Available Operators (with up to n=3 indices)

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February 14, 2025

X=V, n=2

(1, 1) Block 1: Trace != 0, Symmetric, C = 1

Operator 1

$$O_1^{V(1,1),1} = O_{1,1}^V + O_{2,2}^V + O_{3,3}^V + O_{4,4}^V$$

$$K_1^{V(1,1),1} = \frac{i(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N^3)}{(2E(p)(E(p) + m_N))}$$

(3, 1) Block 1: Trace = 0, Symmetric, C = 1

Operator 2

$$O_1^{V(3,1),1} = O_{1,1}^V + O_{2,2}^V + O_{3,3}^V - 3O_{4,4}^V$$

$$K_1^{V(3,1),1} = \frac{i(-3E(p)^3 - 3E(p)m_N^2 - 5E(p)p_1^2 - 5E(p)p_2^2 - 5E(p)p_3^2 - 6m_N^3 - 8m_N p_1^2 - 8m_N p_2^2 - 8m_N p_3^2)}{(2E(p)(E(p) + m_N))}$$

Operator 3

$$O_2^{V(3,1),1} = O_{1,1}^V + O_{2,2}^V - 2O_{3,3}^V$$

$$K_2^{V(3,1),1} = \frac{i(-p_1^2 - p_2^2 + 2p_3^2)}{E(p)}$$

Operator 4

$$O_3^{V(3,1),1} = O_{1,1}^V - O_{2,2}^V$$

$$K_3^{V(3,1),1} = \frac{i(-p_1^2 + p_2^2)}{E(p)}$$

(6, 1) Block 1: Trace = 0, Antisymmetric, C = 1

Operator 5

$$O_1^{V(6,1),1} = O_{1,2}^V - O_{2,1}^V$$
$$K_1^{V(6,1),1} = 0$$

Operator 6

$$O_2^{V(6,1),1} = O_{1,3}^V - O_{3,1}^V$$
$$K_2^{V(6,1),1} = 0$$

Operator 7

$$O_3^{V(6,1),1} = O_{2,3}^V - O_{3,2}^V$$
$$K_3^{V(6,1),1} = 0$$

Operator 8

$$O_4^{V(6,1),1} = O_{1,4}^V - O_{4,1}^V$$
$$K_4^{V(6,1),1} = 0$$

Operator 9

$$O_5^{V(6,1),1} = O_{2,4}^V - O_{4,2}^V$$
$$K_5^{V(6,1),1} = 0$$

Operator 10

$$O_6^{V(6,1),1} = O_{3,4}^V - O_{4,3}^V$$
$$K_6^{V(6,1),1} = 0$$

(6, 3) Block 1: Trace = 0, Symmetric, C = 1

Operator 11

$$O_1^{V(6,3),1} = O_{1,2}^V + O_{2,1}^V$$
$$K_1^{V(6,3),1} = \frac{-2ip_1p_2}{E(p)}$$

Operator 12

$$O_2^{V(6,3),1} = O_{1,3}^V + O_{3,1}^V$$
$$K_2^{V(6,3),1} = \frac{-2ip_1p_3}{E(p)}$$

Operator 13

$$O_3^{V(6,3),1} = O_{2,3}^V + O_{3,2}^V$$
$$K_3^{V(6,3),1} = \frac{-2ip_2p_3}{E(p)}$$

Operator 14

$$O_4^{V(6,3),1} = O_{1,4}^V + O_{4,1}^V$$
$$K_4^{V(6,3),1} = \frac{2p_1(E(p)^2 + E(p)m_N)}{(E(p)(E(p) + m_N))}$$

Operator 15

$$O_5^{V(6,3),1} = O_{2,4}^V + O_{4,2}^V$$
$$K_5^{V(6,3),1} = \frac{2p_2(E(p)^2 + E(p)m_N)}{(E(p)(E(p) + m_N))}$$

Operator 16

$$O_6^{V(6,3),1} = O_{3,4}^V + O_{4,3}^V$$
$$K_6^{V(6,3),1} = \frac{2p_3(E(p)^2 + E(p)m_N)}{(E(p)(E(p) + m_N))}$$

