_2k_3k_4} \left[\frac{1}{\epsilon^{k_5k_6k_7k_8}\ \epsilon^{k_5k_6k_7k_9}_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_8}} + \frac{1}{\epsilon^{k_5k_6k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_9k_2k_3k_4k_8}\ \epsilon_{k_2k_3k_4k_8}} \right] \tag{531}$$



$\rightarrow$ T10:

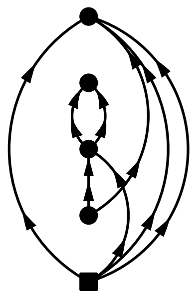


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{532}$$

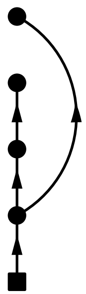
$$a_1 = \epsilon_{k_1}^{k_9}$$
$$a_2 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_5 k_6 k_7 k_9}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_8}$$

Diagram 260:

$$\begin{aligned}
\mathrm{PO4.260} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_6k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3 \epsilon_{k_7k_8}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_6}} \\
&= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_6k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_1k_5} \ \epsilon_{k_7k_8} \ \epsilon_{k_2k_3k_4k_6}}
\end{aligned} \tag{533}$$



$\rightarrow$ T3:

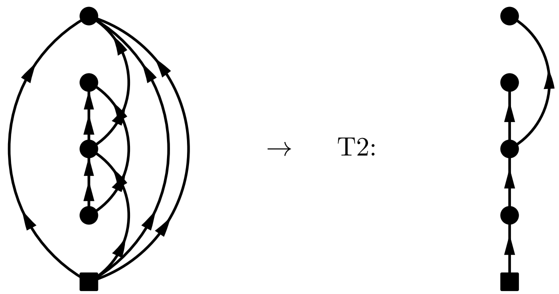


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{534}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_5}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_7 k_8}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_6}$$

Diagram 261:

$$\begin{aligned} \mathrm{PO4.261} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{02}_{k_7k_6} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3 \epsilon_{k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_8}} \\ &= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{02}_{k_7k_6} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_6k_7}\ \epsilon_{k_2k_3k_4k_8}} \end{aligned} \tag{535}$$

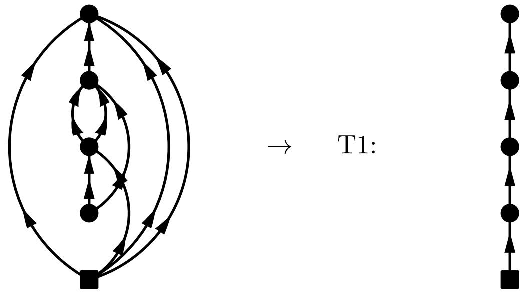


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{536}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_5}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_6 k_7}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_8}$$

Diagram 262:

$$\begin{aligned}\text{PO4.262} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_7k_8k_6} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_2k_3}} \\ &= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_7k_8k_6} \Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_9}}\end{aligned} \tag{537}$$

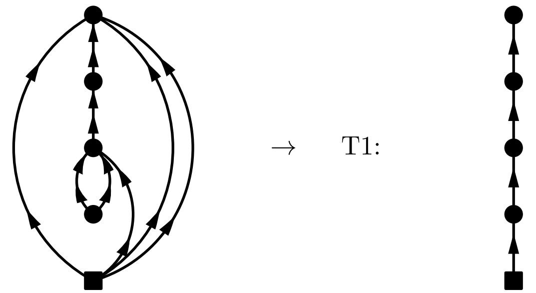


$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{538}$$

$$\begin{aligned} a_1 &= \epsilon^{k_5k_6} \\ a_2 &= \epsilon^{k_7k_8}_{k_1k_5} \\ a_3 &= \epsilon^{k_9}_{k_6k_7k_8} \\ a_4 &= \epsilon_{k_2k_3k_4k_9} \end{aligned}$$

Diagram 263:

$$\begin{aligned}\text{PO4.263} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{11}_{k_8k_7} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_5k_6}} e^{-\tau_3 \epsilon^{k_8}_{k_7}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{11}_{k_8k_7} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_7k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_8}}\end{aligned} \tag{539}$$

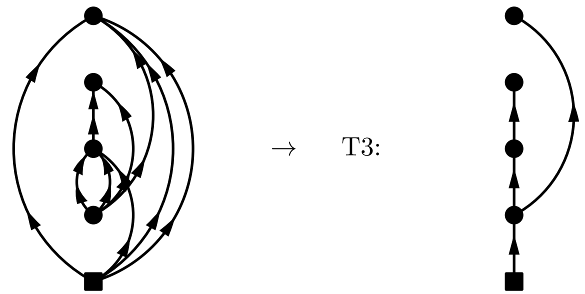


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{540}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_5 k_6}$$
$$a_3 = \epsilon^{k_8}_{k_7}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_8}$$

Diagram 264:

$$\begin{aligned}\mathrm{PO4.264} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{13}_{k_9 k_5 k_6 k_1} \Omega^{02}_{k_9 k_7} \Omega^{04}_{k_8 k_2 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6 k_7 k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1 k_5 k_6}} e^{-\tau_3 \epsilon_{k_7 k_9}} e^{-\tau_4 \epsilon_{k} \cdots} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{40}_{k_5 k_6 k_7 k_8} \Omega^{13}_{k_9 k_5 k_6 k_1} \Omega^{02}_{k_9 k_7} \Omega^{04}_{k_8 k_2 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon^{k_9}_{k_1 k_5 k_6} \ \epsilon_{k_7 k_9} \ \epsilon^{k_9}_{k_1 k_5 k_6 k_2 k_3 k_4 k_8}}\end{aligned} \tag{541}$$

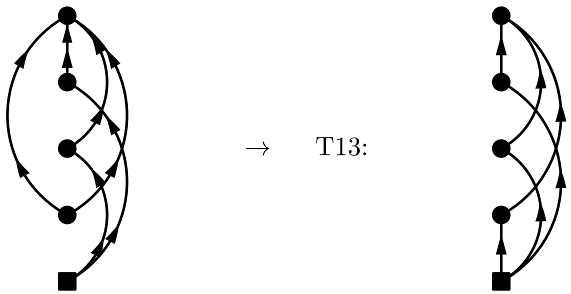


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{542}$$

$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon_{k_2 k_3 k_4 k_8}$$
$$a_3 = \epsilon^{k_9}_{k_1 k_5 k_6}$$
$$a_4 = \epsilon_{k_7 k_9}$$

Diagram 265:

$$\mathrm{PO4.265} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{11}_{k_6 k_2} \Omega^{04}_{k_6 k_5 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5}_{k_1}} e^{-\tau_3 \epsilon^{k_6}_{k_2}} e^{-\tau_4 \epsilon_{k_3 k_4 k_5 k_6}}$$
$$= \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{11}_{k_6 k_2} \Omega^{04}_{k_6 k_5 k_3 k_4} \Bigg[\frac{1}{\epsilon_{k_1 k_6}\ \epsilon_{k_1 k_3 k_4 k_6}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_6}} + \frac{1}{\epsilon_{k_5 k_6}\ \epsilon_{k_1 k_6}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5 k_6}} + \frac{1}{\epsilon_{k_5 k_6}\ \epsilon_{k_1 k_2}\ \epsilon_{k_2 k_5}\ \epsilon_{k_3 k_4 k_5 k_6}} + \frac{1}{\epsilon_{k_2 k_5}\ \epsilon_{k_1 k_2}\ \epsilon_{k_2 k_3}} \tag{543}$$

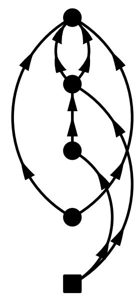


$$\mathrm{T13} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_4)(a_2 + a_1 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_1 + a_4)a_4} + \frac{1}{(a_1 + a_3 + a_4)(a_2} \tag{544}$$

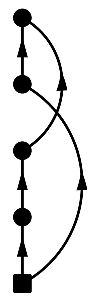
$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_1}^{k_5}$$
$$a_3 = \epsilon_{k_2}^{k_6}$$
$$a_4 = \epsilon_{k_3 k_4 k_5 k_6}$$

Diagram 266:

$$\mathrm{PO4.266} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_5 k_2} \Omega^{04}_{k_6 k_7 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_1}^{k_5}} e^{-\tau_3 \epsilon_{k_2 k_5}^{k_6 k_7}} e^{-\tau_4 \epsilon_{k_3 k_4 k_6 k_7}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_5 k_2} \Omega^{04}_{k_6 k_7 k_3 k_4} \Bigg[\frac{1}{\epsilon_{k_1 k_6 k_7}^{k_5}\ \epsilon_{k_1 k_3 k_4 k_6 k_7}^{k_5}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_6 k_7}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_4 k_6 k_7}^{k_5}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_3 k_4 k_6 k_7}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_5 k_3 k_4}\ \epsilon_{k_3 k_4 k_6}} \tag{545}$$



$$\rightarrow \quad \mathrm{T9:}$$



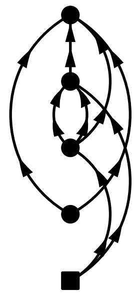
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{546}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_1}^{k_5}$$
$$a_3 = \epsilon_{k_2 k_5}^{k_6 k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_7}$$

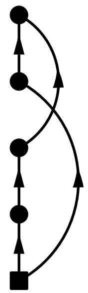
Diagram 267:

$$\text{PO4.267} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{04}_{k_8k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_3\epsilon^{k_8}_{k_2k_5k_6}} e^{-\tau_4\epsilon_{k_3k_4k_7}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{04}_{k_8k_7k_3k_4} \left[\frac{1}{\epsilon^{k_5k_6}_{k_1k_8}\ \epsilon^{k_5k_6}_{k_1k_3k_4k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon^{k_5k_6}_{k_1k_3k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_3}} \right. \tag{547}$$



$\rightarrow$ T9:



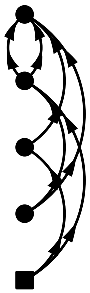
$$\text{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{548}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_2k_5k_6}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

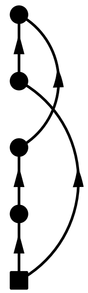
Diagram 268:

$$\text{PO4.268} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{04}_{k_6k_7k_5k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1}} e^{-\tau_3\epsilon^{k_6k_7}_{k_2k_3}} e^{-\tau_4\epsilon_{k_4k_5k_6k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{04}_{k_6k_7k_5k_4} \left[\frac{1}{\epsilon^{k_3}_{k_5k_6k_7}\ \epsilon^{k_3}_{k_1k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon^{k_3}_{k_5k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_5}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_2k_5}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_5k_6k_7}} \right] \tag{549}$$



$\rightarrow$ T9:



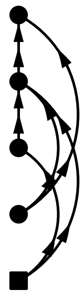
$$\text{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{550}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_3k_4}$$
$$a_3 = \epsilon^{k_6k_7}_{k_2k_3}$$
$$a_4 = \epsilon_{k_4k_5k_6k_7}$$

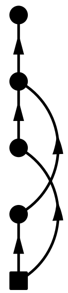
Diagram 269:

$$\text{PO4.269} = \lim_{\tau\to\infty} -(-1)^4 \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_3k_2} \Omega^{02}_{k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1}} e^{-\tau_3\epsilon^{k_6}_{k_2k_3k_5}} e^{-\tau_4\epsilon_{k_4k_6}}$$

$$= -(-1)^4 \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_3k_2} \Omega^{02}_{k_6k_4} \left[\frac{1}{\epsilon_{k_2k_5}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_4k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_4k_6}} \right] \tag{551}$$



$\rightarrow$ T12:

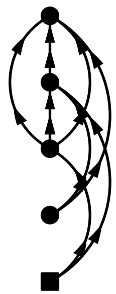


$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{552}$$

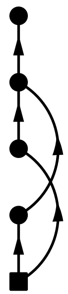
$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_1}^{k_5}$$
$$a_3 = \epsilon_{k_2k_3k_5}^{k_6}$$
$$a_4 = \epsilon_{k_4k_6}$$

Diagram 270:

$$\text{PO4.270} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_3k_2} \Omega^{04}_{k_8k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_3 \epsilon_{k_2k_3k_5}^{k_8}} e$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_3k_2} \Omega^{04}_{k_8k_6k_7k_4} \left[\frac{1}{\epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_5k_4k_6k_7}\ \epsilon_{k_4k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4k_6k_7}\ \epsilon_{k_4k_6k_7k_8}} \right] \tag{553}$$



$\rightarrow$ T12:

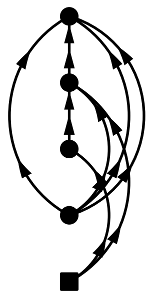


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{554}$$

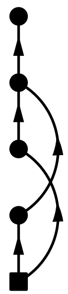
$$\begin{aligned} a_1 &= \epsilon^{k_3k_4} \\ a_2 &= \epsilon_{k_1}^{k_5k_6k_7} \\ a_3 &= \epsilon_{k_2k_3k_5}^{k_8} \\ a_4 &= \epsilon_{k_4k_6k_7k_8} \end{aligned}$$

Diagram 271:

$$\begin{aligned} \mathrm{PO4.271} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_3k_2} \Omega^{04}_{k_8k_4k_5k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1}} e^{-\tau_3 \epsilon^{k_8}_{k_2k_3k_7}} e^{-\tau_4 \epsilon_{k_4k_5k_6}} \\ = \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_3k_2} \Omega^{04}_{k_8k_4k_5k_6} \left[\frac{1}{\epsilon_{k_2k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_7k_4k_5k_6}\ \epsilon_{k_4k_5k_6k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_2k_3k_7k_4k_5k_6}\ \epsilon_{k_4k_5k_6k_8}} \right] \end{aligned} \tag{555}$$



$\rightarrow$ T12:

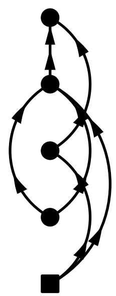


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{556}$$

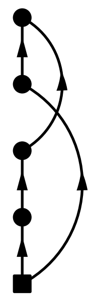
$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_2k_3k_7}$$
$$a_4 = \epsilon_{k_4k_5k_6k_8}$$

Diagram 272:

$$\mathrm{PO4.272} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_3k_4k_2} \Omega^{02}_{k_6k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1}} e^{-\tau_3\epsilon^{k_6}_{k_2k_3k_4}} e^{-\tau_4\epsilon_{k_5k_6}}$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_3k_4k_2} \Omega^{02}_{k_6k_5} \left[\frac{1}{\epsilon^{k_3k_4}_{k_1k_6}\ \epsilon_{k_1k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_5k_6}} \right] \tag{557}$$



$\rightarrow$ T9:



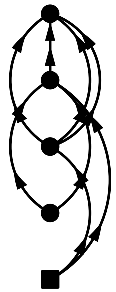
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{558}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1}$$
$$a_3 = \epsilon^{k_6}_{k_2k_3k_4}$$
$$a_4 = \epsilon_{k_5k_6}$$

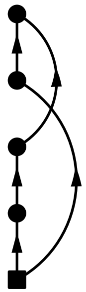
Diagram 273:

$$\mathrm{PO4.273} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_3 k_4 k_2} \Omega^{04}_{k_8 k_5 k_6 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6 k_7}_{k_1}} e^{-\tau_3 \epsilon^{k_8}_{k_2 k_3 k_4}} e^{-\tau_4 \epsilon_{k_5 k_6 k_7 k_8}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_3 k_4 k_2} \Omega^{04}_{k_8 k_5 k_6 k_7} \left[\frac{1}{\epsilon^{k_3 k_4}_{k_1 k_8}\ \epsilon_{k_1 k_8}\ \epsilon_{k_1 k_2}\ \epsilon_{k_5 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_8}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_3 k_4 k_5 k_6 k_7}\ \epsilon_{k_5 k_6 k_7 k_8}} \right] \tag{559}$$



$\rightarrow$ T9:



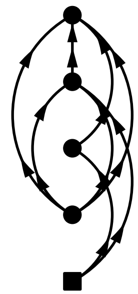
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{560}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6 k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_2 k_3 k_4}$$
$$a_4 = \epsilon_{k_5 k_6 k_7 k_8}$$

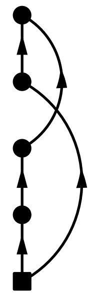
Diagram 274:

$$\mathrm{PO4.274} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_3k_4k_2} \Omega^{04}_{k_8k_7k_5k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1}} e^{-\tau_3 \epsilon^{k_8}_{k_2k_3k_4}} e^{-\tau_4 \epsilon_{k_5k_6k_7 \cdots}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_3k_4k_2} \Omega^{04}_{k_8k_7k_5k_6} \left[\frac{1}{\epsilon^{k_3k_4}_{k_1k_8}\ \epsilon_{k_1k_5k_6k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_5k_6k_8}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_2k_3k_4k_5 \cdots}} \cdots \right. \tag{561}$$



$\rightarrow$ T9:



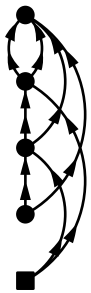
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{562}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_2k_3k_4}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 275:

$$\mathrm{PO4.275} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{22}_{k_7k_8k_5k_2} \Omega^{04}_{k_7k_8k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5k_6}_{k_1k_3}} e^{-\tau_3 \epsilon^{k_7k_8}_{k_2k_5}} e^{-\tau_4 \cdots}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{22}_{k_7k_8k_5k_2} \Omega^{04}_{k_7k_8k_6k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_2k_5k_4k_6}\ \epsilon_{k_4k_6k_7k_8}} \tag{563}$$



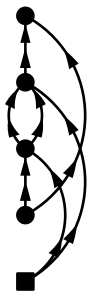
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{564}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_1 k_3}$$
$$a_3 = \epsilon^{k_7 k_8}_{k_2 k_5}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 276:

$$\mathrm{PO4.276} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{13}_{k_7 k_5 k_6 k_2} \Omega^{02}_{k_7 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}_{k_1 k_3}} e^{-\tau_3 \epsilon^{k_7}_{k_2 k_5 k_6}} e^{-\tau_4 \epsilon_{k_4 k_7}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{13}_{k_7 k_5 k_6 k_2} \Omega^{02}_{k_7 k_4}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_2 k_4}\ \epsilon_{k_2 k_5 k_6 k_4}\ \epsilon_{k_4 k_7}} \tag{565}$$



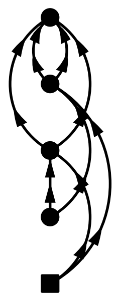
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{566}$$

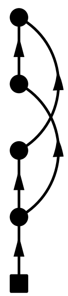
$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_1k_3}^{k_5k_6}$$
$$a_3 = \epsilon_{k_2k_5k_6}^{k_7}$$
$$a_4 = \epsilon_{k_4k_7}$$

Diagram 277:

$$\begin{aligned}\mathrm{PO4.277} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{22}_{k_7k_8k_4k_2} \Omega^{04}_{k_7k_8k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_1k_3}} e^{-\tau_3\epsilon^{k_7k_8}_{k_2k_4}} e^{-\tau_4\epsilon_{k_5k_6k_7k_8}} \\ &= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_3k_1} \Omega^{22}_{k_7k_8k_4k_2} \Omega^{04}_{k_7k_8k_5k_6} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_7k_8}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_2k_4}\ \epsilon_{k_2k_4k_5k_6}\ \epsilon_{k_5k_6k_7k_8}} \right]\end{aligned} \tag{567}$$



$\rightarrow$ T8:

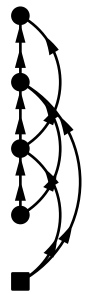


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{568}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_1 k_3}^{k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_4}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_5 k_6 k_7 k_8}$$

Diagram 278:

$$\begin{aligned}\text{PO4.278} &= \lim_{\tau\to\infty} -(-1)^4 \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{13}_{k_7 k_5 k_4 k_2} \Omega^{02}_{k_7 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_1 k_3}^{k_5 k_6}} e^{-\tau_3 \epsilon_{k_2 k_4 k_5}^{k_7}} e^{-\tau_4 \epsilon_{k_6} \\ &= -(-1)^4 \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_3 k_1} \Omega^{13}_{k_7 k_5 k_4 k_2} \Omega^{02}_{k_7 k_6}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_2 k_4}\ \epsilon_{k_2 k_4 k_5 k_6}\ \epsilon_{k_6 k_7}}\end{aligned} \tag{569}$$



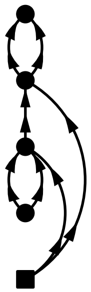
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{570}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon_{k_1 k_3}^{k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_4 k_5}^{k_7}$$
$$a_4 = \epsilon_{k_6 k_7}$$

Diagram 279:

$$\begin{aligned}\mathrm{PO4.279} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{13}_{k_5k_3k_4k_1}\Omega^{22}_{k_6k_7k_5k_2}\Omega^{02}_{k_6k_7}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}}e^{-\tau_2\epsilon^{k_5}_{k_1k_3k_4}}e^{-\tau_3\epsilon^{k_6k_7}_{k_2k_5}}e^{-\tau_4\epsilon_{k_6k_7}}\\ &= \frac{(-1)^4}{(2!)^2}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{13}_{k_5k_3k_4k_1}\Omega^{22}_{k_6k_7k_5k_2}\Omega^{02}_{k_6k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2}\ \epsilon_{k_2k_5}\ \epsilon_{k_6k_7}} \qquad (571)\end{aligned}$$



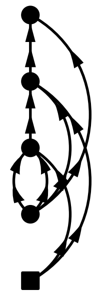
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (572)$$

$$\begin{aligned} a_1 &= \epsilon^{k_3k_4}\\ a_2 &= \epsilon^{k_5}_{k_1k_3k_4}\\ a_3 &= \epsilon^{k_6k_7}_{k_2k_5}\\ a_4 &= \epsilon_{k_6k_7}\end{aligned}$$

Diagram 280:

$$\begin{aligned}\mathrm{PO4.280} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{40}_{k_3k_4k_5k_6}\Omega^{13}_{k_7k_3k_4k_1}\Omega^{13}_{k_8k_7k_5k_2}\Omega^{02}_{k_8k_6}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4k_5k_6}}e^{-\tau_2\epsilon^{k_7}_{k_1k_3k_4}}e^{-\tau_3\epsilon^{k_8}_{k_2k_5}}\\ &= \frac{-(-1)^4}{(2!)}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{40}_{k_3k_4k_5k_6}\Omega^{13}_{k_7k_3k_4k_1}\Omega^{13}_{k_8k_7k_5k_2}\Omega^{02}_{k_8k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_3k_4k_2k_5k_6}\ \epsilon_{k_2k_5k_7k_6}\ \epsilon_{k_6k_8}} \qquad (573)\end{aligned}$$



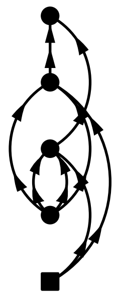
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{574}$$

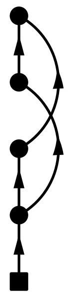
$$a_1 = \epsilon^{k_3 k_4 k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_3 k_4}$$
$$a_3 = \epsilon^{k_8}_{k_2 k_5 k_7}$$
$$a_4 = \epsilon_{k_6 k_8}$$

Diagram 281:

$$\begin{aligned} \mathrm{PO4.281} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{02}_{k_8 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1 k_3 k_4}} e^{-\tau_3 \epsilon^{k_8}_{k_2 k_5 k_6}} e^{-\tau_4 \epsilon_{k_7 \ldots}} \\ &= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_4 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{02}_{k_8 k_7} \left[\frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_4 k_8}\ \epsilon_{k_1 k_3 k_4 k_2 k_5 k_6}\ \epsilon_{k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_3 k_4 k_2 k_5 k_6}\ \epsilon_{k_2 k_5 k_6 k_7}\ \epsilon_{k_7 k_8}} \right] \end{aligned} \tag{575}$$



$\rightarrow$ T8:

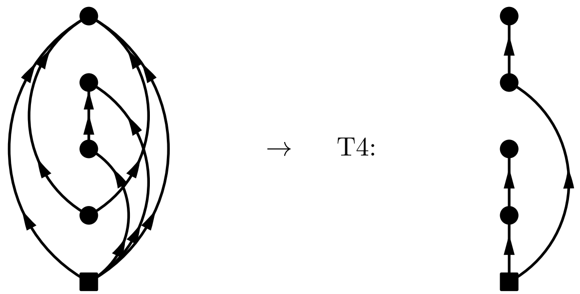


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{576}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_1k_3k_4}^{k_7}$$
$$a_3 = \epsilon_{k_2k_5k_6}^{k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 282:

$$\mathrm{PO4.282} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_7k_2} \Omega^{04}_{k_5k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon_{k_1}^{k_7}} e^{-\tau_3\epsilon_{k_2k_7}} e^{-\tau_4\epsilon_{k_3k_4k_5k_6}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_7k_2} \Omega^{04}_{k_5k_6k_3k_4}}{\epsilon_{k_1}^{k_5k_6k_7}\ \epsilon_{k_1}^{k_7}\ \epsilon_{k_2k_7k_3k_4k_5k_6}\ \epsilon_{k_3k_4k_5k_6}} \tag{577}$$



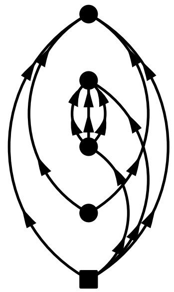
$$\mathrm{T4} = \frac{1}{(a_1+a_2)a_2(a_3+a_4)a_4} \tag{578}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7}$$
$$a_3 = \epsilon_{k_2k_7}$$
$$a_4 = \epsilon_{k_3k_4k_5k_6}$$

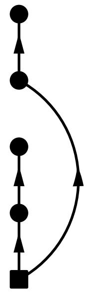
Diagram 283:

$$\mathrm{PO4.283} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_9k_2} \Omega^{04}_{k_5k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_1}} e^{-\tau_3\epsilon_{k_2k_7k_8k_9}} e^{-\tau_4\epsilon_{k_3k_4k_5k_6}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_8k_9k_2} \Omega^{04}_{k_5k_6k_3k_4}}{\epsilon^{k_5k_6k_7k_8k_9}_{k_1}\ \epsilon^{k_7k_8k_9}_{k_1}\ \epsilon_{k_2k_7k_8k_9k_3k_4k_5k_6}\ \epsilon_{k_3k_4k_5k_6}} \tag{579}$$



$\rightarrow$ T4:



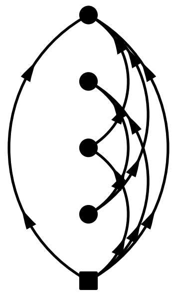
$$\mathrm{T4} = \frac{1}{(a_1+a_2)a_2(a_3+a_4)a_4} \tag{580}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8k_9}_{k_1}$$
$$a_3 = \epsilon_{k_2k_7k_8k_9}$$
$$a_4 = \epsilon_{k_3k_4k_5k_6}$$

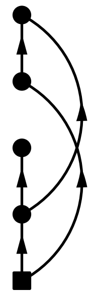
Diagram 284:

$$\mathrm{PO4.284} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{04}_{k_7k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1}} e^{-\tau_3\epsilon_{k_2k_5}} e^{-\tau_4\epsilon_{k_3k_4k_6k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{04}_{k_7k_6k_3k_4} \left[\frac{1}{\epsilon^{k_6k_7}_{k_1k_2}\ \epsilon^{k_7}_{k_1}\ \epsilon_{k_2k_5}\ \epsilon_{k_1k_2k_3k_4}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7}_{k_1}\ \epsilon_{k_2k_5}\ \epsilon_{k_2k_5k_3k_4k_6k_7}} \right] \tag{581}$$



$\rightarrow$ T10:

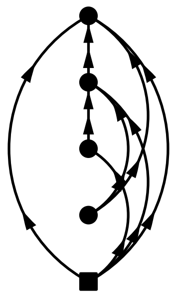


$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{582}$$

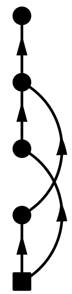
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7}$$
$$a_3 = \epsilon_{k_3 k_4 k_6 k_7}$$
$$a_4 = \epsilon_{k_2 k_5}$$

Diagram 285:

$$\begin{aligned}\mathrm{PO4.285} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_5k_2} \Omega^{04}_{k_8k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon_{k_1}^{k_7}} e^{-\tau_3 \epsilon_{k_2k_5k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_3k_4k_6k_8}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_5k_2} \Omega^{04}_{k_8k_6k_3k_4} \left[\frac{1}{\epsilon_{k_2k_7k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_7k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_2k_5k_7k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_8}} \right]\end{aligned} \tag{583}$$



$\rightarrow$ T12:

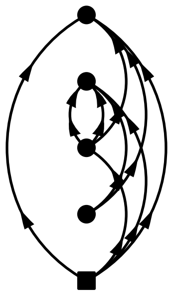


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{584}$$

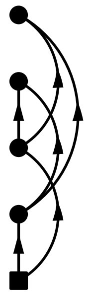
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_2 k_5 k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_8}$$

Diagram 286:

$$\begin{aligned}\mathrm{PO4.286} = \lim_{\tau \to \infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_1} \Omega^{04}_{k_7 k_8 k_5 k_2} \Omega^{04}_{k_9 k_6 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8 k_9}_{k_1}} e^{-\tau_3 \epsilon_{k_2 k_5 k_7 k_8}} e^{-\tau_4 \epsilon} \\ = \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{31}_{k_7 k_8 k_9 k_1} \Omega^{04}_{k_7 k_8 k_5 k_2} \Omega^{04}_{k_9 k_6 k_3 k_4} \left[\frac{1}{\epsilon_{k_2 k_7 k_8 k_3 k_4 k_9} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_2 k_5 k_7 k_8} \ \epsilon_{k_3 k_4 k_6 k_9}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_1 k_2 k_5 k_3 k_4 k_6} \ \epsilon_{k_2 k_5 k_7 k_8} \ \epsilon_{k_3 k_4 k_6 k_9}} \right]\end{aligned} \tag{585}$$



$\rightarrow$ T11:



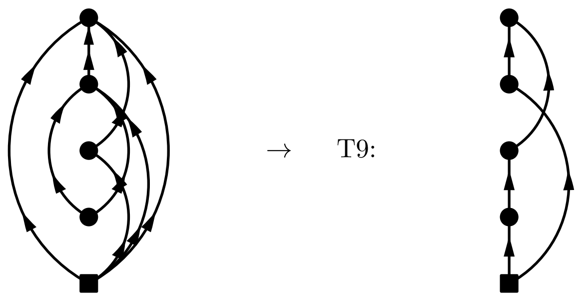
$$\mathrm{T11} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)a_3 a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{586}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8 k_9}_{k_1}$$
$$a_3 = \epsilon_{k_2 k_5 k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_9}$$

Diagram 287:

$$\mathrm{PO4.287} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{04}_{k_8k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1}} e^{-\tau_3\epsilon^{k_8}_{k_2k_5k_6}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{04}_{k_8k_7k_3k_4} \left[\frac{1}{\epsilon^{k_5k_6}_{k_1k_3k_4k_8}\ \epsilon_{k_1k_3k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_3k_4k_8}\ \epsilon_{k_1k_2k_5k_6k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5}} \right. \tag{587}$$



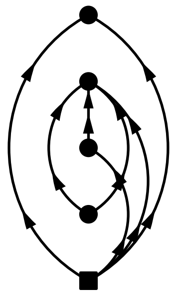
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{588}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1}$$
$$a_3 = \epsilon^{k_8}_{k_2k_5k_6}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

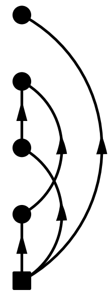
Diagram 288:

$$\mathrm{PO4.288} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_5k_6k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1}} e^{-\tau_3\epsilon_{k_2k_5k_6k_7}} e^{-\tau_4\epsilon_{k_3k_4}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{04}_{k_7k_5k_6k_2} \Omega^{02}_{k_3k_4} \left[\frac{1}{\epsilon_{k_2k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_3k_4}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_3k_4}} \right] \tag{589}$$



$\rightarrow$ T14:

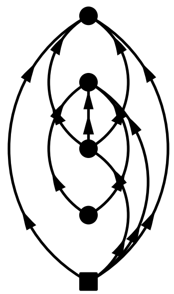


$$\mathrm{T14} = \frac{1}{(a_1+a_3)(a_2+a_1+a_3)a_3a_4} + \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{590}$$

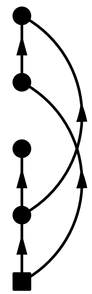
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7}$$
$$a_3 = \epsilon_{k_2k_5k_6k_7}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 289:

$$\begin{aligned}\mathrm{PO4.289} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_5k_6k_2} \Omega^{04}_{k_8k_9k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon_{k_1}^{k_7k_8k_9}} e^{-\tau_3\epsilon_{k_2k_5k_6k_7}} e^{-\tau_4\epsilon_{k_3k_4k_8k_9}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{31}_{k_7k_8k_9k_1} \Omega^{04}_{k_7k_5k_6k_2} \Omega^{04}_{k_8k_9k_3k_4} \left[\frac{1}{\epsilon^{k_5k_6}\ \epsilon_{k_1k_2}^{k_8k_9}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_1k_2k_3k_4}} + \frac{1}{\epsilon^{k_5k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_2k_5k_6k_7k_3k_4k_8k_9}} \right]\end{aligned} \tag{591}$$



$\rightarrow$ T10:

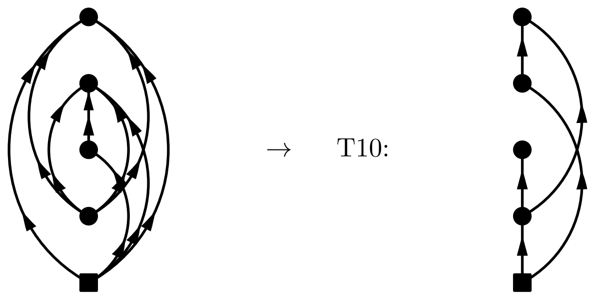


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{592}$$

$$a_1 = \epsilon_{k_1}^{k_7k_8k_9}$$
$$a_2 = \epsilon^{k_5k_6}$$
$$a_3 = \epsilon_{k_3k_4k_8k_9}$$
$$a_4 = \epsilon_{k_2k_5k_6k_7}$$

Diagram 290:

$$\begin{aligned}\mathrm{PO4.290} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_1} \Omega^{04}_{k_9k_5k_6k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon_{k_1}^{k_9}} e^{-\tau_3\epsilon_{k_2k_5k_6k_9}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_1} \Omega^{04}_{k_9k_5k_6k_2} \Omega^{04}_{k_7k_8k_3k_4} \left[\frac{1}{\epsilon^{k_5k_6k_7k_8}\ \epsilon^{k_5k_6k_9}_{k_1k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon^{k_5k_6k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_9k_3k_4k_7k_8}\ \epsilon_{k_3k_4k_7k_8}} \right]\end{aligned} \tag{593}$$

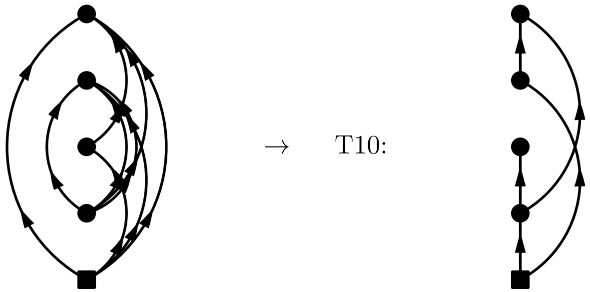


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{594}$$

$$a_1 = \epsilon_{k_1}^{k_9}$$
$$a_2 = \epsilon^{k_5k_6k_7k_8}$$
$$a_3 = \epsilon_{k_2k_5k_6k_9}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

Diagram 291:

$$\text{PO4.291} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_1} \Omega^{04}_{k_5k_6k_7k_2} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1}} e^{-\tau_3 \epsilon_{k_2k_5k_6k_7}} e^{-\tau_4 \epsilon_{k_3k_4k_8k_9}}$$
$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{11}_{k_9k_1} \Omega^{04}_{k_5k_6k_7k_2} \Omega^{04}_{k_9k_8k_3k_4} \left[\frac{1}{\epsilon^{k_8k_9}_{k_1k_2}\ \epsilon^{k_9}_{k_1}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_1k_2k_3k_4}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_9}_{k_1}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_2k_5k_6k_7k_3k_4k_8k_9}} \right] \tag{595}$$

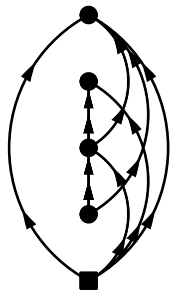


$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{596}$$

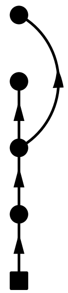
$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1}$$
$$a_3 = \epsilon_{k_3k_4k_8k_9}$$
$$a_4 = \epsilon_{k_2k_5k_6k_7}$$

Diagram 292:

$$\text{PO4.292} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{02}_{k_7k_2} \Omega^{04}_{k_8k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3 \epsilon_{k_2k_7}} e^{-\tau_4 \epsilon_{k_3k_4k_6k_8}}$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{02}_{k_7k_2} \Omega^{04}_{k_8k_6k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_2k_3k_4k_6}\ \epsilon_{k_2k_7}\ \epsilon_{k_3k_4k_6k_8}} \tag{597}$$



$\rightarrow$ T2:



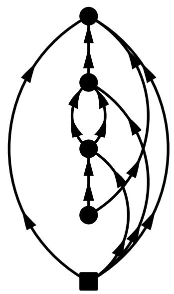
$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{598}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_5}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_2 k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_8}$$

Diagram 293:

$$\mathrm{PO4.293} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_1} \Omega^{13}_{k_9 k_7 k_8 k_2} \Omega^{04}_{k_9 k_6 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_1 k_5}^{k_7 k_8}} e^{-\tau_3 \epsilon_{k_2 k_7 k_8}^{k_9}} e^{-\tau_4 \epsilon_{k_3 k_4 k_6}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_1} \Omega^{13}_{k_9 k_7 k_8 k_2} \Omega^{04}_{k_9 k_6 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_1 k_5 k_2 k_3 k_4 k_6}\ \epsilon_{k_2 k_7 k_8 k_3 k_4 k_6}\ \epsilon_{k_3 k_4 k_6 k_9}} \tag{599}$$



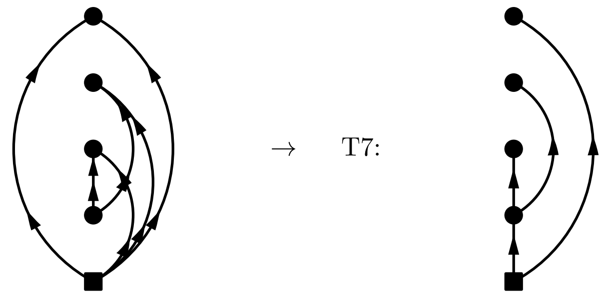
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{600}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_1 k_5}$$
$$a_3 = \epsilon^{k_9}_{k_2 k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_9}$$

Diagram 294:

$$\begin{aligned}
\mathrm{PO4.294} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{02}_{k_6k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon_{k_1k_5}} e^{-\tau_3 \epsilon_{k_2k_6}} e^{-\tau_4 \epsilon_{k_3k_4}} \\
&= \frac{-(-1)^4}{2(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{02}_{k_6k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_5}\ \epsilon_{k_2k_6}\ \epsilon_{k_3k_4}}
\end{aligned} \tag{601}$$



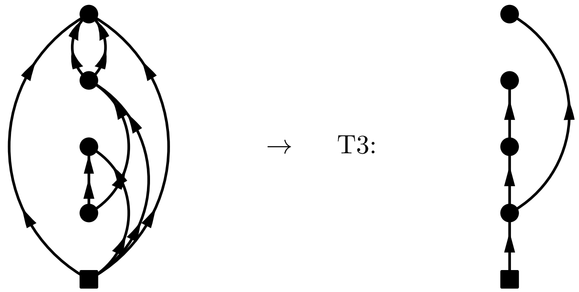
$\rightarrow$ T7:

$$\mathrm{T7} = \frac{1}{(a_1 + a_2 + a_3)a_2 a_3 a_4} \tag{602}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_5}$$
$$a_3 = \epsilon_{k_2 k_6}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 295:

$$\begin{aligned}
\mathrm{PO4.295} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{22}_{k_7k_8k_6k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon_{k_1k_5}} e^{-\tau_3\epsilon^{k_7k_8}_{k_2k_6}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}} \\
&= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{22}_{k_7k_8k_6k_2} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7k_8}_{k_1k_5k_2k_6}\ \epsilon^{k_7k_8}_{k_2k_6}\ \epsilon_{k_3k_4k_7k_8}}
\end{aligned} \tag{603}$$

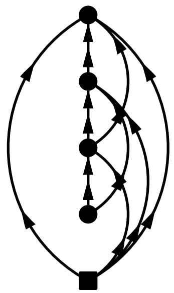


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{604}$$

$$\begin{aligned}
a_1 &= \epsilon^{k_5k_6} \\
a_2 &= \epsilon_{k_1k_5} \\
a_3 &= \epsilon^{k_7k_8}_{k_2k_6} \\
a_4 &= \epsilon_{k_3k_4k_7k_8}
\end{aligned}$$

Diagram 296:

$$\begin{aligned}
\mathrm{PO4.296} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_7k_6k_2} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3\epsilon^{k_9}_{k_2k_6k}} \\
&= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_7k_6k_2} \Omega^{04}_{k_9k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_2k_6k_3k_4}\ \epsilon_{k_2k_6k_7k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_9}}
\end{aligned} \tag{605}$$



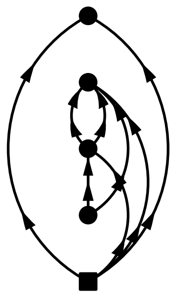
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{606}$$

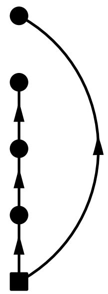
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_1 k_5}$$
$$a_3 = \epsilon^{k_9}_{k_2 k_6 k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 297:

$$\mathrm{PO4.297} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{04}_{k_7k_8k_6k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3 \epsilon_{k_2k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_3k_4}}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{04}_{k_7k_8k_6k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_5k_2k_6}\ \epsilon_{k_2k_6k_7k_8}\ \epsilon_{k_3k_4}} \tag{607}$$



$\rightarrow$ T5:

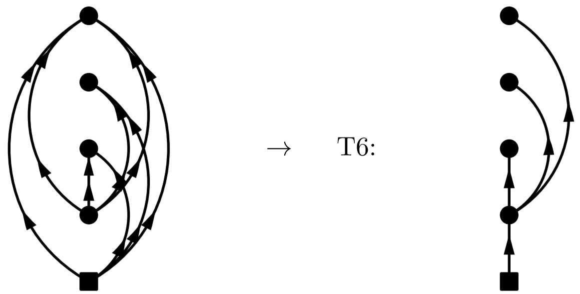


$$\mathrm{T5} = \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{608}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_5}$$
$$a_3 = \epsilon_{k_2k_6k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 298:

$$\begin{aligned}\mathrm{PO4.298} = &\lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{02}_{k_6k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1) e^{-\tau_1\epsilon^{k_5k_6k_7k_8}} e^{-\tau_2\epsilon_{k_1k_5}} e^{-\tau_3\epsilon_{k_2k_6}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}} \\ = &\frac{-(-1)^4}{2(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{02}_{k_6k_2} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5}\ \epsilon_{k_2k_6}\ \epsilon_{k_3k_4k_7k_8}}\end{aligned} \tag{609}$$



$\rightarrow$ T6:

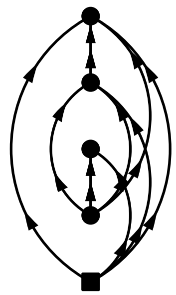
$$\mathrm{T6} = \frac{1}{(a_1+a_2+a_3+a_4)a_2a_3a_4} \tag{610}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_1k_5}$$
$$a_3 = \epsilon_{k_2k_6}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

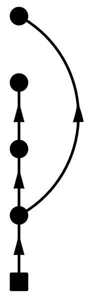
Diagram 299:

$$\mathrm{PO4.299} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{13}_{k_9k_6k_7k_2} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon_{k_1k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_2k_6k_7}} e^{-\tau_4 \epsilon_{k_3}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{13}_{k_9k_6k_7k_2} \Omega^{04}_{k_9k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5}\ \epsilon_{k_2k_6k_7k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_9}} \tag{611}$$



$\rightarrow$ T3:



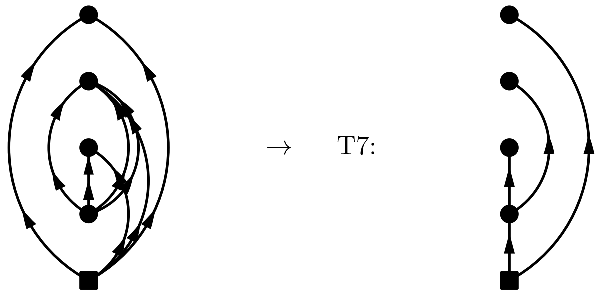
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{612}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_2k_6k_7}$$
$$a_3 = \epsilon_{k_3k_4k_8k_9}$$
$$a_4 = \epsilon_{k_1k_5}$$

Diagram 300:

$$\mathrm{PO4.300} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{04}_{k_6k_7k_8k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon_{k_1k_5}} e^{-\tau_3 \epsilon_{k_2k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_3k_4}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{04}_{k_6k_7k_8k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_5}\ \epsilon_{k_2k_6k_7k_8}\ \epsilon_{k_3k_4}} \tag{613}$$

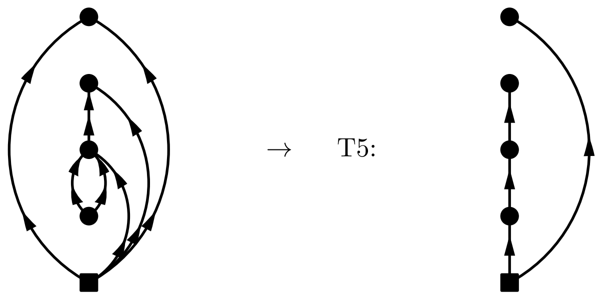


$$\mathrm{T7} = \frac{1}{(a_1 + a_2 + a_3)a_2 a_3 a_4} \tag{614}$$

$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon_{k_1 k_5}$$
$$a_3 = \epsilon_{k_2 k_6 k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 301:

$$\begin{aligned}\mathrm{PO4.301} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_6 k_1} \Omega^{02}_{k_7 k_2} \Omega^{02}_{k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1 k_5 k_6}} e^{-\tau_3 \epsilon_{k_2 k_7}} e^{-\tau_4 \epsilon_{k_3 k_4}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_6 k_1} \Omega^{02}_{k_7 k_2} \Omega^{02}_{k_3 k_4}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_5 k_6 k_2}\ \epsilon_{k_2 k_7}\ \epsilon_{k_3 k_4}}\end{aligned} \tag{615}$$

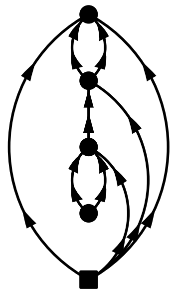


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{616}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_7}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 302:

$$\begin{aligned}
\mathrm{PO4.302} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{22}_{k_8k_9k_7k_2} \Omega^{04}_{k_8k_9k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_5k_6}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_2k_7}} e^{-\tau_4 \epsilon_{k_3k_4k_8k_9}} \\
&= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{22}_{k_8k_9k_7k_2} \Omega^{04}_{k_8k_9k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_2k_7k_3k_4}\ \epsilon_{k_3k_4k_8k_9}}
\end{aligned} \tag{617}$$



$\rightarrow$ T1:

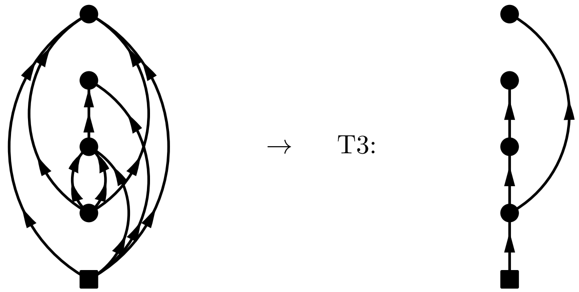
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{618}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_5 k_6}$$
$$a_3 = \epsilon^{k_8 k_9}_{k_2 k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 303:

$$\mathrm{PO4.303} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{02}_{k_9k_2} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_5k_6}} e^{-\tau_3 \epsilon_{k_2k_9}} e^{-\tau_4 \epsilon_{k_3k_4k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{02}_{k_9k_2} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4} \; \epsilon^{k_9}_{k_1k_5k_6} \; \epsilon_{k_2k_9} \; \epsilon^{k_9}_{k_1k_5k_6k_3k_4k_7k_8}} \tag{619}$$



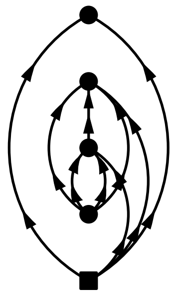
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{620}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_3k_4k_7k_8}$$
$$a_3 = \epsilon^{k_9}_{k_1k_5k_6}$$
$$a_4 = \epsilon_{k_2k_9}$$

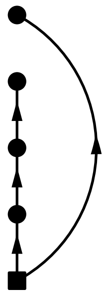
Diagram 304:

$$\mathrm{PO4.304} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{04}_{k_9k_7k_8k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_5k_6}} e^{-\tau_3 \epsilon_{k_2k_7k_8k_9}} e^{-\tau_4 \epsilon_{k_3k_4}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_6k_1} \Omega^{04}_{k_9k_7k_8k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2} \; \epsilon_{k_1k_5k_6k_2k_7k_8} \; \epsilon_{k_2k_7k_8k_9} \; \epsilon_{k_3k_4}} \tag{621}$$



$\rightarrow$ T5:

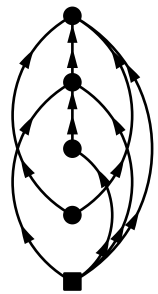


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{622}$$

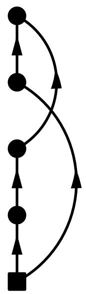
$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1 k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 305:

$$\mathrm{PO4.305} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_2k_3} \Omega^{04}_{k_8k_5k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1}} e^{-\tau_3 \epsilon^{k_8}_{k_2k_3k_7}} e^{-\tau_4 \epsilon_{k_4k_5k_6k_8}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_7k_2k_3} \Omega^{04}_{k_8k_5k_6k_4} \Bigg[\frac{1}{\epsilon_{k_4k_8}\ \epsilon^{k_7}_{k_1k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_6k_8}} + \frac{1}{\epsilon_{k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_7k_4}\ \epsilon_{k_4k_5k_6k_8}} + \frac{1}{\epsilon_{k_2k_3k_7k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_7k_4k_5k_6}} \tag{623}$$



$\rightarrow$ T9:

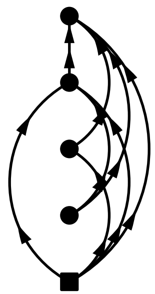


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{624}$$

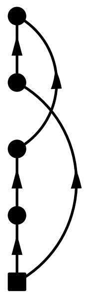
$$a_1 = \epsilon_{k_1}^{k_7}$$
$$a_2 = \epsilon^{k_5k_6}$$
$$a_3 = \epsilon_{k_2k_3k_7}^{k_8}$$
$$a_4 = \epsilon_{k_4k_5k_6k_8}$$

Diagram 306:

$$\begin{aligned} \mathrm{PO4.306} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{04}_{k_8k_7k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon_{k_1}^{k_7}} e^{-\tau_3\epsilon_{k_2k_3k_5}^{k_8}} e^{-\tau_4\epsilon_{k_4k_6k_7k_8}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{11}_{k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{04}_{k_8k_7k_6k_4} \left[\frac{1}{\epsilon_{k_4k_7k_8}^{k_5}\ \epsilon_{k_1k_4k_8}^{k_5}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_6k_7k_8}} + \frac{1}{\epsilon_{k_4k_7k_8}^{k_5}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_7}\ \epsilon_{k_4k_6k_7k_8}} + \frac{1}{\epsilon_{k_2k_3k_4k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5}} \right. \end{aligned} \tag{625}$$



$\rightarrow$ T9:

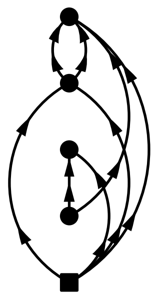


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{626}$$

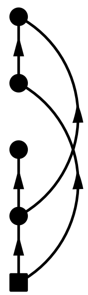
$$a_1 = \epsilon_{k_1}^{k_7}$$
$$a_2 = \epsilon^{k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_3 k_5}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 307:

$$\begin{aligned}\text{PO4.307} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{22}_{k_7k_8k_2k_3} \Omega^{04}_{k_7k_8k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon_{k_1k_5}} e^{-\tau_3 \epsilon^{k_7k_8}_{k_2k_3}} e^{-\tau_4 \epsilon_{k_4k_6k_7k_8}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{22}_{k_7k_8k_2k_3} \Omega^{04}_{k_7k_8k_6k_4} \left[\frac{1}{\epsilon^{k_5}_{k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7k_8}_{k_2k_3}\ \epsilon_{k_4k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_4k_6k_7k_8}\ \epsilon^{k_7k_8}_{k_2k_3}\ \epsilon_{k_4k_6k_7k_8}} \right]\end{aligned} \tag{627}$$



$\rightarrow$ T10:



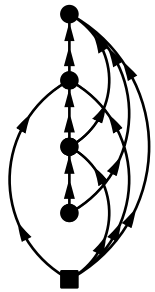
$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{628}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_1 k_5}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 308:

$$\mathrm{PO4.308} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_7k_2k_3} \Omega^{04}_{k_9k_8k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_2k_3k}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_7k_2k_3} \Omega^{04}_{k_9k_8k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_2k_3k_4k_6}\ \epsilon_{k_2k_3k_7k_4k_6k_8}\ \epsilon_{k_4k_6k_8k_9}} \tag{629}$$



$\rightarrow$ T1:

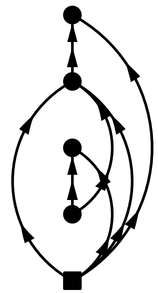
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{630}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_5}$$
$$a_3 = \epsilon^{k_9}_{k_2k_3k_7}$$
$$a_4 = \epsilon_{k_4k_6k_8k_9}$$

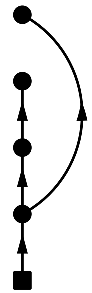
Diagram 309:

$$\mathrm{PO4.309} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{13}_{k_7k_6k_2k_3} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon_{k_1k_5}} e^{-\tau_3 \epsilon^{k_7}_{k_2k_3k_6}} e^{-\tau_4 \epsilon_{k_4k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{02}_{k_5k_1} \Omega^{13}_{k_7k_6k_2k_3} \Omega^{02}_{k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7}_{k_1k_5k_2k_3k_6}\ \epsilon^{k_7}_{k_2k_3k_6}\ \epsilon_{k_4k_7}} \tag{631}$$



$\rightarrow$ T3:

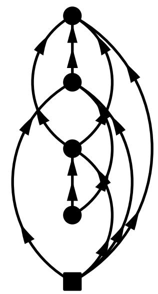


$$\text{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{632}$$

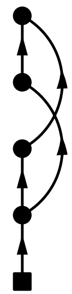
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_5}$$
$$a_3 = \epsilon^{k_7}_{k_2 k_3 k_6}$$
$$a_4 = \epsilon_{k_4 k_7}$$

Diagram 310:

$$\begin{aligned}
\text{PO4.310} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_1} \Omega^{13}_{k_9 k_6 k_2 k_3} \Omega^{04}_{k_9 k_7 k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_1 k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_2 k_3 k_6}} e^{-\tau_4 \epsilon_{k_4 k_7}} \\
&= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_5 k_1} \Omega^{13}_{k_9 k_6 k_2 k_3} \Omega^{04}_{k_9 k_7 k_8 k_4} \left[\frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_1 k_5 k_4 k_9} \ \epsilon_{k_1 k_5 k_2 k_3 k_6 k_4} \ \epsilon_{k_4 k_7 k_8 k_9}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_1 k_5 k_2 k_3 k_6 k_4} \ \epsilon_{k_2 k_3 k_6 k_4 k_7 k_8} \ \epsilon_{k_4 k_7 k_8 k_9}} \right]
\end{aligned} \tag{633}$$



$\rightarrow$ T8:

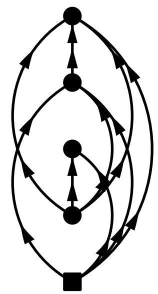


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{634}$$

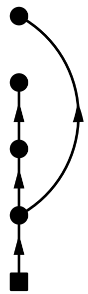
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_1 k_5}$$
$$a_3 = \epsilon^{k_9}_{k_2 k_3 k_6}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 311:

$$\mathrm{PO4.311} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{13}_{k_9k_6k_2k_3} \Omega^{04}_{k_9k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon_{k_1k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_2k_3k_6}} e^{-\tau_4 \epsilon}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{02}_{k_5k_1} \Omega^{13}_{k_9k_6k_2k_3} \Omega^{04}_{k_9k_7k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_9}_{k_1k_5k_2k_3k_6}\ \epsilon^{k_9}_{k_2k_3k_6}\ \epsilon_{k_4k_7k_8k_9}} \tag{635}$$



$\rightarrow$ T3:



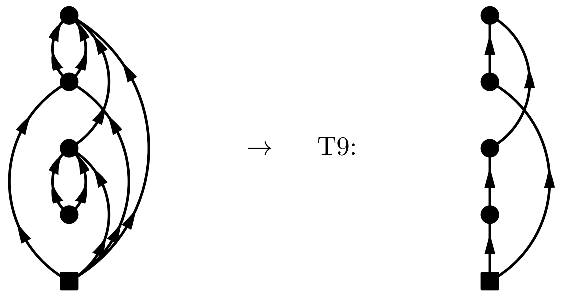
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{636}$$

$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon_{k_1 k_5}$$
$$a_3 = \epsilon^{k_9}_{k_2 k_3 k_6}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 312:

$$\mathrm{PO4.312} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{04}_{k_8k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_5k_6}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_2k_3}} e^{-\tau_4 \epsilon_{k_4k_7k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{04}_{k_8k_9k_7k_4} \Bigg[\frac{1}{\epsilon^{k_5k_6}_{k_2k_3k_4k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_7}\ \epsilon_{k_4k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_7}\ \epsilon_{k_4k_7k_8k_9}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k}} \qquad (637)$$



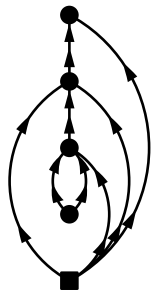
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (638)$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_8k_9}_{k_2k_3}$$
$$a_3 = \epsilon^{k_7}_{k_1k_5k_6}$$
$$a_4 = \epsilon_{k_4k_7k_8k_9}$$

Diagram 313:

$$\mathrm{PO4.313} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{13}_{k_8k_7k_2k_3} \Omega^{02}_{k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_5k_6}} e^{-\tau_3 \epsilon^{k_8}_{k_2k_3k_7}} e^{-\tau_4 \epsilon_{k_4k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_6k_1} \Omega^{13}_{k_8k_7k_2k_3} \Omega^{02}_{k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_2k_3k_7k_4}\ \epsilon_{k_4k_8}} \qquad (639)$$



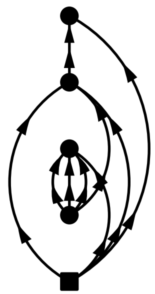
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{640}$$

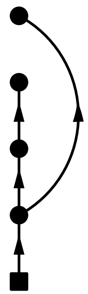
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_5k_6}$$
$$a_3 = \epsilon^{k_8}_{k_2k_3k_7}$$
$$a_4 = \epsilon_{k_4k_8}$$

Diagram 314:

$$\begin{aligned}\mathrm{PO4.314} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)(3!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{04}_{k_5k_6k_7k_1}\Omega^{13}_{k_9k_8k_2k_3}\Omega^{02}_{k_9k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5k_6k_7k_8}}e^{-\tau_2\epsilon_{k_1k_5k_6k_7}}e^{-\tau_3\epsilon^{k_9}_{k_2k_3k_8}}e^{-\tau_4\epsilon_{k_4k_9}} \\ &= \frac{-(-1)^4}{(2!)(3!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{04}_{k_5k_6k_7k_1}\Omega^{13}_{k_9k_8k_2k_3}\Omega^{02}_{k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_2k_3k_8k_4}\ \epsilon_{k_4k_9}}\end{aligned} \tag{641}$$



$\rightarrow$ T3:

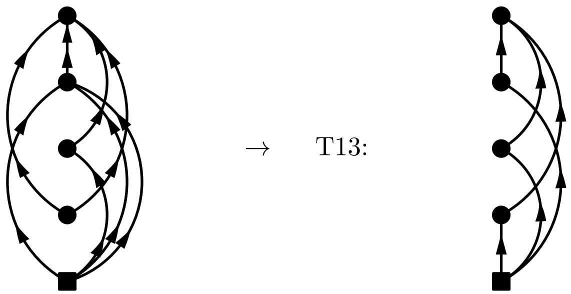


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{642}$$

$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon_{k_2 k_3 k_8}^{k_9}$$
$$a_3 = \epsilon_{k_4 k_9}$$
$$a_4 = \epsilon_{k_1 k_5 k_6 k_7}$$

Diagram 315:

$$\mathrm{PO4.315} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{11}_{k_7 k_1} \Omega^{13}_{k_8 k_2 k_3 k_4} \Omega^{04}_{k_8 k_7 k_5 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_1}^{k_7}} e^{-\tau_3 \epsilon_{k_2 k_3 k_4}^{k_8}} e^{-\tau_4 \epsilon_{k_5 k_6 k_7 k_8}}$$
$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{11}_{k_7 k_1} \Omega^{13}_{k_8 k_2 k_3 k_4} \Omega^{04}_{k_8 k_7 k_5 k_6} \Bigg[\frac{1}{\epsilon_{k_1 k_8}\ \epsilon_{k_1 k_5 k_6 k_8}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_7 k_8}\ \epsilon_{k_1 k_8}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_7 k_8}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_3 k_4 k_7}\ \epsilon_{k_5 k_6 k_7}} \tag{643}$$

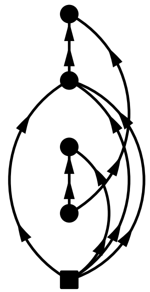


$$\mathrm{T13} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_4)(a_2 + a_1 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_1 + a_4)a_4} + \frac{1}{(a_1 + a_3 + a_4)(a_2} \tag{644}$$

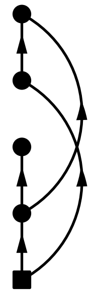
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1}^{k_7}$$
$$a_3 = \epsilon_{k_2 k_3 k_4}^{k_8}$$
$$a_4 = \epsilon_{k_5 k_6 k_7 k_8}$$

Diagram 316:

$$\mathrm{PO4.316} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{02}_{k_5 k_1} \Omega^{13}_{k_7 k_2 k_3 k_4} \Omega^{02}_{k_7 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_1 k_5}} e^{-\tau_3 \epsilon_{k_2 k_3 k_4}^{k_7}} e^{-\tau_4 \epsilon_{k_6 k_7}}$$
$$= \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{02}_{k_5 k_1} \Omega^{13}_{k_7 k_2 k_3 k_4} \Omega^{02}_{k_7 k_6} \left[\frac{1}{\epsilon_{k_1 k_7}\ \epsilon_{k_1 k_5}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_6 k_7}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_1 k_5}\ \epsilon_{k_2 k_3 k_4 k_6}\ \epsilon_{k_6 k_7}} \right] \tag{645}$$



$\rightarrow$ T10:



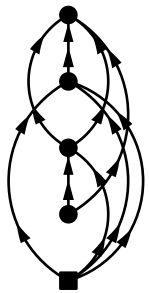
$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{646}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon_{k_1 k_5}$$
$$a_3 = \epsilon_{k_2 k_3 k_4}^{k_7}$$
$$a_4 = \epsilon_{k_6 k_7}$$

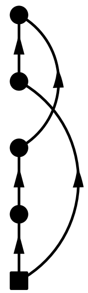
Diagram 317:

$$\mathrm{PO4.317} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{04}_{k_9k_7k_8k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_2k_3k_4}} e^{-\tau_4 \epsilon_{k_6k_7k}}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_5k_1} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{04}_{k_9k_7k_8k_6} \Bigg[\frac{1}{\epsilon_{k_1k_9}\ \epsilon_{k_1k_5k_6k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_9}\ \epsilon_{k_1k_5k_2k_3k_4k_6}\ \epsilon_{k_6k_7k_8k_9}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_2}} \tag{647}$$



$\rightarrow$ T9:

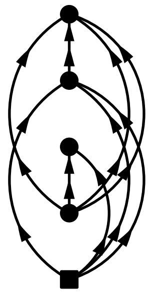


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{648}$$

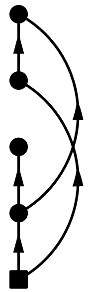
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_5}$$
$$a_3 = \epsilon^{k_9}_{k_2k_3k_4}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

Diagram 318:

$$
\begin{aligned}
\mathrm{PO4.318} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{02}_{k_5k_1}\Omega^{13}_{k_9k_2k_3k_4}\Omega^{04}_{k_9k_6k_7k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5k_6k_7k_8}}e^{-\tau_2\epsilon_{k_1k_5}}e^{-\tau_3\epsilon^{k_9}_{k_2k_3k_4}}e^{-\tau_4\epsilon_{k_6k_7k_8k_9}} \\
&= \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{02}_{k_5k_1}\Omega^{13}_{k_9k_2k_3k_4}\Omega^{04}_{k_9k_6k_7k_8} \left[\frac{1}{\epsilon_{k_1k_9}\ \epsilon_{k_1k_5}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5}\ \epsilon_{k_2k_3k_4k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_9}}\right]
\end{aligned}
\tag{649}
$$



$\rightarrow$ T10:

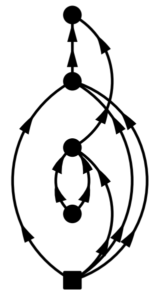


$$
\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{650}
$$

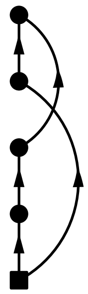
$$
\begin{aligned}
a_1 &= \epsilon^{k_5k_6k_7k_8} \\
a_2 &= \epsilon_{k_1k_5} \\
a_3 &= \epsilon^{k_9}_{k_2k_3k_4} \\
a_4 &= \epsilon_{k_6k_7k_8k_9}
\end{aligned}
$$

Diagram 319:

$$
\begin{aligned}
\mathrm{PO4.319} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_5k_6k_1}\Omega^{13}_{k_8k_2k_3k_4}\Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5k_6}}e^{-\tau_2\epsilon^{k_7}_{k_1k_5k_6}}e^{-\tau_3\epsilon^{k_8}_{k_2k_3k_4}}e^{-\tau_4\epsilon_{k_7k_8}} \\
&= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_5k_6k_1}\Omega^{13}_{k_8k_2k_3k_4}\Omega^{02}_{k_8k_7} \Bigg[\frac{1}{\epsilon_{k_1k_8}\ \epsilon_{k_1k_5k_6k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_8}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_2k_3k_4}\ \epsilon_{k_2k_3}
\end{aligned}
\tag{651}
$$



$\rightarrow$ T9:

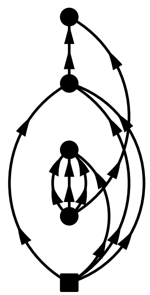


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{652}$$

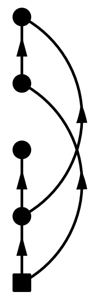
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_5 k_6}$$
$$a_3 = \epsilon^{k_8}_{k_2 k_3 k_4}$$
$$a_4 = \epsilon_{k_7 k_8}$$

Diagram 320:

$$\begin{aligned}\mathrm{PO4.320} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{04}_{k_5k_6k_7k_1} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{02}_{k_9k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon_{k_1k_5k_6k_7}} e^{-\tau_3 \epsilon^{k_9}_{k_2k_3k_4}} e^{-\tau_4 \epsilon_{k_8k_9}} \\ &= \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{04}_{k_5k_6k_7k_1} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{02}_{k_9k_8} \left[\frac{1}{\epsilon_{k_1k_9}\ \epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_2k_3k_4k_8}\ \epsilon_{k_8k_9}} \right]\end{aligned} \tag{653}$$



$\rightarrow$ T10:

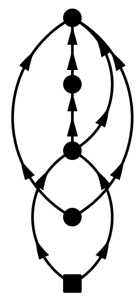


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{654}$$

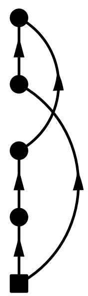
$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon_{k_1k_5k_6k_7}$$
$$a_3 = \epsilon^{k_9}_{k_2k_3k_4}$$
$$a_4 = \epsilon_{k_8k_9}$$

Diagram 321:

$$\begin{aligned}\mathrm{PO4.321} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{04}_{k_7k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_3\epsilon^{k_7}_{k_5}} e^{-\tau_4\epsilon_{k_3k_4k_6k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{04}_{k_7k_6k_3k_4} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_7}} + \frac{1}{\epsilon_{k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_7}} + \frac{1}{\epsilon_{k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_3k_4k_6k_7}} \right]\end{aligned} \tag{655}$$



$\rightarrow$ T9:

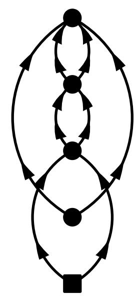


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{656}$$

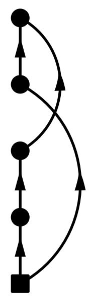
$$a_1 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon^{k_3k_4}$$
$$a_4 = \epsilon_{k_3k_4k_6k_7}$$

Diagram 322:

$$\begin{aligned}\mathrm{PO4.322} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}} e^{-\tau_2 \epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_3 \epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_4 \epsilon_{k_3k_4k_7k_8}} \\ &= \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{04}_{k_7k_8k_3k_4} \Bigg[\frac{1}{\epsilon^{k_5k_6}_{k_1k_2k_7k_8}\ \epsilon^{k_5k_6}_{k_1k_2k_3k_4k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon^{k_5k_6}_{k_1k_2k_3k_4k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3}}\end{aligned} \tag{657}$$



$\rightarrow$ T9:

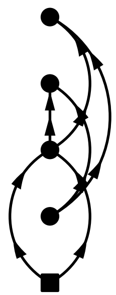
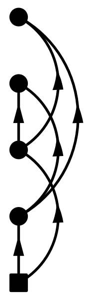


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{658}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_3 = \epsilon^{k_7 k_8}_{k_5 k_6}$$
$$a_4 = \epsilon_{k_3 k_4 k_7 k_8}$$

Diagram 323:

$$\text{PO4.323} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{02}_{k_5 k_3} \Omega^{02}_{k_6 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}} e^{-\tau_2 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_3 \epsilon_{k_3 k_5}} e^{-\tau_4 \epsilon_{k_4 k_6}}$$
$$= \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{20}_{k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{02}_{k_5 k_3} \Omega^{02}_{k_6 k_4} \left[\frac{1}{\epsilon_{k_5 k_6}\ \epsilon_{k_1 k_2}\ \epsilon_{k_3 k_5}\ \epsilon_{k_4 k_6}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_3 k_5}\ \epsilon_{k_4 k_6}} \right] \tag{659}$$

 $\rightarrow$ T11: 

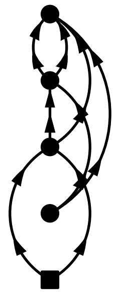
$$\text{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3 a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3 a_4} \tag{660}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_3 = \epsilon_{k_3 k_5}$$
$$a_4 = \epsilon_{k_4 k_6}$$

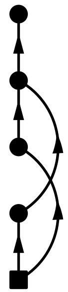
Diagram 324:

$$\mathrm{PO4.324} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{22}_{k_7k_8k_5k_3}\Omega^{04}_{k_7k_8k_6k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_3\epsilon^{k_7k_8}_{k_3k_5}} e^{-\tau_4$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{22}_{k_7k_8k_5k_3}\Omega^{04}_{k_7k_8k_6k_4} \left[\frac{1}{\epsilon_{k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_5k_4k_6}\ \epsilon_{k_4k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_4k_6}\ \epsilon_{k_4k_6k_7k_8}} \right] \tag{661}$$



$\rightarrow$ T12:



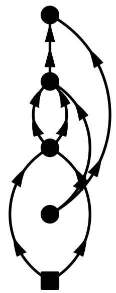
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{662}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_3 = \epsilon^{k_7k_8}_{k_3k_5}$$
$$a_4 = \epsilon_{k_4k_6k_7k_8}$$

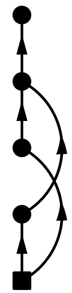
Diagram 325:

$$\mathrm{PO4.325} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{13}_{k_7k_5k_6k_3}\Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_3\epsilon^{k_7}_{k_3k_5k_6}} e^{-\tau_4\epsilon_{k_4k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{13}_{k_7k_5k_6k_3}\Omega^{02}_{k_7k_4} \left[\frac{1}{\epsilon_{k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_4k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_4k_7}} \right] \tag{663}$$



$\rightarrow$ T12:

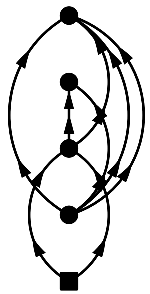


$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{664}$$

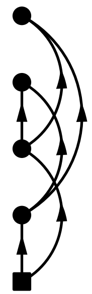
$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_3 = \epsilon^{k_7}_{k_3k_5k_6}$$
$$a_4 = \epsilon_{k_4k_7}$$

Diagram 326:

$$\begin{aligned}\text{PO4.326} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{02}_{k_7k_3} \Omega^{04}_{k_8k_4k_5k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon_{k_3k_7}} e^{-\tau_4\epsilon_{k_4k_5k_6}} \\ &= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{02}_{k_7k_3} \Omega^{04}_{k_8k_4k_5k_6} \left[\frac{1}{\epsilon_{k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_7}\ \epsilon_{k_4k_5k_6k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_3k_7}\ \epsilon_{k_4k_5k_6k_8}} \right]\end{aligned} \tag{665}$$



$\rightarrow$ T11:

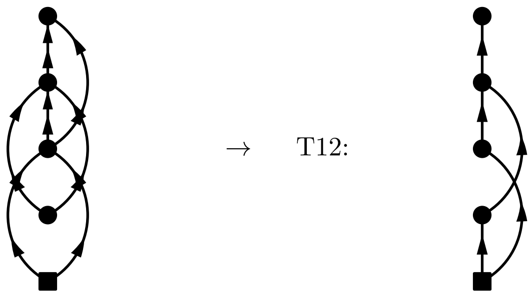


$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{666}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon_{k_1k_2}^{k_7k_8}$$
$$a_3 = \epsilon_{k_3k_7}$$
$$a_4 = \epsilon_{k_4k_5k_6k_8}$$

Diagram 327:

$$\mathrm{PO4.327} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_3k_4} \Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon_{k_1k_2}^{k_5k_6}} e^{-\tau_3\epsilon_{k_3k_4k_5}^{k_7}} e^{-\tau_4\epsilon_{k_6k_7}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_3k_4} \Omega^{02}_{k_7k_6} \left[\frac{1}{\epsilon_{k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_6k_7}} \right] \tag{667}$$



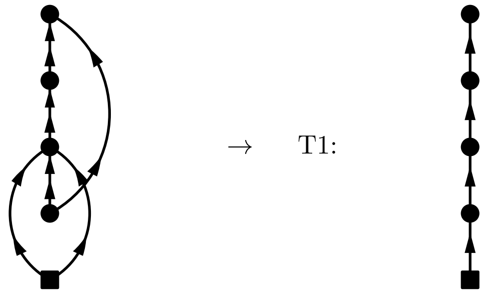
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{668}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_3 = \epsilon_{k_3k_4k_5}^{k_7}$$
$$a_4 = \epsilon_{k_6k_7}$$

Diagram 328:

$$\text{PO4.328} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_1k_2} \Omega^{11}_{k_6k_5} \Omega^{02}_{k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_3\epsilon^{k_6}_{k_5}} e^{-\tau_4\epsilon_{k_4k_6}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_1k_2} \Omega^{11}_{k_6k_5} \Omega^{02}_{k_6k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_4k_6}} \tag{669}$$



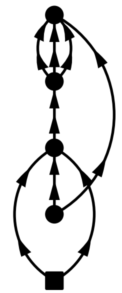
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{670}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_3 = \epsilon^{k_6}_{k_5}$$
$$a_4 = \epsilon_{k_4k_6}$$

Diagram 329:

$$\text{PO4.329} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_1k_2} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{04}_{k_6k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_3\epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_4\epsilon_{k_4k_6k_7k}}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{20}_{k_3k_4} \Omega^{13}_{k_5k_3k_1k_2} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{04}_{k_6k_7k_8k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_4k_6k_7k_8}} \tag{671}$$



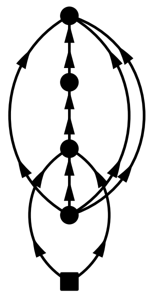
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{672}$$

$$a_1 = \epsilon^{k_3 k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1 k_2 k_3}$$
$$a_3 = \epsilon^{k_6 k_7 k_8}_{k_5}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 330:

$$\begin{aligned} \text{PO4.330} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_1 k_2} \Omega^{11}_{k_8 k_7} \Omega^{04}_{k_8 k_4 k_5 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3 k_4 k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1 k_2 k_3}} e^{-\tau_3 \epsilon^{k_8}_{k_7}} e^{-\tau_4 \epsilon_{k_4 k_5 k_6 k}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{40}_{k_3 k_4 k_5 k_6} \Omega^{13}_{k_7 k_3 k_1 k_2} \Omega^{11}_{k_8 k_7} \Omega^{04}_{k_8 k_4 k_5 k_6}}{\epsilon_{k_1 k_2} \ \epsilon_{k_1 k_2 k_3 k_4 k_5 k_6} \ \epsilon_{k_7 k_4 k_5 k_6} \ \epsilon_{k_4 k_5 k_6 k_8}} \end{aligned} \tag{673}$$



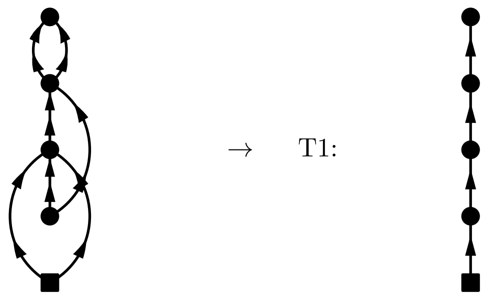
$\rightarrow$ T1:

$$T1 = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{674}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_3}$$
$$a_3 = \epsilon^{k_8}_{k_7}$$
$$a_4 = \epsilon_{k_4k_5k_6k_8}$$

Diagram 331:

$$\begin{aligned} \text{PO4.331} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{13}_{k_5k_3k_1k_2}\Omega^{22}_{k_6k_7k_5k_4}\Omega^{02}_{k_6k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4}} e^{-\tau_2\epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_3\epsilon^{k_6k_7}_{k_4k_5}} e^{-\tau_4\epsilon_{k_6k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{20}_{k_3k_4}\Omega^{13}_{k_5k_3k_1k_2}\Omega^{22}_{k_6k_7k_5k_4}\Omega^{02}_{k_6k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5}\ \epsilon_{k_6k_7}} \end{aligned} \tag{675}$$



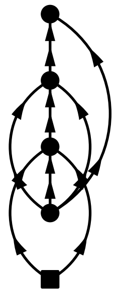
$$T1 = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{676}$$

$$a_1 = \epsilon^{k_3k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_3 = \epsilon^{k_6k_7}_{k_4k_5}$$
$$a_4 = \epsilon_{k_6k_7}$$

Diagram 332:

$$\mathrm{PO}4.332 = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_1k_2} \Omega^{13}_{k_8k_7k_4k_5} \Omega^{02}_{k_8k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_2k_3}} e^{-\tau_3 \epsilon^{k_8}_{k_4k_5k}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{40}_{k_3k_4k_5k_6} \Omega^{13}_{k_7k_3k_1k_2} \Omega^{13}_{k_8k_7k_4k_5} \Omega^{02}_{k_8k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_4k_5k_7k_6}\ \epsilon_{k_6k_8}} \tag{677}$$



$\rightarrow$ T1:

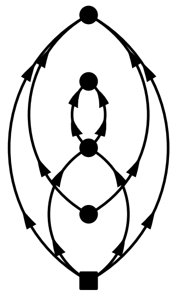
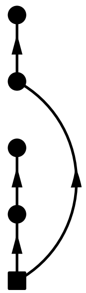
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{678}$$

$$a_1 = \epsilon^{k_3k_4k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_3}$$
$$a_3 = \epsilon^{k_8}_{k_4k_5k_7}$$
$$a_4 = \epsilon_{k_6k_8}$$

Diagram 333:

$$\mathrm{PO}4.333 = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_5k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3 \epsilon_{k_7k_8}} e^{-\tau_4 \epsilon_{k_3k_4k_5k_6}}$$

$$= \frac{(-1)^4}{(2!)^4} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_5k_6k_3k_4}}{\epsilon^{k_5k_6k_7k_8}_{k_1k_2}\ \epsilon^{k_7k_8}_{k_1k_2}\ \epsilon_{k_7k_8k_3k_4k_5k_6}\ \epsilon_{k_3k_4k_5k_6}} \tag{679}$$

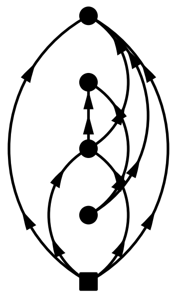
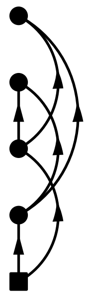
 $\rightarrow$ T4: 

$$\mathrm{T4} = \frac{1}{(a_1 + a_2)a_2(a_3 + a_4)a_4} \tag{680}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_1 k_2}$$
$$a_3 = \epsilon_{k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_5 k_6}$$

Diagram 334:

$$\begin{aligned}\mathrm{PO4.334} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{02}_{k_7k_5} \Omega^{04}_{k_8k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon_{k_5k_7}} e^{-\tau_4\epsilon_{k_3k_4k_6k_8}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{02}_{k_7k_5} \Omega^{04}_{k_8k_6k_3k_4} \left[\frac{1}{\epsilon_{k_7k_3k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7}\ \epsilon_{k_3k_4k_6k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_5k_7}\ \epsilon_{k_3k_4k_6k_8}} \right]\end{aligned} \tag{681}$$

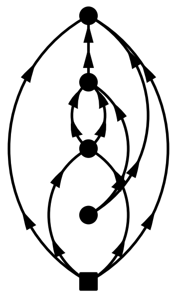
 $\rightarrow$ T11: 

$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{682}$$

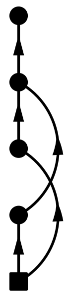
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon_{k_5k_7}$$
$$a_4 = \epsilon_{k_3k_4k_6k_8}$$

Diagram 335:

$$\begin{aligned}\mathrm{PO4.335} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_8k_5} \Omega^{04}_{k_9k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon^{k_9}_{k_5k_7k_8}} e^{-\tau_4\epsilon_{k_3k_4k_6}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_8k_5} \Omega^{04}_{k_9k_6k_3k_4} \left[\frac{1}{\epsilon_{k_7k_8k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7k_8k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_5k_7k_8k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_9}} \right]\end{aligned} \tag{683}$$



$\rightarrow$ T12:



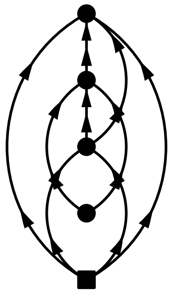
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{684}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon^{k_9}_{k_5k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4k_6k_9}$$

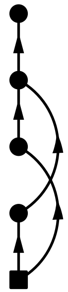
Diagram 336:

$$\mathrm{PO4.336} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_5k_6} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon^{k_9}_{k_5k_6k_7}} e^{-\tau_4\epsilon_{k_3k_4k_8}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_5k_6} \Omega^{04}_{k_9k_8k_3k_4} \left[\frac{1}{\epsilon_{k_7k_3k_4k_8} \;\; \epsilon_{k_1k_2k_3k_4} \;\; \epsilon_{k_5k_6k_7k_3k_4k_8} \;\; \epsilon_{k_3k_4k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \;\; \epsilon_{k_1k_2k_5k_6k_3k_4} \;\; \epsilon_{k_5k_6k_7k_3k_4k_8} \;\; \epsilon_{k_3k_4k_8k_9}} \right] \tag{685}$$



$\rightarrow$ T12:



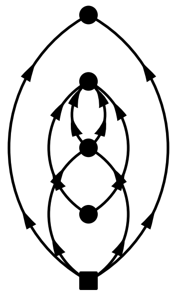
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{686}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon^{k_9}_{k_5k_6k_7}$$
$$a_4 = \epsilon_{k_3k_4k_8k_9}$$

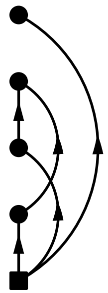
Diagram 337:

$$\mathrm{PO4.337} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{04}_{k_7k_8k_5k_6} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon_{k_5k_6k_7k_8}} e^{-\tau_4\epsilon_{k_3k_4}}$$

$$= \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{04}_{k_7k_8k_5k_6} \Omega^{02}_{k_3k_4} \left[\frac{1}{\epsilon_{k_7k_8} \;\; \epsilon_{k_1k_2} \;\; \epsilon_{k_5k_6k_7k_8} \;\; \epsilon_{k_3k_4}} + \frac{1}{\epsilon_{k_1k_2} \;\; \epsilon_{k_1k_2k_5k_6} \;\; \epsilon_{k_5k_6k_7k_8} \;\; \epsilon_{k_3k_4}} \right] \tag{687}$$