X=A, n=2

(1, 4) Block 1: Trace != 0, Symmetric, C = -1

Operator 17

$$O_1^{A(1,4),1} = O_{1,1}^A + O_{2,2}^A + O_{3,3}^A + O_{4,4}^A$$
$$K_1^{A(1,4),1} = 0$$

(3, 4) Block 1: Trace = 0, Symmetric, C = -1

Operator 18

$$O_1^{A(3,4),1} = O_{1,1}^A + O_{2,2}^A + O_{3,3}^A - 3O_{4,4}^A$$
$$K_1^{A(3,4),1} = \frac{4ip_3(E(p)^2 + E(p)m_N)}{(E(p)(E(p) + m_N))}$$

Operator 19

$$O_2^{A(3,4),1} = O_{1,1}^A + O_{2,2}^A - 2O_{3,3}^A$$
$$K_2^{A(3,4),1} = \frac{ip_3(-2E(p)m_N - 2m_N^2 + p_1^2 + p_2^2 - 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 20

$$O_3^{A(3,4),1} = O_{1,1}^A - O_{2,2}^A$$
$$K_3^{A(3,4),1} = \frac{ip_3(p_1^2 - p_2^2)}{(E(p)(E(p) + m_N))}$$

(6, 1) Block 1: Trace = 0, Antisymmetric, C = -1

Operator 21

$$O_1^{A(6,1),1} = O_{3,4}^A - O_{4,3}^A$$
$$K_1^{A(6,1),1} = \frac{(-E(p)^3 - E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 2m_N p_1^2 - 2m_N p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 22

$$O_2^{A(6,1),1} = O_{2,4}^A - O_{4,2}^A$$
$$K_2^{A(6,1),1} = \frac{m_N p_2 p_3}{(E(p)(E(p) + m_N))}$$

Operator 23

$$O_3^{A(6,1),1} = O_{1,4}^A - O_{4,1}^A$$
$$K_3^{A(6,1),1} = \frac{m_N p_1 p_3}{(E(p)(E(p) + m_N))}$$

Operator 24

$$O_4^{A(6,1),1} = O_{2,3}^A - O_{3,2}^A$$
$$K_4^{A(6,1),1} = \frac{-im_N p_2}{E(p)}$$

Operator 25

$$O_5^{A(6,1),1} = O_{1,3}^A - O_{3,1}^A$$
$$K_5^{A(6,1),1} = \frac{-im_N p_1}{E(p)}$$

Operator 26

$$O_6^{A(6,1),1} = O_{1,2}^A - O_{2,1}^A$$
$$K_6^{A(6,1),1} = 0$$

(6, 4) Block 1: Trace = 0, Symmetric, C = -1

Operator 27

$$O_1^{A(6,4),1} = O_{1,2}^A + O_{2,1}^A$$
$$K_1^{A(6,4),1} = \frac{2ip_1p_2p_3}{(E(p)(E(p)+m_N))}$$

Operator 28

$$O_2^{A(6,4),1} = O_{1,3}^A + O_{3,1}^A$$
$$K_2^{A(6,4),1} = \frac{ip_1(E(p)m_N + m_N^2 + 2p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 29

$$O_3^{A(6,4),1} = O_{2,3}^A + O_{3,2}^A$$
$$K_3^{A(6,4),1} = \frac{ip_2(E(p)m_N + m_N^2 + 2p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 30

$$O_4^{A(6,4),1} = O_{1,4}^A + O_{4,1}^A$$
$$K_4^{A(6,4),1} = \frac{-p_1p_3(2E(p)+m_N)}{(E(p)(E(p)+m_N))}$$

Operator 31

$$O_5^{A(6,4),1} = O_{2,4}^A + O_{4,2}^A$$
$$K_5^{A(6,4),1} = \frac{-p_2p_3(2E(p)+m_N)}{(E(p)(E(p)+m_N))}$$

Operator 32

$$O_6^{A(6,4),1} = O_{3,4}^A + O_{4,3}^A$$
$$K_6^{A(6,4),1} = \frac{(-E(p)^3 - 2E(p)^2m_N - E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 - 3E(p)p_3^2 - 2m_Np_3^2)}{(2E(p)(E(p)+m_N))}$$