$\rightarrow$ T14:

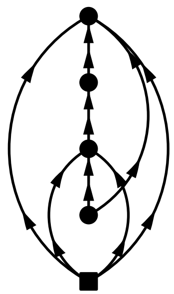


$$\mathrm{T14} = \frac{1}{(a_1+a_3)(a_2+a_1+a_3)a_3a_4} + \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{688}$$

$$\begin{aligned} a_1 &= \epsilon^{k_5k_6} \\ a_2 &= \epsilon^{k_7k_8}_{k_1k_2} \\ a_3 &= \epsilon_{k_5k_6k_7k_8} \\ a_4 &= \epsilon_{k_3k_4} \end{aligned}$$

Diagram 338:

$$\begin{aligned} \mathrm{PO4.338} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{11}_{k_8k_7} \Omega^{04}_{k_8k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1k_2k_5}} e^{-\tau_3\epsilon^{k_8}_{k_7}} e^{-\tau_4\epsilon_{k_3k_4k_6k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{11}_{k_8k_7} \Omega^{04}_{k_8k_6k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_7k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_8}} \end{aligned} \tag{689}$$



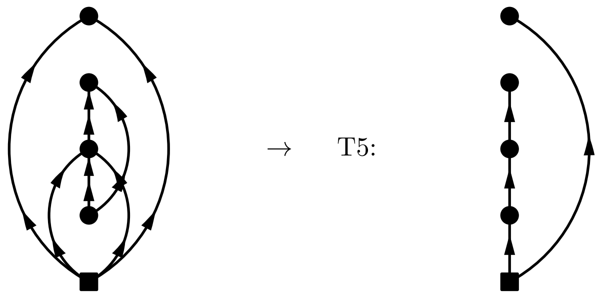
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{690}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_2 k_5}$$
$$a_3 = \epsilon^{k_8}_{k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_8}$$

Diagram 339:

$$\begin{aligned}\mathrm{PO4.339} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_1 k_2} \Omega^{02}_{k_7 k_6} \Omega^{02}_{k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1 k_2 k_5}} e^{-\tau_3 \epsilon_{k_6 k_7}} e^{-\tau_4 \epsilon_{k_3 k_4}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_1 k_2} \Omega^{02}_{k_7 k_6} \Omega^{02}_{k_3 k_4}}{\epsilon_{k_1 k_2}\ \epsilon_{k_1 k_2 k_5 k_6}\ \epsilon_{k_6 k_7}\ \epsilon_{k_3 k_4}}\end{aligned} \tag{691}$$



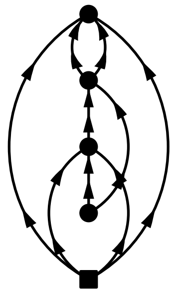
$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{692}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_2 k_5}$$
$$a_3 = \epsilon_{k_6 k_7}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 340:

$$\text{PO4.340} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{22}_{k_8k_9k_7k_6} \Omega^{04}_{k_8k_9k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_2k_5}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_6k_7}} e^{-\tau_4 \epsilon_{k_3k_4k_8}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{22}_{k_8k_9k_7k_6} \Omega^{04}_{k_8k_9k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_6k_3k_4}\ \epsilon_{k_6k_7k_3k_4}\ \epsilon_{k_3k_4k_8k_9}} \tag{693}$$



$\rightarrow$ T1:

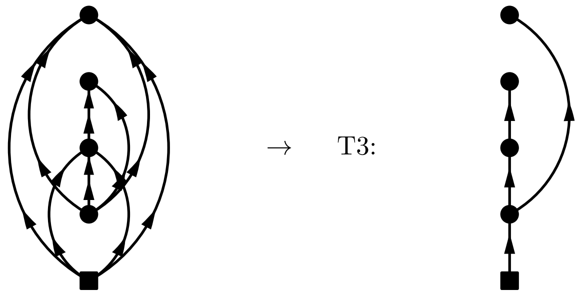
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{694}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_5}$$
$$a_3 = \epsilon^{k_8k_9}_{k_6k_7}$$
$$a_4 = \epsilon_{k_3k_4k_8k_9}$$

Diagram 341:

$$\text{PO4.341} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{02}_{k_9k_6} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7k_8}} e^{-\tau_2 \epsilon^{k_9}_{k_1k_2k_5}} e^{-\tau_3 \epsilon_{k_6k_9}} e^{-\tau_4 \epsilon_{k_3}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{40}_{k_5k_6k_7k_8} \Omega^{13}_{k_9k_5k_1k_2} \Omega^{02}_{k_9k_6} \Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_6}\ \epsilon_{k_6k_9}\ \epsilon_{k_3k_4k_7k_8}} \tag{695}$$

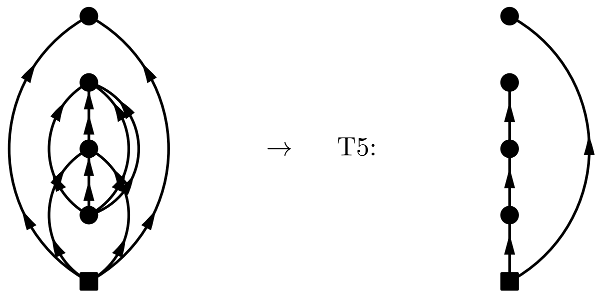


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{696}$$

$$a_1 = \epsilon^{k_5k_6k_7k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1k_2k_5}$$
$$a_3 = \epsilon_{k_6k_9}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

Diagram 342:

$$\begin{aligned}\mathrm{PO4.342} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^2(3!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{13}_{k_9k_5k_1k_2}\Omega^{04}_{k_9k_6k_7k_8}\Omega^{02}_{k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon^{k_5k_6k_7k_8}}e^{-\tau_2\epsilon^{k_9}_{k_1k_2k_5}}e^{-\tau_3\epsilon_{k_6k_7k_8k_9}}e^{-\tau_4\epsilon_{k_3k_4}} \\ &= \frac{(-1)^4}{(2!)^2(3!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{40}_{k_5k_6k_7k_8}\Omega^{13}_{k_9k_5k_1k_2}\Omega^{04}_{k_9k_6k_7k_8}\Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_1k_2k_5k_6k_7k_8}\ \epsilon_{k_6k_7k_8k_9}\ \epsilon_{k_3k_4}}\end{aligned} \tag{697}$$

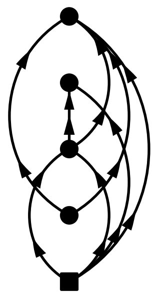


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{698}$$

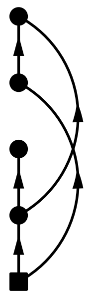
$$a_1 = \epsilon^{k_5 k_6 k_7 k_8}$$
$$a_2 = \epsilon^{k_9}_{k_1 k_2 k_5}$$
$$a_3 = \epsilon_{k_6 k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 343:

$$\begin{aligned}\mathrm{PO4.343} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_1 k_2} \Omega^{02}_{k_7 k_3} \Omega^{04}_{k_8 k_5 k_6 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_1 k_2}} e^{-\tau_3 \epsilon_{k_3 k_7}} e^{-\tau_4 \epsilon_{k_4 k_5 k_6 k_8}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_1 k_2} \Omega^{02}_{k_7 k_3} \Omega^{04}_{k_8 k_5 k_6 k_4} \left[\frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_1 k_2 k_3 k_4 k_5 k_6} \ \epsilon_{k_3 k_7} \ \epsilon_{k_4 k_5 k_6 k_8}} + \frac{1}{\epsilon_{k_4 k_8} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_3 k_7} \ \epsilon_{k_4 k_5 k_6 k_8}} \right]\end{aligned} \tag{699}$$



$\rightarrow$ T10:



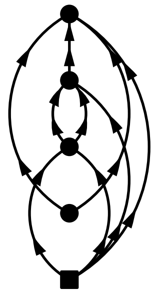
$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{700}$$

$$a_1 = \epsilon^{k_7 k_8}_{k_1 k_2}$$
$$a_2 = \epsilon_{k_3 k_7}$$
$$a_3 = \epsilon^{k_5 k_6}$$
$$a_4 = \epsilon_{k_4 k_5 k_6 k_8}$$

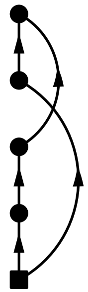
Diagram 344:

$$\mathrm{PO4.344} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_8k_3} \Omega^{04}_{k_9k_5k_6k_4} \int_0^{\tau} \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3 \epsilon^{k_9}_{k_3k_7k_8}} e^{-\tau_4 \epsilon_{k_4k_5k_6k_9}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_8k_3} \Omega^{04}_{k_9k_5k_6k_4} \Bigg[\frac{1}{\epsilon^{k_7k_8}_{k_1k_2k_4k_9}\ \epsilon^{k_7k_8}_{k_1k_2k_4k_5k_6k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_6k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7k_8}_{k_1k_2k_4k_5k_6k_9}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_4k_5k_6k_9}} + \quad (701)$$



$\rightarrow$ T9:



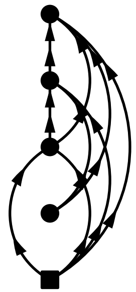
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \quad (702)$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon^{k_9}_{k_3k_7k_8}$$
$$a_4 = \epsilon_{k_4k_5k_6k_9}$$

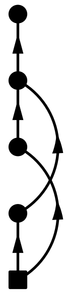
Diagram 345:

$$\text{PO4.345} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_5k_3} \Omega^{04}_{k_9k_8k_6k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon^{k_9}_{k_3k_5k}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_7k_5k_3} \Omega^{04}_{k_9k_8k_6k_4} \left[\frac{1}{\epsilon_{k_3k_7k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_7k_4k_6k_8}\ \epsilon_{k_4k_6k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_5k_4k_6}\ \epsilon_{k_3k_5k_7k_4k_6k_8}\ \epsilon_{k_4k_6k_8k_9}} \right] \tag{703}$$



$\rightarrow$ T12:



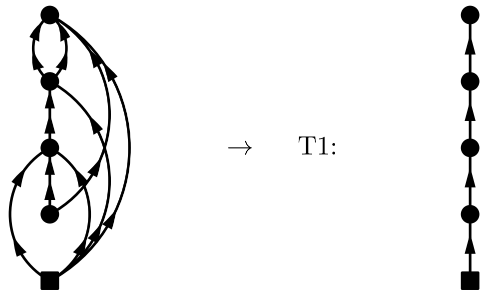
$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{704}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7k_8}_{k_1k_2}$$
$$a_3 = \epsilon^{k_9}_{k_3k_5k_7}$$
$$a_4 = \epsilon_{k_4k_6k_8k_9}$$

Diagram 346:

$$\text{PO4.346} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{22}_{k_8k_9k_7k_3} \Omega^{04}_{k_8k_9k_6k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1k_2k_5}} e^{-\tau_3\epsilon^{k_8k_9}_{k_3k_7}} e^{-\tau_4\epsilon_{k_4k_6}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{22}_{k_8k_9k_7k_3} \Omega^{04}_{k_8k_9k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_3k_7k_4k_6}\ \epsilon_{k_4k_6k_8k_9}} \tag{705}$$

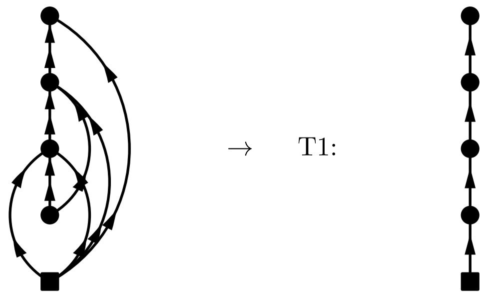


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{706}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_2 k_5}$$
$$a_3 = \epsilon^{k_8 k_9}_{k_3 k_7}$$
$$a_4 = \epsilon_{k_4 k_6 k_8 k_9}$$

Diagram 347:

$$\mathrm{PO4.347} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_1 k_2} \Omega^{13}_{k_8 k_7 k_6 k_3} \Omega^{02}_{k_8 k_4} \int_0^{\tau} \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1 k_2 k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_3 k_6 k_7}} e^{-\tau_4 \epsilon_{k_4 k_8}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_5 k_1 k_2} \Omega^{13}_{k_8 k_7 k_6 k_3} \Omega^{02}_{k_8 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_1 k_2 k_5 k_3 k_6 k_4}\ \epsilon_{k_3 k_6 k_7 k_4}\ \epsilon_{k_4 k_8}} \tag{707}$$

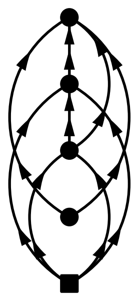


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{708}$$

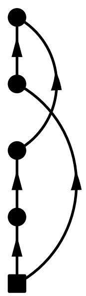
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_2 k_5}$$
$$a_3 = \epsilon^{k_8}_{k_3 k_6 k_7}$$
$$a_4 = \epsilon_{k_4 k_8}$$

Diagram 348:

$$\mathrm{PO4.348} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_1 k_2} \Omega^{13}_{k_9 k_7 k_3 k_4} \Omega^{04}_{k_9 k_8 k_5 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_1 k_2}} e^{-\tau_3 \epsilon^{k_9}_{k_3 k_4 k_7}} e^{-\tau_4 \epsilon_{k_5 k_6 k_8}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{22}_{k_7 k_8 k_1 k_2} \Omega^{13}_{k_9 k_7 k_3 k_4} \Omega^{04}_{k_9 k_8 k_5 k_6} \Bigg[\frac{1}{\epsilon^{k_7}_{k_1 k_2 k_9} \ \epsilon^{k_7}_{k_1 k_2 k_5 k_6 k_9} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6 k_8 k_9}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon^{k_7}_{k_1 k_2 k_5 k_6 k_9} \ \epsilon_{k_1 k_2 k_3 k_4 k_5 k_6} \ \epsilon_{k_5 k_6 k_8 k_9}} + \frac{}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k}}$$
(709)



$\rightarrow$ T9:

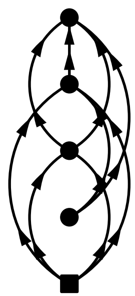


$$\mathrm{T9} = \frac{1}{(a_1 + a_2 + a_4)(a_2 + a_4)(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{710}$$

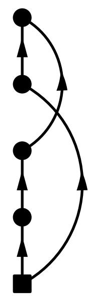
$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_1 k_2}$$
$$a_3 = \epsilon^{k_9}_{k_3 k_4 k_7}$$
$$a_4 = \epsilon_{k_5 k_6 k_8 k_9}$$

Diagram 349:

$$\mathrm{PO4.349} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_5k_3k_4} \Omega^{04}_{k_9k_7k_8k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7k_8}_{k_1k_2}} e^{-\tau_3\epsilon^{k_9}_{k_3k_4k_5}} e^{-\tau_4\epsilon_{k_6k_7k_8}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{22}_{k_7k_8k_1k_2} \Omega^{13}_{k_9k_5k_3k_4} \Omega^{04}_{k_9k_7k_8k_6} \Bigg[\frac{1}{\epsilon^{k_5}_{k_7k_8k_9}\ \epsilon^{k_5}_{k_1k_2k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon^{k_5}_{k_7k_8k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4}} \tag{711}$$



$\rightarrow$ T9:



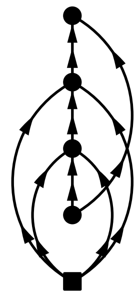
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{712}$$

$$a_1 = \epsilon^{k_7 k_8}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_5 k_6}$$
$$a_3 = \epsilon^{k_9}_{k_3 k_4 k_5}$$
$$a_4 = \epsilon_{k_6 k_7 k_8 k_9}$$

Diagram 350:

$$\text{PO4.350} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{13}_{k_8k_7k_3k_4} \Omega^{02}_{k_8k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_2k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_3k_4k_7}} e^{-\tau_4 \epsilon_{k_6k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{13}_{k_8k_7k_3k_4} \Omega^{02}_{k_8k_6}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_7k_6}\ \epsilon_{k_6k_8}} \tag{713}$$



$\rightarrow$ T1:

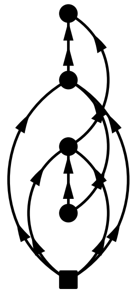
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{714}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_5}$$
$$a_3 = \epsilon^{k_8}_{k_3k_4k_7}$$
$$a_4 = \epsilon_{k_6k_8}$$

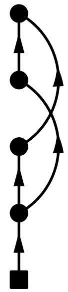
Diagram 351:

$$\text{PO4.351} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{13}_{k_8k_6k_3k_4} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_2k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_3k_4k_6}} e^{-\tau_4 \epsilon_{k_7k_8}}$$

$$= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_5k_1k_2} \Omega^{13}_{k_8k_6k_3k_4} \Omega^{02}_{k_8k_7} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_8}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_7}\ \epsilon_{k_7k_8}} \right] \tag{715}$$



$\rightarrow$ T8:

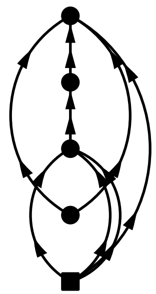


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{716}$$

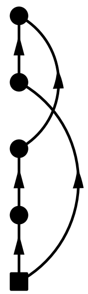
$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_5}$$
$$a_3 = \epsilon^{k_8}_{k_3k_4k_6}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 352:

$$\begin{aligned}\mathrm{PO4.352} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)(3!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_1k_2k_3}\Omega^{11}_{k_8k_7}\Omega^{04}_{k_8k_5k_6k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5k_6}}e^{-\tau_2\epsilon^{k_7}_{k_1k_2k_3}}e^{-\tau_3\epsilon^{k_8}_{k_7}}e^{-\tau_4\epsilon_{k_4k_5k_6k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_1k_2k_3}\Omega^{11}_{k_8k_7}\Omega^{04}_{k_8k_5k_6k_4}\Bigg[\frac{1}{\epsilon_{k_4k_8}\ \epsilon^{k_7}_{k_1k_2k_3k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_6k_8}} + \frac{1}{\epsilon_{k_4k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_7k_4}\ \epsilon_{k_4k_5k_6k_8}} + \frac{1}{\epsilon_{k_7k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_7k_4k_5k_6}\ \epsilon_{k_4k_5}}\end{aligned} \tag{717}$$



$\rightarrow$ T9:

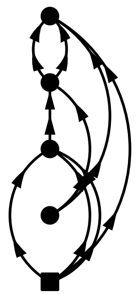


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{718}$$

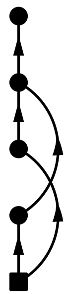
$$a_1 = \epsilon^{k_7}_{k_1 k_2 k_3}$$
$$a_2 = \epsilon^{k_5 k_6}$$
$$a_3 = \epsilon^{k_8}_{k_7}$$
$$a_4 = \epsilon_{k_4 k_5 k_6 k_8}$$

Diagram 353:

$$\begin{aligned}\mathrm{PO4.353} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_1k_2k_3} \Omega^{22}_{k_8k_9k_7k_5} \Omega^{04}_{k_8k_9k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1k_2k_3}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_5k_7}} e^{-\tau_4 \epsilon_{k_4k_6k}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_1k_2k_3} \Omega^{22}_{k_8k_9k_7k_5} \Omega^{04}_{k_8k_9k_6k_4} \left[\frac{1}{\epsilon_{k_7k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7k_4k_6}\ \epsilon_{k_4k_6k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_5k_4k_6}\ \epsilon_{k_5k_7k_4k_6}\ \epsilon_{k_4k_6k_8k_9}} \right]\end{aligned} \tag{719}$$



$\rightarrow$ T12:

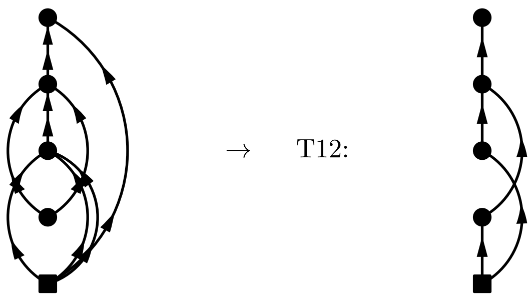


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{720}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_2 k_3}$$
$$a_3 = \epsilon^{k_8 k_9}_{k_5 k_7}$$
$$a_4 = \epsilon_{k_4 k_6 k_8 k_9}$$

Diagram 354:

$$\mathrm{PO4.354} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_1 k_2 k_3} \Omega^{13}_{k_8 k_7 k_5 k_6} \Omega^{02}_{k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}} e^{-\tau_2 \epsilon^{k_7}_{k_1 k_2 k_3}} e^{-\tau_3 \epsilon^{k_8}_{k_5 k_6 k_7}} e^{-\tau_4 \epsilon_{k_4 k_8}}$$
$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{20}_{k_5 k_6} \Omega^{13}_{k_7 k_1 k_2 k_3} \Omega^{13}_{k_8 k_7 k_5 k_6} \Omega^{02}_{k_8 k_4} \left[\frac{1}{\epsilon_{k_7 k_4} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6 k_7 k_4} \ \epsilon_{k_4 k_8}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_1 k_2 k_3 k_5 k_6 k_4} \ \epsilon_{k_5 k_6 k_7 k_4} \ \epsilon_{k_4 k_8}} \right] \tag{721}$$



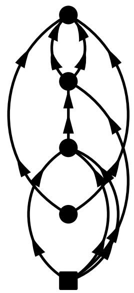
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{722}$$

$$a_1 = \epsilon^{k_5 k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1 k_2 k_3}$$
$$a_3 = \epsilon^{k_8}_{k_5 k_6 k_7}$$
$$a_4 = \epsilon_{k_4 k_8}$$

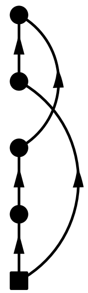
Diagram 355:

$$\mathrm{PO4.355} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_1k_2k_3}\Omega^{22}_{k_8k_9k_7k_4}\Omega^{04}_{k_8k_9k_5k_6}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5k_6}}e^{-\tau_2\epsilon^{k_7}_{k_1k_2k_3}}e^{-\tau_3\epsilon^{k_8k_9}_{k_4k_7}}e^{-\tau_4\epsilon_{k_5k_6k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{20}_{k_5k_6}\Omega^{13}_{k_7k_1k_2k_3}\Omega^{22}_{k_8k_9k_7k_4}\Omega^{04}_{k_8k_9k_5k_6}\Bigg[\frac{1}{\epsilon^{k_7}_{k_1k_2k_3k_8k_9}\ \epsilon^{k_7}_{k_1k_2k_3k_5k_6k_8k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_7}_{k_1k_2k_3k_5k_6k_8k_9}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_5k_6k_8k_9}} \tag{723}$$



$\rightarrow$ T9:



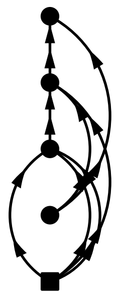
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{724}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_3}$$
$$a_3 = \epsilon^{k_8k_9}_{k_4k_7}$$
$$a_4 = \epsilon_{k_5k_6k_8k_9}$$

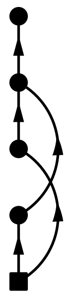
Diagram 356:

$$\mathrm{PO4.356} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_1k_2k_3} \Omega^{13}_{k_8k_7k_5k_4} \Omega^{02}_{k_8k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}} e^{-\tau_2\epsilon^{k_7}_{k_1k_2k_3}} e^{-\tau_3\epsilon^{k_8}_{k_4k_5k_7}} e^{-\tau_4\epsilon_{k_6k_8}}$$

$$= \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{20}_{k_5k_6} \Omega^{13}_{k_7k_1k_2k_3} \Omega^{13}_{k_8k_7k_5k_4} \Omega^{02}_{k_8k_6} \left[\frac{1}{\epsilon_{k_4k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_7k_6}\ \epsilon_{k_6k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_2k_3k_4k_5k_6}\ \epsilon_{k_4k_5k_7k_6}\ \epsilon_{k_6k_8}} \right] \tag{725}$$



$\rightarrow$ T12:



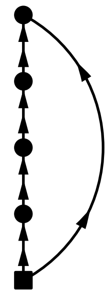
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{726}$$

$$a_1 = \epsilon^{k_5k_6}$$
$$a_2 = \epsilon^{k_7}_{k_1k_2k_3}$$
$$a_3 = \epsilon^{k_8}_{k_4k_5k_7}$$
$$a_4 = \epsilon_{k_6k_8}$$

Diagram 357:

$$\mathrm{PO4.357} = \lim_{\tau\to\infty} (-1)^4 \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{11}_{k_4k_3} \Omega^{11}_{k_5k_4} \Omega^{02}_{k_5k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4}_{k_3}} e^{-\tau_3\epsilon^{k_5}_{k_4}} e^{-\tau_4\epsilon_{k_2k_5}}$$

$$= (-1)^4 \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{11}_{k_4k_3} \Omega^{11}_{k_5k_4} \Omega^{02}_{k_5k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_2}\ \epsilon_{k_2k_5}} \tag{727}$$



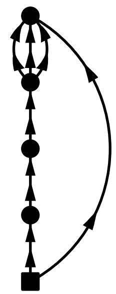
$\rightarrow$ T1:

$$T1 = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{728}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4}$$
$$a_3 = \epsilon_{k_4}^{k_5}$$
$$a_4 = \epsilon_{k_2 k_5}$$

Diagram 358:

$$\begin{aligned} \text{PO4.358} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{11}_{k_4k_3} \Omega^{31}_{k_5k_6k_7k_4} \Omega^{04}_{k_5k_6k_7k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3}} e^{-\tau_2 \epsilon_{k_3}^{k_4}} e^{-\tau_3 \epsilon_{k_4}^{k_5k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_5k_6k_7}} \\ &= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{11}_{k_4k_3} \Omega^{31}_{k_5k_6k_7k_4} \Omega^{04}_{k_5k_6k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_2}\ \epsilon_{k_2k_5k_6k_7}} \end{aligned} \tag{729}$$



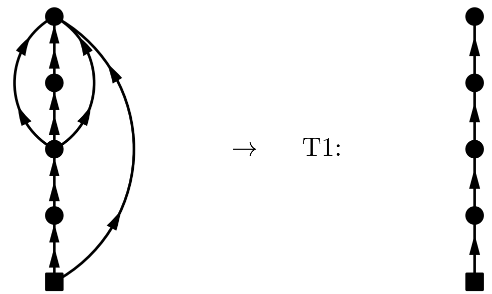
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{730}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4}$$
$$a_3 = \epsilon_{k_4}^{k_5k_6k_7}$$
$$a_4 = \epsilon_{k_2k_5k_6k_7}$$

Diagram 359:

$$\begin{aligned}\mathrm{PO4.359} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{31}_{k_4k_5k_6k_3}\Omega^{11}_{k_7k_4}\Omega^{04}_{k_7k_5k_6k_2}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_3}}e^{-\tau_2\epsilon_{k_3}^{k_4k_5k_6}}e^{-\tau_3\epsilon_{k_4}^{k_7}}e^{-\tau_4\epsilon_{k_2k_5k_6k_7}}\\ &= \frac{(-1)^4}{(2!)}\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{31}_{k_4k_5k_6k_3}\Omega^{11}_{k_7k_4}\Omega^{04}_{k_7k_5k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_7}}\end{aligned} \tag{731}$$



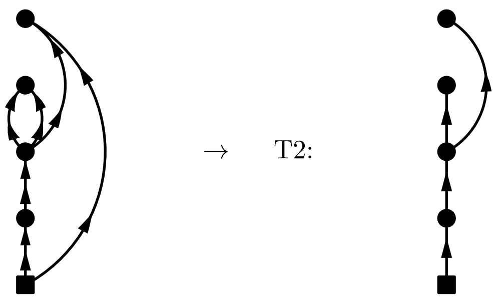
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{732}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4k_5k_6}$$
$$a_3 = \epsilon_{k_4}^{k_7}$$
$$a_4 = \epsilon_{k_2k_5k_6k_7}$$

Diagram 360:

$$\text{PO4.360} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_3} \Omega^{02}_{k_4k_5} \Omega^{02}_{k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4k_5k_6}_{k_3}} e^{-\tau_3\epsilon_{k_4k_5}} e^{-\tau_4\epsilon_{k_2k_6}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_3} \Omega^{02}_{k_4k_5} \Omega^{02}_{k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_5}\ \epsilon_{k_2k_6}} \tag{733}$$



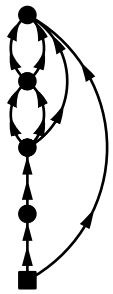
$$\text{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{734}$$

$$a_1 = \epsilon^{k_3}_{k_1}$$
$$a_2 = \epsilon^{k_4k_5k_6}_{k_3}$$
$$a_3 = \epsilon_{k_4k_5}$$
$$a_4 = \epsilon_{k_2k_6}$$

Diagram 361:

$$\text{PO4.361} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_3} \Omega^{22}_{k_7k_8k_4k_5} \Omega^{04}_{k_7k_8k_6k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4k_5k_6}_{k_3}} e^{-\tau_3\epsilon^{k_7k_8}_{k_4k_5}} e^{-\tau_4\epsilon_{k_2k_6k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_3} \Omega^{22}_{k_7k_8k_4k_5} \Omega^{04}_{k_7k_8k_6k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_5k_2k_6}\ \epsilon_{k_2k_6k_7k_8}} \tag{735}$$



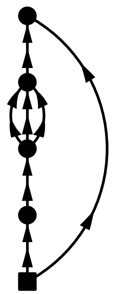
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{736}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4 k_5 k_6}$$
$$a_3 = \epsilon_{k_4 k_5}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_2 k_6 k_7 k_8}$$

Diagram 362:

$$\begin{aligned}
\mathrm{PO4.362} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{11}_{k_3 k_1} \Omega^{31}_{k_4 k_5 k_6 k_3} \Omega^{13}_{k_7 k_4 k_5 k_6} \Omega^{02}_{k_7 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3}} e^{-\tau_2 \epsilon_{k_3}^{k_4 k_5 k_6}} e^{-\tau_3 \epsilon_{k_4 k_5 k_6}^{k_7}} e^{-\tau_4 \epsilon_{k_2 k_7}} \\
&= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{11}_{k_3 k_1} \Omega^{31}_{k_4 k_5 k_6 k_3} \Omega^{13}_{k_7 k_4 k_5 k_6} \Omega^{02}_{k_7 k_2}}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_2} \ \epsilon_{k_4 k_5 k_6 k_2} \ \epsilon_{k_2 k_7}}
\end{aligned} \tag{737}$$



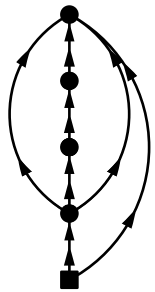
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{738}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4 k_5 k_6}$$
$$a_3 = \epsilon_{k_4 k_5 k_6}^{k_7}$$
$$a_4 = \epsilon_{k_2 k_7}$$

Diagram 363:

$$\mathrm{PO4.363} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{11}_{k_7 k_6} \Omega^{04}_{k_7 k_4 k_5 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_6}^{k_7}} e^{-\tau_4 \epsilon_{k_2 k_4 k_5 k_7}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{11}_{k_7 k_6} \Omega^{04}_{k_7 k_4 k_5 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_2 k_4 k_5}\ \epsilon_{k_6 k_2 k_4 k_5}\ \epsilon_{k_2 k_4 k_5 k_7}} \tag{739}$$



$\rightarrow$ T1:

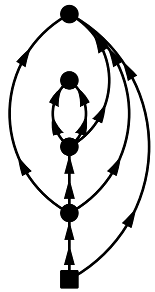
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{740}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7}$$
$$a_4 = \epsilon_{k_2 k_4 k_5 k_7}$$

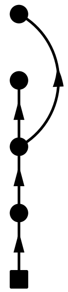
Diagram 364:

$$\text{PO4.364} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{02}_{k_6k_7} \Omega^{04}_{k_8k_4k_5k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6k_7k_8}} e^{-\tau_3 \epsilon_{k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_4k_5k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{02}_{k_6k_7} \Omega^{04}_{k_8k_4k_5k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_6k_7}\ \epsilon_{k_2k_4k_5k_8}} \tag{741}$$



$\rightarrow$ T2:



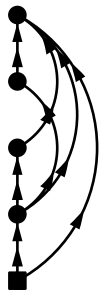
$$\text{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{742}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_6k_7}$$
$$a_4 = \epsilon_{k_2k_4k_5k_8}$$

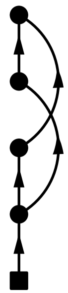
Diagram 365:

$$\text{PO4.365} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{11}_{k_7k_4} \Omega^{04}_{k_7k_6k_5k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_4}^{k_7}} e^{-\tau_4 \epsilon_{k_2k_5k_6}}$$

$$= \frac{-(-1)^4}{2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{11}_{k_7k_4} \Omega^{04}_{k_7k_6k_5k_2} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_5k_7}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_2k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_4k_2k_5k_6}\ \epsilon_{k_2k_5k_6k_7}} \right] \tag{743}$$



$\rightarrow$ T8:

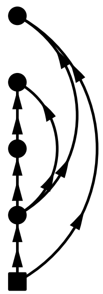


$$\mathrm{T8} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{744}$$

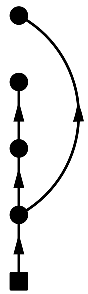
$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_4}^{k_7}$$
$$a_4 = \epsilon_{k_2 k_5 k_6 k_7}$$

Diagram 366:

$$\begin{aligned}
\mathrm{PO4.366} &= \lim_{\tau \to \infty} (-1)^4 \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{02}_{k_6 k_4} \Omega^{02}_{k_5 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_4 k_6}} e^{-\tau_4 \epsilon_{k_2 k_5}} \\
&= (-1)^4 \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{02}_{k_6 k_4} \Omega^{02}_{k_5 k_2}}{\epsilon_{k_1 k_2} \; \epsilon_{k_3 k_4} \; \epsilon_{k_4 k_6} \; \epsilon_{k_2 k_5}}
\end{aligned} \tag{745}$$



$\rightarrow$ T3:

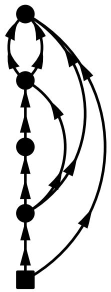


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{746}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_4 k_6}$$
$$a_4 = \epsilon_{k_2 k_5}$$

Diagram 367:

$$\mathrm{PO4.367} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{22}_{k_7 k_8 k_6 k_4} \Omega^{04}_{k_7 k_8 k_5 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_4 k_6}^{k_7 k_8}} e^{-\tau_4 \epsilon_{k_2}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{22}_{k_7 k_8 k_6 k_4} \Omega^{04}_{k_7 k_8 k_5 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_2 k_5}\ \epsilon_{k_4 k_6 k_2 k_5}\ \epsilon_{k_2 k_5 k_7 k_8}} \tag{747}$$



$\rightarrow$ T1:

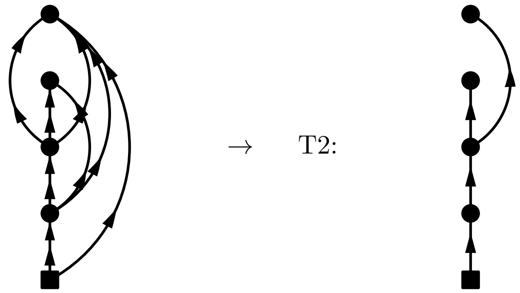
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{748}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_4 k_6}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_2 k_5 k_7 k_8}$$

Diagram 368:

$$\text{PO4.368} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{02}_{k_6k_4} \Omega^{04}_{k_7k_8k_5k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_3}} e^{-\tau_3 \epsilon_{k_4k_6}} e^{-$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{02}_{k_6k_4} \Omega^{04}_{k_7k_8k_5k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_4k_6}\ \epsilon_{k_2k_5k_7k_8}} \tag{749}$$



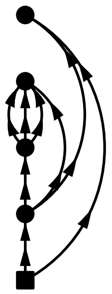
$$\text{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{750}$$

$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_3}$$
$$a_3 = \epsilon_{k_4k_6}$$
$$a_4 = \epsilon_{k_2k_5k_7k_8}$$

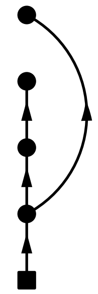
Diagram 369:

$$\text{PO4.369} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{04}_{k_6k_7k_8k_4} \Omega^{02}_{k_5k_2} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_3}} e^{-\tau_3 \epsilon_{k_4k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_2k_5}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{04}_{k_6k_7k_8k_4} \Omega^{02}_{k_5k_2}}{\epsilon_{k_1k_2}\ \epsilon^{k_6k_7k_8}_{k_3k_2k_5}\ \epsilon_{k_4k_6k_7k_8}\ \epsilon_{k_2k_5}} \tag{751}$$



$\rightarrow$ T3:

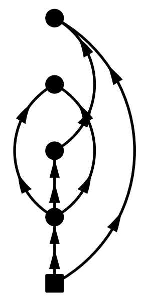


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{752}$$

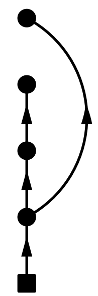
$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_2 k_5}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 370:

$$\mathrm{PO4.370} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{02}_{k_4 k_5} \Omega^{02}_{k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_4 k_5}} e^{-\tau_4 \epsilon_{k_2 k_6}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{02}_{k_4 k_5} \Omega^{02}_{k_6 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_5}^{k_6}\ \epsilon_{k_4 k_5}\ \epsilon_{k_2 k_6}} \tag{753}$$



$\rightarrow$ T3:

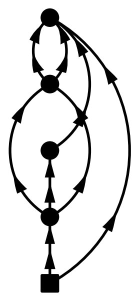


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{754}$$

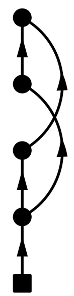
$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_4 k_5}$$
$$a_4 = \epsilon_{k_2 k_6}$$

Diagram 371:

$$\begin{aligned}\mathrm{PO4.371} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{22}_{k_7 k_8 k_4 k_5} \Omega^{04}_{k_7 k_8 k_6 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_4 k_5}^{k_7 k_8}} e^{-\tau_4 \epsilon_{k_2 k_6 k_7 k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{22}_{k_7 k_8 k_4 k_5} \Omega^{04}_{k_7 k_8 k_6 k_2} \left[\frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_2 k_7 k_8} \ \epsilon_{k_3 k_4 k_5 k_2} \ \epsilon_{k_2 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_4 k_5 k_2} \ \epsilon_{k_4 k_5 k_2 k_6} \ \epsilon_{k_2 k_6 k_7 k_8}} \right]\end{aligned} \tag{755}$$



$\rightarrow$ T8:

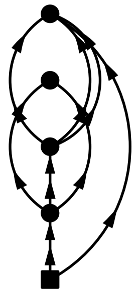


$$\mathrm{T8} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{756}$$

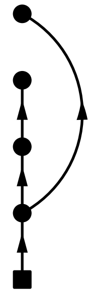
$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_4k_5}^{k_7k_8}$$
$$a_4 = \epsilon_{k_2k_6k_7k_8}$$

Diagram 372:

$$\mathrm{PO4.372} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{02}_{k_4k_5} \Omega^{04}_{k_6k_7k_8k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_3}^{k_6k_7k_8}} e^{-\tau_3\epsilon_{k_4k_5}} e^{-\tau_4\epsilon_{k_2k_6k_7k_8}}$$
$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{02}_{k_4k_5} \Omega^{04}_{k_6k_7k_8k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_5}\ \epsilon_{k_2k_6k_7k_8}} \tag{757}$$



$\rightarrow$ T3:



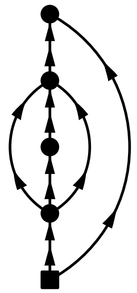
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{758}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_2k_6k_7k_8}$$
$$a_4 = \epsilon_{k_4k_5}$$

Diagram 373:

$$\text{PO4.373} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{13}_{k_7k_6k_4k_5} \Omega^{02}_{k_7k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_3}} e^{-\tau_3\epsilon^{k_7}_{k_4k_5k_6}} e^{-\tau_4\epsilon_{k_2k_7}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{13}_{k_7k_6k_4k_5} \Omega^{02}_{k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_4k_5k_6k_2}\ \epsilon_{k_2k_7}} \tag{759}$$



$\rightarrow$ T1:

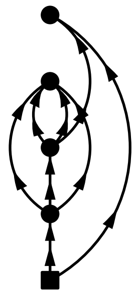
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{760}$$

$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_3}$$
$$a_3 = \epsilon^{k_7}_{k_4k_5k_6}$$
$$a_4 = \epsilon_{k_2k_7}$$

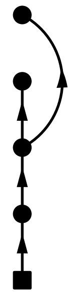
Diagram 374:

$$\text{PO4.374} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{04}_{k_6k_7k_4k_5} \Omega^{02}_{k_8k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7k_8}_{k_3}} e^{-\tau_3\epsilon_{k_4k_5k_6k_7}} e^{-\tau_4\epsilon_{k_2k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_3} \Omega^{04}_{k_6k_7k_4k_5} \Omega^{02}_{k_8k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_2k_8}} \tag{761}$$



$\rightarrow$ T2:

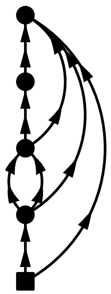


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{762}$$

$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_3 k_4 k_5} \\ a_2 &= \epsilon_{k_3}^{k_6 k_7 k_8} \\ a_3 &= \epsilon_{k_4 k_5 k_6 k_7} \\ a_4 &= \epsilon_{k_2 k_8} \end{aligned}$$

Diagram 375:

$$\begin{aligned} \mathrm{PO4.375} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_4} \Omega^{11}_{k_8 k_6} \Omega^{04}_{k_8 k_7 k_5 k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3 k_4}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_6}^{k_8}} e^{-\tau_4 \epsilon_{k} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_4} \Omega^{11}_{k_8 k_6} \Omega^{04}_{k_8 k_7 k_5 k_2}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4 k_2 k_5}\ \epsilon_{k_6 k_2 k_5 k_7}\ \epsilon_{k_2 k_5 k_7 k_8}} \end{aligned} \tag{763}$$



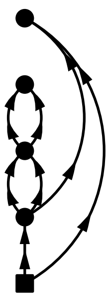
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{764}$$

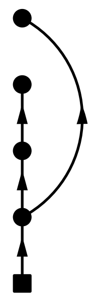
$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}^{k_6k_7}$$
$$a_3 = \epsilon_{k_6}^{k_8}$$
$$a_4 = \epsilon_{k_2k_5k_7k_8}$$

Diagram 376:

$$\begin{aligned}\mathrm{PO4.376} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{02}_{k_6k_7} \Omega^{02}_{k_5k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_3k_4}^{k_6k_7}} e^{-\tau_3 \epsilon_{k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_5}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{02}_{k_6k_7} \Omega^{02}_{k_5k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_6k_7}\ \epsilon_{k_2k_5}} \end{aligned} \tag{765}$$



$\rightarrow$ T3:



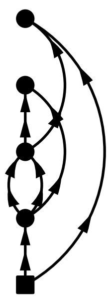
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{766}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}^{k_6k_7}$$
$$a_3 = \epsilon_{k_6k_7}$$
$$a_4 = \epsilon_{k_2k_5}$$

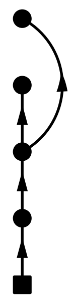
Diagram 377:

$$\mathrm{PO4.377} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{02}_{k_6k_5} \Omega^{02}_{k_7k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6k_7}_{k_3k_4}} e^{-\tau_3 \epsilon_{k_5k_6}} e^{-\tau_4 \epsilon_{k_2k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{02}_{k_6k_5} \Omega^{02}_{k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_7}} \tag{767}$$



$\rightarrow$ T2:



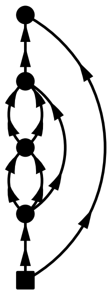
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{768}$$

$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_3k_4}$$
$$a_3 = \epsilon_{k_5k_6}$$
$$a_4 = \epsilon_{k_2k_7}$$

Diagram 378:

$$\mathrm{PO4.378} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{13}_{k_8k_6k_7k_5} \Omega^{02}_{k_8k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6k_7}_{k_3k_4}} e^{-\tau_3 \epsilon^{k_8}_{k_5k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{13}_{k_8k_6k_7k_5} \Omega^{02}_{k_8k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_5k_6k_7k_2}\ \epsilon_{k_2k_8}} \tag{769}$$



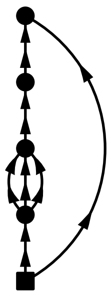
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{770}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}^{k_6k_7}$$
$$a_3 = \epsilon_{k_5k_6k_7}^{k_8}$$
$$a_4 = \epsilon_{k_2k_8}$$

Diagram 379:

$$\mathrm{PO4.379} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_5} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_2} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_3k_4k_5}^{k_6}} e^{-\tau_3\epsilon_{k_6}^{k_7}} e^{-\tau_4\epsilon_{k_2k_7}}$$
$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_5} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_2}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_6k_2}\ \epsilon_{k_2k_7}} \tag{771}$$



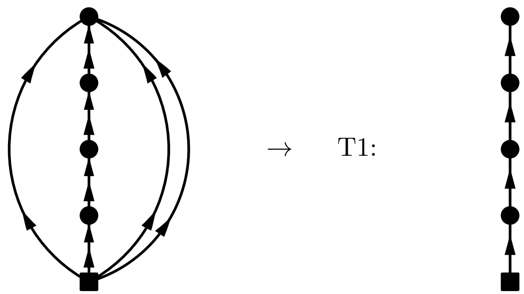
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{772}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4k_5}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7}$$
$$a_4 = \epsilon_{k_2k_7}$$

Diagram 380:

$$\mathrm{PO4.380} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{11}_{k_7k_6} \Omega^{04}_{k_7k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_5}^{k_6}} e^{-\tau_3\epsilon_{k_6}^{k_7}} e^{-\tau_4\epsilon_{k_2k_3k_4k_7}}$$
$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{11}_{k_7k_6} \Omega^{04}_{k_7k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_6k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_7}} \tag{773}$$

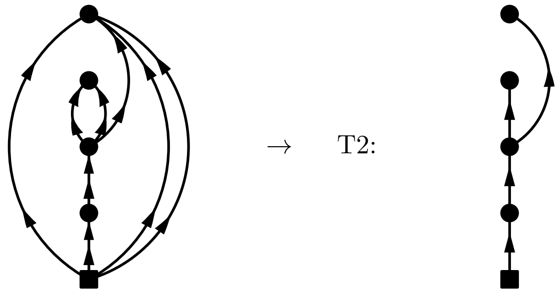


$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{774}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7}$$
$$a_4 = \epsilon_{k_2k_3k_4k_7}$$

Diagram 381:

$$\mathrm{PO4.381} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{02}_{k_6k_7} \Omega^{04}_{k_8k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3 \epsilon_{k_6k_7}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_8}}$$
$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{02}_{k_6k_7} \Omega^{04}_{k_8k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_6k_7}\ \epsilon_{k_2k_3k_4k_8}} \tag{775}$$

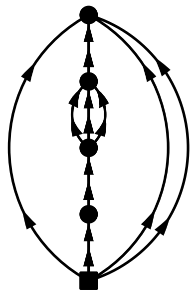


$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{776}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_3 = \epsilon_{k_6k_7}$$
$$a_4 = \epsilon_{k_2k_3k_4k_8}$$

Diagram 382:

$$\mathrm{PO4.382} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_7k_8} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_2k_3k_4k_9}}$$
$$= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_7k_8} \Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_9}} \tag{777}$$



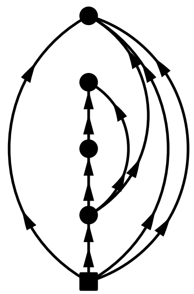
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{778}$$

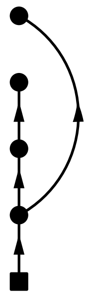
$$\begin{aligned} a_1 &= \epsilon_{k_1}^{k_5} \\ a_2 &= \epsilon_{k_5}^{k_6 k_7 k_8} \\ a_3 &= \epsilon_{k_6 k_7 k_8}^{k_9} \\ a_4 &= \epsilon_{k_2 k_3 k_4 k_9} \end{aligned}$$

Diagram 383:

$$\begin{aligned} \text{PO4.383} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{11}_{k_8 k_5} \Omega^{02}_{k_8 k_6} \Omega^{04}_{k_7 k_2 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8}} e^{-\tau_3 \epsilon_{k_6 k_8}} e^{-\tau_4 \epsilon_{k_2 k_3 k_4 k_7}} \\ &= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{11}_{k_8 k_5} \Omega^{02}_{k_8 k_6} \Omega^{04}_{k_7 k_2 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon^{k_8}_{k_5 k_2 k_3 k_4 k_7} \ \epsilon_{k_6 k_8} \ \epsilon_{k_2 k_3 k_4 k_7}} \end{aligned} \tag{779}$$



$\rightarrow$ T3:

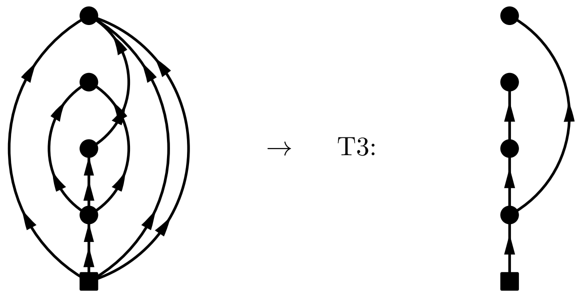


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{780}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_2 k_3 k_4 k_7}$$
$$a_4 = \epsilon_{k_6 k_8}$$

Diagram 384:

$$\begin{aligned}\mathrm{PO4.384} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{11}_{k_8 k_5} \Omega^{02}_{k_6 k_7} \Omega^{04}_{k_8 k_2 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8}} e^{-\tau_3 \epsilon_{k_6 k_7}} e^{-\tau_4 \epsilon_{k_2 k_3 k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{11}_{k_8 k_5} \Omega^{02}_{k_6 k_7} \Omega^{04}_{k_8 k_2 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_2 k_3 k_4}\ \epsilon_{k_6 k_7}\ \epsilon_{k_2 k_3 k_4 k_8}}\end{aligned} \tag{781}$$

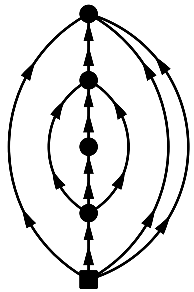


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{782}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_2 k_3 k_4 k_8}$$
$$a_4 = \epsilon_{k_6 k_7}$$

Diagram 385:

$$\begin{aligned}
\mathrm{PO4.385} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_8k_6k_7} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5}^{k_8}} e^{-\tau_3\epsilon_{k_6k_7k_8}^{k_9}} e^{-\tau_4\epsilon_{k_2k_3k}} \\
&= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_8k_6k_7} \Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_9}} \qquad (783)
\end{aligned}$$



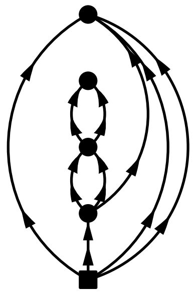
$$\rightarrow \qquad \mathrm{T1:}$$

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \qquad (784)$$

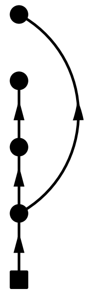
$$\begin{aligned}
a_1 &= \epsilon_{k_1}^{k_5k_6k_7} \\
a_2 &= \epsilon_{k_5}^{k_8} \\
a_3 &= \epsilon_{k_6k_7k_8}^{k_9} \\
a_4 &= \epsilon_{k_2k_3k_4k_9}
\end{aligned}$$

Diagram 386:

$$\begin{aligned}
\mathrm{PO4.386} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{02}_{k_8k_9} \Omega^{04}_{k_7k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3\epsilon_{k_8k_9}} e^{-\tau_4\epsilon_{k_2k_3k_4k_7}} \\
&= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{02}_{k_8k_9} \Omega^{04}_{k_7k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}^{k_8k_9}\ \epsilon_{k_8k_9}\ \epsilon_{k_5k_6k_2k_3k_4k_7}^{k_8k_9}} \qquad (785)
\end{aligned}$$



$\rightarrow$ T3:

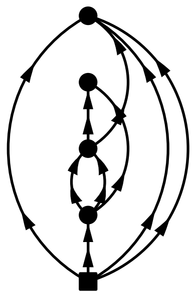


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{786}$$

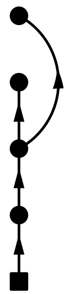
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_3 k_4 k_7}$$
$$a_3 = \epsilon_{k_5 k_6}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_8 k_9}$$

Diagram 387:

$$\begin{aligned}
\mathrm{PO4.387} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{02}_{k_8k_7} \Omega^{04}_{k_9k_2k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3 \epsilon_{k_7k_8}} e^{-\tau_4 \epsilon_{k_2k_3}} \\
&= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{02}_{k_8k_7} \Omega^{04}_{k_9k_2k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_7k_8}\ \epsilon_{k_2k_3k_4k_9}}
\end{aligned} \tag{787}$$



$\rightarrow$ T2:

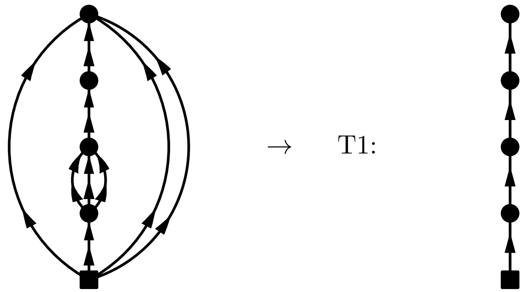


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{788}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_7 k_8}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_9}$$

Diagram 388:

$$\mathrm{PO4.388} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_7} \Omega^{11}_{k_9 k_8} \Omega^{04}_{k_9 k_2 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5 k_6 k_7}^{k_8}} e^{-\tau_3 \epsilon_{k_8}^{k_9}} e^{-\tau_4 \epsilon_{k_2 k_3 k_4 k_9}}$$
$$= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_7} \Omega^{11}_{k_9 k_8} \Omega^{04}_{k_9 k_2 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_2 k_3 k_4}\ \epsilon_{k_8 k_2 k_3 k_4}\ \epsilon_{k_2 k_3 k_4 k_9}} \tag{789}$$

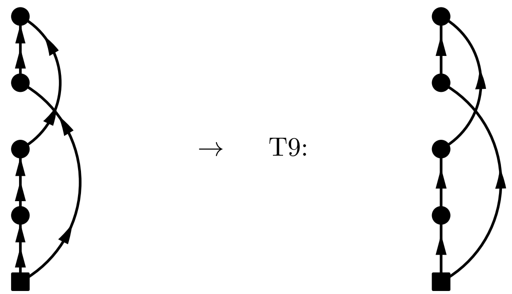


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{790}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6 k_7}^{k_8}$$
$$a_3 = \epsilon_{k_8}^{k_9}$$
$$a_4 = \epsilon_{k_2 k_3 k_4 k_9}$$

Diagram 389:

$$\mathrm{PO4.389} = \lim_{\tau\to\infty} -(-1)^4 \sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{11}_{k_4k_3}\Omega^{11}_{k_5k_2}\Omega^{02}_{k_5k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3}_{k_1}}e^{-\tau_2\epsilon^{k_4}_{k_3}}e^{-\tau_3\epsilon^{k_5}_{k_2}}e^{-\tau_4\epsilon_{k_4k_5}}$$
$$= -(-1)^4 \sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{11}_{k_4k_3}\Omega^{11}_{k_5k_2}\Omega^{02}_{k_5k_4}\left[\frac{1}{\epsilon^{k_3}_{k_1k_4k_5}\ \epsilon_{k_1k_2}\ \epsilon^{k_3}_{k_1k_2k_4}\ \epsilon_{k_4k_5}} + \frac{1}{\epsilon^{k_3}_{k_1k_4k_5}\ \epsilon_{k_1k_5}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5}} + \frac{1}{\epsilon_{k_1k_5}\ \epsilon_{k_3k_5}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5}}\right] \tag{791}$$



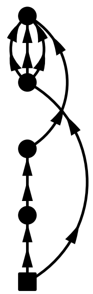
$\rightarrow$ T9:

$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{792}$$

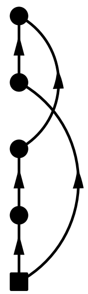
$$a_1 = \epsilon^{k_5}_{k_2}$$
$$a_2 = \epsilon^{k_3}_{k_1}$$
$$a_3 = \epsilon^{k_4}_{k_3}$$
$$a_4 = \epsilon_{k_4k_5}$$

Diagram 390:

$$\mathrm{PO4.390} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{11}_{k_4k_3} \Omega^{31}_{k_5k_6k_7k_2} \Omega^{04}_{k_5k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4}_{k_3}} e^{-\tau_3\epsilon^{k_5k_6k_7}_{k_2}} e^{-\tau_4\epsilon_{k_4k_5k_6k_7}}$$
$$= \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{11}_{k_4k_3} \Omega^{31}_{k_5k_6k_7k_2} \Omega^{04}_{k_5k_6k_7k_4} \left[\frac{1}{\epsilon_{k_1k_5k_6k_7}\ \epsilon_{k_3k_5k_6k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_5k_6k_7}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_2k_4}\ \epsilon_{k_4k_5k_6k_7}} \right] \tag{793}$$



$\rightarrow$ T9:



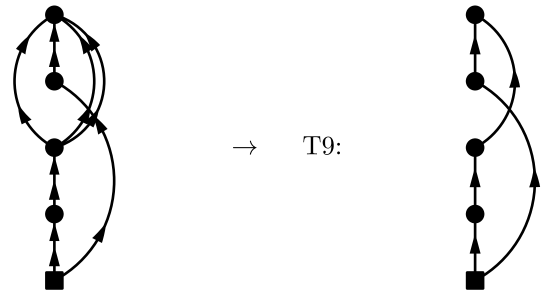
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{794}$$

$$a_1 = \epsilon^{k_3}_{k_1}$$
$$a_2 = \epsilon^{k_4}_{k_3}$$
$$a_3 = \epsilon^{k_5k_6k_7}_{k_2}$$
$$a_4 = \epsilon_{k_4k_5k_6k_7}$$

Diagram 391:

$$\mathrm{PO4.391} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{31}_{k_4k_5k_6k_3}\Omega^{11}_{k_7k_2}\Omega^{04}_{k_7k_4k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3}_{k_1}}e^{-\tau_2\epsilon^{k_4k_5k_6}_{k_3}}e^{-\tau_3\epsilon^{k_7}_{k_2}}e^{-\tau_4\epsilon_{k_4k_5k_6k_7}}$$

$$= \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{31}_{k_4k_5k_6k_3}\Omega^{11}_{k_7k_2}\Omega^{04}_{k_7k_4k_5k_6} \left[\frac{1}{\epsilon_{k_1k_7}\ \epsilon_{k_3k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_7}\ \epsilon_{k_3k_2}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_2k_4k_5k_6}\ \epsilon_{k_4k_5k_6k_7}}\right] \tag{795}$$



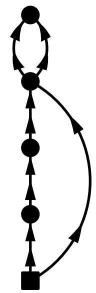
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{796}$$

$$a_1 = \epsilon^{k_3}_{k_1}$$
$$a_2 = \epsilon^{k_4k_5k_6}_{k_3}$$
$$a_3 = \epsilon^{k_7}_{k_2}$$
$$a_4 = \epsilon_{k_4k_5k_6k_7}$$

Diagram 392:

$$\mathrm{PO4.392} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{11}_{k_4k_3}\Omega^{22}_{k_5k_6k_4k_2}\Omega^{02}_{k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3}_{k_1}}e^{-\tau_2\epsilon^{k_4}_{k_3}}e^{-\tau_3\epsilon^{k_5k_6}_{k_2k_4}}e^{-\tau_4\epsilon_{k_5k_6}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{11}_{k_4k_3}\Omega^{22}_{k_5k_6k_4k_2}\Omega^{02}_{k_5k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_2k_4}\ \epsilon_{k_5k_6}} \tag{797}$$



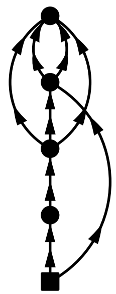
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{798}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4}$$
$$a_3 = \epsilon_{k_2 k_4}^{k_5 k_6}$$
$$a_4 = \epsilon_{k_5 k_6}$$

Diagram 393:

$$\begin{aligned}\text{PO4.393} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{11}_{k_3 k_1} \Omega^{31}_{k_4 k_5 k_6 k_3} \Omega^{22}_{k_7 k_8 k_4 k_2} \Omega^{04}_{k_7 k_8 k_5 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3}} e^{-\tau_2 \epsilon_{k_3}^{k_4 k_5 k_6}} e^{-\tau_3 \epsilon_{k_2 k_4}^{k_7 k_8}} e^{-\tau_4 \epsilon_{k_5 k_6 k_7 k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{11}_{k_3 k_1} \Omega^{31}_{k_4 k_5 k_6 k_3} \Omega^{22}_{k_7 k_8 k_4 k_2} \Omega^{04}_{k_7 k_8 k_5 k_6}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_2}\ \epsilon_{k_2 k_4 k_5 k_6}\ \epsilon_{k_5 k_6 k_7 k_8}}\end{aligned} \tag{799}$$



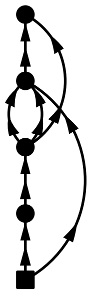
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{800}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4k_5k_6}$$
$$a_3 = \epsilon_{k_2k_4}^{k_7k_8}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 394:

$$\begin{aligned}\mathrm{PO4.394} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{31}_{k_4k_5k_6k_3}\Omega^{13}_{k_7k_4k_5k_2}\Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_3}}e^{-\tau_2\epsilon_{k_3}^{k_4k_5k_6}}e^{-\tau_3\epsilon_{k_2k_4k_5}^{k_7}}e^{-\tau_4\epsilon_{k_6k_7}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{31}_{k_4k_5k_6k_3}\Omega^{13}_{k_7k_4k_5k_2}\Omega^{02}_{k_7k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2}\ \epsilon_{k_2k_4k_5k_6}\ \epsilon_{k_6k_7}}\end{aligned} \tag{801}$$



→ T1:

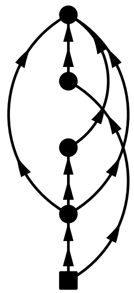
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{802}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_3}^{k_4k_5k_6}$$
$$a_3 = \epsilon_{k_2k_4k_5}^{k_7}$$
$$a_4 = \epsilon_{k_6k_7}$$

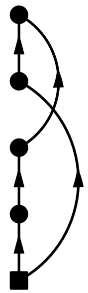
Diagram 395:

$$\mathrm{PO4.395} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{11}_{k_7k_2} \Omega^{04}_{k_7k_6k_4k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_2}^{k_7}} e^{-\tau_4 \epsilon_{k_4k_5k_6k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{11}_{k_7k_2} \Omega^{04}_{k_7k_6k_4k_5} \left[\frac{1}{\epsilon_{k_1k_7}\ \epsilon_{k_3k_4k_5k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_7}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_2k_4k_5k_6}\ \epsilon_{k_4k_5k_6k_7}} \right] \tag{803}$$



$\rightarrow$ T9:



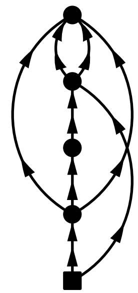
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{804}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_2}^{k_7}$$
$$a_4 = \epsilon_{k_4k_5k_6k_7}$$

Diagram 396:

$$\mathrm{PO4.396} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{22}_{k_7k_8k_6k_2} \Omega^{04}_{k_7k_8k_4k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_2k_6}^{k_7k_8}} e^{-\tau_4 \epsilon_{k_4k_5k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{22}_{k_7k_8k_6k_2} \Omega^{04}_{k_7k_8k_4k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_2k_6k_4k_5}\ \epsilon_{k_4k_5k_7k_8}} \tag{805}$$

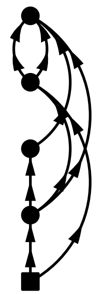
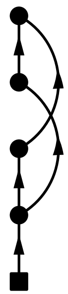
 $\rightarrow$ T1: 

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{806}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_2 k_6}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_4 k_5 k_7 k_8}$$

Diagram 397:

$$\begin{aligned}\mathrm{PO4.397} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{22}_{k_7 k_8 k_4 k_2} \Omega^{04}_{k_7 k_8 k_6 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_2 k_4}^{k_7 k_8}} e^{-\tau_4} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{22}_{k_7 k_8 k_4 k_2} \Omega^{04}_{k_7 k_8 k_6 k_5} \left[\frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_5 k_7 k_8} \ \epsilon_{k_3 k_2 k_4 k_5} \ \epsilon_{k_5 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_3 k_2 k_4 k_5} \ \epsilon_{k_2 k_4 k_5 k_6} \ \epsilon_{k_5 k_6 k_7 k_8}} \right]\end{aligned} \tag{807}$$

 $\rightarrow$ T8: 

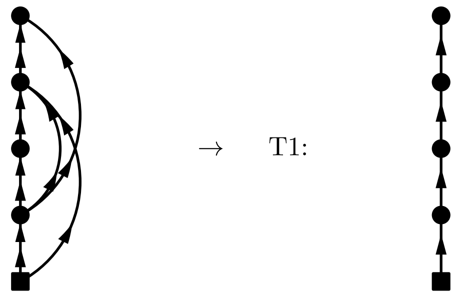
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{808}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_2 k_4}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_5 k_6 k_7 k_8}$$

Diagram 398:

$$\mathrm{PO4.398} = \lim_{\tau\to\infty} -(-1)^4 \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{13}_{k_7 k_6 k_4 k_2} \Omega^{02}_{k_7 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3}^{k_6}} e^{-\tau_3 \epsilon_{k_2 k_4 k_6}^{k_7}} e^{-\tau_4 \epsilon_{k_5}$$

$$= -(-1)^4 \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{11}_{k_6 k_3} \Omega^{13}_{k_7 k_6 k_4 k_2} \Omega^{02}_{k_7 k_5}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_2 k_4 k_5}\ \epsilon_{k_2 k_4 k_6 k_5}\ \epsilon_{k_5 k_7}} \tag{809}$$



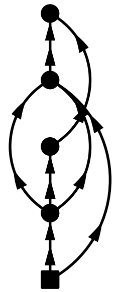
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{810}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_3}^{k_6}$$
$$a_3 = \epsilon_{k_2 k_4 k_6}^{k_7}$$
$$a_4 = \epsilon_{k_5 k_7}$$

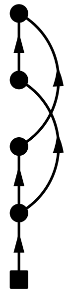
Diagram 399:

$$\text{PO4.399} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{13}_{k_7k_4k_5k_2} \Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6}_{k_3}} e^{-\tau_3 \epsilon^{k_7}_{k_2k_4k_5}} e^{-\tau_4 \epsilon_{k_6k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{11}_{k_6k_3} \Omega^{13}_{k_7k_4k_5k_2} \Omega^{02}_{k_7k_6} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_7}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_2k_4k_5}\ \epsilon_{k_2k_4k_5k_6}\ \epsilon_{k_6k_7}} \right] \tag{811}$$



$\rightarrow$ T8:



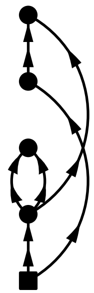
$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{812}$$

$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_3}$$
$$a_3 = \epsilon^{k_7}_{k_2k_4k_5}$$
$$a_4 = \epsilon_{k_6k_7}$$

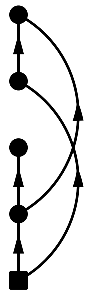
Diagram 400:

$$\text{PO4.400} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{02}_{k_3k_4} \Omega^{11}_{k_6k_2} \Omega^{02}_{k_6k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2 \epsilon_{k_3k_4}} e^{-\tau_3 \epsilon^{k_6}_{k_2}} e^{-\tau_4 \epsilon_{k_5k_6}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{02}_{k_3k_4} \Omega^{11}_{k_6k_2} \Omega^{02}_{k_6k_5} \left[\frac{1}{\epsilon^{k_3k_4k_5}_{k_1}\ \epsilon_{k_1k_2}\ \epsilon^{k_3k_4}_{k_1k_2}\ \epsilon_{k_5k_6}} + \frac{1}{\epsilon^{k_3k_4k_5}_{k_1}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6}} \right] \tag{813}$$



$\rightarrow$ T10:

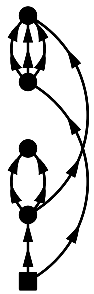


$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{814}$$

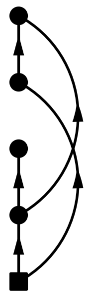
$$a_1 = \epsilon_{k_2}^{k_6}$$
$$a_2 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_3 = \epsilon_{k_3 k_4}$$
$$a_4 = \epsilon_{k_5 k_6}$$

Diagram 401:

$$\begin{aligned}\mathrm{PO4.401} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{02}_{k_3 k_4} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{04}_{k_6 k_7 k_8 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_3 k_4}} e^{-\tau_3 \epsilon_{k_2}^{k_6 k_7 k_8}} e^{-\tau_4 \epsilon_{k_5 k_6 k_7 k_8}} \\ &= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{02}_{k_3 k_4} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{04}_{k_6 k_7 k_8 k_5} \left[\frac{1}{\epsilon_{k_1 k_6 k_7 k_8}\ \epsilon_{k_3 k_4}\ \epsilon_{k_1 k_2}\ \epsilon_{k_5 k_6 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_2 k_5}\ \epsilon_{k_5 k_6 k_7 k_8}} \right]\end{aligned} \tag{815}$$



$\rightarrow$ T10:

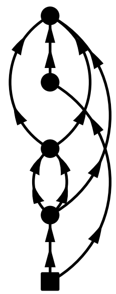


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{816}$$

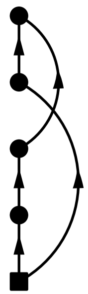
$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}$$
$$a_3 = \epsilon_{k_2}^{k_6k_7k_8}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 402:

$$\begin{aligned}\mathrm{PO4.402} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{11}_{k_8k_2} \Omega^{04}_{k_8k_6k_7k_5} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_3k_4}^{k_6k_7}} e^{-\tau_3\epsilon_{k_2}^{k_8}} e^{-\tau_4\epsilon_{k_5k_6k_7k_8}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{11}_{k_8k_2} \Omega^{04}_{k_8k_6k_7k_5} \left[\frac{1}{\epsilon_{k_1k_8}\ \epsilon_{k_3k_4k_5k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_8}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_5k_6k_7}} \right.\end{aligned} \tag{817}$$



$\rightarrow$ T9:

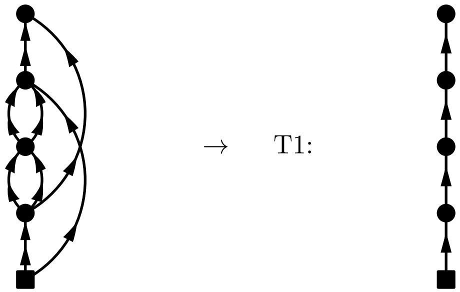


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{818}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}^{k_6k_7}$$
$$a_3 = \epsilon_{k_2}^{k_8}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 403:

$$\mathrm{PO4.403} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{13}_{k_8k_6k_7k_2} \Omega^{02}_{k_8k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_3k_4}^{k_6k_7}} e^{-\tau_3\epsilon_{k_2k_6k_7}^{k_8}} e^{-\tau_4\epsilon_{k_5k_8}}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{13}_{k_8k_6k_7k_2} \Omega^{02}_{k_8k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_2k_6k_7k_5}\ \epsilon_{k_5k_8}} \tag{819}$$



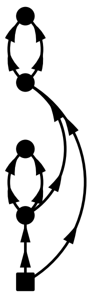
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{820}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}^{k_6k_7}$$
$$a_3 = \epsilon_{k_2k_6k_7}^{k_8}$$
$$a_4 = \epsilon_{k_5k_8}$$

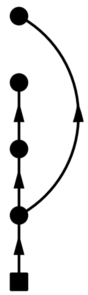
Diagram 404:

$$\mathrm{PO4.404} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{02}_{k_6k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2\epsilon_{k_3k_4}} e^{-\tau_3\epsilon^{k_6k_7}_{k_2k_5}} e^{-\tau_4\epsilon_{k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{02}_{k_3k_4} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{02}_{k_6k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_2k_5}\ \epsilon_{k_6k_7}} \tag{821}$$



$\rightarrow$ T3:



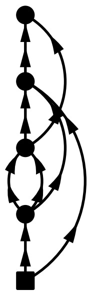
$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{822}$$

$$a_1 = \epsilon^{k_3k_4k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_2k_5}$$
$$a_3 = \epsilon_{k_6k_7}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 405:

$$\mathrm{PO4.405} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{13}_{k_8k_6k_5k_2} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3k_4k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_3k_4}} e^{-\tau_3\epsilon^{k_8}_{k_2k_5k_6}} e^{-$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{13}_{k_8k_6k_5k_2} \Omega^{02}_{k_8k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_2k_5}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_7k_8}} \tag{823}$$



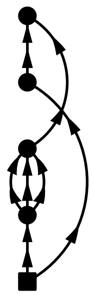
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{824}$$

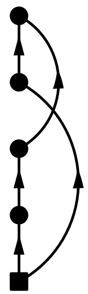
$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4}^{k_6k_7}$$
$$a_3 = \epsilon_{k_2k_5k_6}^{k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 406:

$$\begin{aligned}\mathrm{PO4.406} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(3!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{31}_{k_3k_4k_5k_1}\Omega^{13}_{k_6k_3k_4k_5}\Omega^{11}_{k_7k_2}\Omega^{02}_{k_7k_6}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}}e^{-\tau_2\epsilon_{k_3k_4k_5}^{k_6}}e^{-\tau_3\epsilon_{k_2}^{k_7}}e^{-\tau_4\epsilon_{k_6k_7}} \\ &= \frac{-(-1)^4}{(3!)}\sum_{k_i} O^{20}_{k_1k_2}\Omega^{31}_{k_3k_4k_5k_1}\Omega^{13}_{k_6k_3k_4k_5}\Omega^{11}_{k_7k_2}\Omega^{02}_{k_7k_6}\left[\frac{1}{\epsilon_{k_1k_7}\ \epsilon_{k_3k_4k_5k_7}\ \epsilon_{k_1k_2}\ \epsilon_{k_6k_7}}+\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_7}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_6k_7}}+\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_2k_6}\ \epsilon_{k_6k_7}}\right]\end{aligned} \tag{825}$$



$\rightarrow$ T9:

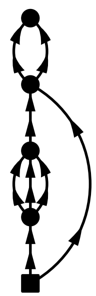


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{826}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4k_5}^{k_6}$$
$$a_3 = \epsilon_{k_2}^{k_7}$$
$$a_4 = \epsilon_{k_6k_7}$$

Diagram 407:

$$\begin{aligned}\mathrm{PO4.407} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_5} \Omega^{22}_{k_7k_8k_6k_2} \Omega^{02}_{k_7k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_3k_4k_5}^{k_6}} e^{-\tau_3\epsilon_{k_2k_6}^{k_7k_8}} e^{-\tau_4\epsilon_{k_7k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_5} \Omega^{22}_{k_7k_8k_6k_2} \Omega^{02}_{k_7k_8}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_2}\ \epsilon_{k_2k_6}\ \epsilon_{k_7k_8}}\end{aligned} \tag{827}$$



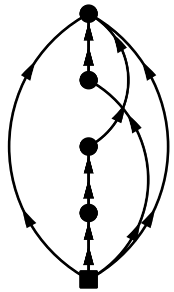
→ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{828}$$

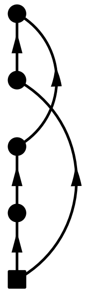
$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_3k_4k_5}^{k_6}$$
$$a_3 = \epsilon_{k_2k_6}^{k_7k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 408:

$$\begin{aligned}\mathrm{PO4.408} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{11}_{k_6k_5}\Omega^{11}_{k_7k_2}\Omega^{04}_{k_7k_6k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_5}}e^{-\tau_2\epsilon_{k_5}^{k_6}}e^{-\tau_3\epsilon_{k_2}^{k_7}}e^{-\tau_4\epsilon_{k_3k_4k_6k_7}} \\ &= \frac{-(-1)^4}{(2!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{11}_{k_6k_5}\Omega^{11}_{k_7k_2}\Omega^{04}_{k_7k_6k_3k_4}\Bigg[\frac{1}{\epsilon_{k_1k_3k_4k_7}\ \epsilon_{k_5k_3k_4k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_6k_7}}+\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_7}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_3k_4k_6k_7}}+\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_3}}\end{aligned} \tag{829}$$



$$\rightarrow \quad \text{T9:}$$

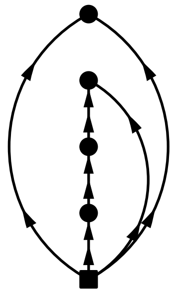


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4}+\frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{830}$$

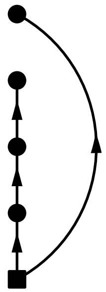
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6}$$
$$a_3 = \epsilon_{k_2}^{k_7}$$
$$a_4 = \epsilon_{k_3k_4k_6k_7}$$

Diagram 409:

$$\begin{aligned}\text{PO4.409} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{11}_{k_6k_5}\Omega^{02}_{k_6k_2}\Omega^{02}_{k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon^{k_5}_{k_1}}e^{-\tau_2\epsilon^{k_6}_{k_5}}e^{-\tau_3\epsilon_{k_2k_6}}e^{-\tau_4\epsilon_{k_3k_4}}\\ &= \frac{(-1)^4}{(2!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{11}_{k_6k_5}\Omega^{02}_{k_6k_2}\Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_2}\ \epsilon_{k_2k_6}\ \epsilon_{k_3k_4}}\end{aligned} \tag{831}$$



$\rightarrow$ T5:

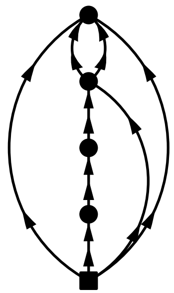


$$\text{T5} = \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{832}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_5}$$
$$a_3 = \epsilon_{k_2k_6}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 410:

$$\begin{aligned}\text{PO4.410} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{11}_{k_6k_5}\Omega^{22}_{k_7k_8k_6k_2}\Omega^{04}_{k_7k_8k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5}_{k_1}}e^{-\tau_2\epsilon^{k_6}_{k_5}}e^{-\tau_3\epsilon^{k_7k_8}_{k_2k_6}}e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}\\ &= \frac{(-1)^4}{(2!)^2}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{11}_{k_6k_5}\Omega^{22}_{k_7k_8k_6k_2}\Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_6k_3k_4}\ \epsilon_{k_3k_4k_7k_8}}\end{aligned} \tag{833}$$



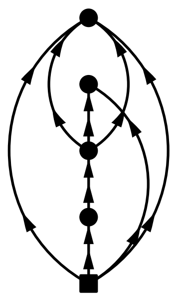
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{834}$$

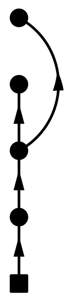
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6}$$
$$a_3 = \epsilon_{k_2k_6}^{k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

Diagram 411:

$$\begin{aligned}\mathrm{PO4.411} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{31}_{k_6k_7k_8k_5}\Omega^{02}_{k_6k_2}\Omega^{04}_{k_7k_8k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)e^{-\tau_1\epsilon_{k_1}^{k_5}}e^{-\tau_2\epsilon_{k_5}^{k_6k_7k_8}}e^{-\tau_3\epsilon_{k_2k_6}}e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}\\ &= \frac{(-1)^4}{(2!)^2}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{31}_{k_6k_7k_8k_5}\Omega^{02}_{k_6k_2}\Omega^{04}_{k_7k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\;\epsilon_{k_5k_2k_3k_4}\;\epsilon_{k_2k_6}\;\epsilon_{k_3k_4k_7k_8}}\end{aligned} \tag{835}$$



$\rightarrow$ T2:

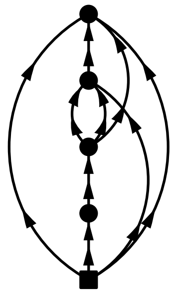


$$T2 = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{836}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_2 k_6}$$
$$a_4 = \epsilon_{k_3 k_4 k_7 k_8}$$

Diagram 412:

$$\begin{aligned} PO4.412 &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_5} \Omega^{13}_{k_9 k_6 k_7 k_2} \Omega^{04}_{k_9 k_8 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_5}^{k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k_2 k_6 k_7}^{k_9}} e^{-\tau_4 \epsilon_{k_3 k_4}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_5} \Omega^{13}_{k_9 k_6 k_7 k_2} \Omega^{04}_{k_9 k_8 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \; \epsilon_{k_5 k_2 k_3 k_4} \; \epsilon_{k_2 k_6 k_7 k_3 k_4 k_8} \; \epsilon_{k_3 k_4 k_8 k_9}} \end{aligned} \tag{837}$$



$\rightarrow$ T1:

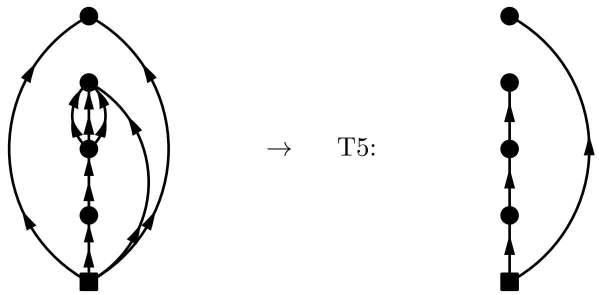
$$T1 = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{838}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_2 k_6 k_7}^{k_9}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 413:

$$\text{PO4.413} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{04}_{k_6k_7k_8k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3\epsilon_{k_2k_6k_7k_8}} e^{-\tau_4\epsilon_{k_3k_4}}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{04}_{k_6k_7k_8k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_2}\ \epsilon_{k_2k_6k_7k_8}\ \epsilon_{k_3k_4}} \tag{839}$$



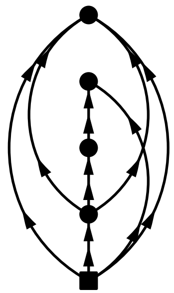
$$\mathrm{T5} = \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{840}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_3 = \epsilon_{k_2k_6k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4}$$

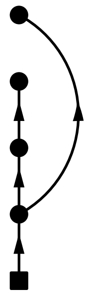
Diagram 414:

$$\text{PO4.414} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{02}_{k_8k_2} \Omega^{04}_{k_6k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8}_{k_5}} e^{-\tau_3\epsilon_{k_2k_8}} e^{-\tau_4\epsilon_{k_3k_4k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{02}_{k_8k_2} \Omega^{04}_{k_6k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_8}_{k_5k_3k_4k_6k_7}\ \epsilon_{k_2k_8}\ \epsilon_{k_3k_4k_6k_7}} \tag{841}$$



$\rightarrow$ T3:

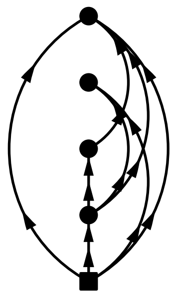


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{842}$$

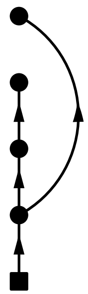
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_3 k_4 k_6 k_7}$$
$$a_4 = \epsilon_{k_2 k_8}$$

Diagram 415:

$$\begin{aligned}
\mathrm{PO4.415} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{02}_{k_6k_2} \Omega^{04}_{k_8k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8}} e^{-\tau_3 \epsilon_{k_2k_6}} e^{-\tau_4 \epsilon_{k_3k_4k_7k_8}} \\
&= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{02}_{k_6k_2} \Omega^{04}_{k_8k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5}^{k_8} \ \epsilon_{k_5k_2k_6}^{k_8} \ \epsilon_{k_3k_4k_7k_8}}
\end{aligned} \tag{843}$$



$\rightarrow$ T3:

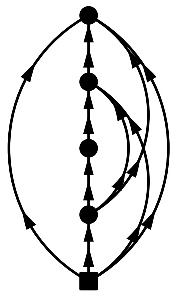


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{844}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_6}$$
$$a_3 = \epsilon_{k_5}^{k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_7 k_8}$$

Diagram 416:

$$\begin{aligned}\mathrm{PO4.416} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{11}_{k_8 k_5} \Omega^{13}_{k_9 k_8 k_6 k_2} \Omega^{04}_{k_9 k_7 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8}} e^{-\tau_3 \epsilon_{k_2 k_6 k}^{k_9}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{11}_{k_8 k_5} \Omega^{13}_{k_9 k_8 k_6 k_2} \Omega^{04}_{k_9 k_7 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_2 k_6 k_3 k_4 k_7}\ \epsilon_{k_2 k_6 k_8 k_3 k_4 k_7}\ \epsilon_{k_3 k_4 k_7 k_9}}\end{aligned} \tag{845}$$



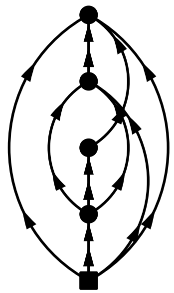
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{846}$$

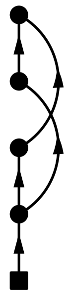
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_2 k_6 k_8}^{k_9}$$
$$a_4 = \epsilon_{k_3 k_4 k_7 k_9}$$

Diagram 417:

$$\mathrm{PO4.417} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_6k_7k_2} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8}} e^{-\tau_3 \epsilon_{k_2k_6k_7}^{k_9}} e^{-\tau_4 \epsilon_{k_3k_4}}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_6k_7k_2} \Omega^{04}_{k_9k_8k_3k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_9}\ \epsilon_{k_5k_2k_6k_7k_3k_4}\ \epsilon_{k_3k_4k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_6k_7k_3k_4}\ \epsilon_{k_2k_6k_7k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_9}} \right] \tag{847}$$