X=T, n=3

(4, 1) Block 1: Trace = 0, Mixed Symmetry, C = 1

Operator 33

$$O_1^{T(4,1),1} = O_{2,1,2}^T + O_{3,1,3}^T + O_{4,1,4}^T$$
$$K_1^{T(4,1),1} = 0$$

Operator 34

$$O_2^{T(4,1),1} = O_{1,2,1}^T + O_{3,2,3}^T + O_{4,2,4}^T$$
$$K_2^{T(4,1),1} = 0$$

Operator 35

$$O_3^{T(4,1),1} = O_{1,3,1}^T + O_{2,3,2}^T + O_{4,3,4}^T$$
$$K_3^{T(4,1),1} = 0$$

Operator 36

$$O_4^{T(4,1),1} = O_{1,4,1}^T + O_{2,4,2}^T + O_{3,4,3}^T$$
$$K_4^{T(4,1),1} = 0$$

(4, 1) Block 2: Trace = 0, Mixed Symmetry, C = 1

Operator 37

$$O_1^{T(4,1),2} = O_{2,2,1}^T + O_{3,3,1}^T + O_{4,4,1}^T$$
$$K_1^{T(4,1),2} = 0$$

Operator 38

$$O_2^{T(4,1),2} = O_{1,1,2}^T + O_{3,3,2}^T + O_{4,4,2}^T$$
$$K_2^{T(4,1),2} = 0$$

Operator 39

$$O_3^{T(4,1),2} = O_{1,1,3}^T + O_{2,2,3}^T + O_{4,4,3}^T$$
$$K_3^{T(4,1),2} = 0$$

Operator 40

$$O_4^{T(4,1),2} = O_{1,1,4}^T + O_{2,2,4}^T + O_{3,3,4}^T$$
$$K_4^{T(4,1),2} = 0$$

(4, 1) Block 3: Trace = 0, Symmetric, C = 1

Operator 41

$$O_1^{T(4,1),3} = O_{1,1,1}^T$$
$$K_1^{T(4,1),3} = 0$$

Operator 42

$$O_2^{T(4,1),3} = O_{2,2,2}^T$$
$$K_2^{T(4,1),3} = 0$$

Operator 43

$$O_3^{T(4,1),3} = O_{3,3,3}^T$$
$$K_3^{T(4,1),3} = 0$$

Operator 44

$$O_4^{T(4,1),3} = O_{4,4,4}^T$$
$$K_4^{T(4,1),3} = 0$$

(4, 1) Block 4: Trace = 0, Mixed Symmetry, C = 1

Operator 45

$$O_1^{T(4,1),4} = O_{1,2,2}^T + O_{1,3,3}^T + O_{1,4,4}^T$$
$$K_1^{T(4,1),4} = 0$$

Operator 46

$$O_2^{T(4,1),4} = O_{2,1,1}^T + O_{2,3,3}^T + O_{2,4,4}^T$$
$$K_2^{T(4,1),4} = 0$$

Operator 47

$$O_3^{T(4,1),4} = O_{3,1,1}^T + O_{3,2,2}^T + O_{3,4,4}^T$$
$$K_3^{T(4,1),4} = 0$$

Operator 48

$$O_4^{T(4,1),4} = O_{4,1,1}^T + O_{4,2,2}^T + O_{4,3,3}^T$$
$$K_4^{T(4,1),4} = 0$$

(4, 2) Block 1: Trace = 0, Symmetric, C = 1

Operator 49

$$O_1^{T(4,2),1} = O^T_{2,3,4} + O^T_{2,4,3} + O^T_{3,2,4} + O^T_{3,4,2} + O^T_{4,2,3} + O^T_{4,3,2}$$
$$K_1^{T(4,2),1} = 0$$

Operator 50

$$O_2^{T(4,2),1} = O^T_{1,3,4} + O^T_{1,4,3} + O^T_{3,1,4} + O^T_{3,4,1} + O^T_{4,1,3} + O^T_{4,3,1}$$
$$K_2^{T(4,2),1} = 0$$

Operator 51

$$O_3^{T(4,2),1} = O^T_{1,2,4} + O^T_{1,4,2} + O^T_{2,1,4} + O^T_{2,4,1} + O^T_{4,1,2} + O^T_{4,2,1}$$
$$K_3^{T(4,2),1} = 0$$

Operator 52

$$O_4^{T(4,2),1} = O^T_{1,2,3} + O^T_{1,3,2} + O^T_{2,1,3} + O^T_{2,3,1} + O^T_{3,1,2} + O^T_{3,2,1}$$
$$K_4^{T(4,2),1} = 0$$