$\rightarrow$ T8:

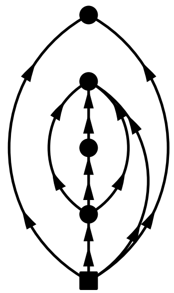


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{848}$$

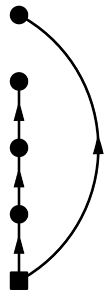
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_2k_6k_7}^{k_9}$$
$$a_4 = \epsilon_{k_3k_4k_8k_9}$$

Diagram 418:

$$\mathrm{PO4.418} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{04}_{k_8k_6k_7k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5}^{k_8}} e^{-\tau_3 \epsilon_{k_2k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_3k_4}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{04}_{k_8k_6k_7k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_2k_6k_7}\ \epsilon_{k_2k_6k_7k_8}\ \epsilon_{k_3k_4}} \tag{849}$$



$\rightarrow$ T5:

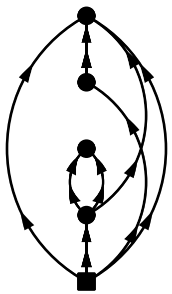


$$\text{T5} = \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{850}$$

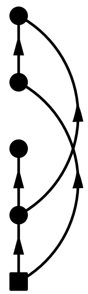
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_2k_6k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 419:

$$\begin{aligned}\text{PO4.419} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{11}_{k_8k_2}\Omega^{04}_{k_8k_7k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}}e^{-\tau_2\epsilon_{k_5k_6}}e^{-\tau_3\epsilon_{k_2}^{k_8}}e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}\\ &= \frac{-(-1)^4}{(2!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{11}_{k_8k_2}\Omega^{04}_{k_8k_7k_3k_4}\left[\frac{1}{\epsilon_{k_1k_3k_4k_8}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_7k_8}}+\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_3k_4k_7}\ \epsilon_{k_3k_4k_7k_8}}\right]\end{aligned} \tag{851}$$



$\rightarrow$ T10:



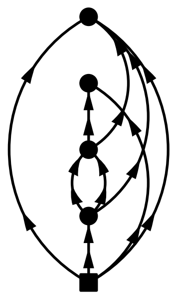
$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{852}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6}$$
$$a_3 = \epsilon_{k_2}^{k_8}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

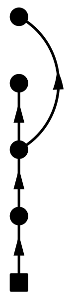
Diagram 420:

$$\mathrm{PO4.420} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{02}_{k_8k_2} \Omega^{04}_{k_9k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3\epsilon_{k_2k_8}} e^{-\tau_4\epsilon_{k_3k_4k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{02}_{k_8k_2} \Omega^{04}_{k_9k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_2k_3k_4k_7}\ \epsilon_{k_2k_8}\ \epsilon_{k_3k_4k_7k_9}} \tag{853}$$



$\rightarrow$ T2:

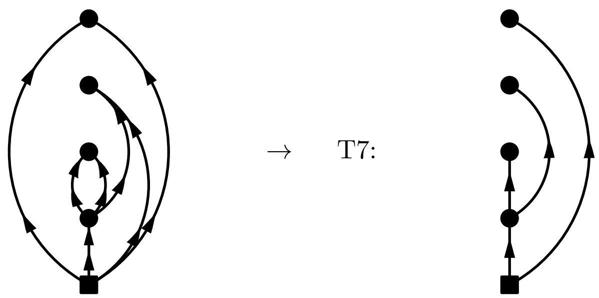


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3a_4} \tag{854}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6}^{k_8k_9}$$
$$a_3 = \epsilon_{k_2k_8}$$
$$a_4 = \epsilon_{k_3k_4k_7k_9}$$

Diagram 421:

$$\begin{aligned}\mathrm{PO4.421} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{02}_{k_7k_2}\Omega^{02}_{k_3k_4}\int_0^{\tau}\mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}}e^{-\tau_2\epsilon_{k_5k_6}}e^{-\tau_3\epsilon_{k_2k_7}}e^{-\tau_4\epsilon_{k_3k_4}}\\ &= \frac{(-1)^4}{(2!)^2}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{02}_{k_7k_2}\Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_7}\ \epsilon_{k_3k_4}}\end{aligned} \tag{855}$$

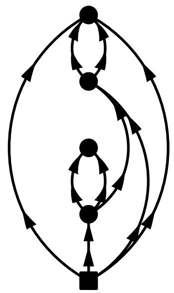


$$\mathrm{T7} = \frac{1}{(a_1+a_2+a_3)a_2a_3a_4} \tag{856}$$

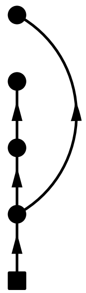
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6}$$
$$a_3 = \epsilon_{k_2k_7}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 422:

$$\begin{aligned}\mathrm{PO4.422} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^3}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{22}_{k_8k_9k_7k_2}\Omega^{04}_{k_8k_9k_3k_4}\int_0^{\tau}\mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}}e^{-\tau_2\epsilon_{k_5k_6}}e^{-\tau_3\epsilon_{k_2k_7}^{k_8k_9}}e^{-\tau_4\epsilon_{k_3k_4k_8k_9}}\\ &= \frac{(-1)^4}{(2!)^3}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_6}\Omega^{22}_{k_8k_9k_7k_2}\Omega^{04}_{k_8k_9k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon^{k_8k_9}_{k_5k_6k_2k_7}\ \epsilon_{k_3k_4k_8k_9}}\end{aligned} \tag{857}$$



$\rightarrow$ T3:

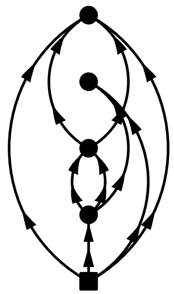


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{858}$$

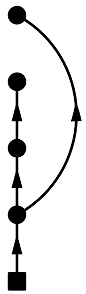
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_7}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_5 k_6}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 423:

$$\begin{aligned}\mathrm{PO4.423} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_5 k_6} \Omega^{02}_{k_7 k_2} \Omega^{04}_{k_8 k_9 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5 k_6}^{k_8 k_9}} e^{-\tau_3 \epsilon_{k_2 k_7}} e^{-\tau_4 \epsilon_{k_3 k_4 k_8 k_9}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_5 k_6} \Omega^{02}_{k_7 k_2} \Omega^{04}_{k_8 k_9 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \; \epsilon_{k_5 k_6}^{k_8 k_9} \; \epsilon_{k_5 k_6 k_2 k_7}^{k_8 k_9} \; \epsilon_{k_3 k_4 k_8 k_9}}\end{aligned} \tag{859}$$



$\rightarrow$ T3:

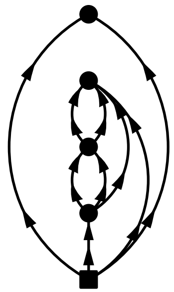


$$\text{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{860}$$

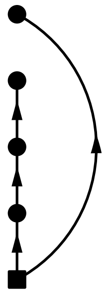
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_7}$$
$$a_3 = \epsilon_{k_5 k_6}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 424:

$$\begin{aligned}\text{PO4.424} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{04}_{k_8k_9k_7k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_3 \epsilon_{k_2k_7k_8k_9}} e^{-\tau_4 \epsilon_{k_3k_4}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_6} \Omega^{04}_{k_8k_9k_7k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2} \;\epsilon_{k_5k_6k_2k_7} \;\epsilon_{k_2k_7k_8k_9} \;\epsilon_{k_3k_4}}\end{aligned} \tag{861}$$



$\rightarrow$ T5:



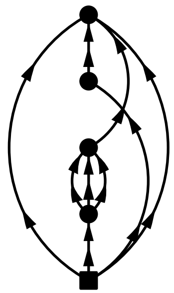
$$\text{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{862}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_2 k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_3 k_4}$$

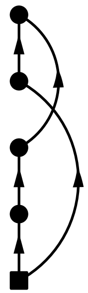
Diagram 425:

$$\mathrm{PO4.425} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{11}_{k_9k_2} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6k_7}^{k_8}} e^{-\tau_3 \epsilon_{k_2}^{k_9}} e^{-\tau_4 \epsilon_{k_3k_4k_8k_9}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{11}_{k_9k_2} \Omega^{04}_{k_9k_8k_3k_4} \Bigg[\frac{1}{\epsilon_{k_1k_3k_4k_9}\ \epsilon_{k_5k_6k_7k_3k_4k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_3k_4k_9}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_3k_4k_8k_9}} + \frac{}{\epsilon_{k_1k_2}} \tag{863}$$



$\rightarrow$ T9:



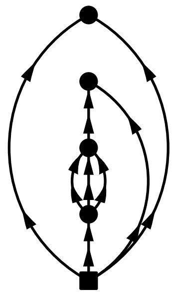
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{864}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6k_7}^{k_8}$$
$$a_3 = \epsilon_{k_2}^{k_9}$$
$$a_4 = \epsilon_{k_3k_4k_8k_9}$$

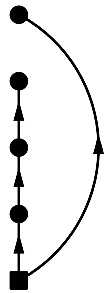
Diagram 426:

$$\mathrm{PO4.426} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{02}_{k_8k_2} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6k_7}^{k_8}} e^{-\tau_3 \epsilon_{k_2k_8}} e^{-\tau_4 \epsilon_{k_3k_4}}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{02}_{k_8k_2} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_6k_7k_2}\ \epsilon_{k_2k_8}\ \epsilon_{k_3k_4}} \tag{865}$$



$\rightarrow$ T5:

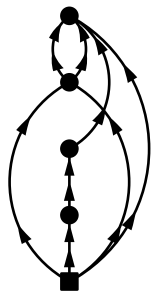


$$T5 = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{866}$$

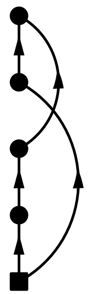
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6 k_7}^{k_8}$$
$$a_3 = \epsilon_{k_2 k_8}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 427:

$$\begin{aligned} \text{PO4.427} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{22}_{k_7k_8k_2k_3} \Omega^{04}_{k_7k_8k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_5}^{k_6}} e^{-\tau_3 \epsilon_{k_2k_3}^{k_7k_8}} e^{-\tau_4 \epsilon_{k_4k_6k_7k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{22}_{k_7k_8k_2k_3} \Omega^{04}_{k_7k_8k_6k_4} \Bigg[\frac{1}{\epsilon_{k_1k_4k_7k_8}\ \epsilon_{k_5k_4k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4k_7k_8}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_4k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2}} \end{aligned} \tag{867}$$



$\rightarrow$ T9:

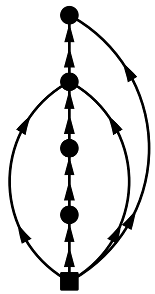


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{868}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6}$$
$$a_3 = \epsilon_{k_2k_3}^{k_7k_8}$$
$$a_4 = \epsilon_{k_4k_6k_7k_8}$$

Diagram 428:

$$\begin{aligned}\mathrm{PO4.428} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{13}_{k_7k_6k_2k_3} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_5}^{k_6}} e^{-\tau_3\epsilon_{k_2k_3k_6}^{k_7}} e^{-\tau_4\epsilon_{k_4k_7}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{13}_{k_7k_6k_2k_3} \Omega^{02}_{k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_3k_6k_4}\ \epsilon_{k_4k_7}}\end{aligned} \tag{869}$$



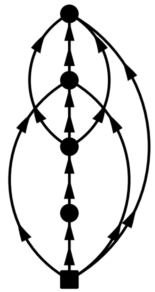
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{870}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6}$$
$$a_3 = \epsilon_{k_2k_3k_6}^{k_7}$$
$$a_4 = \epsilon_{k_4k_7}$$

Diagram 429:

$$\mathrm{PO4.429} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_2k_3} \Omega^{04}_{k_9k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_5}^{k_6k_7k_8}} e^{-\tau_3\epsilon_{k_2k_3k_6}^{k_9}} e^{-\tau_4\epsilon_{k_4k_7k_8}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_2k_3} \Omega^{04}_{k_9k_7k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_3k_6k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_9}} \tag{871}$$



$$\rightarrow \qquad \mathrm{T1:}$$

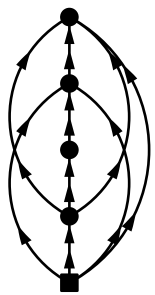
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{872}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_2k_3k_6}^{k_9}$$
$$a_4 = \epsilon_{k_4k_7k_8k_9}$$

Diagram 430:

$$\mathrm{PO4.430} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_8k_2k_3} \Omega^{04}_{k_9k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8}_{k_5}} e^{-\tau_3\epsilon^{k_9}_{k_2k_3k_8}} e^{-\tau_4\epsilon_{k_4k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_8k_2k_3} \Omega^{04}_{k_9k_6k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4k_6k_7}\ \epsilon_{k_2k_3k_8k_4k_6k_7}\ \epsilon_{k_4k_6k_7k_9}} \tag{873}$$



$\rightarrow$ T1:

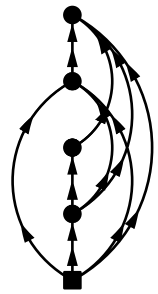
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{874}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon^{k_8}_{k_5}$$
$$a_3 = \epsilon^{k_9}_{k_2k_3k_8}$$
$$a_4 = \epsilon_{k_4k_6k_7k_9}$$

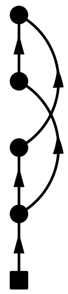
Diagram 431:

$$\mathrm{PO4.431} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_6k_2k_3} \Omega^{04}_{k_9k_8k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8}_{k_5}} e^{-\tau_3\epsilon^{k_9}_{k_2k_3k}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_6k_2k_3} \Omega^{04}_{k_9k_8k_7k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4k_7k_9}\ \epsilon_{k_5k_2k_3k_6k_4k_7}\ \epsilon_{k_4k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_6k_4k_7}\ \epsilon_{k_2k_3k_6k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_9}} \right] \tag{875}$$



$\rightarrow$ T8:

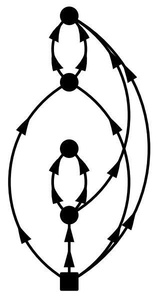


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{876}$$

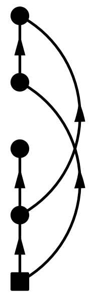
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_2 k_3 k_6}^{k_9}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 432:

$$\begin{aligned}\mathrm{PO4.432} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_6} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{04}_{k_8k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6}} e^{-\tau_3 \epsilon_{k_2k_3}^{k_8k_9}} e^{-\tau_4 \epsilon_{k_4k_7k_8k_9}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_6} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{04}_{k_8k_9k_7k_4} \left[\frac{1}{\epsilon_{k_1k_4k_8k_9}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_3k_4k_7}\ \epsilon_{k_4k_7k_8k_9}} \right]\end{aligned} \tag{877}$$



$\rightarrow$ T10:

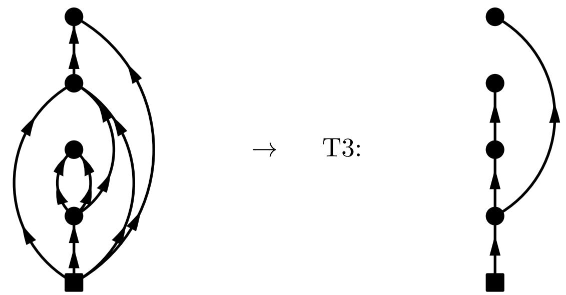


$$\text{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{878}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6}$$
$$a_3 = \epsilon_{k_2 k_3}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 433:

$$\begin{aligned} \text{PO4.433} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{02}_{k_5 k_6} \Omega^{13}_{k_8 k_7 k_2 k_3} \Omega^{02}_{k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_5 k_6}} e^{-\tau_3 \epsilon_{k_2 k_3 k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{02}_{k_5 k_6} \Omega^{13}_{k_8 k_7 k_2 k_3} \Omega^{02}_{k_8 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6} \ \epsilon_{k_2 k_3 k_7 k_4} \ \epsilon_{k_4 k_8}} \end{aligned} \tag{879}$$



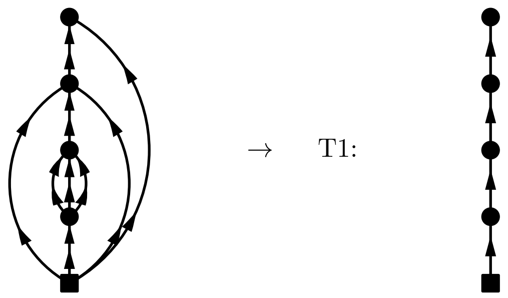
$$\text{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{880}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_3 k_7}^{k_8}$$
$$a_3 = \epsilon_{k_4 k_8}$$
$$a_4 = \epsilon_{k_5 k_6}$$

Diagram 434:

$$\text{PO4.434} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{13}_{k_9k_8k_2k_3} \Omega^{02}_{k_9k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6k_7}^{k_8}} e^{-\tau_3 \epsilon_{k_2k_3k_8}^{k_9}} e^{-\tau_4 \epsilon_{k_4k_9}}$$

$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{13}_{k_9k_8k_2k_3} \Omega^{02}_{k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_2k_3k_8k_4}\ \epsilon_{k_4k_9}} \tag{881}$$



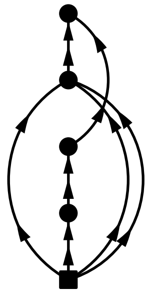
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{882}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6k_7}^{k_8}$$
$$a_3 = \epsilon_{k_2k_3k_8}^{k_9}$$
$$a_4 = \epsilon_{k_4k_9}$$

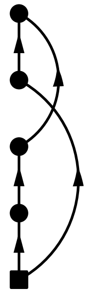
Diagram 435:

$$\text{PO4.435} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{13}_{k_7k_2k_3k_4} \Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_5}^{k_6}} e^{-\tau_3 \epsilon_{k_2k_3k_4}^{k_7}} e^{-\tau_4 \epsilon_{k_6k_7}}$$

$$= \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_5} \Omega^{13}_{k_7k_2k_3k_4} \Omega^{02}_{k_7k_6} \left[\frac{1}{\epsilon_{k_1k_7}\ \epsilon_{k_5k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_6k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_6}\ \epsilon_{k_6k_7}} \right] \tag{883}$$



$\rightarrow$ T9:

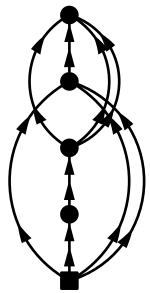
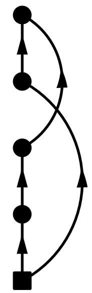


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{884}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6}$$
$$a_3 = \epsilon_{k_2k_3k_4}^{k_7}$$
$$a_4 = \epsilon_{k_6k_7}$$

Diagram 436:

$$\mathrm{PO4.436} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{04}_{k_9k_6k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_5}^{k_6k_7k_8}} e^{-\tau_3 \epsilon_{k_2k_3k_4}^{k_9}} e^{-\tau_4 \epsilon_{k_6k_7k_8k_9}}$$
$$= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{04}_{k_9k_6k_7k_8} \Bigg[\frac{1}{\epsilon_{k_1k_9}\ \epsilon_{k_5k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_9}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_6}} \tag{885}$$

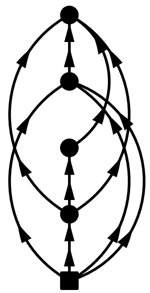
 $\rightarrow$ T9: 

$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{886}$$

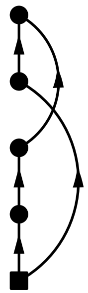
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_5}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_2k_3k_4}^{k_9}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

Diagram 437:

$$\begin{aligned}\mathrm{PO4.437} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{04}_{k_9k_8k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5}^{k_8}} e^{-\tau_3\epsilon_{k_2k_3k_4}^{k_9}} e^{-\tau_4\epsilon_{k_6k_7}} \\ &= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_5} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{04}_{k_9k_8k_6k_7} \Bigg[\frac{1}{\epsilon_{k_1k_9}\ \epsilon_{k_5k_6k_7k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_9}\ \epsilon_{k_5k_2k_3k_4k_6k_7}\ \epsilon_{k_6k_7k_8k_9}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_2k_3}} \end{aligned} \tag{887}$$



$\rightarrow$ T9:

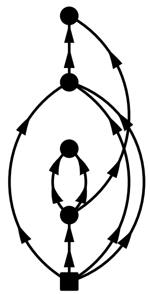


$$\text{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{888}$$

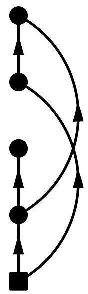
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5}^{k_8}$$
$$a_3 = \epsilon_{k_2k_3k_4}^{k_9}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

Diagram 438:

$$\text{PO4.438} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_5k_6}} e^{-\tau_3 \epsilon_{k_2k_3k_4}^{k_8}} e^{-\tau_4 \epsilon_{k_7k_8}}$$
$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_6} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{02}_{k_8k_7} \left[\frac{1}{\epsilon_{k_1k_8}\ \epsilon_{k_5k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_2k_3k_4k_7}\ \epsilon_{k_7k_8}} \right] \tag{889}$$



$\rightarrow$ T10:

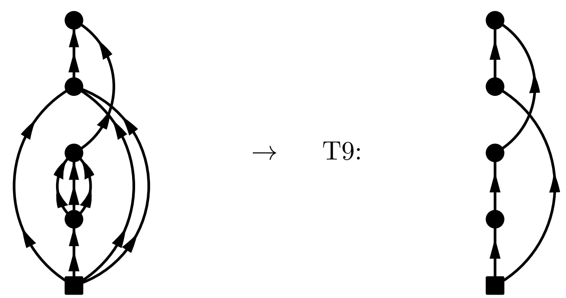


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{890}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_5k_6}$$
$$a_3 = \epsilon_{k_2k_3k_4}^{k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 439:

$$\mathrm{PO4.439} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{02}_{k_9k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_5k_6k_7}^{k_8}} e^{-\tau_3\epsilon_{k_2k_3k_4}^{k_9}} e^{-\tau_4\epsilon_{k_8k_9}}$$
$$= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_7} \Omega^{13}_{k_9k_2k_3k_4} \Omega^{02}_{k_9k_8} \Bigg[\frac{1}{\epsilon_{k_1k_9}\ \epsilon_{k_5k_6k_7k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_9}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon_{k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_2k_3k_4}\ \epsilon \tag{891}$$

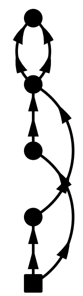


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{892}$$

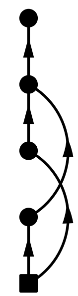
$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_5 k_6 k_7}^{k_8}$$
$$a_3 = \epsilon_{k_2 k_3 k_4}^{k_9}$$
$$a_4 = \epsilon_{k_8 k_9}$$

Diagram 440:

$$\mathrm{PO4.440} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{11}_{k_3 k_1} \Omega^{11}_{k_4 k_2} \Omega^{22}_{k_5 k_6 k_4 k_3} \Omega^{02}_{k_5 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3}} e^{-\tau_2 \epsilon_{k_2}^{k_4}} e^{-\tau_3 \epsilon_{k_3 k_4}^{k_5 k_6}} e^{-\tau_4 \epsilon_{k_5 k_6}}$$
$$= \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{11}_{k_3 k_1} \Omega^{11}_{k_4 k_2} \Omega^{22}_{k_5 k_6 k_4 k_3} \Omega^{02}_{k_5 k_6} \left[\frac{1}{\epsilon_{k_1 k_4} \ \epsilon_{k_1 k_2} \ \epsilon_{k_3 k_4} \ \epsilon_{k_5 k_6}} + \frac{1}{\epsilon_{k_1 k_2} \ \epsilon_{k_2 k_3} \ \epsilon_{k_3 k_4} \ \epsilon_{k_5 k_6}} \right] \tag{893}$$



$\rightarrow$ T12:

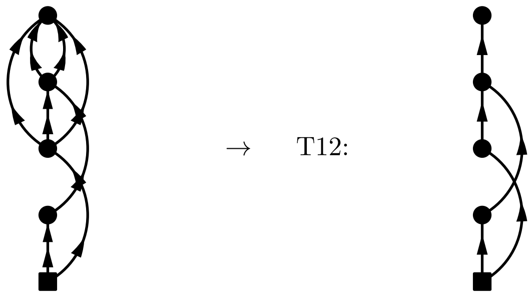


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{894}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_2}^{k_4}$$
$$a_3 = \epsilon_{k_3 k_4}^{k_5 k_6}$$
$$a_4 = \epsilon_{k_5 k_6}$$

Diagram 441:

$$\mathrm{PO4.441} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_2} \Omega^{22}_{k_7k_8k_4k_3} \Omega^{04}_{k_7k_8k_5k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4k_5k_6}_{k_2}} e^{-\tau_3\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_4\epsilon_{k_5k_6k_7k_8}}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_2} \Omega^{22}_{k_7k_8k_4k_3} \Omega^{04}_{k_7k_8k_5k_6} \left[\frac{1}{\epsilon_{k_1k_4k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_5k_6k_7k_8}}\right] \tag{895}$$

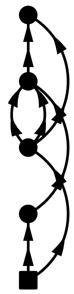


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{896}$$

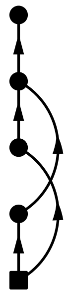
$$a_1 = \epsilon^{k_3}_{k_1}$$
$$a_2 = \epsilon^{k_4k_5k_6}_{k_2}$$
$$a_3 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 442:

$$\mathrm{PO4.442} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_2} \Omega^{13}_{k_7k_4k_5k_3} \Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4k_5k_6}_{k_2}} e^{-\tau_3\epsilon^{k_7}_{k_3k_4k_5}} e^{-\tau_4\epsilon_{k_6k_7}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{31}_{k_4k_5k_6k_2} \Omega^{13}_{k_7k_4k_5k_3} \Omega^{02}_{k_7k_6} \left[\frac{1}{\epsilon_{k_1k_4k_5k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_6k_7}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_6k_7}}\right] \tag{897}$$



$\rightarrow$ T12:

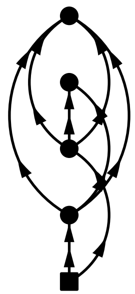


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{898}$$

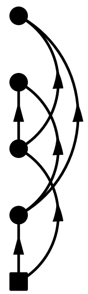
$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_2}^{k_4k_5k_6}$$
$$a_3 = \epsilon_{k_3k_4k_5}^{k_7}$$
$$a_4 = \epsilon_{k_6k_7}$$

Diagram 443:

$$\begin{aligned}\mathrm{PO4.443} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{02}_{k_6k_3} \Omega^{04}_{k_7k_8k_4k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2 \epsilon_{k_2}^{k_6k_7k_8}} e^{-\tau_3 \epsilon_{k_3k_6}} e^{-\tau_4 \epsilon_{k_4k_5k_7}} \\ &= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{02}_{k_6k_3} \Omega^{04}_{k_7k_8k_4k_5} \left[\frac{1}{\epsilon_{k_1k_6k_7k_8}\ \epsilon_{k_1k_2}\ \epsilon_{k_3k_6}\ \epsilon_{k_4k_5k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_3k_6}\ \epsilon_{k_4k_5k_7k_8}} \right]\end{aligned} \tag{899}$$



$\rightarrow$ T11:

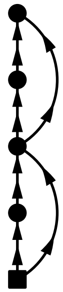


$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{900}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_3k_6}$$
$$a_4 = \epsilon_{k_4k_5k_7k_8}$$

Diagram 444:

$$\begin{aligned} \mathrm{PO4.444} &= \lim_{\tau\to\infty}(-1)^4\sum_{k_i} O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{22}_{k_4k_5k_3k_2}\Omega^{11}_{k_6k_4}\Omega^{02}_{k_6k_5}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_3}}e^{-\tau_2\epsilon_{k_2k_3}^{k_4k_5}}e^{-\tau_3\epsilon_{k_4}^{k_6}}e^{-\tau_4\epsilon_{k_5k_6}} \\ &= (-1)^4\sum_{k_i}\frac{O^{20}_{k_1k_2}\Omega^{11}_{k_3k_1}\Omega^{22}_{k_4k_5k_3k_2}\Omega^{11}_{k_6k_4}\Omega^{02}_{k_6k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3}\ \epsilon_{k_4k_5}\ \epsilon_{k_5k_6}} \end{aligned} \tag{901}$$



$\rightarrow$ T1:

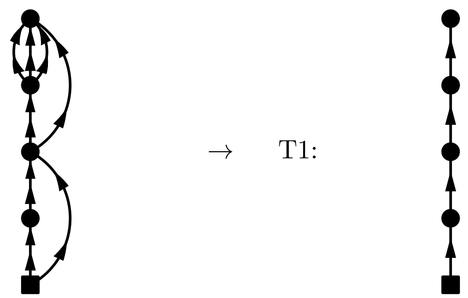
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{902}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_2k_3}^{k_4k_5}$$
$$a_3 = \epsilon_{k_4}^{k_6}$$
$$a_4 = \epsilon_{k_5k_6}$$

Diagram 445:

$$\mathrm{PO4.445} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{22}_{k_4k_5k_3k_2} \Omega^{31}_{k_6k_7k_8k_4} \Omega^{04}_{k_6k_7k_8k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4k_5}_{k_2k_3}} e^{-\tau_3\epsilon^{k_6k_7k_8}_{k_4}} e^{-\tau_4\epsilon_{k_5k_6k_7k_8}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{22}_{k_4k_5k_3k_2} \Omega^{31}_{k_6k_7k_8k_4} \Omega^{04}_{k_6k_7k_8k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3}\ \epsilon_{k_4k_5}\ \epsilon_{k_5k_6k_7k_8}} \tag{903}$$



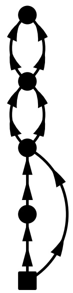
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{904}$$

$$a_1 = \epsilon^{k_3}_{k_1}$$
$$a_2 = \epsilon^{k_4k_5}_{k_2k_3}$$
$$a_3 = \epsilon^{k_6k_7k_8}_{k_4}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 446:

$$\mathrm{PO4.446} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{22}_{k_4k_5k_3k_2} \Omega^{22}_{k_6k_7k_4k_5} \Omega^{02}_{k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_3}_{k_1}} e^{-\tau_2\epsilon^{k_4k_5}_{k_2k_3}} e^{-\tau_3\epsilon^{k_6k_7}_{k_4k_5}} e^{-\tau_4\epsilon_{k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{11}_{k_3k_1} \Omega^{22}_{k_4k_5k_3k_2} \Omega^{22}_{k_6k_7k_4k_5} \Omega^{02}_{k_6k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3}\ \epsilon_{k_4k_5}\ \epsilon_{k_6k_7}} \tag{905}$$



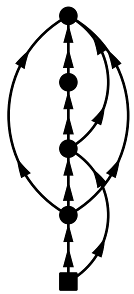
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{906}$$

$$a_1 = \epsilon_{k_1}^{k_3}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_4 k_5}$$
$$a_3 = \epsilon_{k_4 k_5}^{k_6 k_7}$$
$$a_4 = \epsilon_{k_6 k_7}$$

Diagram 447:

$$\begin{aligned}\mathrm{PO4.447} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_2} \Omega^{11}_{k_8 k_6} \Omega^{04}_{k_8 k_7 k_4 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_2 k_3}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_6}^{k_8}} e^{-\tau_4 \epsilon_{k_4}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_2} \Omega^{11}_{k_8 k_6} \Omega^{04}_{k_8 k_7 k_4 k_5}}{\epsilon_{k_1 k_2}\ \epsilon_{k_2 k_3 k_4 k_5}\ \epsilon_{k_6 k_4 k_5 k_7}\ \epsilon_{k_4 k_5 k_7 k_8}}\end{aligned} \tag{907}$$



$\rightarrow$ T1:

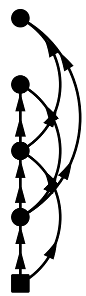
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{908}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_6}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_5 k_7 k_8}$$

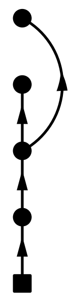
Diagram 448:

$$\mathrm{PO4.448} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_2} \Omega^{02}_{k_6 k_4} \Omega^{02}_{k_7 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_2 k_3}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_4 k_6}} e^{-\tau_4 \epsilon_{k_5}$$

$$= \frac{-(-1)^4}{2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{22}_{k_6 k_7 k_3 k_2} \Omega^{02}_{k_6 k_4} \Omega^{02}_{k_7 k_5}}{\epsilon_{k_1 k_2}\ \epsilon_{k_2 k_3 k_4 k_5}\ \epsilon_{k_4 k_6}\ \epsilon_{k_5 k_7}} \tag{909}$$



$\rightarrow$ T2:



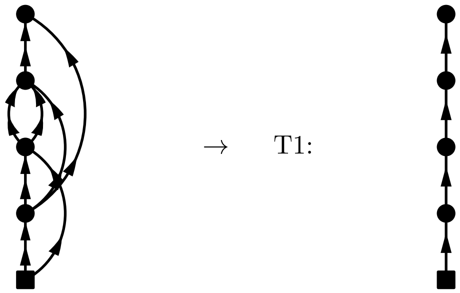
$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{910}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_4 k_6}$$
$$a_4 = \epsilon_{k_5 k_7}$$

Diagram 449:

$$\mathrm{PO4.449} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{13}_{k_8k_6k_7k_4} \Omega^{02}_{k_8k_5} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_2k_3}^{k_6k_7}} e^{-\tau_3\epsilon_{k_4k_6k_7}^{k_8}} e^{-}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{13}_{k_8k_6k_7k_4} \Omega^{02}_{k_8k_5}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_6k_7k_5}\ \epsilon_{k_5k_8}} \tag{911}$$



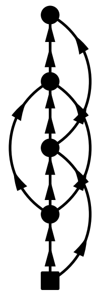
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{912}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_2k_3}^{k_6k_7}$$
$$a_3 = \epsilon_{k_4k_6k_7}^{k_8}$$
$$a_4 = \epsilon_{k_5k_8}$$

Diagram 450:

$$\mathrm{PO4.450} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{13}_{k_8k_6k_4k_5} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_2k_3}^{k_6k_7}} e^{-\tau_3\epsilon_{k_4k_5k_6}^{k_8}} e^{-}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{22}_{k_6k_7k_3k_2} \Omega^{13}_{k_8k_6k_4k_5} \Omega^{02}_{k_8k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_7k_8}} \tag{913}$$



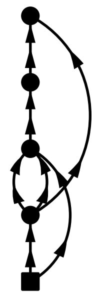
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{914}$$

$$a_1 = \epsilon_{k_1}^{k_3 k_4 k_5}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_4 k_5 k_6}^{k_8}$$
$$a_4 = \epsilon_{k_7 k_8}$$

Diagram 451:

$$\begin{aligned}
\mathrm{PO4.451} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{13}_{k_6 k_3 k_4 k_2} \Omega^{11}_{k_7 k_6} \Omega^{02}_{k_7 k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_3 k_4 k_5}} e^{-\tau_2 \epsilon_{k_2 k_3 k_4}^{k_6}} e^{-\tau_3 \epsilon_{k_6}^{k_7}} e^{-\tau_4 \epsilon_{k_5 k_7}} \\
&= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{31}_{k_3 k_4 k_5 k_1} \Omega^{13}_{k_6 k_3 k_4 k_2} \Omega^{11}_{k_7 k_6} \Omega^{02}_{k_7 k_5}}{\epsilon_{k_1 k_2}\ \epsilon_{k_2 k_3 k_4 k_5}\ \epsilon_{k_6 k_5}\ \epsilon_{k_5 k_7}}
\end{aligned} \tag{915}$$



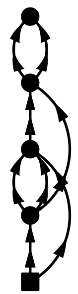
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{916}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_2k_3k_4}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7}$$
$$a_4 = \epsilon_{k_5k_7}$$

Diagram 452:

$$\begin{aligned}\mathrm{PO4.452} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_2} \Omega^{22}_{k_7k_8k_6k_5} \Omega^{02}_{k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_3k_4k_5}} e^{-\tau_2\epsilon_{k_2k_3k_4}^{k_6}} e^{-\tau_3\epsilon_{k_5k_6}^{k_7k_8}} e^{-\tau_4\epsilon_{k_7k_8}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{31}_{k_3k_4k_5k_1} \Omega^{13}_{k_6k_3k_4k_2} \Omega^{22}_{k_7k_8k_6k_5} \Omega^{02}_{k_7k_8}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_5k_6}\ \epsilon_{k_7k_8}}\end{aligned} \tag{917}$$



$\rightarrow$ T1:

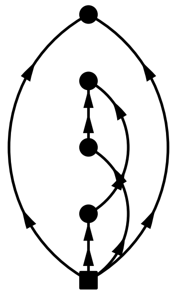
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{918}$$

$$a_1 = \epsilon_{k_1}^{k_3k_4k_5}$$
$$a_2 = \epsilon_{k_2k_3k_4}^{k_6}$$
$$a_3 = \epsilon_{k_5k_6}^{k_7k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

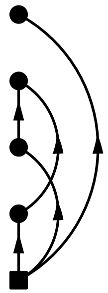
Diagram 453:

$$\text{PO4.453} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{02}_{k_6k_5} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_2}} e^{-\tau_3\epsilon_{k_5k_6}} e^{-\tau_4\epsilon_{k_3k_4}}$$

$$= \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{02}_{k_6k_5} \Omega^{02}_{k_3k_4} \left[\frac{1}{\epsilon_{k_1k_6}\ \epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_3k_4}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_5}\ \epsilon_{k_5k_6}\ \epsilon_{k_3k_4}} \right] \quad (919)$$



$\rightarrow$ T14:



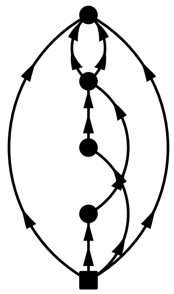
$$\text{T14} = \frac{1}{(a_1+a_3)(a_2+a_1+a_3)a_3a_4} + \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \quad (920)$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_2}$$
$$a_3 = \epsilon_{k_5k_6}$$
$$a_4 = \epsilon_{k_3k_4}$$

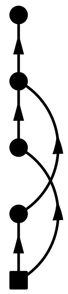
Diagram 454:

$$\text{PO4.454} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{22}_{k_7k_8k_6k_5} \Omega^{04}_{k_7k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_2}} e^{-\tau_3\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}$$

$$= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{22}_{k_7k_8k_6k_5} \Omega^{04}_{k_7k_8k_3k_4} \left[\frac{1}{\epsilon_{k_1k_6k_3k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} \right] \quad (921)$$



$\rightarrow$ T12:

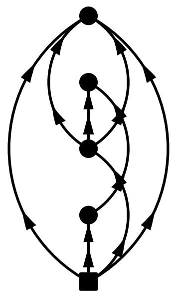


$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{922}$$

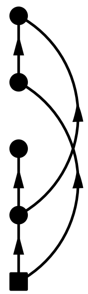
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6}$$
$$a_3 = \epsilon_{k_5 k_6}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_7 k_8}$$

Diagram 455:

$$\begin{aligned} \text{PO4.455} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{02}_{k_6 k_5} \Omega^{04}_{k_7 k_8 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2}^{k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k_5 k_6}} e^{-\tau_4 \epsilon_{k_3 k_4 k_7 k_8}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{02}_{k_6 k_5} \Omega^{04}_{k_7 k_8 k_3 k_4} \left[\frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_5 k_3 k_4}\ \epsilon_{k_5 k_6}\ \epsilon_{k_3 k_4 k_7 k_8}} + \frac{1}{\epsilon_{k_1 k_6}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6}\ \epsilon_{k_3 k_4 k_7 k_8}} \right] \end{aligned} \tag{923}$$



$\rightarrow$ T10:

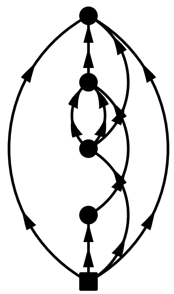


$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{924}$$

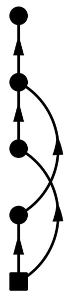
$$a_1 = \epsilon_{k_2}^{k_6 k_7 k_8}$$
$$a_2 = \epsilon_{k_3 k_4 k_7 k_8}$$
$$a_3 = \epsilon_{k_1}^{k_5}$$
$$a_4 = \epsilon_{k_5 k_6}$$

Diagram 456:

$$\begin{aligned}
\mathrm{PO4.456} = &\lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{13}_{k_9 k_6 k_7 k_5} \Omega^{04}_{k_9 k_8 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2}^{k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k_5 k_6 k_7}^{k_9}} e^{-\tau_4 \epsilon_{k_3 k_4 k_8}} \\
= &\frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{13}_{k_9 k_6 k_7 k_5} \Omega^{04}_{k_9 k_8 k_3 k_4} \left[\frac{1}{\epsilon_{k_1 k_6 k_7 k_3 k_4 k_8} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6 k_7 k_3 k_4 k_8} \ \epsilon_{k_3 k_4 k_8 k_9}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_2 k_5 k_3 k_4} \ \epsilon_{k_5 k_6 k_7 k_3 k_4 k_8} \ \epsilon_{k_3 k_4 k_8 k_9}} \right]
\end{aligned} \tag{925}$$



$\rightarrow$ T12:

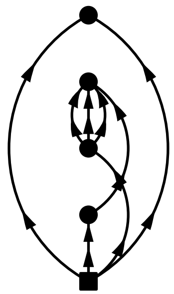


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{926}$$

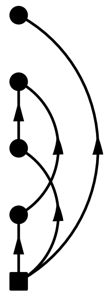
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_5 k_6 k_7}^{k_9}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 457:

$$\mathrm{PO4.457} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{04}_{k_6 k_7 k_8 k_5} \Omega^{02}_{k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2}^{k_6 k_7 k_8}} e^{-\tau_3 \epsilon_{k_5 k_6 k_7 k_8}} e^{-\tau_4 \epsilon_{k_3 k_4}}$$
$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{31}_{k_6 k_7 k_8 k_2} \Omega^{04}_{k_6 k_7 k_8 k_5} \Omega^{02}_{k_3 k_4} \left[\frac{1}{\epsilon_{k_1 k_6 k_7 k_8}\ \epsilon_{k_1 k_2}\ \epsilon_{k_5 k_6 k_7 k_8}\ \epsilon_{k_3 k_4}} + \frac{1}{\epsilon_{k_1 k_2}\ \epsilon_{k_2 k_5}\ \epsilon_{k_5 k_6 k_7 k_8}\ \epsilon_{k_3 k_4}} \right] \tag{927}$$



$\rightarrow$ T14:



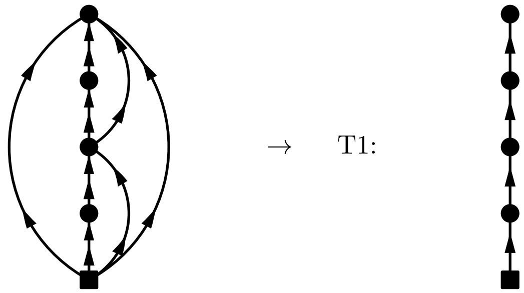
$$\mathrm{T14} = \frac{1}{(a_1 + a_3)(a_2 + a_1 + a_3) a_3 a_4} + \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3) a_3 a_4} \tag{928}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_5 k_6 k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 458:

$$\text{PO4.458} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{11}_{k_8k_6} \Omega^{04}_{k_8k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_5}} e^{-\tau_3\epsilon^{k_8}_{k_6}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{11}_{k_8k_6} \Omega^{04}_{k_8k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4}\ \epsilon_{k_6k_3k_4k_7}\ \epsilon_{k_3k_4k_7k_8}} \tag{929}$$



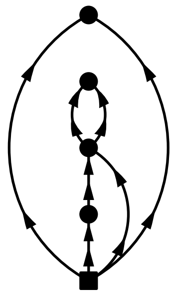
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{930}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_2k_5}$$
$$a_3 = \epsilon^{k_8}_{k_6}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

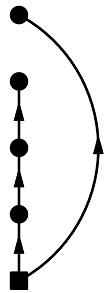
Diagram 459:

$$\text{PO4.459} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{02}_{k_6k_7} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_5}} e^{-\tau_3\epsilon_{k_6k_7}} e^{-\tau_4\epsilon_{k_3k_4}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{02}_{k_6k_7} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_5}\ \epsilon_{k_6k_7}\ \epsilon_{k_3k_4}} \tag{931}$$



$\rightarrow$ T5:

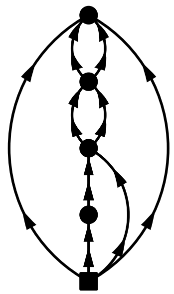


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{932}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_5}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_6 k_7}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 460:

$$\begin{aligned}\mathrm{PO4.460} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_5 k_2} \Omega^{22}_{k_8 k_9 k_6 k_7} \Omega^{04}_{k_8 k_9 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2 k_5}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_6 k_7}^{k_8 k_9}} e^{-\tau_4 \epsilon_{k_3 k_4 k_8 k_9}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_5 k_2} \Omega^{22}_{k_8 k_9 k_6 k_7} \Omega^{04}_{k_8 k_9 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_2 k_5 k_3 k_4} \ \epsilon_{k_6 k_7 k_3 k_4} \ \epsilon_{k_3 k_4 k_8 k_9}}\end{aligned} \tag{933}$$



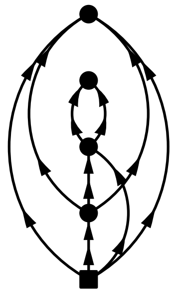
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{934}$$

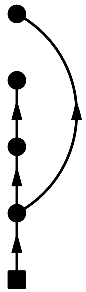
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_5}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_6 k_7}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 461:

$$\begin{aligned}
\mathrm{PO4.461} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{02}_{k_8k_9} \Omega^{04}_{k_6k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_5}^{k_8k_9}} e^{-\tau_3 \epsilon_{k_8k_9}} e^{-\tau_4 \epsilon_{k_3k_4k_6k_7}} \\
&= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{02}_{k_8k_9} \Omega^{04}_{k_6k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5}^{k_8k_9}\ \epsilon_{k_8k_9}\ \epsilon_{k_2k_5k_3k_4k_6k_7}^{k_8k_9}}
\end{aligned} \tag{935}$$



$\rightarrow$ T3:



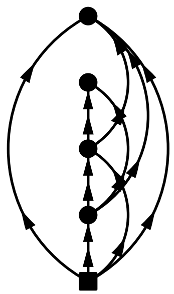
$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{936}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_3 k_4 k_6 k_7}$$
$$a_3 = \epsilon_{k_2 k_5}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_8 k_9}$$

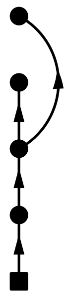
Diagram 462:

$$\mathrm{PO4.462} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{02}_{k_8k_6} \Omega^{04}_{k_9k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2 \epsilon^{k_8k_9}_{k_2k_5}} e^{-\tau_3 \epsilon_{k_6k}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{02}_{k_8k_6} \Omega^{04}_{k_9k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_6k_8}\ \epsilon_{k_3k_4k_7k_9}} \tag{937}$$



$\rightarrow$ T2:



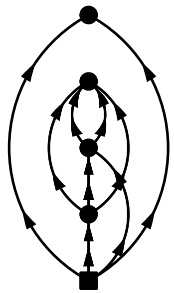
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{938}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon^{k_8k_9}_{k_2k_5}$$
$$a_3 = \epsilon_{k_6k_8}$$
$$a_4 = \epsilon_{k_3k_4k_7k_9}$$

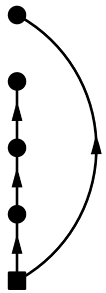
Diagram 463:

$$\mathrm{PO4.463} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{04}_{k_8k_9k_6k_7} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1 \epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2 \epsilon^{k_8k_9}_{k_2k_5}} e^{-\tau_3 \epsilon_{k_6k_7k_8k_9}} e^{-\tau_4 \epsilon_{k_3k_4}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{04}_{k_8k_9k_6k_7} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_6k_7k_8k_9}\ \epsilon_{k_3k_4}} \tag{939}$$



$\rightarrow$ T5:

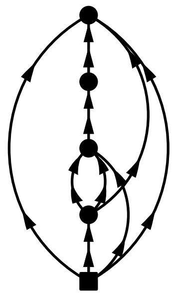


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{940}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_5}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_6 k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 464:

$$\begin{aligned}\mathrm{PO4.464} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{11}_{k_9k_8} \Omega^{04}_{k_9k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_5k_6}^{k_8}} e^{-\tau_3 \epsilon_{k_8}^{k_9}} e^{-\tau_4 \epsilon_{k_3k_4}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{11}_{k_9k_8} \Omega^{04}_{k_9k_7k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_8k_3k_4k_7}\ \epsilon_{k_3k_4k_7k_9}}\end{aligned} \tag{941}$$



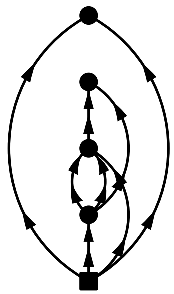
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{942}$$

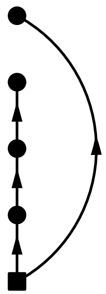
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5k_6}^{k_8}$$
$$a_3 = \epsilon_{k_8}^{k_9}$$
$$a_4 = \epsilon_{k_3k_4k_7k_9}$$

Diagram 465:

$$\begin{aligned}\mathrm{PO4.465} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{13}_{k_8k_5k_6k_2}\Omega^{02}_{k_8k_7}\Omega^{02}_{k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}}e^{-\tau_2\epsilon_{k_2k_5k_6}^{k_8}}e^{-\tau_3\epsilon_{k_7k_8}}e^{-\tau_4\epsilon_{k_3k_4}} \\ &= \frac{-(-1)^4}{(2!)^2}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{13}_{k_8k_5k_6k_2}\Omega^{02}_{k_8k_7}\Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_7k_8}\ \epsilon_{k_3k_4}}\end{aligned} \tag{943}$$



→ T5:



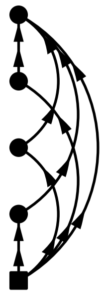
$$\mathrm{T5} = \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{944}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5k_6}^{k_8}$$
$$a_3 = \epsilon_{k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4}$$

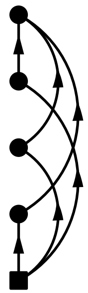
Diagram 466:

$$\text{PO4.466} = \lim_{\tau\to\infty} \frac{-(-1)^4}{10} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{11}_{k_7k_3} \Omega^{04}_{k_7k_6k_5k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_2}} e^{-\tau_3\epsilon^{k_7}_{k_3}} e^{-\tau_4\epsilon_{k_4k_5k_6k_7}}$$

$$= \frac{-(-1)^4}{10} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{11}_{k_7k_3} \Omega^{04}_{k_7k_6k_5k_4} \Bigg[\frac{1}{\epsilon_{k_1k_2k_4k_7}\ \epsilon_{k_2k_4k_5k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_4k_6k_7}\ \epsilon_{k_1k_2k_4k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_6k_7}} + \frac{1}{\epsilon_{k_1k_4k_6k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1k_3}} \tag{945}$$



$\rightarrow$ T13:



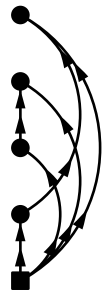
$$\text{T13} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_4)(a_2+a_1+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_4)(a_2+a_1+a_3+a_4)(a_3+a_1+a_4)a_4} + \frac{}{(a_1+a_3+a_4)(a_2} \tag{946}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_2}$$
$$a_3 = \epsilon^{k_7}_{k_3}$$
$$a_4 = \epsilon_{k_4k_5k_6k_7}$$

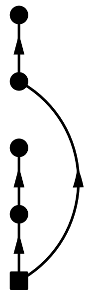
Diagram 467:

$$\text{PO4.467} = \lim_{\tau\to\infty} \frac{(-1)^4}{2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{02}_{k_6k_3} \Omega^{02}_{k_5k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_2}} e^{-\tau_3\epsilon_{k_3k_6}} e^{-\tau_4\epsilon_{k_4k_5}}$$

$$= \frac{(-1)^4}{2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{02}_{k_6k_3} \Omega^{02}_{k_5k_4}}{\epsilon^{k_5k_6}_{k_1k_2}\ \epsilon^{k_6}_{k_2}\ \epsilon_{k_3k_6k_4k_5}\ \epsilon_{k_4k_5}} \tag{947}$$



$\rightarrow$ T4:

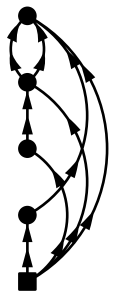


$$\text{T4} = \frac{1}{(a_1 + a_2)a_2(a_3 + a_4)a_4} \tag{948}$$

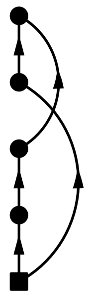
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6}$$
$$a_3 = \epsilon_{k_3 k_6}$$
$$a_4 = \epsilon_{k_4 k_5}$$

Diagram 468:

$$\begin{aligned} \text{PO4.468} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{22}_{k_7k_8k_6k_3} \Omega^{04}_{k_7k_8k_5k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2}^{k_6}} e^{-\tau_3 \epsilon_{k_3k_6}^{k_7k_8}} e^{-\tau_4 \epsilon_{k_4k_5k_7k_8}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{22}_{k_7k_8k_6k_3} \Omega^{04}_{k_7k_8k_5k_4} \Bigg[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_3k_6k_4k_5}\ \epsilon_{k_4k_5k_7k_8}} + \frac{1}{\epsilon_{k_1k_3k_6k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_6k_4k_5}\ \epsilon_{k_4k_5k_7k_8}} + \frac{1}{\epsilon_{k_1k_4k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1}} \end{aligned} \tag{949}$$



$\rightarrow$ T9:



$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{950}$$

$$a_1 = \epsilon_{k_2}^{k_6}$$
$$a_2 = \epsilon_{k_3k_6}^{k_7k_8}$$
$$a_3 = \epsilon_{k_1}^{k_5}$$
$$a_4 = \epsilon_{k_4k_5k_7k_8}$$

Diagram 469:

$$\begin{aligned}\mathrm{PO4.469} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{02}_{k_6k_3} \Omega^{04}_{k_7k_8k_5k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6k_7k_8}} e^{-\tau_3\epsilon_{k_3k_6}} e^{-\tau_4\epsilon_{k_4k_5k_7k_8}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{02}_{k_6k_3} \Omega^{04}_{k_7k_8k_5k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3}^{k_5k_7k_8}\ \epsilon_{k_2}^{k_6k_7k_8}\ \epsilon_{k_3k_6}\ \epsilon_{k_1k_2k_3k_4}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2}^{k_6k_7k_8}\ \epsilon_{k_3k_6}\ \epsilon_{k_3k_6k_4k_5k_7k_8}} \right]\end{aligned} \tag{951}$$

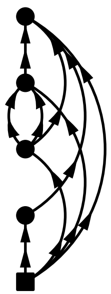
$\rightarrow$ T10:

$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{952}$$

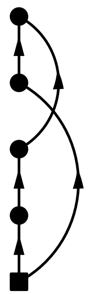
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_4 k_5 k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_6}$$

Diagram 470:

$$\mathrm{PO4.470} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_7k_3} \Omega^{04}_{k_9k_8k_5k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6k_7k_8}} e^{-\tau_3\epsilon_{k_3k_6k_7}^{k_9}} e^{-\tau_4\epsilon_{k_4k_5}$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_7k_3} \Omega^{04}_{k_9k_8k_5k_4} \left[\frac{1}{\epsilon^{k_6k_7}_{k_1k_2k_4k_9}\ \epsilon^{k_6k_7}_{k_2k_4k_5k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_6k_7}_{k_2k_4k_5k_9}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_5k_8k_9}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4}} \right. \tag{953}$$



$\rightarrow$ T9:

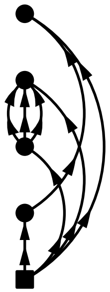


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{954}$$

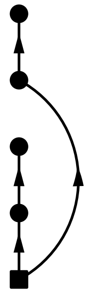
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6 k_7 k_8}$$
$$a_3 = \epsilon_{k_3 k_6 k_7}^{k_9}$$
$$a_4 = \epsilon_{k_4 k_5 k_8 k_9}$$

Diagram 471:

$$\text{PO4.471} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{04}_{k_6k_7k_8k_3} \Omega^{02}_{k_5k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6k_7k_8}} e^{-\tau_3\epsilon_{k_3k_6k_7k_8}} e^{-\tau_4\epsilon_{k_4k_5}}$$
$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{04}_{k_6k_7k_8k_3} \Omega^{02}_{k_5k_4}}{\epsilon_{k_1k_4}\ \epsilon_{k_2k_3}\ \epsilon_{k_3k_6k_7k_8}\ \epsilon_{k_4k_5}} \tag{955}$$



$\rightarrow$ T4:

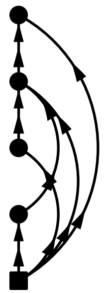


$$\text{T4} = \frac{1}{(a_1+a_2)a_2(a_3+a_4)a_4} \tag{956}$$

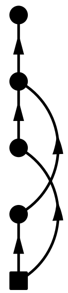
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_4k_5}$$
$$a_3 = \epsilon_{k_2}^{k_6k_7k_8}$$
$$a_4 = \epsilon_{k_3k_6k_7k_8}$$

Diagram 472:

$$\text{PO4.472} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{13}_{k_7k_6k_5k_3} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6}} e^{-\tau_3\epsilon_{k_3k_5k_6}^{k_7}} e^{-\tau_4\epsilon_{k_4k_7}}$$
$$= \frac{-(-1)^4}{2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{13}_{k_7k_6k_5k_3} \Omega^{02}_{k_7k_4} \left[\frac{1}{\epsilon_{k_1k_3k_6k_4}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_4k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_4k_7}} \right] \tag{957}$$



$\rightarrow$ T12:

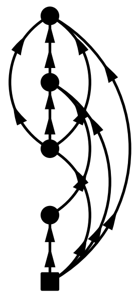


$$\text{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{958}$$

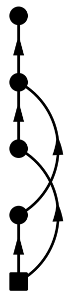
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6}$$
$$a_3 = \epsilon_{k_3k_5k_6}^{k_7}$$
$$a_4 = \epsilon_{k_4k_7}$$

Diagram 473:

$$\begin{aligned}\text{PO4.473} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_5k_3} \Omega^{04}_{k_9k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2}^{k_6k_7k_8}} e^{-\tau_3 \epsilon_{k_3k_5k_6}^{k_9}} e^{-\tau_4 \epsilon_{k_4k_7}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_5k_3} \Omega^{04}_{k_9k_7k_8k_4} \left[\frac{1}{\epsilon_{k_1k_3k_6k_4k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_3k_5k_6k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_9}} \right]\end{aligned} \tag{959}$$



$\rightarrow$ T12:



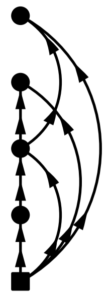
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{960}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6k_7k_8}$$
$$a_3 = \epsilon_{k_3k_5k_6}^{k_9}$$
$$a_4 = \epsilon_{k_4k_7k_8k_9}$$

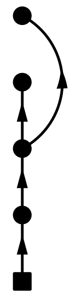
Diagram 474:

$$\mathrm{PO4.474} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{02}_{k_6k_3} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2k_5}^{k_6k_7}} e^{-\tau_3\epsilon_{k_3k_6}} e^{-\tau_4\epsilon_{k_4k_7}}$$

$$= \frac{-(-1)^4}{2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{02}_{k_6k_3} \Omega^{02}_{k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4}\ \epsilon_{k_3k_6}\ \epsilon_{k_4k_7}} \tag{961}$$



$\rightarrow$ T2:

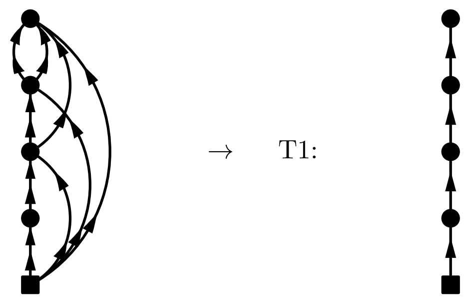


$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{962}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2k_5}^{k_6k_7}$$
$$a_3 = \epsilon_{k_3k_6}$$
$$a_4 = \epsilon_{k_4k_7}$$

Diagram 475:

$$\mathrm{PO4.475} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{22}_{k_8k_9k_6k_3} \Omega^{04}_{k_8k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_5}} e^{-\tau_3\epsilon^{k_8k_9}_{k_3k_6}} e^{-\tau_4\epsilon_{k_4k_7k_8k_9}}$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{22}_{k_8k_9k_6k_3} \Omega^{04}_{k_8k_9k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4}\ \epsilon_{k_3k_6k_4k_7}\ \epsilon_{k_4k_7k_8k_9}} \tag{963}$$

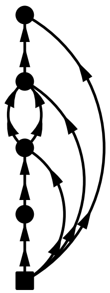


$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{964}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_2k_5}$$
$$a_3 = \epsilon^{k_8k_9}_{k_3k_6}$$
$$a_4 = \epsilon_{k_4k_7k_8k_9}$$

Diagram 476:

$$\mathrm{PO4.476} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{13}_{k_8k_6k_7k_3} \Omega^{02}_{k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_5}} e^{-\tau_3\epsilon^{k_8}_{k_3k_6k_7}} e^{-\tau_4\epsilon_{k_4k_8}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_5k_2} \Omega^{13}_{k_8k_6k_7k_3} \Omega^{02}_{k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4}\ \epsilon_{k_3k_6k_7k_4}\ \epsilon_{k_4k_8}} \tag{965}$$



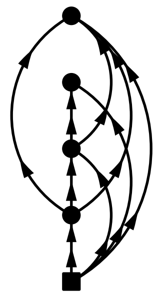
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{966}$$

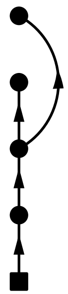
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_5}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_3 k_6 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_8}$$

Diagram 477:

$$\begin{aligned}\mathrm{PO4.477} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{02}_{k_8k_3} \Omega^{04}_{k_9k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_5}^{k_8k_9}} e^{-\tau_3 \epsilon_{k_3k_8}} e^{-\tau_4 \epsilon_{k_4k_6}} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_5k_2} \Omega^{02}_{k_8k_3} \Omega^{04}_{k_9k_6k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4k_6k_7}\ \epsilon_{k_3k_8}\ \epsilon_{k_4k_6k_7k_9}} \end{aligned} \tag{967}$$



$\rightarrow$ T2:

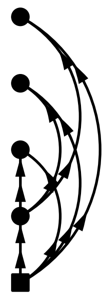


$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{968}$$

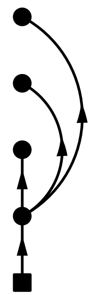
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5}^{k_8k_9}$$
$$a_3 = \epsilon_{k_3k_8}$$
$$a_4 = \epsilon_{k_4k_6k_7k_9}$$

Diagram 478:

$$\mathrm{PO4.478} = \lim_{\tau\to\infty} \frac{-(-1)^4}{10} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{02}_{k_6k_3} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2k_5}} e^{-\tau_3\epsilon_{k_3k_6}} e^{-\tau_4\epsilon_{k_4k_7}}$$
$$= \frac{-(-1)^4}{10} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{02}_{k_6k_3} \Omega^{02}_{k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5}\ \epsilon_{k_3k_6}\ \epsilon_{k_4k_7}} \tag{969}$$



$\rightarrow$ T6:



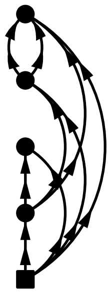
$$\mathrm{T6} = \frac{1}{(a_1+a_2+a_3+a_4)a_2a_3a_4} \tag{970}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5}$$
$$a_3 = \epsilon_{k_3k_6}$$
$$a_4 = \epsilon_{k_4k_7}$$

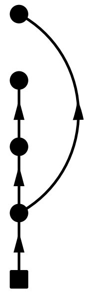
Diagram 479:

$$\text{PO4.479} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{22}_{k_8k_9k_6k_3} \Omega^{04}_{k_8k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon_{k_2k_5}} e^{-\tau_3\epsilon^{k_8k_9}_{k_3k_6}} e^{-\tau_4\epsilon_{k_4k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{22}_{k_8k_9k_6k_3} \Omega^{04}_{k_8k_9k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_8k_9}_{k_2k_5k_3k_6}\ \epsilon^{k_8k_9}_{k_3k_6}\ \epsilon_{k_4k_7k_8k_9}} \tag{971}$$



$\rightarrow$ T3:



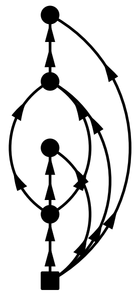
$$\text{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{972}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon_{k_2k_5}$$
$$a_3 = \epsilon^{k_8k_9}_{k_3k_6}$$
$$a_4 = \epsilon_{k_4k_7k_8k_9}$$

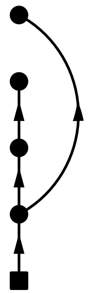
Diagram 480:

$$\text{PO4.480} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{13}_{k_8k_6k_7k_3} \Omega^{02}_{k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon_{k_2k_5}} e^{-\tau_3\epsilon^{k_8}_{k_3k_6k_7}} e^{-\tau_4\epsilon_{k_4k_8}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{02}_{k_5k_2} \Omega^{13}_{k_8k_6k_7k_3} \Omega^{02}_{k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_8}_{k_2k_5k_3k_6k_7}\ \epsilon^{k_8}_{k_3k_6k_7}\ \epsilon_{k_4k_8}} \tag{973}$$



$\rightarrow$ T3:

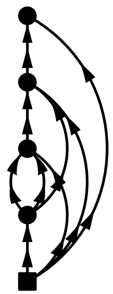


$$\text{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{974}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_5}$$
$$a_3 = \epsilon_{k_3 k_6 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_8}$$

Diagram 481:

$$\begin{aligned}\text{PO4.481} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{13}_{k_9 k_8 k_7 k_3} \Omega^{02}_{k_9 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_5 k_6}^{k_8}} e^{-\tau_3 \epsilon_{k_3 k_7 k_8}^{k_9}} e^{-\tau_4 \epsilon} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_6 k_2} \Omega^{13}_{k_9 k_8 k_7 k_3} \Omega^{02}_{k_9 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_5 k_6 k_3 k_7 k_4}\ \epsilon_{k_3 k_7 k_8 k_4}\ \epsilon_{k_4 k_9}}\end{aligned} \tag{975}$$



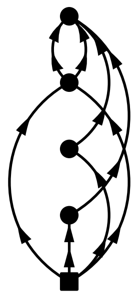
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{976}$$

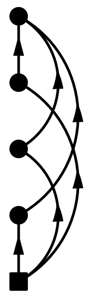
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5k_6}^{k_8}$$
$$a_3 = \epsilon_{k_3k_7k_8}^{k_9}$$
$$a_4 = \epsilon_{k_4k_9}$$

Diagram 482:

$$\mathrm{PO4.482} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{04}_{k_7k_8k_6k_5} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6}} e^{-\tau_3\epsilon_{k_3k_4}^{k_7k_8}} e^{-\tau_4\epsilon_{k_5k_6k_7k_8}}$$
$$= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{04}_{k_7k_8k_6k_5} \Bigg[\frac{1}{\epsilon_{k_1k_2k_7k_8}\ \epsilon_{k_2k_5k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_6k_7k_8}\ \epsilon_{k_1k_2k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_6k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon \cdots} \tag{977}$$



$\rightarrow$ T13:

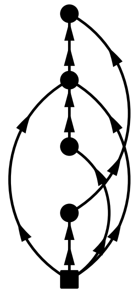


$$\mathrm{T13} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_4)(a_2+a_1+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_4)(a_2+a_1+a_3+a_4)(a_3+a_1+a_4)a_4} + \frac{1}{(a_1+a_3+a_4)(a_2 \cdots} \tag{978}$$

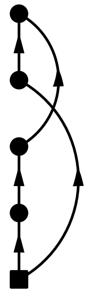
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6}$$
$$a_3 = \epsilon_{k_3k_4}^{k_7k_8}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 483:

$$\mathrm{PO4.483} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{13}_{k_7k_6k_3k_4} \Omega^{02}_{k_7k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2}^{k_6}} e^{-\tau_3\epsilon_{k_3k_4k_6}^{k_7}} e^{-\tau_4\epsilon_{k_5k_7}}$$
$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{11}_{k_6k_2} \Omega^{13}_{k_7k_6k_3k_4} \Omega^{02}_{k_7k_5} \left[\frac{1}{\epsilon_{k_1k_2k_7}^{k_6}\ \epsilon_{k_2k_5k_7}^{k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_7}^{k_6}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_5k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_3k_4k_6k_5}\ \epsilon_{k_5k_7}} \right] \tag{979}$$



$\rightarrow$ T9:



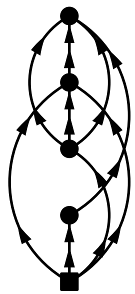
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{980}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2}^{k_6}$$
$$a_3 = \epsilon_{k_3k_4k_6}^{k_7}$$
$$a_4 = \epsilon_{k_5k_7}$$

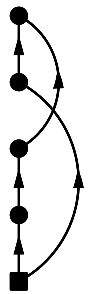
Diagram 484:

$$\mathrm{PO4.484} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_3k_4} \Omega^{04}_{k_9k_7k_8k_5} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7k_8}_{k_2}} e^{-\tau_3\epsilon^{k_9}_{k_3k_4k_6}} e^{-\tau_4\epsilon_{k_5k_7}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{31}_{k_6k_7k_8k_2} \Omega^{13}_{k_9k_6k_3k_4} \Omega^{04}_{k_9k_7k_8k_5} \Bigg[\frac{1}{\epsilon^{k_6}_{k_1k_2k_9}\ \epsilon^{k_6}_{k_2k_5k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_6}_{k_2k_5k_9}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_5k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_3}} \tag{981}$$



$\rightarrow$ T9:



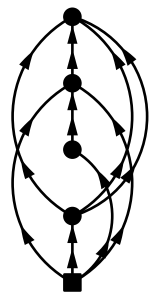
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{982}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_2}$$
$$a_3 = \epsilon^{k_9}_{k_3k_4k_6}$$
$$a_4 = \epsilon_{k_5k_7k_8k_9}$$

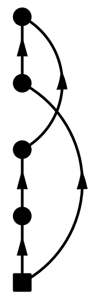
Diagram 485:

$$\mathrm{PO4.485} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_2} \Omega^{13}_{k_9k_8k_3k_4} \Omega^{04}_{k_9k_5k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2}^{k_8}} e^{-\tau_3 \epsilon_{k_3k_4k_8}^{k_9}} e^{-\tau_4 \epsilon_{k_5k_6k_7k_9}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{11}_{k_8k_2} \Omega^{13}_{k_9k_8k_3k_4} \Omega^{04}_{k_9k_5k_6k_7} \Bigg[\frac{1}{\epsilon_{k_1k_2k_9}^{k_8}\ \epsilon_{k_2k_5k_6k_7k_9}^{k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_7k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_7k_9}^{k_8}\ \epsilon_{k_2k_3k_4k_5k_6k_7}\ \epsilon_{k_5k_6k_7k_9}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon} \tag{983}$$



$\rightarrow$ T9:



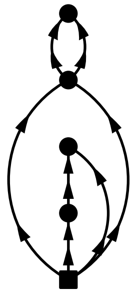
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{984}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2}^{k_8}$$
$$a_3 = \epsilon_{k_3k_4k_8}^{k_9}$$
$$a_4 = \epsilon_{k_5k_6k_7k_9}$$

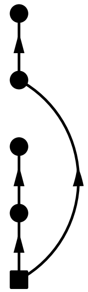
Diagram 486:

$$\mathrm{PO4.486} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{02}_{k_5k_2} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{02}_{k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2k_5}} e^{-\tau_3 \epsilon_{k_3k_4}^{k_6k_7}} e^{-\tau_4 \epsilon_{k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{02}_{k_5k_2} \Omega^{22}_{k_6k_7k_3k_4} \Omega^{02}_{k_6k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_5}\ \epsilon_{k_3k_4}\ \epsilon_{k_6k_7}} \tag{985}$$



$\rightarrow$ T4:

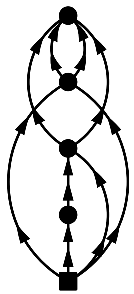


$$\mathrm{T4} = \frac{1}{(a_1 + a_2)a_2(a_3 + a_4)a_4} \tag{986}$$

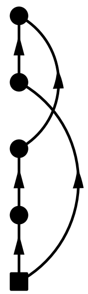
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_5}$$
$$a_3 = \epsilon_{k_3 k_4}^{k_6 k_7}$$
$$a_4 = \epsilon_{k_6 k_7}$$

Diagram 487:

$$\mathrm{PO4.487} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_5 k_2} \Omega^{22}_{k_8 k_9 k_3 k_4} \Omega^{04}_{k_8 k_9 k_6 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2 k_5}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_3 k_4}^{k_8 k_9}} e^{-\tau_4 \epsilon_{k_6 k_7 k_8 k_9}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_5 k_2} \Omega^{22}_{k_8 k_9 k_3 k_4} \Omega^{04}_{k_8 k_9 k_6 k_7} \Bigg[\frac{1}{\epsilon^{k_5}_{k_1 k_6 k_7 k_8 k_9} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon^{k_5}_{k_1 k_3 k_4 k_6 k_7} \ \epsilon_{k_6 k_7 k_8 k_9}} + \frac{1}{\epsilon^{k_5}_{k_1 k_6 k_7 k_8 k_9} \ \epsilon_{k_1 k_2 k_8 k_9} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_6 k_7 k_8 k_9}} + \frac{}{\epsilon_{k_1 k_2 k_8 k_9} \ \epsilon_{k_2}} \tag{987}$$



$\rightarrow$ T9:

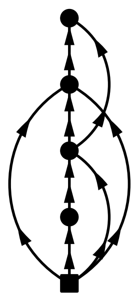


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{988}$$

$$a_1 = \epsilon^{k_8k_9}_{k_3k_4}$$
$$a_2 = \epsilon^{k_5}_{k_1}$$
$$a_3 = \epsilon^{k_6k_7}_{k_2k_5}$$
$$a_4 = \epsilon_{k_6k_7k_8k_9}$$

Diagram 488:

$$\begin{aligned}\mathrm{PO4.488} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{22}_{k_6k_7k_5k_2}\Omega^{13}_{k_8k_6k_3k_4}\Omega^{02}_{k_8k_7}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5}_{k_1}}e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_5}}e^{-\tau_3\epsilon^{k_8}_{k_3k_4k_6}}e^{-\tau_4\epsilon_{k_7k_8}} \\ &= \frac{(-1)^4}{(2!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{11}_{k_5k_1}\Omega^{22}_{k_6k_7k_5k_2}\Omega^{13}_{k_8k_6k_3k_4}\Omega^{02}_{k_8k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_3k_4}\ \epsilon_{k_3k_4k_6k_7}\ \epsilon_{k_7k_8}}\end{aligned} \tag{989}$$



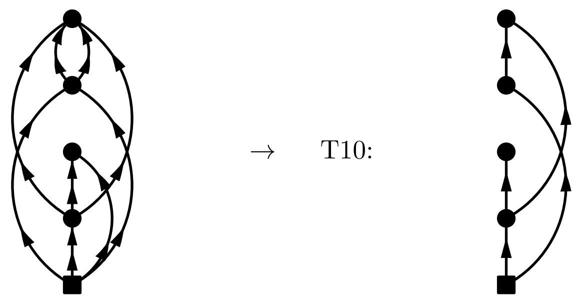
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{990}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_5}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_3 k_4 k_6}^{k_8}$$
$$a_4 = \epsilon_{k_7 k_8}$$

Diagram 489:

$$\mathrm{PO4.489} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{02}_{k_5 k_2} \Omega^{22}_{k_8 k_9 k_3 k_4} \Omega^{04}_{k_8 k_9 k_6 k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_5}} e^{-\tau_3 \epsilon_{k_3 k_4}^{k_8 k_9}} e^{-\tau_4 \epsilon_{k_6 k_7 k_8 k_9}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{02}_{k_5 k_2} \Omega^{22}_{k_8 k_9 k_3 k_4} \Omega^{04}_{k_8 k_9 k_6 k_7} \left[\frac{1}{\epsilon_{k_1}^{k_5 k_6 k_7} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_1 k_3 k_4}^{k_5} \ \epsilon_{k_6 k_7 k_8 k_9}} + \frac{1}{\epsilon_{k_1}^{k_5 k_6 k_7} \ \epsilon_{k_2 k_5 k_6 k_7 k_8 k_9} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_6 k_7 k_8 k_9}} \right] \tag{991}$$

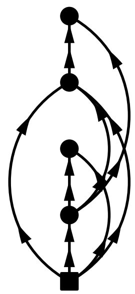


$$\mathrm{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{992}$$

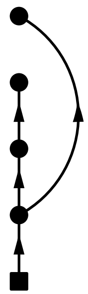
$$a_1 = \epsilon_{k_3 k_4}^{k_8 k_9}$$
$$a_2 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_2 k_5}$$
$$a_4 = \epsilon_{k_6 k_7 k_8 k_9}$$

Diagram 490:

$$\begin{aligned}\mathrm{PO4.490} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_2}\Omega^{13}_{k_8k_6k_3k_4}\Omega^{02}_{k_8k_7}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}}e^{-\tau_2\epsilon_{k_2k_5}}e^{-\tau_3\epsilon_{k_3k_4k_6}^{k_8}}e^{-\tau_4\epsilon_{k_7k_8}}\\ &= \frac{(-1)^4}{(2!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{02}_{k_5k_2}\Omega^{13}_{k_8k_6k_3k_4}\Omega^{02}_{k_8k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5}\ \epsilon_{k_3k_4k_6k_7}\ \epsilon_{k_7k_8}}\end{aligned} \tag{993}$$



$\rightarrow$ T3:

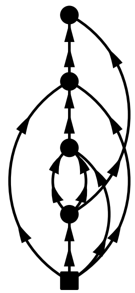


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{994}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_3k_4k_6}^{k_8}$$
$$a_3 = \epsilon_{k_7k_8}$$
$$a_4 = \epsilon_{k_2k_5}$$

Diagram 491:

$$\begin{aligned}\mathrm{PO4.491} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)^2}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{13}_{k_8k_5k_6k_2}\Omega^{13}_{k_9k_8k_3k_4}\Omega^{02}_{k_9k_7}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}}e^{-\tau_2\epsilon_{k_2k_5k_6}^{k_8}}e^{-\tau_3\epsilon_{k_3k_4k_8}^{k_9}}e^{-\tau_4\epsilon}\\ &= \frac{-(-1)^4}{(2!)^2}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{31}_{k_5k_6k_7k_1}\Omega^{13}_{k_8k_5k_6k_2}\Omega^{13}_{k_9k_8k_3k_4}\Omega^{02}_{k_9k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_3k_4k_8k_7}\ \epsilon_{k_7k_9}}\end{aligned} \tag{995}$$



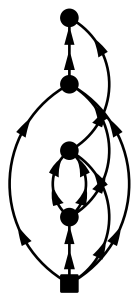
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{996}$$

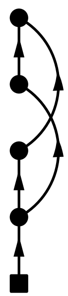
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5k_6}^{k_8}$$
$$a_3 = \epsilon_{k_3k_4k_8}^{k_9}$$
$$a_4 = \epsilon_{k_7k_9}$$

Diagram 492:

$$\begin{aligned}\mathrm{PO4.492} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{13}_{k_9k_7k_3k_4} \Omega^{02}_{k_9k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2k_5k_6}^{k_8}} e^{-\tau_3\epsilon_{k_3k_4k_7}^{k_9}} e^{-\tau_4\epsilon_{k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_6k_2} \Omega^{13}_{k_9k_7k_3k_4} \Omega^{02}_{k_9k_8} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_9}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_5k_6k_3k_4k_7}\ \epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_8k_9}} \right]\end{aligned} \tag{997}$$



$\rightarrow$ T8:

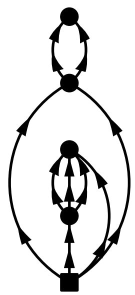


$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{998}$$

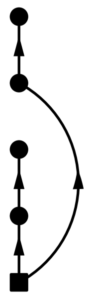
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5k_6}^{k_8}$$
$$a_3 = \epsilon_{k_3k_4k_7}^{k_9}$$
$$a_4 = \epsilon_{k_8k_9}$$

Diagram 493:

$$\text{PO4.493} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{04}_{k_5k_6k_7k_2} \Omega^{22}_{k_8k_9k_3k_4} \Omega^{02}_{k_8k_9} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2\epsilon_{k_2k_5k_6k_7}} e^{-\tau_3\epsilon_{k_3k_4}^{k_8k_9}} e^{-\tau_4\epsilon_{k_8k_9}}$$
$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{04}_{k_5k_6k_7k_2} \Omega^{22}_{k_8k_9k_3k_4} \Omega^{02}_{k_8k_9}}{\epsilon_{k_1k_2}\ \epsilon_{k_2k_5k_6k_7}\ \epsilon_{k_3k_4}\ \epsilon_{k_8k_9}} \tag{999}$$



$\rightarrow$ T4:

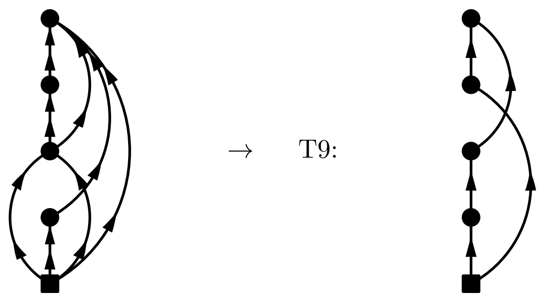


$$\text{T4} = \frac{1}{(a_1+a_2)a_2(a_3+a_4)a_4} \tag{1000}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_5k_6k_7}$$
$$a_3 = \epsilon_{k_3k_4}^{k_8k_9}$$
$$a_4 = \epsilon_{k_8k_9}$$

Diagram 494:

$$\mathrm{PO4.494} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{11}_{k_8k_6} \Omega^{04}_{k_8k_7k_5k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_3}} e^{-\tau_3\epsilon^{k_8}_{k_6}} e^{-\tau_4\epsilon_{k_4k_5k_7k_8}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{11}_{k_8k_6} \Omega^{04}_{k_8k_7k_5k_4} \Bigg[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_6k_4k_5k_7}\ \epsilon_{k_4k_5k_7k_8}} + \frac{1}{\epsilon_{k_1k_6k_4k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_4k_5k_7}\ \epsilon_{k_4k_5k_7k_8}} + \frac{1}{\epsilon_{k_1k_4k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_1}}$$
(1001)



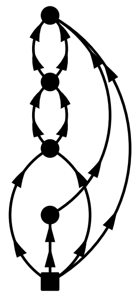
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4}$$
(1002)

$$a_1 = \epsilon^{k_6k_7}_{k_2k_3}$$
$$a_2 = \epsilon^{k_8}_{k_6}$$
$$a_3 = \epsilon^{k_5}_{k_1}$$
$$a_4 = \epsilon_{k_4k_5k_7k_8}$$

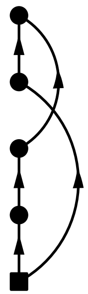
Diagram 495:

$$\mathrm{PO4.495} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{04}_{k_8k_9k_5k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_3}} e^{-\tau_3\epsilon^{k_8k_9}_{k_6k_7}} e^{-\tau_4\epsilon_{k_4k_5k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{04}_{k_8k_9k_5k_4} \left[\frac{1}{\epsilon^{k_6k_7}_{k_1k_2k_3k_4k_8k_9}\ \epsilon^{k_6k_7}_{k_2k_3k_4k_5k_8k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_6k_7}_{k_2k_3k_4k_5k_8k_9}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_5k_8k_9}} + \frac{}{\epsilon_{k_1k_2k}} \right. \tag{1003}$$



$\rightarrow$ T9:



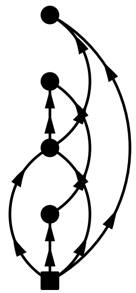
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1004}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_2k_3}$$
$$a_3 = \epsilon^{k_8k_9}_{k_6k_7}$$
$$a_4 = \epsilon_{k_4k_5k_8k_9}$$

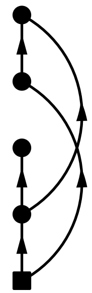
Diagram 496:

$$\mathrm{PO4.496} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{02}_{k_6k_5} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_3}} e^{-\tau_3\epsilon_{k_5k_6}} e^{-\tau_4\epsilon_{k_4k_7}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{02}_{k_6k_5} \Omega^{02}_{k_7k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_4k_7}} + \frac{1}{\epsilon_{k_1k_6}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_4k_7}} \right] \tag{1005}$$



$\rightarrow$ T10:

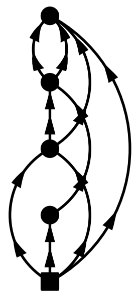


$$\mathrm{T10} = \frac{1}{(a_1 + a_2 + a_4)a_2(a_3 + a_1 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)a_2(a_3 + a_4)a_4} \tag{1006}$$

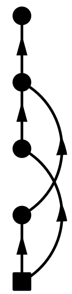
$$a_1 = \epsilon_{k_2k_3}^{k_6k_7}$$
$$a_2 = \epsilon_{k_4k_7}$$
$$a_3 = \epsilon_{k_1}^{k_5}$$
$$a_4 = \epsilon_{k_5k_6}$$