(4, 4) Block 1: Trace = 0, Antisymmetric, C = 1

Operator 53

$$O_1^{T(4,4),1} = O^T_{2,3,4} - O^T_{2,4,3} - O^T_{3,2,4} + O^T_{3,4,2} + O^T_{4,2,3} - O^T_{4,3,2}$$
$$K_1^{T(4,4),1} = \frac{-2im_N p_1 p_3}{(E(p)(E(p)+m_N))}$$

Operator 54

$$O_2^{T(4,4),1} = O^T_{1,3,4} - O^T_{1,4,3} - O^T_{3,1,4} + O^T_{3,4,1} + O^T_{4,1,3} - O^T_{4,3,1}$$
$$K_2^{T(4,4),1} = \frac{2im_N p_2 p_3}{(E(p)(E(p)+m_N))}$$

Operator 55

$$O_3^{T(4,4),1} = O^T_{1,2,4} - O^T_{1,4,2} - O^T_{2,1,4} + O^T_{2,4,1} + O^T_{4,1,2} - O^T_{4,2,1}$$
$$K_3^{T(4,4),1} = \frac{i(-E(p)^3 - E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 2m_N p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 56

$$O_4^{T(4,4),1} = O^T_{1,2,3} - O^T_{1,3,2} - O^T_{2,1,3} + O^T_{2,3,1} + O^T_{3,1,2} - O^T_{3,2,1}$$
$$K_4^{T(4,4),1} = \frac{-2m_N p_3}{E(p)}$$

(8, 1) Block 1: Trace = 0, Mixed Symmetry, C = 1

Operator 57

$$O_1^{T(8,1),1} = O_{2,1,2}^T - \frac{1}{2}O_{3,1,3}^T - \frac{1}{2}O_{4,1,4}^T$$
$$K_1^{T(8,1),1} = \frac{3p_2(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 58

$$O_2^{T(8,1),1} = O_{1,2,1}^T - \frac{1}{2}O_{3,2,3}^T - \frac{1}{2}O_{4,2,4}^T$$
$$K_2^{T(8,1),1} = \frac{-3p_1(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 59

$$O_3^{T(8,1),1} = O_{1,3,1}^T + O_{2,3,2}^T - 2O_{4,3,4}^T$$
$$K_3^{T(8,1),1} = 0$$

Operator 60

$$O_4^{T(8,1),1} = O_{1,4,1}^T + O_{2,4,2}^T - 2O_{3,4,3}^T$$
$$K_4^{T(8,1),1} = 0$$

Operator 61

$$O_5^{T(8,1),1} = O_{3,1,3}^T - O_{4,1,4}^T$$
$$K_5^{T(8,1),1} = \frac{p_2(E(p)m_N + m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 62

$$O_6^{T(8,1),1} = O_{3,2,3}^T - O_{4,2,4}^T$$
$$K_6^{T(8,1),1} = \frac{-p_1(E(p)m_N + m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 63

$$O_7^{T(8,1),1} = O_{1,3,1}^T - O_{2,3,2}^T$$
$$K_7^{T(8,1),1} = \frac{-2p_1p_2p_3}{(E(p)(E(p) + m_N))}$$

Operator 64

$$O_8^{T(8,1),1} = O_{1,4,1}^T - O_{2,4,2}^T$$
$$K_8^{T(8,1),1} = \frac{-2ip_1p_2}{E(p)}$$

(8, 1) Block 2: Trace = 0, Mixed Symmetry, C = 1

Operator 65

$$O_1^{T(8,1),2} = O_{2,2,1}^T - \frac{1}{2}O_{3,3,1}^T - \frac{1}{2}O_{4,4,1}^T$$
$$K_1^{T(8,1),2} = 0$$

Operator 66

$$O_2^{T(8,1),2} = O_{1,1,2}^T - \frac{1}{2}O_{3,3,2}^T - \frac{1}{2}O_{4,4,2}^T$$
$$K_2^{T(8,1),2} = 0$$

Operator 67

$$O_3^{T(8,1),2} = O_{1,1,3}^T + O_{2,2,3}^T - 2O_{4,4,3}^T$$
$$K_3^{T(8,1),2} = 0$$

Operator 68

$$O_4^{T(8,1),2} = O_{1,1,4}^T + O_{2,2,4}^T - 2O_{3,3,4}^T$$
$$K_4^{T(8,1),2} = 0$$

Operator 69

$$O_5^{T(8,1),2} = O_{3,3,1}^T - O_{4,4,1}^T$$
$$K_5^{T(8,1),2} = 0$$

Operator 70

$$O_6^{T(8,1),2} = O_{3,3,2}^T - O_{4,4,2}^T$$
$$K_6^{T(8,1),2} = 0$$

Operator 71

$$O_7^{T(8,1),2} = O_{1,1,3}^T - O_{2,2,3}^T$$
$$K_7^{T(8,1),2} = 0$$

Operator 72

$$O_8^{T(8,1),2} = O_{1,1,4}^T - O_{2,2,4}^T$$
$$K_8^{T(8,1),2} = 0$$

(8, 1) Block 3: Trace = 0, Mixed Symmetry, C = 1

Operator 73

$$O_1^{T(8,1),3} = O_{1,2,2}^T - \frac{1}{2}O_{1,3,3}^T - \frac{1}{2}O_{1,4,4}^T$$
$$K_1^{T(8,1),3} = \frac{-3p_2(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 74

$$O_2^{T(8,1),3} = O_{2,1,1}^T - \frac{1}{2}O_{2,3,3}^T - \frac{1}{2}O_{2,4,4}^T$$
$$K_2^{T(8,1),3} = \frac{3p_1(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 75

$$O_3^{T(8,1),3} = O_{3,1,1}^T + O_{3,2,2}^T - 2O_{3,4,4}^T$$
$$K_3^{T(8,1),3} = 0$$

Operator 76

$$O_4^{T(8,1),3} = O_{4,1,1}^T + O_{4,2,2}^T - 2O_{4,3,3}^T$$
$$K_4^{T(8,1),3} = 0$$

Operator 77

$$O_5^{T(8,1),3} = O_{1,3,3}^T - O_{1,4,4}^T$$
$$K_5^{T(8,1),3} = \frac{-p_2(E(p)m_N + m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 78

$$O_6^{T(8,1),3} = O_{2,3,3}^T - O_{2,4,4}^T$$
$$K_6^{T(8,1),3} = \frac{p_1(E(p)m_N + m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 79

$$O_7^{T(8,1),3} = O_{3,1,1}^T - O_{3,2,2}^T$$
$$K_7^{T(8,1),3} = \frac{2p_1p_2p_3}{(E(p)(E(p) + m_N))}$$

Operator 80

$$O_8^{T(8,1),3} = O_{4,1,1}^T - O_{4,2,2}^T$$
$$K_8^{T(8,1),3} = \frac{2ip_1p_2}{E(p)}$$

(8, 2) Block 1: Trace = 0, Mixed Symmetry, C = 1

Operator 81

$$O_1^{T(8,2),1} = O_{2,3,4}^T + O_{2,4,3}^T - O_{3,2,4}^T - O_{4,2,3}^T$$
$$K_1^{T(8,2),1} = \frac{2ip_1p_3(2E(p) + m_N)}{(E(p)(E(p) + m_N))}$$

Operator 82

$$O_2^{T(8,2),1} = O_{1,3,4}^T + O_{1,4,3}^T - O_{3,1,4}^T - O_{4,1,3}^T$$
$$K_2^{T(8,2),1} = \frac{-2ip_2p_3(2E(p) + m_N)}{(E(p)(E(p) + m_N))}$$

Operator 83

$$O_3^{T(8,2),1} = O_{1,4,2}^T + O_{2,4,1}^T - O_{4,1,2}^T - O_{4,2,1}^T$$
$$K_3^{T(8,2),1} = \frac{2i(p_1^2 - p_2^2)}{E(p)}$$

Operator 84

$$O_4^{T(8,2),1} = O_{1,3,2}^T + O_{2,3,1}^T - O_{3,1,2}^T - O_{3,2,1}^T$$
$$K_4^{T(8,2),1} = \frac{2p_3(p_1^2 - p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 85

$$O_5^{T(8,2),1} = O_{2,3,4}^T - O_{2,4,3}^T - O_{3,2,4}^T - 2O_{3,4,2}^T + O_{4,2,3}^T + 2O_{4,3,2}^T$$
$$K_5^{T(8,2),1} = \frac{-2im_Np_1p_3}{(E(p)(E(p) + m_N))}$$