Diagram 497:

$$\begin{aligned}
\mathrm{PO4.497} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{22}_{k_8k_9k_6k_5} \Omega^{04}_{k_8k_9k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2k_3}^{k_6k_7}} e^{-\tau_3 \epsilon_{k_5k_6}^{k_8k_9}} e^{-\tau_4 \epsilon_{k_4k_7k_8k_9}} \\
&= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{22}_{k_8k_9k_6k_5} \Omega^{04}_{k_8k_9k_7k_4} \left[\frac{1}{\epsilon_{k_1k_6k_4k_7} \ \epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_6k_4k_7} \ \epsilon_{k_4k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_2k_3k_5k_4} \ \epsilon_{k_5k_6k_4k_7} \ \epsilon_{k_4k_7k_8k_9}} \right]
\end{aligned} \tag{1007}$$



$\rightarrow$ T12:

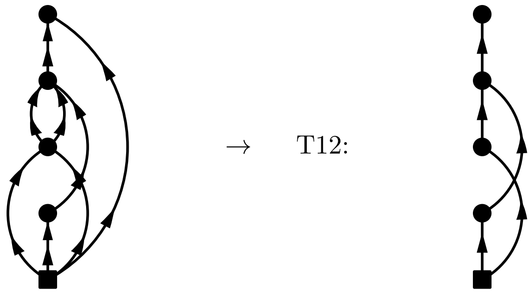


$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1008}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_5 k_6}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 498:

$$\begin{aligned}\text{PO4.498} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_2 k_3} \Omega^{13}_{k_8 k_6 k_7 k_5} \Omega^{02}_{k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2 k_3}^{k_6 k_7}} e^{-\tau_3 \epsilon_{k_5 k_6 k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{11}_{k_5 k_1} \Omega^{22}_{k_6 k_7 k_2 k_3} \Omega^{13}_{k_8 k_6 k_7 k_5} \Omega^{02}_{k_8 k_4} \left[\frac{1}{\epsilon_{k_1 k_6 k_7 k_4}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_4}\ \epsilon_{k_4 k_8}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_3 k_5 k_4}\ \epsilon_{k_5 k_6 k_7 k_4}\ \epsilon_{k_4 k_8}} \right]\end{aligned} \tag{1009}$$

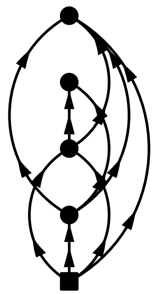


$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1010}$$

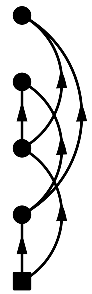
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_5 k_6 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_8}$$

Diagram 499:

$$\mathrm{PO4.499} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_2 k_3} \Omega^{02}_{k_8 k_5} \Omega^{04}_{k_9 k_6 k_7 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_3}^{k_8 k_9}} e^{-\tau_3 \epsilon_{k_5 k_8}} e^{-\tau_4 \epsilon_{k_4 k_6}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{22}_{k_8 k_9 k_2 k_3} \Omega^{02}_{k_8 k_5} \Omega^{04}_{k_9 k_6 k_7 k_4} \left[\frac{1}{\epsilon_{k_1 k_8 k_4 k_9} \ \epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_8} \ \epsilon_{k_4 k_6 k_7 k_9}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_2 k_3 k_5 k_4 k_6 k_7} \ \epsilon_{k_5 k_8} \ \epsilon_{k_4 k_6 k_7 k_9}} \right] \tag{1011}$$



→ T11:



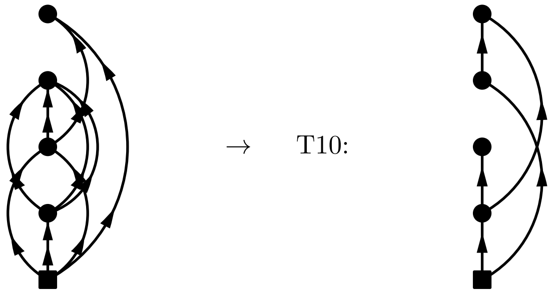
$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3 a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3 a_4} \tag{1012}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_3}^{k_8 k_9}$$
$$a_3 = \epsilon_{k_5 k_8}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_9}$$

Diagram 500:

$$\text{PO4.500} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{04}_{k_8k_5k_6k_7} \Omega^{02}_{k_9k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8k_9}_{k_2k_3}} e^{-\tau_3\epsilon_{k_5k_6k_7k_8}} e^{-\tau_4\epsilon_{k_4k_9}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{22}_{k_8k_9k_2k_3} \Omega^{04}_{k_8k_5k_6k_7} \Omega^{02}_{k_9k_4} \left[\frac{1}{\epsilon^{k_5k_6k_7k_8}_{k_1k_2k_3k_4}\ \epsilon^{k_8k_9}_{k_2k_3}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_8k_9}_{k_2k_3}\ \epsilon_{k_5k_6k_7k_8k_4k_9}\ \epsilon_{k_4k_9}} \right] \tag{1013}$$



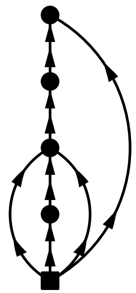
$$\text{T10} = \frac{1}{(a_1+a_2+a_4)a_2(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)a_2(a_3+a_4)a_4} \tag{1014}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon^{k_8k_9}_{k_2k_3}$$
$$a_3 = \epsilon_{k_5k_6k_7k_8}$$
$$a_4 = \epsilon_{k_4k_9}$$

Diagram 501:

$$\text{PO4.501} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_2k_3} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_2k_3k_5}} e^{-\tau_3\epsilon^{k_7}_{k_6}} e^{-\tau_4\epsilon_{k_4k_7}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_2k_3} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_6k_4}\ \epsilon_{k_4k_7}} \tag{1015}$$



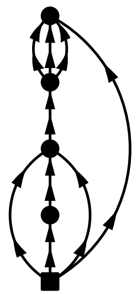
$\rightarrow$ T1:

$$T1 = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1016}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_3 k_5}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7}$$
$$a_4 = \epsilon_{k_4 k_7}$$

Diagram 502:

$$\begin{aligned}
\mathrm{PO4.502} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_2k_3} \Omega^{31}_{k_7k_8k_9k_6} \Omega^{04}_{k_7k_8k_9k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2k_3k_5}^{k_6}} e^{-\tau_3 \epsilon_{k_6}^{k_7k_8k_9}} e^{-\tau_4 \epsilon_{k_4k_7k_8k_9}} \\
&= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_2k_3} \Omega^{31}_{k_7k_8k_9k_6} \Omega^{04}_{k_7k_8k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_6k_4}\ \epsilon_{k_4k_7k_8k_9}}
\end{aligned} \tag{1017}$$



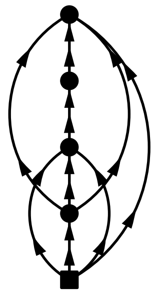
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1018}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2 k_3 k_5}^{k_6}$$
$$a_3 = \epsilon_{k_6}^{k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 503:

$$\begin{aligned}\mathrm{PO4.503} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_2 k_3} \Omega^{11}_{k_9 k_8} \Omega^{04}_{k_9 k_6 k_7 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5 k_6 k_7}} e^{-\tau_2 \epsilon_{k_2 k_3 k_5}^{k_8}} e^{-\tau_3 \epsilon_{k_8}^{k_9}} e^{-\tau_4 \epsilon_{k_4 k_6 k_7}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{31}_{k_5 k_6 k_7 k_1} \Omega^{13}_{k_8 k_5 k_2 k_3} \Omega^{11}_{k_9 k_8} \Omega^{04}_{k_9 k_6 k_7 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_2 k_3 k_5 k_4 k_6 k_7}\ \epsilon_{k_8 k_4 k_6 k_7}\ \epsilon_{k_4 k_6 k_7 k_9}}\end{aligned} \tag{1019}$$



$\rightarrow$ T1:

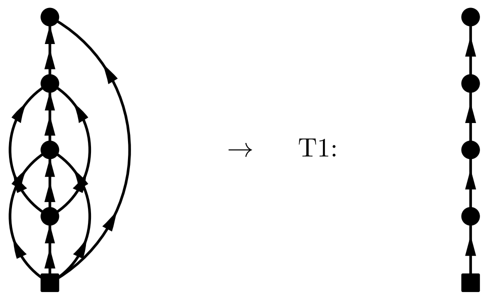
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1020}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_3 k_5}^{k_8}$$
$$a_3 = \epsilon_{k_8}^{k_9}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_9}$$

Diagram 504:

$$\mathrm{PO4.504} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{13}_{k_9k_8k_6k_7} \Omega^{02}_{k_9k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6k_7}_{k_1}} e^{-\tau_2\epsilon^{k_8}_{k_2k_3k_5}} e^{-\tau_3\epsilon^{k_9}_{k_6k_7k_8}} e^{-\tau_4\epsilon_{k_4}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{13}_{k_9k_8k_6k_7} \Omega^{02}_{k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_6k_7k_4}\ \epsilon_{k_6k_7k_8k_4}\ \epsilon_{k_4k_9}} \tag{1021}$$



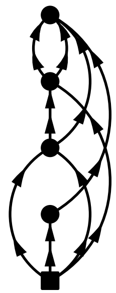
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1022}$$

$$a_1 = \epsilon^{k_5k_6k_7}_{k_1}$$
$$a_2 = \epsilon^{k_8}_{k_2k_3k_5}$$
$$a_3 = \epsilon^{k_9}_{k_6k_7k_8}$$
$$a_4 = \epsilon_{k_4k_9}$$

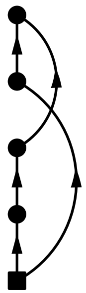
Diagram 505:

$$\mathrm{PO4.505} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{22}_{k_8k_9k_6k_4} \Omega^{04}_{k_8k_9k_7k_5} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6k_7}_{k_2k_3}} e^{-\tau_3\epsilon^{k_8k_9}_{k_4k_6}} e^{-\tau_4\epsilon_{k_5k_7k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{22}_{k_8k_9k_6k_4} \Omega^{04}_{k_8k_9k_7k_5} \Bigg[\frac{1}{\epsilon^{k_6}_{k_1k_2k_3k_8k_9}\ \epsilon^{k_6}_{k_2k_3k_5k_8k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_6}_{k_2k_3k_5k_8k_9}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_5k_7k_8k_9}} + \frac{}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2}} \tag{1023}$$



$\rightarrow$ T9:

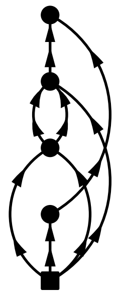


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1024}$$

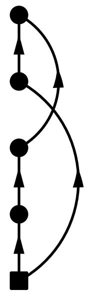
$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2k_3}^{k_6k_7}$$
$$a_3 = \epsilon_{k_4k_6}^{k_8k_9}$$
$$a_4 = \epsilon_{k_5k_7k_8k_9}$$

Diagram 506:

$$\mathrm{PO4.506} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{13}_{k_8k_6k_7k_4} \Omega^{02}_{k_8k_5} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2k_3}^{k_6k_7}} e^{-\tau_3\epsilon_{k_4k_6k_7}^{k_8}} e^{-\tau_4\epsilon_{k_5k_8}}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{13}_{k_8k_6k_7k_4} \Omega^{02}_{k_8k_5} \Bigg[\frac{1}{\epsilon_{k_1k_2k_3k_8}^{k_6k_7}\ \epsilon_{k_2k_3k_5k_8}^{k_6k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_8}^{k_6k_7}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_5k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_6k_7k_5}} \tag{1025}$$



$\rightarrow$ T9:

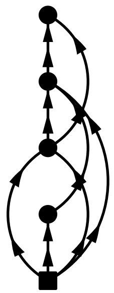
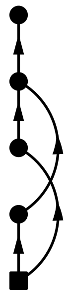


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1026}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2k_3}^{k_6k_7}$$
$$a_3 = \epsilon_{k_4k_6k_7}^{k_8}$$
$$a_4 = \epsilon_{k_5k_8}$$

Diagram 507:

$$\mathrm{PO4.507} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{13}_{k_8k_6k_5k_4} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1}^{k_5}} e^{-\tau_2\epsilon_{k_2k_3}^{k_6k_7}} e^{-\tau_3\epsilon_{k_4k_5k_6}^{k_8}} e^{-\tau_4\epsilon_{k_7k_8}}$$
$$= \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{22}_{k_6k_7k_2k_3} \Omega^{13}_{k_8k_6k_5k_4} \Omega^{02}_{k_8k_7} \left[\frac{1}{\epsilon_{k_1k_4k_6k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_7k_8}} \right] \tag{1027}$$

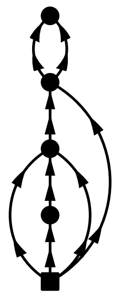
 $\rightarrow$ T12: 

$$\text{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1028}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6k_7}_{k_2k_3}$$
$$a_3 = \epsilon^{k_8}_{k_4k_5k_6}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 508:

$$\begin{aligned}\text{PO4.508} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_2k_3} \Omega^{22}_{k_7k_8k_6k_4} \Omega^{02}_{k_7k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_2k_3k_5}} e^{-\tau_3\epsilon^{k_7k_8}_{k_4k_6}} e^{-\tau_4\epsilon_{k_7k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_5k_2k_3} \Omega^{22}_{k_7k_8k_6k_4} \Omega^{02}_{k_7k_8}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4}\ \epsilon_{k_4k_6}\ \epsilon_{k_7k_8}}\end{aligned} \tag{1029}$$

 $\rightarrow$ T1: 

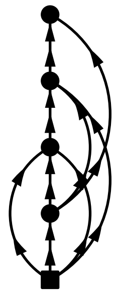
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1030}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2k_3k_5}^{k_6}$$
$$a_3 = \epsilon_{k_4k_6}^{k_7k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 509:

$$\mathrm{PO4.509} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{13}_{k_9k_8k_6k_4} \Omega^{02}_{k_9k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_3k_5}^{k_8}} e^{-\tau_3 \epsilon_{k}^{k}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_5k_2k_3} \Omega^{13}_{k_9k_8k_6k_4} \Omega^{02}_{k_9k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_5k_4k_6k_7}\ \epsilon_{k_4k_6k_8k_7}\ \epsilon_{k_7k_9}} \tag{1031}$$



$\rightarrow$ T1:

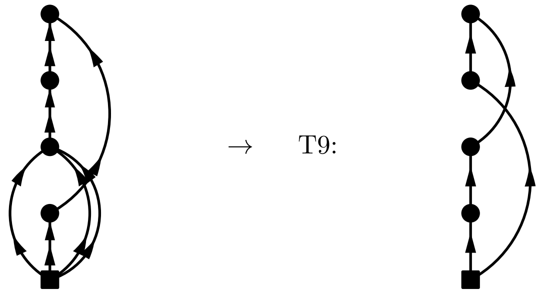
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1032}$$

$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_3k_5}^{k_8}$$
$$a_3 = \epsilon_{k_4k_6k_8}^{k_9}$$
$$a_4 = \epsilon_{k_7k_9}$$

Diagram 510:

$$\mathrm{PO4.510} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_2k_3k_4} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1}} e^{-\tau_2\epsilon^{k_6}_{k_2k_3k_4}} e^{-\tau_3\epsilon^{k_7}_{k_6}} e^{-\tau_4\epsilon_{k_5k_7}}$$

$$= \frac{-(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_2k_3k_4} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_5} \Bigg[\frac{1}{\epsilon^{k_6}_{k_1k_2k_3k_4k_7}\ \epsilon^{k_6}_{k_2k_3k_4k_5k_7}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_6}_{k_2k_3k_4k_5k_7}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_5k_7}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5}\ \epsilon_{k_6k_5}\ \epsilon \cdots} \tag{1033}$$



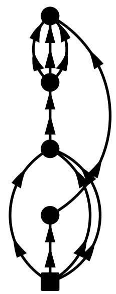
$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1034}$$

$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_2k_3k_4}$$
$$a_3 = \epsilon^{k_7}_{k_6}$$
$$a_4 = \epsilon_{k_5k_7}$$

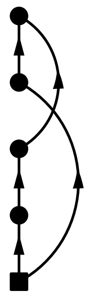
Diagram 511:

$$\mathrm{PO4.511} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_2k_3k_4} \Omega^{31}_{k_7k_8k_9k_6} \Omega^{04}_{k_7k_8k_9k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1}} e^{-\tau_2 \epsilon^{k_6}_{k_2k_3k_4}} e^{-\tau_3 \epsilon^{k_7k_8k_9}_{k_6}} e^{-\tau_4 \epsilon_{k_5k_7k_8k_9}}$$

$$= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_2k_3k_4} \Omega^{31}_{k_7k_8k_9k_6} \Omega^{04}_{k_7k_8k_9k_5} \Bigg[\frac{1}{\epsilon^{k_6}_{k_1k_2k_3k_4k_7k_8k_9} \ \epsilon^{k_6}_{k_2k_3k_4k_5k_7k_8k_9} \ \epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_7k_8k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon^{k_6}_{k_2k_3k_4k_5k_7k_8k_9} \ \epsilon_{k_2k_3k_4k_5} \ \epsilon_{k_5k_7k_8k_9}} + \tag{1035}$$



$\rightarrow$ T9:

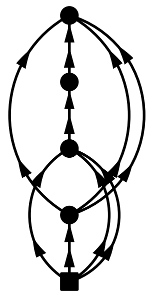


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1036}$$

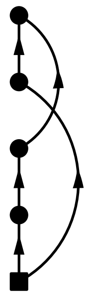
$$a_1 = \epsilon^{k_5}_{k_1}$$
$$a_2 = \epsilon^{k_6}_{k_2k_3k_4}$$
$$a_3 = \epsilon^{k_7k_8k_9}_{k_6}$$
$$a_4 = \epsilon_{k_5k_7k_8k_9}$$

Diagram 512:

$$\text{PO4.512} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{11}_{k_9k_8} \Omega^{04}_{k_9k_5k_6k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_3k_4}^{k_8}} e^{-\tau_3 \epsilon_{k_8}^{k_9}} e^{-\tau_4 \epsilon_{k_5k_6k_7k_9}}$$
$$= \frac{-(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{11}_{k_9k_8} \Omega^{04}_{k_9k_5k_6k_7} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4k_9}^{k_8} \ \epsilon_{k_2k_3k_4k_5k_6k_7k_9}^{k_8} \ \epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_6k_7k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_2k_3k_4k_5k_6k_7k_9}^{k_8} \ \epsilon_{k_2k_3k_4k_5k_6k_7} \ \epsilon_{k_5k_6k_7k_9}} + \right. \tag{1037}$$



$\rightarrow$ T9:

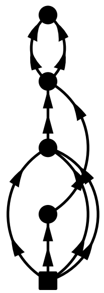


$$\text{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1038}$$

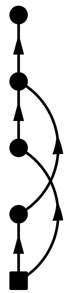
$$a_1 = \epsilon_{k_1}^{k_5k_6k_7}$$
$$a_2 = \epsilon_{k_2k_3k_4}^{k_8}$$
$$a_3 = \epsilon_{k_8}^{k_9}$$
$$a_4 = \epsilon_{k_5k_6k_7k_9}$$

Diagram 513:

$$\text{PO4.513} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_2k_3k_4} \Omega^{22}_{k_7k_8k_6k_5} \Omega^{02}_{k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5}} e^{-\tau_2 \epsilon_{k_2k_3k_4}^{k_6}} e^{-\tau_3 \epsilon_{k_5k_6}^{k_7k_8}} e^{-\tau_4 \epsilon_{k_7k_8}}$$
$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{11}_{k_5k_1} \Omega^{13}_{k_6k_2k_3k_4} \Omega^{22}_{k_7k_8k_6k_5} \Omega^{02}_{k_7k_8} \left[\frac{1}{\epsilon_{k_1k_6} \ \epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_6} \ \epsilon_{k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_2k_3k_4k_5} \ \epsilon_{k_5k_6} \ \epsilon_{k_7k_8}} \right] \tag{1039}$$



$\rightarrow$ T12:



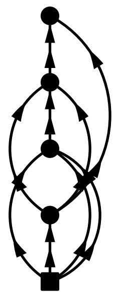
$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1040}$$

$$a_1 = \epsilon_{k_1}^{k_5}$$
$$a_2 = \epsilon_{k_2k_3k_4}^{k_6}$$
$$a_3 = \epsilon_{k_5k_6}^{k_7k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

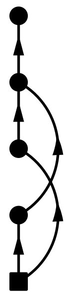
Diagram 514:

$$\mathrm{PO4.514} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{13}_{k_9k_8k_5k_6} \Omega^{02}_{k_9k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1}^{k_5k_6k_7}} e^{-\tau_2 \epsilon_{k_2k_3k_4}^{k_8}} e^{-\tau_3 \epsilon_{k_5k_6k_8}^{k_9}} e^{-\tau_4 \epsilon$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{31}_{k_5k_6k_7k_1} \Omega^{13}_{k_8k_2k_3k_4} \Omega^{13}_{k_9k_8k_5k_6} \Omega^{02}_{k_9k_7} \left[\frac{1}{\epsilon_{k_1k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_8k_7}\ \epsilon_{k_7k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_2k_3k_4k_5k_6k_7}\ \epsilon_{k_5k_6k_8k_7}\ \epsilon_{k_7k_9}} \right] \tag{1041}$$



$\rightarrow$ T12:

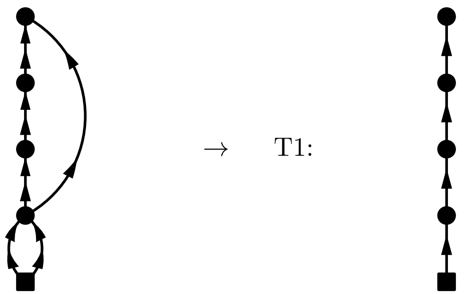


$$\mathrm{T12} = \frac{1}{(a_1 + a_3 + a_4)(a_2 + a_1 + a_3 + a_4)(a_3 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1042}$$

$$a_1 = \epsilon_{k_1}^{k_5 k_6 k_7}$$
$$a_2 = \epsilon_{k_2 k_3 k_4}^{k_8}$$
$$a_3 = \epsilon_{k_5 k_6 k_8}^{k_9}$$
$$a_4 = \epsilon_{k_7 k_9}$$

Diagram 515:

$$\begin{aligned}\mathrm{PO4.515} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{11}_{k_5 k_3} \Omega^{11}_{k_6 k_5} \Omega^{02}_{k_6 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_3}^{k_5}} e^{-\tau_3 \epsilon_{k_5}^{k_6}} e^{-\tau_4 \epsilon_{k_4 k_6}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{11}_{k_5 k_3} \Omega^{11}_{k_6 k_5} \Omega^{02}_{k_6 k_4}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_5 k_4}\ \epsilon_{k_4 k_6}}\end{aligned} \tag{1043}$$

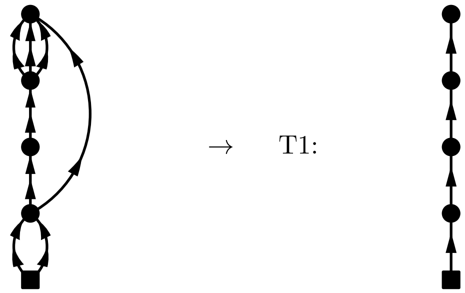


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1044}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_5}^{k_6}$$
$$a_4 = \epsilon_{k_4 k_6}$$

Diagram 516:

$$\mathrm{PO4.516} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{11}_{k_5k_3}\Omega^{31}_{k_6k_7k_8k_5}\Omega^{04}_{k_6k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}_{k_1k_2}}e^{-\tau_2\epsilon^{k_5}_{k_3}}e^{-\tau_3\epsilon^{k_6k_7k_8}_{k_5}}e^{-\tau_4\epsilon_{k_4k_6k_7k_8}}$$
$$= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{11}_{k_5k_3}\Omega^{31}_{k_6k_7k_8k_5}\Omega^{04}_{k_6k_7k_8k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_4k_6k_7k_8}} \tag{1045}$$

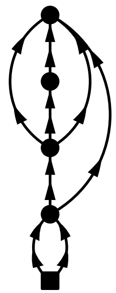


$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1046}$$

$$a_1 = \epsilon^{k_3k_4}_{k_1k_2}$$
$$a_2 = \epsilon^{k_5}_{k_3}$$
$$a_3 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_4 = \epsilon_{k_4k_6k_7k_8}$$

Diagram 517:

$$\mathrm{PO4.517} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{11}_{k_8k_5}\Omega^{04}_{k_8k_6k_7k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}_{k_1k_2}}e^{-\tau_2\epsilon^{k_5k_6k_7}_{k_3}}e^{-\tau_3\epsilon^{k_8}_{k_5}}e^{-\tau_4\epsilon_{k_4}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{31}_{k_5k_6k_7k_3}\Omega^{11}_{k_8k_5}\Omega^{04}_{k_8k_6k_7k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_4k_6k_7}\ \epsilon_{k_4k_6k_7k_8}} \tag{1047}$$



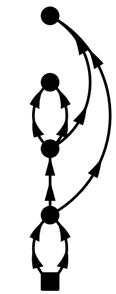
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1048}$$

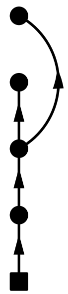
$$a_1 = \epsilon^{k_3 k_4}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_5 k_6 k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_5}$$
$$a_4 = \epsilon_{k_4 k_6 k_7 k_8}$$

Diagram 518:

$$\begin{aligned}
\mathrm{PO4.518} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{02}_{k_5 k_6} \Omega^{02}_{k_7 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_3 k_4}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_5 k_6 k_7}_{k_3}} e^{-\tau_3 \epsilon_{k_5 k_6}} e^{-\tau_4 \epsilon_{k_4 k_7}} \\
&= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{02}_{k_5 k_6} \Omega^{02}_{k_7 k_4}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_5 k_6}\ \epsilon_{k_4 k_7}}
\end{aligned} \tag{1049}$$



$\rightarrow$ T2:

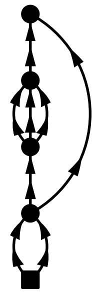


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{1050}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_5 k_6}$$
$$a_4 = \epsilon_{k_4 k_7}$$

Diagram 519:

$$\begin{aligned}\mathrm{PO4.519} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{13}_{k_8 k_5 k_6 k_7} \Omega^{02}_{k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_3 k_4}} e^{-\tau_2 \epsilon_{k_3}^{k_5 k_6 k_7}} e^{-\tau_3 \epsilon_{k_5 k_6 k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{20}_{k_1 k_2} \Omega^{22}_{k_3 k_4 k_1 k_2} \Omega^{31}_{k_5 k_6 k_7 k_3} \Omega^{13}_{k_8 k_5 k_6 k_7} \Omega^{02}_{k_8 k_4}}{\epsilon_{k_1 k_2}\ \epsilon_{k_3 k_4}\ \epsilon_{k_5 k_6 k_7 k_4}\ \epsilon_{k_4 k_8}}\end{aligned} \tag{1051}$$



$\rightarrow$ T1:

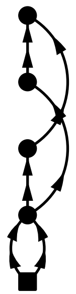
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1052}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5 k_6 k_7}$$
$$a_3 = \epsilon_{k_5 k_6 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_8}$$

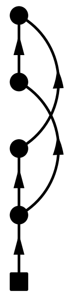
Diagram 520:

$$\text{PO4.520} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{11}_{k_5k_3} \Omega^{11}_{k_6k_4} \Omega^{02}_{k_6k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_5}_{k_3}} e^{-\tau_3 \epsilon^{k_6}_{k_4}} e^{-\tau_4 \epsilon_{k_5k_6}}$$

$$= \frac{-(-1)^4}{2(2!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{11}_{k_5k_3} \Omega^{11}_{k_6k_4} \Omega^{02}_{k_6k_5} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_6}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_6}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_4k_5}\ \epsilon_{k_5k_6}} \right] \quad (1053)$$



$\rightarrow$ T8:



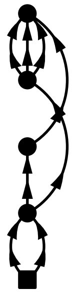
$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \quad (1054)$$

$$a_1 = \epsilon^{k_3k_4}_{k_1k_2}$$
$$a_2 = \epsilon^{k_5}_{k_3}$$
$$a_3 = \epsilon^{k_6}_{k_4}$$
$$a_4 = \epsilon_{k_5k_6}$$

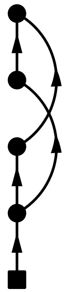
Diagram 521:

$$\text{PO4.521} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{11}_{k_5k_3} \Omega^{31}_{k_6k_7k_8k_4} \Omega^{04}_{k_6k_7k_8k_5} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_3k_4}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_5}_{k_3}} e^{-\tau_3 \epsilon^{k_6k_7k_8}_{k_4}} e^{-\tau_4 \epsilon_{k_5k_6k_7k_8}}$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{11}_{k_5k_3} \Omega^{31}_{k_6k_7k_8k_4} \Omega^{04}_{k_6k_7k_8k_5} \left[\frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_6k_7k_8}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_6k_7k_8}} + \frac{1}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_4k_5}\ \epsilon_{k_5k_6k_7k_8}} \right] \quad (1055)$$



$\rightarrow$ T8:

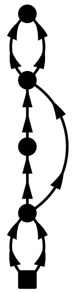


$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1056}$$

$$a_1 = \epsilon_{k_1k_2}^{k_3k_4}$$
$$a_2 = \epsilon_{k_3}^{k_5}$$
$$a_3 = \epsilon_{k_4}^{k_6k_7k_8}$$
$$a_4 = \epsilon_{k_5k_6k_7k_8}$$

Diagram 522:

$$\mathrm{PO4.522} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{11}_{k_5k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{02}_{k_6k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1k_2}^{k_3k_4}} e^{-\tau_2\epsilon_{k_3}^{k_5}} e^{-\tau_3\epsilon_{k_4k_5}^{k_6k_7}} e^{-\tau_4\epsilon_{k_6k_7}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{11}_{k_5k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{02}_{k_6k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_4k_5}\ \epsilon_{k_6k_7}} \tag{1057}$$



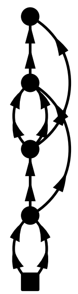
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1058}$$

$$a_1 = \epsilon^{k_3k_4}_{k_1k_2}$$
$$a_2 = \epsilon^{k_5}_{k_3}$$
$$a_3 = \epsilon^{k_6k_7}_{k_4k_5}$$
$$a_4 = \epsilon_{k_6k_7}$$

Diagram 523:

$$\mathrm{PO4.523} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_6k_4} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_3k_4}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_5k_6k_7}_{k_3}} e^{-\tau_3 \epsilon^{k_8}_{k_4k_5k_6}} e$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2} \Omega^{22}_{k_3k_4k_1k_2} \Omega^{31}_{k_5k_6k_7k_3} \Omega^{13}_{k_8k_5k_6k_4} \Omega^{02}_{k_8k_7}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_4k_5k_6k_7}\ \epsilon_{k_7k_8}} \tag{1059}$$



$\rightarrow$ T1:

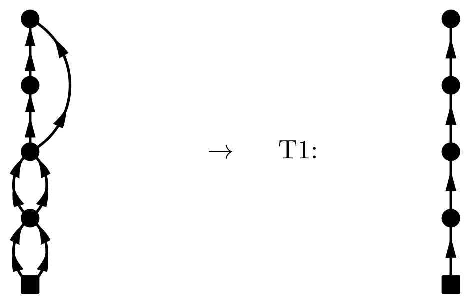
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1060}$$

$$a_1 = \epsilon^{k_3k_4}_{k_1k_2}$$
$$a_2 = \epsilon^{k_5k_6k_7}_{k_3}$$
$$a_3 = \epsilon^{k_8}_{k_4k_5k_6}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 524:

$$\mathrm{PO4.524} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{22}_{k_5k_6k_3k_4}\Omega^{11}_{k_7k_5}\Omega^{02}_{k_7k_6} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}_{k_1k_2}}e^{-\tau_2\epsilon^{k_5k_6}_{k_3k_4}}e^{-\tau_3\epsilon^{k_7}_{k_5}}e^{-\tau_4\epsilon_{k_6k_7}}$$

$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{22}_{k_5k_6k_3k_4}\Omega^{11}_{k_7k_5}\Omega^{02}_{k_7k_6}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_6k_7}} \tag{1061}$$



$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1062}$$

$$a_1 = \epsilon^{k_3k_4}_{k_1k_2}$$
$$a_2 = \epsilon^{k_5k_6}_{k_3k_4}$$
$$a_3 = \epsilon^{k_7}_{k_5}$$
$$a_4 = \epsilon_{k_6k_7}$$

Diagram 525:

$$\mathrm{PO4.525} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^4} \sum_{k_i} O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{22}_{k_5k_6k_3k_4}\Omega^{22}_{k_7k_8k_5k_6}\Omega^{02}_{k_7k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_3k_4}_{k_1k_2}}e^{-\tau_2\epsilon^{k_5k_6}_{k_3k_4}}e^{-\tau_3\epsilon^{k_7k_8}_{k_5k_6}}e^{-\tau_4\epsilon_{k_7k_8}}$$

$$= \frac{(-1)^4}{(2!)^4} \sum_{k_i} \frac{O^{20}_{k_1k_2}\Omega^{22}_{k_3k_4k_1k_2}\Omega^{22}_{k_5k_6k_3k_4}\Omega^{22}_{k_7k_8k_5k_6}\Omega^{02}_{k_7k_8}}{\epsilon_{k_1k_2}\ \epsilon_{k_3k_4}\ \epsilon_{k_5k_6}\ \epsilon_{k_7k_8}} \tag{1063}$$

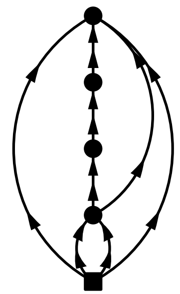
$\rightarrow$ T1:

$$\text{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1064}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_3 k_4}$$
$$a_2 = \epsilon_{k_3 k_4}^{k_5 k_6}$$
$$a_3 = \epsilon_{k_5 k_6}^{k_7 k_8}$$
$$a_4 = \epsilon_{k_7 k_8}$$

Diagram 526:

$$\begin{aligned}\text{PO4.526} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{11}_{k_8 k_7} \Omega^{04}_{k_8 k_6 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7}} e^{-\tau_3 \epsilon_{k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_3 k_4 k_6 k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{11}_{k_8 k_7} \Omega^{04}_{k_8 k_6 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_3 k_4 k_6}\ \epsilon_{k_7 k_3 k_4 k_6}\ \epsilon_{k_3 k_4 k_6 k_8}}\end{aligned} \tag{1065}$$



$\rightarrow$ T1:

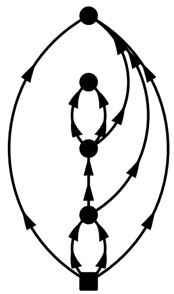
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1066}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_7}^{k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_8}$$

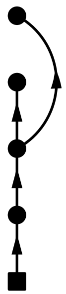
Diagram 527:

$$\mathrm{PO4.527} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_9k_6k_3k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon_{k_1k_2}^{k_5k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7k_8k_9}} e^{-\tau_3 \epsilon_{k_7k_8}} e^{-\tau_4 \epsilon_{k_3k_4k_6}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{02}_{k_7k_8} \Omega^{04}_{k_9k_6k_3k_4}}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_3k_4k_6} \ \epsilon_{k_7k_8} \ \epsilon_{k_3k_4k_6k_9}} \tag{1067}$$



$\rightarrow$ T2:

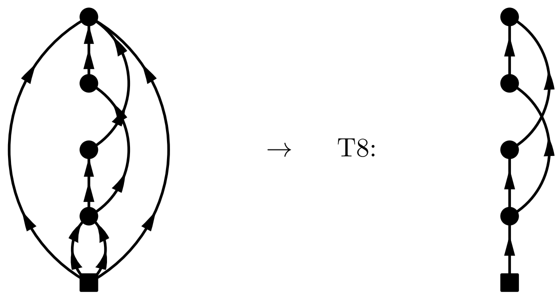


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{1068}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_7 k_8}$$
$$a_4 = \epsilon_{k_3 k_4 k_6 k_9}$$

Diagram 528:

$$\text{PO4.528} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{11}_{k_8k_6} \Omega^{04}_{k_8k_7k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7}_{k_5}} e^{-\tau_3\epsilon^{k_8}_{k_6}} e^{-\tau_4\epsilon_{k_3k_4k_7k_8}}$$
$$= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{11}_{k_8k_6} \Omega^{04}_{k_8k_7k_3k_4} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_8}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_3k_4k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_6k_3k_4k_7}\ \epsilon_{k_3k_4k_7k_8}} \right] \tag{1069}$$

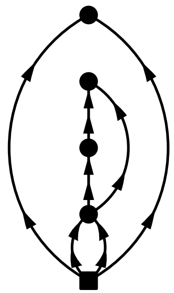


$$\text{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1070}$$

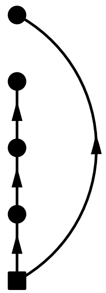
$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7}_{k_5}$$
$$a_3 = \epsilon^{k_8}_{k_6}$$
$$a_4 = \epsilon_{k_3k_4k_7k_8}$$

Diagram 529:

$$\text{PO4.529} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_7k_6} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7}_{k_5}} e^{-\tau_3\epsilon_{k_6k_7}} e^{-\tau_4\epsilon_{k_3k_4}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{02}_{k_7k_6} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_6k_7}\ \epsilon_{k_3k_4}} \tag{1071}$$



$\rightarrow$ T5:

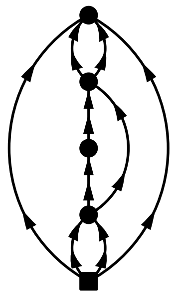


$$\mathrm{T5} = \frac{1}{(a_1 + a_2 + a_3)(a_2 + a_3)a_3 a_4} \tag{1072}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_6 k_7}$$
$$a_4 = \epsilon_{k_3 k_4}$$

Diagram 530:

$$\mathrm{PO4.530} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{22}_{k_8 k_9 k_7 k_6} \Omega^{04}_{k_8 k_9 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7}} e^{-\tau_3 \epsilon_{k_6 k_7}^{k_8 k_9}} e^{-\tau_4 \epsilon_{k_3 k_4 k_8 k_9}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{22}_{k_8 k_9 k_7 k_6} \Omega^{04}_{k_8 k_9 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_6 k_3 k_4}\ \epsilon_{k_6 k_7 k_3 k_4}\ \epsilon_{k_3 k_4 k_8 k_9}} \tag{1073}$$



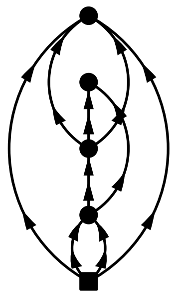
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1074}$$

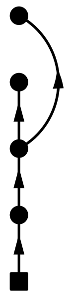
$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_6 k_7}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 531:

$$\begin{aligned}\mathrm{PO4.531} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{02}_{k_7 k_6} \Omega^{04}_{k_8 k_9 k_3 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7 k_8 k_9}} e^{-\tau_3 \epsilon_{k_6 k_7}} e^{-\tau_4 \epsilon_{k_3 k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{31}_{k_7 k_8 k_9 k_5} \Omega^{02}_{k_7 k_6} \Omega^{04}_{k_8 k_9 k_3 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_5 k_6 k_3 k_4} \ \epsilon_{k_6 k_7} \ \epsilon_{k_3 k_4 k_8 k_9}}\end{aligned} \tag{1075}$$



$\rightarrow$ T2:

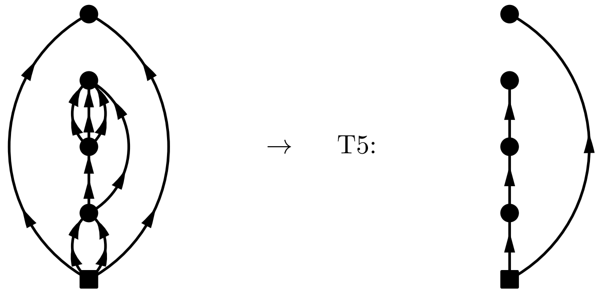


$$\mathrm{T2} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)a_3 a_4} \tag{1076}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7 k_8 k_9}$$
$$a_3 = \epsilon_{k_6 k_7}$$
$$a_4 = \epsilon_{k_3 k_4 k_8 k_9}$$

Diagram 532:

$$\text{PO4.532} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{04}_{k_7k_8k_9k_6} \Omega^{02}_{k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_5}} e^{-\tau_3\epsilon_{k_6k_7k_8k_9}} e^{-\tau_4\epsilon_{k_3k_4}}$$
$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{04}_{k_7k_8k_9k_6} \Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_6k_7k_8k_9}\ \epsilon_{k_3k_4}} \tag{1077}$$

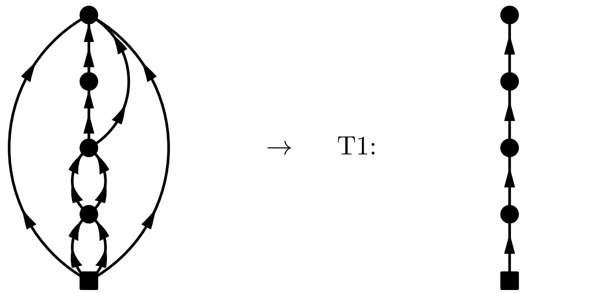


$$\text{T5} = \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{1078}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8k_9}_{k_5}$$
$$a_3 = \epsilon_{k_6k_7k_8k_9}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 533:

$$\text{PO4.533} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{11}_{k_9k_7} \Omega^{04}_{k_9k_8k_3k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3\epsilon^{k_9}_{k_7}} e^{-\tau_4\epsilon_{k_3k_4k_8k_9}}$$
$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{11}_{k_9k_7} \Omega^{04}_{k_9k_8k_3k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_7k_3k_4k_8}\ \epsilon_{k_3k_4k_8k_9}} \tag{1079}$$

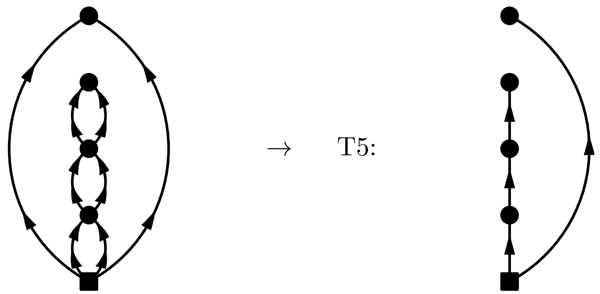


$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1080}$$

$$a_1 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_2 = \epsilon_{k_5k_6}^{k_7k_8}$$
$$a_3 = \epsilon_{k_7}^{k_9}$$
$$a_4 = \epsilon_{k_3k_4k_8k_9}$$

Diagram 534:

$$\begin{aligned}\mathrm{PO4.534} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^4}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{22}_{k_7k_8k_5k_6}\Omega^{02}_{k_7k_8}\Omega^{02}_{k_3k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon_{k_1k_2}^{k_5k_6}}e^{-\tau_2\epsilon_{k_5k_6}^{k_7k_8}}e^{-\tau_3\epsilon_{k_7k_8}}e^{-\tau_4\epsilon_{k_3k_4}} \\ &= \frac{(-1)^4}{(2!)^4}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{22}_{k_7k_8k_5k_6}\Omega^{02}_{k_7k_8}\Omega^{02}_{k_3k_4}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_7k_8}\ \epsilon_{k_3k_4}}\end{aligned} \tag{1081}$$