Operator 86

$$O_6^{T(8,2),1} = O_{1,3,4}^T - O_{1,4,3}^T - O_{3,1,4}^T - 2O_{3,4,1}^T + O_{4,1,3}^T + 2O_{4,3,1}^T$$
$$K_6^{T(8,2),1} = \frac{2im_Np_2p_3}{(E(p)(E(p) + m_N))}$$

Operator 87

$$O_7^{T(8,2),1} = O_{1,2,4}^T + \frac{1}{2}O_{1,4,2}^T - O_{2,1,4}^T - \frac{1}{2}O_{2,4,1}^T - \frac{1}{2}O_{4,1,2}^T + \frac{1}{2}O_{4,2,1}^T$$
$$K_7^{T(8,2),1} = \frac{i(-E(p)^3 - E(p)m_N^2 - 2E(p)p_1^2 - 2E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 3m_Np_1^2 - 3m_Np_2^2 - 2m_Np_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 88

$$O_8^{T(8,2),1} = O_{1,2,3}^T + \frac{1}{2}O_{1,3,2}^T - O_{2,1,3}^T - \frac{1}{2}O_{2,3,1}^T - \frac{1}{2}O_{3,1,2}^T + \frac{1}{2}O_{3,2,1}^T$$
$$K_8^{T(8,2),1} = \frac{-p_3(2E(p)m_N + 2m_N^2 + 3p_1^2 + 3p_2^2)}{(E(p)(E(p) + m_N))}$$

(8, 2) Block 2: Trace = 0, Mixed Symmetry, C = 1

Operator 89

$$O_1^{T(8,2),2} = O_{2,3,4}^T + O_{2,4,3}^T - O_{3,4,2}^T - O_{4,3,2}^T$$
$$K_1^{T(8,2),2} = \frac{ip_1p_3(2E(p) + m_N)}{(E(p)(E(p) + m_N))}$$

Operator 90

$$O_2^{T(8,2),2} = O_{1,3,4}^T + O_{1,4,3}^T - O_{3,4,1}^T - O_{4,3,1}^T$$
$$K_2^{T(8,2),2} = \frac{-ip_2p_3(2E(p) + m_N)}{(E(p)(E(p) + m_N))}$$

Operator 91

$$O_3^{T(8,2),2} = O_{1,2,4}^T + O_{2,1,4}^T - O_{4,1,2}^T - O_{4,2,1}^T$$
$$K_3^{T(8,2),2} = \frac{i(p_1^2 - p_2^2)}{E(p)}$$

Operator 92

$$O_4^{T(8,2),2} = O_{1,2,3}^T + O_{2,1,3}^T - O_{3,1,2}^T - O_{3,2,1}^T$$
$$K_4^{T(8,2),2} = \frac{p_3(p_1^2 - p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 93

$$O_5^{T(8,2),2} = O_{2,3,4}^T - O_{2,4,3}^T + 2O_{3,2,4}^T + O_{3,4,2}^T - 2O_{4,2,3}^T - O_{4,3,2}^T$$
$$K_5^{T(8,2),2} = \frac{im_Np_1p_3}{(E(p)(E(p) + m_N))}$$

Operator 94

$$O_6^{T(8,2),2} = O_{1,3,4}^T - O_{1,4,3}^T + 2O_{3,1,4}^T + O_{3,4,1}^T - 2O_{4,1,3}^T - O_{4,3,1}^T$$
$$K_6^{T(8,2),2} = \frac{-im_Np_2p_3}{(E(p)(E(p) + m_N))}$$

Operator 95

$$O_7^{T(8,2),2} = O_{1,2,4}^T + 2O_{1,4,2}^T - O_{2,1,4}^T - 2O_{2,4,1}^T + O_{4,1,2}^T - O_{4,2,1}^T$$
$$K_7^{T(8,2),2} = \frac{i(-E(p)^3 - E(p)m_N^2 - 2E(p)p_1^2 - 2E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 3m_Np_1^2 - 3m_Np_2^2 - 2m_Np_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 96

$$O_8^{T(8,2),2} = O_{1,2,3}^T + 2O_{1,3,2}^T - O_{2,1,3}^T - 2O_{2,3,1}^T + O_{3,1,2}^T - O_{3,2,1}^T$$
$$K_8^{T(8,2),2} = \frac{-p_3(2E(p)m_N + 2m_N^2 + 3p_1^2 + 3p_2^2)}{(E(p)(E(p) + m_N))}$$

X=V, n=3

(4, 1) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 97

$$O_1^{V(4,1),1} = O^V_{2,1,2} + O^V_{3,1,3} + O^V_{4,1,4}$$
$$K_1^{V(4,1),1} = \frac{ip_1(E(p)^3 + E(p)m_N^2 + E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 + 2m_N p_1^2)}{(2E(p)(E(p) + m_N))}$$

Operator 98

$$O_2^{V(4,1),1} = O^V_{1,2,1} + O^V_{3,2,3} + O^V_{4,2,4}$$
$$K_2^{V(4,1),1} = \frac{ip_2(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 + E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 + 2m_N p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 99

$$O_3^{V(4,1),1} = O^V_{1,3,1} + O^V_{2,3,2} + O^V_{4,3,4}$$
$$K_3^{V(4,1),1} = \frac{ip_3(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 + E(p)p_3^2 + 2m_N^3 + 2m_N p_3^2)}{(2E(p)(E(p) + m_N))}$$

Operator 100

$$O_4^{V(4,1),1} = O^V_{1,4,1} + O^V_{2,4,2} + O^V_{3,4,3}$$
$$K_4^{V(4,1),1} = p_1^2 + p_2^2 + p_3^2$$

(4, 1) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 101

$$O_1^{V(4,1),2} = O^V_{2,2,1} + O^V_{3,3,1} + O^V_{4,4,1}$$

$$K_1^{V(4,1),2} = \frac{ip_1(E(p)^3 + E(p)m_N^2 + E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 + 2m_N p_1^2)}{(2E(p)(E(p) + m_N))}$$

Operator 102

$$O_2^{V(4,1),2} = O^V_{1,1,2} + O^V_{3,3,2} + O^V_{4,4,2}$$

$$K_2^{V(4,1),2} = \frac{ip_2(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 + E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 + 2m_N p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 103

$$O_3^{V(4,1),2} = O^V_{1,1,3} + O^V_{2,2,3} + O^V_{4,4,3}$$

$$K_3^{V(4,1),2} = \frac{ip_3(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 + E(p)p_3^2 + 2m_N^3 + 2m_N p_3^2)}{(2E(p)(E(p) + m_N))}$$

Operator 104

$$O_4^{V(4,1),2} = O^V_{1,1,4} + O^V_{2,2,4} + O^V_{3,3,4}$$

$$K_4^{V(4,1),2} = p_1^2 + p_2^2 + p_3^2$$

(4, 1) Block 3: Trace = 0, Symmetric, C = -1

Operator 105

$$O_1^{V(4,1),3} = O^V_{1,1,1}$$
$$K_1^{V(4,1),3} = \frac{-ip_1^3}{E(p)}$$

Operator 106

$$O_2^{V(4,1),3} = O^V_{2,2,2}$$
$$K_2^{V(4,1),3} = \frac{-ip_2^3}{E(p)}$$

Operator 107

$$O_3^{V(4,1),3} = O^V_{3,3,3}$$
$$K_3^{V(4,1),3} = \frac{-ip_3^3}{E(p)}$$

Operator 108

$$O_4^{V(4,1),3} = O^V_{4,4,4}$$
$$K_4^{V(4,1),3} = \frac{-E(p)(E(p)^2 + E(p)m_N)}{(E(p) + m_N)}$$

(4, 1) Block 4: Trace = 0, Mixed Symmetry, C = -1

Operator 109

$$O_1^{V(4,1),4} = O_{1,2,2}^V + O_{1,3,3}^V + O_{1,4,4}^V$$
$$K_1^{V(4,1),4} = \frac{ip_1(m_N^2 + p_1^2)}{E(p)}$$

Operator 110

$$O_2^{V(4,1),4} = O_{2,1,1}^V + O_{2,3,3}^V + O_{2,4,4}^V$$
$$K_2^{V(4,1),4} = \frac{ip_2(m_N^2 + p_2^2)}{E(p)}$$

Operator 111

$$O_3^{V(4,1),4} = O_{3,1,1}^V + O_{3,2,2}^V + O_{3,4,4}^V$$
$$K_3^{V(4,1),4} = \frac{ip_3(m_N^2 + p_3^2)}{E(p)}$$