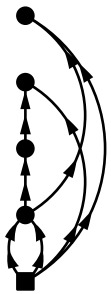


$$\mathrm{T5} = \frac{1}{(a_1+a_2+a_3)(a_2+a_3)a_3a_4} \tag{1082}$$

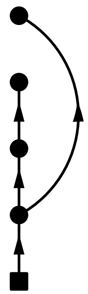
$$a_1 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_2 = \epsilon_{k_5k_6}^{k_7k_8}$$
$$a_3 = \epsilon_{k_7k_8}$$
$$a_4 = \epsilon_{k_3k_4}$$

Diagram 535:

$$\begin{aligned}\mathrm{PO4.535} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{11}_{k_7k_5}\Omega^{02}_{k_7k_3}\Omega^{02}_{k_6k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon_{k_1k_2}^{k_5k_6}}e^{-\tau_2\epsilon_{k_5}^{k_7}}e^{-\tau_3\epsilon_{k_3k_7}}e^{-\tau_4\epsilon_{k_4k_6}}\\ &= \frac{-(-1)^4}{(2!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{11}_{k_7k_5}\Omega^{02}_{k_7k_3}\Omega^{02}_{k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3}\ \epsilon_{k_3k_7}\ \epsilon_{k_4k_6}}\end{aligned} \tag{1083}$$



$\rightarrow$ T3:

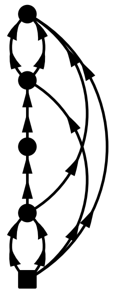


$$\mathrm{T3} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3)a_3a_4} \tag{1084}$$

$$a_1 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_3k_7}$$
$$a_4 = \epsilon_{k_4k_6}$$

Diagram 536:

$$\begin{aligned}\mathrm{PO4.536} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{22}_{k_8k_9k_7k_3} \Omega^{04}_{k_8k_9k_6k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7}_{k_5}} e^{-\tau_3\epsilon^{k_8k_9}_{k_3k_7}} e^{-\tau_4\epsilon_{k_4k_6k_8k_9}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{22}_{k_8k_9k_7k_3} \Omega^{04}_{k_8k_9k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_7k_4k_6}\ \epsilon_{k_4k_6k_8k_9}} \end{aligned} \tag{1085}$$



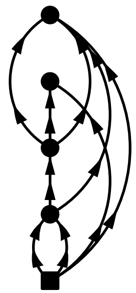
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1086}$$

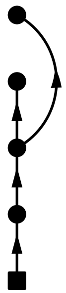
$$\begin{aligned} a_1 &= \epsilon^{k_5k_6}_{k_1k_2} \\ a_2 &= \epsilon^{k_7}_{k_5} \\ a_3 &= \epsilon^{k_8k_9}_{k_3k_7} \\ a_4 &= \epsilon_{k_4k_6k_8k_9} \end{aligned}$$

Diagram 537:

$$\begin{aligned}\mathrm{PO4.537} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{02}_{k_7k_3} \Omega^{04}_{k_8k_9k_6k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8k_9}_{k_5}} e^{-\tau_3\epsilon_{k_3k_7}} e^{-\tau_4\epsilon_{k_4k_6}} \\ &= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{31}_{k_7k_8k_9k_5} \Omega^{02}_{k_7k_3} \Omega^{04}_{k_8k_9k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_7}\ \epsilon_{k_4k_6k_8k_9}} \end{aligned} \tag{1087}$$



$\rightarrow$ T2:

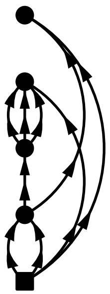


$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{1088}$$

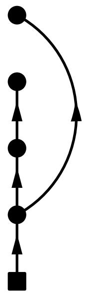
$$a_1 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7k_8k_9}$$
$$a_3 = \epsilon_{k_3k_7}$$
$$a_4 = \epsilon_{k_4k_6k_8k_9}$$

Diagram 538:

$$\begin{aligned}\mathrm{PO4.538} &= \lim_{\tau\to\infty}\frac{-(-1)^4}{(2!)(3!)}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{31}_{k_7k_8k_9k_5}\Omega^{04}_{k_7k_8k_9k_3}\Omega^{02}_{k_6k_4}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)e^{-\tau_1\epsilon_{k_1k_2}^{k_5k_6}}e^{-\tau_2\epsilon_{k_5}^{k_7k_8k_9}}e^{-\tau_3\epsilon_{k_3k_7k_8k_9}}e^{-\tau_4\epsilon_{k_4k_6}} \\ &= \frac{-(-1)^4}{(2!)(3!)}\sum_{k_i}\frac{O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{31}_{k_7k_8k_9k_5}\Omega^{04}_{k_7k_8k_9k_3}\Omega^{02}_{k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3}\ \epsilon_{k_3k_7k_8k_9}\ \epsilon_{k_4k_6}}\end{aligned} \tag{1089}$$



$\rightarrow$ T3:

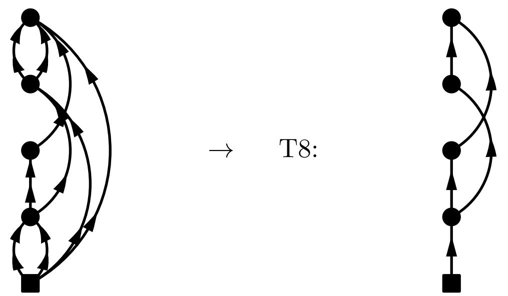


$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{1090}$$

$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7 k_8 k_9}_{k_5}$$
$$a_3 = \epsilon_{k_3 k_7 k_8 k_9}$$
$$a_4 = \epsilon_{k_4 k_6}$$

Diagram 539:

$$\begin{aligned}\mathrm{PO4.539} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{22}_{k_8 k_9 k_6 k_3} \Omega^{04}_{k_8 k_9 k_7 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_7}_{k_5}} e^{-\tau_3 \epsilon^{k_8 k_9}_{k_3 k_6}} e^{-\tau_4 \epsilon_{k_4 k_7 k_8 k_9}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{22}_{k_8 k_9 k_6 k_3} \Omega^{04}_{k_8 k_9 k_7 k_4} \left[\frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_4 k_8 k_9}\ \epsilon_{k_5 k_3 k_6 k_4}\ \epsilon_{k_4 k_7 k_8 k_9}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_3 k_6 k_4}\ \epsilon_{k_3 k_6 k_4 k_7}\ \epsilon_{k_4 k_7 k_8 k_9}} \right]\end{aligned} \tag{1091}$$

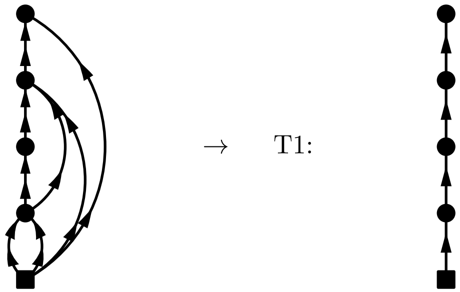


$$\mathrm{T8} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_4)(a_3 + a_2 + a_4)a_4} + \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1092}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_3 k_6}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_4 k_7 k_8 k_9}$$

Diagram 540:

$$\begin{aligned} \mathrm{PO4.540} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{13}_{k_8 k_7 k_6 k_3} \Omega^{02}_{k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_5}^{k_7}} e^{-\tau_3 \epsilon_{k_3 k_6 k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{11}_{k_7 k_5} \Omega^{13}_{k_8 k_7 k_6 k_3} \Omega^{02}_{k_8 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_3 k_6 k_4}\ \epsilon_{k_3 k_6 k_7 k_4}\ \epsilon_{k_4 k_8}} \end{aligned} \tag{1093}$$



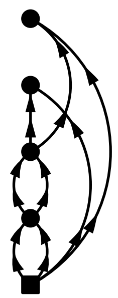
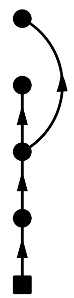
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1094}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_3 k_6 k_7}^{k_8}$$
$$a_4 = \epsilon_{k_4 k_8}$$

Diagram 541:

$$\mathrm{PO4.541} = \lim_{\tau\to\infty} \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{02}_{k_7k_3} \Omega^{02}_{k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3\epsilon_{k_3k_7}} e^{-\tau_4\epsilon_{k_4k_8}}$$

$$= \frac{-(-1)^4}{2(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{02}_{k_7k_3} \Omega^{02}_{k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_3k_7}\ \epsilon_{k_4k_8}} \tag{1095}$$

 $\rightarrow$ T2: 

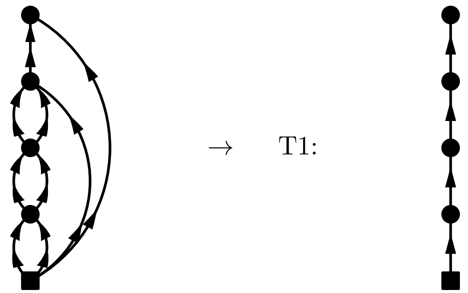
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{1096}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8}_{k_5k_6}$$
$$a_3 = \epsilon_{k_3k_7}$$
$$a_4 = \epsilon_{k_4k_8}$$

Diagram 542:

$$\mathrm{PO4.542} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_7k_8k_3} \Omega^{02}_{k_9k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3\epsilon^{k_9}_{k_3k_7k_8}} e^{-\tau_4\epsilon_{k_4k_9}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_7k_8k_3} \Omega^{02}_{k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_3k_7k_8k_4}\ \epsilon_{k_4k_9}} \tag{1097}$$

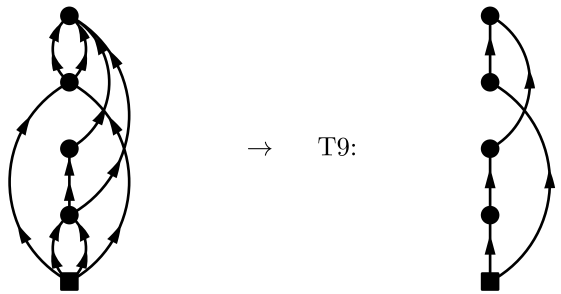


$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1098}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8}_{k_5k_6}$$
$$a_3 = \epsilon^{k_9}_{k_3k_7k_8}$$
$$a_4 = \epsilon_{k_4k_9}$$

Diagram 543:

$$\begin{aligned}\mathrm{PO4.543} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^3}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{11}_{k_7k_5}\Omega^{22}_{k_8k_9k_3k_4}\Omega^{04}_{k_8k_9k_7k_6}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}}e^{-\tau_2\epsilon^{k_7}_{k_5}}e^{-\tau_3\epsilon^{k_8k_9}_{k_3k_4}}e^{-\tau_4\epsilon_{k_6k_7k_8k_9}} \\ &= \frac{(-1)^4}{(2!)^3}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{11}_{k_7k_5}\Omega^{22}_{k_8k_9k_3k_4}\Omega^{04}_{k_8k_9k_7k_6}\Bigg[\frac{1}{\epsilon^{k_5}_{k_1k_2k_7k_8k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon^{k_5}_{k_1k_2k_3k_4k_7}\ \epsilon_{k_6k_7k_8k_9}} + \frac{1}{\epsilon^{k_5}_{k_1k_2k_7k_8k_9}\ \epsilon_{k_1k_2k_8k_9}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_6k_7k_8k_9}} + \frac{}{\epsilon_{k_1k_2k_8k_9}\ \epsilon_{k_5}}\end{aligned} \tag{1099}$$

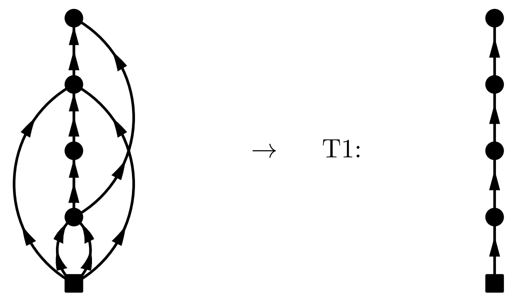


$$\mathrm{T9} = \frac{1}{(a_1+a_2+a_4)(a_2+a_4)(a_3+a_1+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \quad (1100)$$

$$a_1 = \epsilon^{k_8 k_9}_{k_3 k_4}$$
$$a_2 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_3 = \epsilon^{k_7}_{k_5}$$
$$a_4 = \epsilon_{k_6 k_7 k_8 k_9}$$

Diagram 544:

$$\begin{aligned}\mathrm{PO4.544} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_7k_3k_4} \Omega^{02}_{k_8k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_7}_{k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_3k_4k_7}} e^{-\tau_4 \epsilon_{k_6k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_7k_3k_4} \Omega^{02}_{k_8k_6}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_7k_6}\ \epsilon_{k_6k_8}} \end{aligned} \quad (1101)$$

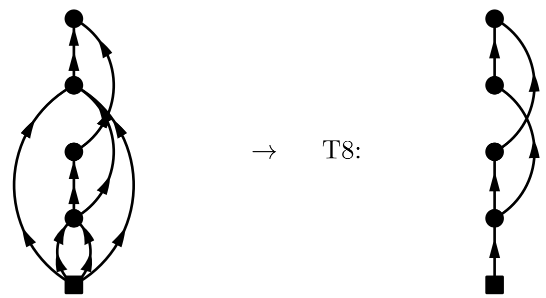


$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \quad (1102)$$

$$a_1 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_3k_4k_7}^{k_8}$$
$$a_4 = \epsilon_{k_6k_8}$$

Diagram 545:

$$\mathrm{PO4.545} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_6k_3k_4} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon_{k_1k_2}^{k_5k_6}} e^{-\tau_2\epsilon_{k_5}^{k_7}} e^{-\tau_3\epsilon_{k_3k_4k_6}^{k_8}} e^{-\tau_4\epsilon_{k_7k_8}}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{11}_{k_7k_5} \Omega^{13}_{k_8k_6k_3k_4} \Omega^{02}_{k_8k_7} \left[\frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_8}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_7k_8}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_3k_4k_6}\ \epsilon_{k_3k_4k_6k_7}\ \epsilon_{k_7k_8}} \right] \tag{1103}$$



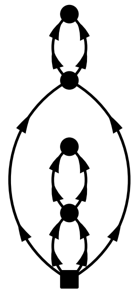
$$\mathrm{T8} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_4)(a_3+a_2+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1104}$$

$$a_1 = \epsilon_{k_1k_2}^{k_5k_6}$$
$$a_2 = \epsilon_{k_5}^{k_7}$$
$$a_3 = \epsilon_{k_3k_4k_6}^{k_8}$$
$$a_4 = \epsilon_{k_7k_8}$$

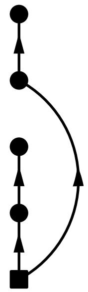
Diagram 546:

$$\text{PO4.546} = \lim_{\tau\to\infty} \frac{(-1)^4}{2(2!)^4} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{02}_{k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon_{k_5k_6}} e^{-\tau_3\epsilon^{k_7k_8}_{k_3k_4}} e^{-\tau_4\epsilon_{k_7k_8}}$$

$$= \frac{(-1)^4}{2(2!)^4} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{02}_{k_5k_6} \Omega^{22}_{k_7k_8k_3k_4} \Omega^{02}_{k_7k_8}}{\epsilon_{k_1k_2}\ \epsilon_{k_5k_6}\ \epsilon_{k_3k_4}\ \epsilon_{k_7k_8}} \tag{1105}$$



$\rightarrow$ T4:



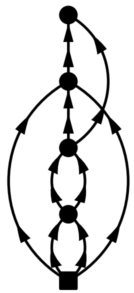
$$\text{T4} = \frac{1}{(a_1+a_2)a_2(a_3+a_4)a_4} \tag{1106}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon_{k_5k_6}$$
$$a_3 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 547:

$$\text{PO4.547} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_7k_3k_4} \Omega^{02}_{k_9k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_5k_6}} e^{-\tau_3\epsilon^{k_9}_{k_3k_4k_7}} e^{-\tau_4\epsilon_{k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_6} \Omega^{13}_{k_9k_7k_3k_4} \Omega^{02}_{k_9k_8}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_6k_3k_4}\ \epsilon_{k_3k_4k_7k_8}\ \epsilon_{k_8k_9}} \tag{1107}$$



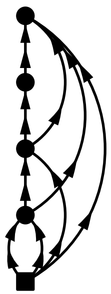
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1108}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8}_{k_5k_6}$$
$$a_3 = \epsilon^{k_9}_{k_3k_4k_7}$$
$$a_4 = \epsilon_{k_8k_9}$$

Diagram 548:

$$\begin{aligned} \mathrm{PO4.548} &= \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{11}_{k_9k_7} \Omega^{04}_{k_9k_8k_6k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_5}} e^{-\tau_3\epsilon^{k_9}_{k_7}} e^{-} \\ &= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{11}_{k_9k_7} \Omega^{04}_{k_9k_8k_6k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_4k_6}\ \epsilon_{k_7k_4k_6k_8}\ \epsilon_{k_4k_6k_8k_9}} \end{aligned} \tag{1109}$$



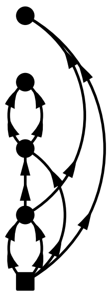
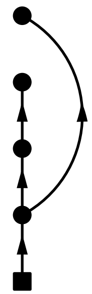
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1110}$$

$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_3 k_5}$$
$$a_3 = \epsilon^{k_9}_{k_7}$$
$$a_4 = \epsilon_{k_4 k_6 k_8 k_9}$$

Diagram 549:

$$\mathrm{PO4.549} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{02}_{k_7 k_8} \Omega^{02}_{k_6 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_3 k_5}} e^{-\tau_3 \epsilon_{k_7 k_8}} e^{-\tau_4 \epsilon_{k_4 k_6}}$$
$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{02}_{k_7 k_8} \Omega^{02}_{k_6 k_4}}{\epsilon_{k_1 k_2 k_3 k_4} \ \epsilon_{k_3 k_5} \ \epsilon_{k_7 k_8} \ \epsilon_{k_4 k_6}} \tag{1111}$$


$\rightarrow$ T3:


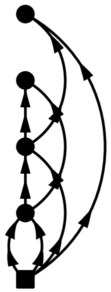
$$\mathrm{T3} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3)a_3 a_4} \tag{1112}$$

$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_3 k_5}$$
$$a_3 = \epsilon_{k_7 k_8}$$
$$a_4 = \epsilon_{k_4 k_6}$$

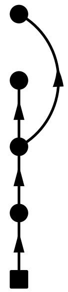
Diagram 550:

$$\mathrm{PO4.550} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{02}_{k_7k_6} \Omega^{02}_{k_8k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_5}} e^{-\tau_3\epsilon_{k_6k_7}} e^{-\tau_4\epsilon_{k_4k_8}}$$

$$= \frac{(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{02}_{k_7k_6} \Omega^{02}_{k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_6k_7}\ \epsilon_{k_4k_8}} \tag{1113}$$



$\rightarrow$ T2:



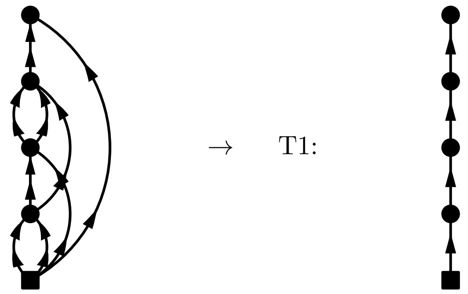
$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{1114}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8}_{k_3k_5}$$
$$a_3 = \epsilon_{k_6k_7}$$
$$a_4 = \epsilon_{k_4k_8}$$

Diagram 551:

$$\mathrm{PO4.551} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{13}_{k_9k_7k_8k_6} \Omega^{02}_{k_9k_4} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_5}} e^{-\tau_3\epsilon^{k_9}_{k_6k_7k_8}} e^{-\tau_4\epsilon_{k_4k_9}}$$

$$= \frac{-(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{13}_{k_9k_7k_8k_6} \Omega^{02}_{k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_6k_7k_8k_4}\ \epsilon_{k_4k_9}} \tag{1115}$$

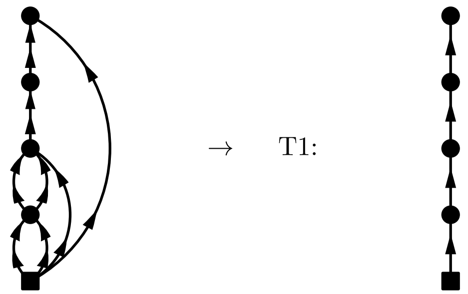


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1116}$$

$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_3 k_5}$$
$$a_3 = \epsilon^{k_9}_{k_6 k_7 k_8}$$
$$a_4 = \epsilon_{k_4 k_9}$$

Diagram 552:

$$\begin{aligned}\mathrm{PO4.552} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{13}_{k_7 k_5 k_6 k_3} \Omega^{11}_{k_8 k_7} \Omega^{02}_{k_8 k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_7}_{k_3 k_5 k_6}} e^{-\tau_3 \epsilon^{k_8}_{k_7}} e^{-\tau_4 \epsilon_{k_4 k_8}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{13}_{k_7 k_5 k_6 k_3} \Omega^{11}_{k_8 k_7} \Omega^{02}_{k_8 k_4}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_3 k_5 k_6 k_4}\ \epsilon_{k_7 k_4}\ \epsilon_{k_4 k_8}}\end{aligned} \tag{1117}$$

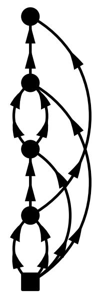


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1118}$$

$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7}_{k_3 k_5 k_6}$$
$$a_3 = \epsilon^{k_8}_{k_7}$$
$$a_4 = \epsilon_{k_4 k_8}$$

Diagram 553:

$$\begin{aligned}\mathrm{PO4.553} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{13}_{k_9 k_7 k_8 k_4} \Omega^{02}_{k_9 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_3 k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_4 k_7 k_8}} e^{-\tau_4 \epsilon_{k_6 k_9}} \\ &= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_5 k_3} \Omega^{13}_{k_9 k_7 k_8 k_4} \Omega^{02}_{k_9 k_6}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_3 k_5 k_4 k_6}\ \epsilon_{k_4 k_7 k_8 k_6}\ \epsilon_{k_6 k_9}}\end{aligned} \tag{1119}$$



$\rightarrow$ T1:

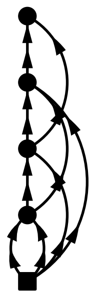
$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1120}$$

$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7 k_8}_{k_3 k_5}$$
$$a_3 = \epsilon^{k_9}_{k_4 k_7 k_8}$$
$$a_4 = \epsilon_{k_6 k_9}$$

Diagram 554:

$$\mathrm{PO4.554} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{13}_{k_9k_7k_6k_4} \Omega^{02}_{k_9k_8} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_5}} e^{-\tau_3\epsilon^{k_9}_{k_4k_6k}}$$

$$= \frac{-(-1)^4}{(2!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{22}_{k_7k_8k_5k_3} \Omega^{13}_{k_9k_7k_6k_4} \Omega^{02}_{k_9k_8}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_4k_6}\ \epsilon_{k_4k_6k_7k_8}\ \epsilon_{k_8k_9}} \tag{1121}$$



$\rightarrow$ T1:

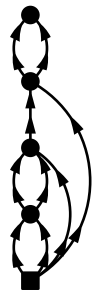
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1122}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8}_{k_3k_5}$$
$$a_3 = \epsilon^{k_9}_{k_4k_6k_7}$$
$$a_4 = \epsilon_{k_8k_9}$$

Diagram 555:

$$\mathrm{PO4.555} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_6k_3} \Omega^{22}_{k_8k_9k_7k_4} \Omega^{02}_{k_8k_9} \int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2\epsilon^{k_7}_{k_3k_5k_6}} e^{-\tau_3\epsilon^{k_8k_9}_{k_4k_7}} e^{-\tau_4\epsilon_{k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_6k_3} \Omega^{22}_{k_8k_9k_7k_4} \Omega^{02}_{k_8k_9}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_5k_6k_4}\ \epsilon_{k_4k_7}\ \epsilon_{k_8k_9}} \tag{1123}$$



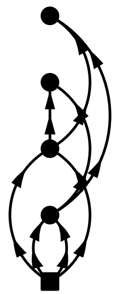
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1124}$$

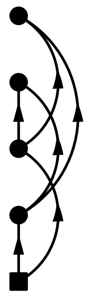
$$a_1 = \epsilon^{k_5 k_6}_{k_1 k_2}$$
$$a_2 = \epsilon^{k_7}_{k_3 k_5 k_6}$$
$$a_3 = \epsilon^{k_8 k_9}_{k_4 k_7}$$
$$a_4 = \epsilon_{k_8 k_9}$$

Diagram 556:

$$\begin{aligned}\mathrm{PO4.556} = &\lim_{\tau\to\infty} \frac{-(-1)^4}{6(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_3 k_4} \Omega^{02}_{k_7 k_5} \Omega^{02}_{k_8 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_3 - \tau_1)\theta(\tau_4 - \tau_1)\theta(\tau_3 - \tau_2)\theta(\tau_4 - \tau_2) e^{-\tau_1 \epsilon^{k_5 k_6}_{k_1 k_2}} e^{-\tau_2 \epsilon^{k_7 k_8}_{k_3 k_4}} e^{-\tau_3 \epsilon_{k_5 k_7}} e^{-\tau_4 \epsilon_{k_6 k_8}} \\ = &\frac{-(-1)^4}{6(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{22}_{k_7 k_8 k_3 k_4} \Omega^{02}_{k_7 k_5} \Omega^{02}_{k_8 k_6} \left[\frac{1}{\epsilon_{k_1 k_2 k_7 k_8}\ \epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_5 k_7}\ \epsilon_{k_6 k_8}} + \frac{1}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_3 k_4 k_5 k_6}\ \epsilon_{k_5 k_7}\ \epsilon_{k_6 k_8}} \right]\end{aligned} \tag{1125}$$



$\rightarrow$ T11:

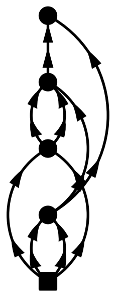


$$\mathrm{T11} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)a_3a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{1126}$$

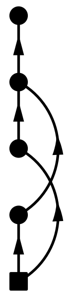
$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7k_8}_{k_3k_4}$$
$$a_3 = \epsilon_{k_5k_7}$$
$$a_4 = \epsilon_{k_6k_8}$$

Diagram 557:

$$\begin{aligned}\mathrm{PO4.557} &= \lim_{\tau\to\infty}\frac{(-1)^4}{(2!)^3}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{22}_{k_7k_8k_3k_4}\Omega^{13}_{k_9k_7k_8k_5}\Omega^{02}_{k_9k_6}\int_0^\tau \mathrm{d}\tau_1\mathrm{d}\tau_2\mathrm{d}\tau_3\mathrm{d}\tau_4\theta(\tau_3-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3)e^{-\tau_1\epsilon^{k_5k_6}_{k_1k_2}}e^{-\tau_2\epsilon^{k_7k_8}_{k_3k_4}}e^{-\tau_3\epsilon^{k_9}_{k_5k_7k_8}}e^{-\tau_4\epsilon_{k_6k_9}}\\ &= \frac{(-1)^4}{(2!)^3}\sum_{k_i} O^{40}_{k_1k_2k_3k_4}\Omega^{22}_{k_5k_6k_1k_2}\Omega^{22}_{k_7k_8k_3k_4}\Omega^{13}_{k_9k_7k_8k_5}\Omega^{02}_{k_9k_6}\left[\frac{1}{\epsilon_{k_1k_2k_7k_8}\ \epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_7k_8k_6}\ \epsilon_{k_6k_9}} + \frac{1}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_5k_7k_8k_6}\ \epsilon_{k_6k_9}}\right]\end{aligned} \tag{1127}$$



$\rightarrow$ T12:

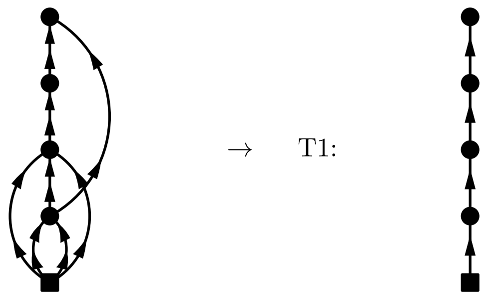


$$\mathrm{T12} = \frac{1}{(a_1+a_3+a_4)(a_2+a_1+a_3+a_4)(a_3+a_4)a_4} + \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1128}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_3 k_4}^{k_7 k_8}$$
$$a_3 = \epsilon_{k_5 k_7 k_8}^{k_9}$$
$$a_4 = \epsilon_{k_6 k_9}$$

Diagram 558:

$$\mathrm{PO4.558} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2} \sum_{k_i} O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{13}_{k_7 k_5 k_3 k_4} \Omega^{11}_{k_8 k_7} \Omega^{02}_{k_8 k_6} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_4-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1 k_2}^{k_5 k_6}} e^{-\tau_2 \epsilon_{k_3 k_4 k_5}^{k_7}} e^{-\tau_3 \epsilon_{k_7}^{k_8}} e^{-\tau_4 \epsilon_{k_6 k_8}}$$
$$= \frac{(-1)^4}{(2!)^2} \sum_{k_i} \frac{O^{40}_{k_1 k_2 k_3 k_4} \Omega^{22}_{k_5 k_6 k_1 k_2} \Omega^{13}_{k_7 k_5 k_3 k_4} \Omega^{11}_{k_8 k_7} \Omega^{02}_{k_8 k_6}}{\epsilon_{k_1 k_2 k_3 k_4}\ \epsilon_{k_3 k_4 k_5 k_6}\ \epsilon_{k_7 k_6}\ \epsilon_{k_6 k_8}} \tag{1129}$$



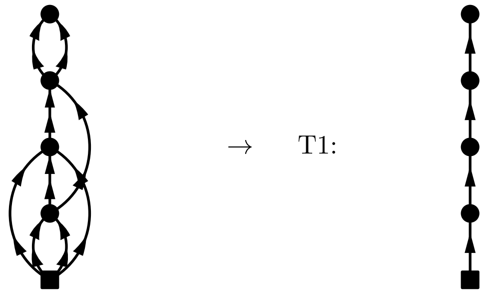
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1130}$$

$$a_1 = \epsilon_{k_1 k_2}^{k_5 k_6}$$
$$a_2 = \epsilon_{k_3 k_4 k_5}^{k_7}$$
$$a_3 = \epsilon_{k_7}^{k_8}$$
$$a_4 = \epsilon_{k_6 k_8}$$

Diagram 559:

$$\mathrm{PO4.559} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^3} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_3k_4} \Omega^{22}_{k_8k_9k_7k_6} \Omega^{02}_{k_8k_9} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5k_6}_{k_1k_2}} e^{-\tau_2 \epsilon^{k_7}_{k_3k_4k_5}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_6k_7}} e^{-\tau_4 \epsilon_{k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^3} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{22}_{k_5k_6k_1k_2} \Omega^{13}_{k_7k_5k_3k_4} \Omega^{22}_{k_8k_9k_7k_6} \Omega^{02}_{k_8k_9}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_3k_4k_5k_6}\ \epsilon_{k_6k_7}\ \epsilon_{k_8k_9}} \tag{1131}$$



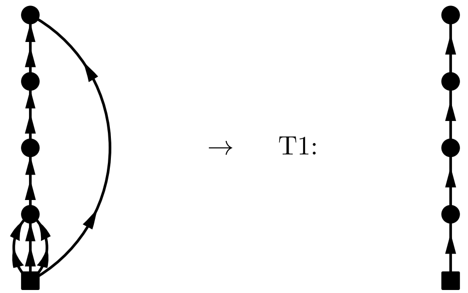
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1132}$$

$$a_1 = \epsilon^{k_5k_6}_{k_1k_2}$$
$$a_2 = \epsilon^{k_7}_{k_3k_4k_5}$$
$$a_3 = \epsilon^{k_8k_9}_{k_6k_7}$$
$$a_4 = \epsilon_{k_8k_9}$$

Diagram 560:

$$\mathrm{PO4.560} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{11}_{k_6k_5} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6}_{k_5}} e^{-\tau_3 \epsilon^{k_7}_{k_6}} e^{-\tau_4 \epsilon_{k_4k_7}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{11}_{k_6k_5} \Omega^{11}_{k_7k_6} \Omega^{02}_{k_7k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_6k_4}\ \epsilon_{k_4k_7}} \tag{1133}$$

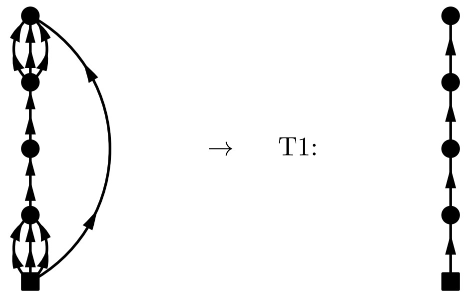


$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1134}$$

$$a_1 = \epsilon^{k_5}_{k_1 k_2 k_3}$$
$$a_2 = \epsilon^{k_6}_{k_5}$$
$$a_3 = \epsilon^{k_7}_{k_6}$$
$$a_4 = \epsilon_{k_4 k_7}$$

Diagram 561:

$$\begin{aligned}\mathrm{PO4.561} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{11}_{k_6k_5} \Omega^{31}_{k_7k_8k_9k_6} \Omega^{04}_{k_7k_8k_9k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6}_{k_5}} e^{-\tau_3 \epsilon^{k_7k_8k_9}_{k_6}} e^{-\tau_4 \epsilon_{k_4k_7k_8k_9}} \\ &= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{11}_{k_6k_5} \Omega^{31}_{k_7k_8k_9k_6} \Omega^{04}_{k_7k_8k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_6k_4}\ \epsilon_{k_4k_7k_8k_9}}\end{aligned} \tag{1135}$$

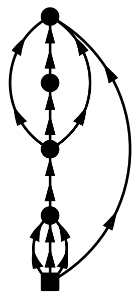


$$
\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1136}
$$

$$
\begin{aligned}
a_1 &= \epsilon_{k_1k_2k_3}^{k_5} \\
a_2 &= \epsilon_{k_5}^{k_6} \\
a_3 &= \epsilon_{k_6}^{k_7k_8k_9} \\
a_4 &= \epsilon_{k_4k_7k_8k_9}
\end{aligned}
$$

Diagram 562:

$$
\begin{aligned}
\mathrm{PO4.562} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{11}_{k_9k_6} \Omega^{04}_{k_9k_7k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon_{k_1k_2k_3}^{k_5}} e^{-\tau_2 \epsilon_{k_5}^{k_6k_7k_8}} e^{-\tau_3 \epsilon_{k_6}^{k_9}} e^{-\tau_4 \epsilon_{k_4k_7k}} \\
&= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{11}_{k_9k_6} \Omega^{04}_{k_9k_7k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_6k_4k_7k_8}\ \epsilon_{k_4k_7k_8k_9}}
\end{aligned} \tag{1137}
$$



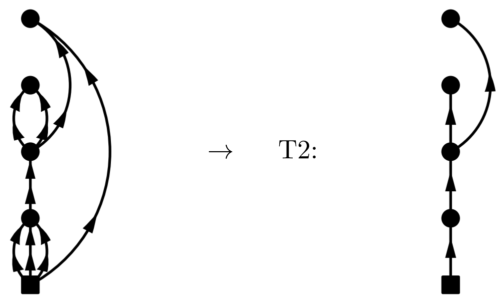
$\rightarrow$ T1:

$$
\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1138}
$$

$$
\begin{aligned}
a_1 &= \epsilon_{k_1k_2k_3}^{k_5} \\
a_2 &= \epsilon_{k_5}^{k_6k_7k_8} \\
a_3 &= \epsilon_{k_6}^{k_9} \\
a_4 &= \epsilon_{k_4k_7k_8k_9}
\end{aligned}
$$

Diagram 563:

$$\begin{aligned}\mathrm{PO4.563} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{02}_{k_6k_7} \Omega^{02}_{k_8k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3 \epsilon_{k_6k_7}} e^{-\tau_4 \epsilon_{k_4k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{02}_{k_6k_7} \Omega^{02}_{k_8k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_6k_7}\ \epsilon_{k_4k_8}} \end{aligned} \tag{1139}$$

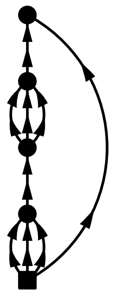


$$\mathrm{T2} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)a_3a_4} \tag{1140}$$

$$a_1 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_3 = \epsilon_{k_6k_7}$$
$$a_4 = \epsilon_{k_4k_8}$$

Diagram 564:

$$\begin{aligned}\mathrm{PO4.564} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)^2} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_7k_8} \Omega^{02}_{k_9k_4} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3 \epsilon^{k_9}_{k_6k_7k_8}} e^{-\tau_4 \epsilon_{k_4k_9}} \\ &= \frac{(-1)^4}{(3!)^2} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_7k_8} \Omega^{02}_{k_9k_4}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_6k_7k_8k_4}\ \epsilon_{k_4k_9}} \end{aligned} \tag{1141}$$



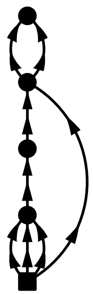
$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1142}$$

$$a_1 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_3 = \epsilon^{k_9}_{k_6k_7k_8}$$
$$a_4 = \epsilon_{k_4k_9}$$

Diagram 565:

$$\begin{aligned}\mathrm{PO4.565} &= \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{11}_{k_6k_5} \Omega^{22}_{k_7k_8k_6k_4} \Omega^{02}_{k_7k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6}_{k_5}} e^{-\tau_3 \epsilon^{k_7k_8}_{k_4k_6}} e^{-\tau_4 \epsilon_{k_7k_8}} \\ &= \frac{(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{11}_{k_6k_5} \Omega^{22}_{k_7k_8k_6k_4} \Omega^{02}_{k_7k_8}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_5k_4}\ \epsilon_{k_4k_6}\ \epsilon_{k_7k_8}}\end{aligned} \tag{1143}$$



$\rightarrow$ T1:

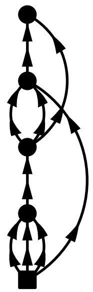
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1144}$$

$$a_1 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_2 = \epsilon^{k_6}_{k_5}$$
$$a_3 = \epsilon^{k_7k_8}_{k_4k_6}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 566:

$$\mathrm{PO4.566} = \lim_{\tau\to\infty} \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_7k_4} \Omega^{02}_{k_9k_8} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1\epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2\epsilon^{k_6k_7k_8}_{k_5}} e^{-\tau_3\epsilon^{k_9}_{k_4k_6k_7}} e^{-\tau_4\epsilon$$

$$= \frac{-(-1)^4}{(2!)(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{31}_{k_6k_7k_8k_5} \Omega^{13}_{k_9k_6k_7k_4} \Omega^{02}_{k_9k_8}}{\epsilon_{k_1k_2k_3k_4} \ \epsilon_{k_5k_4} \ \epsilon_{k_4k_6k_7k_8} \ \epsilon_{k_8k_9}} \tag{1145}$$



$\rightarrow$ T1:

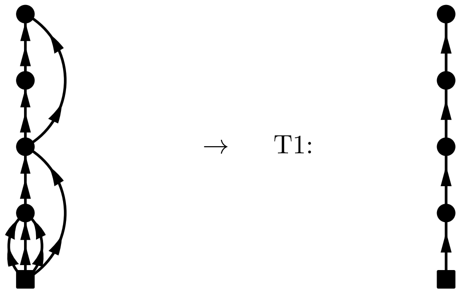
$$\mathrm{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1146}$$

$$a_1 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_2 = \epsilon^{k_6k_7k_8}_{k_5}$$
$$a_3 = \epsilon^{k_9}_{k_4k_6k_7}$$
$$a_4 = \epsilon_{k_8k_9}$$

Diagram 567:

$$\text{PO4.567} = \lim_{\tau\to\infty} \frac{(-1)^4}{(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{11}_{k_8k_6} \Omega^{02}_{k_8k_7} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6k_7}_{k_4k_5}} e^{-\tau_3 \epsilon^{k_8}_{k_6}} e^{-\tau_4 \epsilon_{k_7k_8}}$$

$$= \frac{(-1)^4}{(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{11}_{k_8k_6} \Omega^{02}_{k_8k_7}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5}\ \epsilon_{k_6k_7}\ \epsilon_{k_7k_8}} \tag{1147}$$



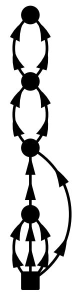
$$\text{T1} = \frac{1}{(a_1+a_2+a_3+a_4)(a_2+a_3+a_4)(a_3+a_4)a_4} \tag{1148}$$

$$a_1 = \epsilon^{k_5}_{k_1k_2k_3}$$
$$a_2 = \epsilon^{k_6k_7}_{k_4k_5}$$
$$a_3 = \epsilon^{k_8}_{k_6}$$
$$a_4 = \epsilon_{k_7k_8}$$

Diagram 568:

$$\text{PO4.568} = \lim_{\tau\to\infty} \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{02}_{k_8k_9} \int_0^\tau \mathrm{d}\tau_1 \mathrm{d}\tau_2 \mathrm{d}\tau_3 \mathrm{d}\tau_4 \theta(\tau_2-\tau_1)\theta(\tau_3-\tau_2)\theta(\tau_4-\tau_3) e^{-\tau_1 \epsilon^{k_5}_{k_1k_2k_3}} e^{-\tau_2 \epsilon^{k_6k_7}_{k_4k_5}} e^{-\tau_3 \epsilon^{k_8k_9}_{k_6k_7}} e^{-\tau_4 \epsilon_{k_8k_9}}$$

$$= \frac{(-1)^4}{(2!)^2(3!)} \sum_{k_i} \frac{O^{40}_{k_1k_2k_3k_4} \Omega^{13}_{k_5k_1k_2k_3} \Omega^{22}_{k_6k_7k_5k_4} \Omega^{22}_{k_8k_9k_6k_7} \Omega^{02}_{k_8k_9}}{\epsilon_{k_1k_2k_3k_4}\ \epsilon_{k_4k_5}\ \epsilon_{k_6k_7}\ \epsilon_{k_8k_9}} \tag{1149}$$



$\rightarrow$ T1:

$$\mathrm{T1} = \frac{1}{(a_1 + a_2 + a_3 + a_4)(a_2 + a_3 + a_4)(a_3 + a_4)a_4} \tag{1150}$$

$$a_1 = \epsilon_{k_1 k_2 k_3}^{k_5}$$
$$a_2 = \epsilon_{k_4 k_5}^{k_6 k_7}$$
$$a_3 = \epsilon_{k_6 k_7}^{k_8 k_9}$$
$$a_4 = \epsilon_{k_8 k_9}$$