Operator 112

$$O_4^{V(4,1),4} = O_{4,1,1}^V + O_{4,2,2}^V + O_{4,3,3}^V$$
$$K_4^{V(4,1),4} = \frac{(p_1^2 + p_2^2 + p_3^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N - p_3) + (E(p) + p_3$$
$$(4E(p)(E(p) + m_N))$$

(4, 2) Block 1: Trace = 0, Symmetric, C = -1

Operator 113

$$O_1^{V(4,2),1} = O^V_{2,3,4} + O^V_{2,4,3} + O^V_{3,2,4} + O^V_{3,4,2} + O^V_{4,2,3} + O^V_{4,3,2}$$
$$K_1^{V(4,2),1} = \frac{6p_2p_3(E(p)^2 + E(p)m_N)}{(E(p)(E(p)+m_N))}$$

Operator 114

$$O_2^{V(4,2),1} = O^V_{1,3,4} + O^V_{1,4,3} + O^V_{3,1,4} + O^V_{3,4,1} + O^V_{4,1,3} + O^V_{4,3,1}$$
$$K_2^{V(4,2),1} = \frac{6p_1p_3(E(p)^2 + E(p)m_N)}{(E(p)(E(p)+m_N))}$$

Operator 115

$$O_3^{V(4,2),1} = O^V_{1,2,4} + O^V_{1,4,2} + O^V_{2,1,4} + O^V_{2,4,1} + O^V_{4,1,2} + O^V_{4,2,1}$$
$$K_3^{V(4,2),1} = \frac{6p_1p_2(E(p)^2 + E(p)m_N)}{(E(p)(E(p)+m_N))}$$

Operator 116

$$O_4^{V(4,2),1} = O^V_{1,2,3} + O^V_{1,3,2} + O^V_{2,1,3} + O^V_{2,3,1} + O^V_{3,1,2} + O^V_{3,2,1}$$
$$K_4^{V(4,2),1} = \frac{-6ip_1p_2p_3}{E(p)}$$

(4, 4) Block 1: Trace = 0, Antisymmetric, C = 1

Operator 117

$$O_1^{V(4,4),1} = O^V_{2,3,4} - O^V_{2,4,3} - O^V_{3,2,4} + O^V_{3,4,2} + O^V_{4,2,3} - O^V_{4,3,2}$$
$$K_1^{V(4,4),1} = 0$$

Operator 118

$$O_2^{V(4,4),1} = O^V_{1,3,4} - O^V_{1,4,3} - O^V_{3,1,4} + O^V_{3,4,1} + O^V_{4,1,3} - O^V_{4,3,1}$$
$$K_2^{V(4,4),1} = 0$$

Operator 119

$$O_3^{V(4,4),1} = O^V_{1,2,4} - O^V_{1,4,2} - O^V_{2,1,4} + O^V_{2,4,1} + O^V_{4,1,2} - O^V_{4,2,1}$$
$$K_3^{V(4,4),1} = 0$$

Operator 120

$$O_4^{V(4,4),1} = O^V_{1,2,3} - O^V_{1,3,2} - O^V_{2,1,3} + O^V_{2,3,1} + O^V_{3,1,2} - O^V_{3,2,1}$$
$$K_4^{V(4,4),1} = 0$$

(8, 1) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 121

$$O_1^{V(8,1),1} = O_{2,1,2}^V - \frac{1}{2}O_{3,1,3}^V - \frac{1}{2}O_{4,1,4}^V$$
$$K_1^{V(8,1),1} = \frac{ip_1(-E(p)^3 - E(p)m_N^2 - E(p)p_1^2 - 5E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 2m_N p_1^2 - 6m_N p_2^2)}{(4E(p)(E(p)+m_N))}$$

Operator 122

$$O_2^{V(8,1),1} = O_{1,2,1}^V - \frac{1}{2}O_{3,2,3}^V - \frac{1}{2}O_{4,2,4}^V$$
$$K_2^{V(8,1),1} = \frac{ip_2(-E(p)^3 - E(p)m_N^2 - 5E(p)p_1^2 - E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 6m_N p_1^2 - 2m_N p_2^2)}{(4E(p)(E(p)+m_N))}$$

Operator 123

$$O_3^{V(8,1),1} = O_{1,3,1}^V + O_{2,3,2}^V - 2O_{4,3,4}^V$$
$$K_3^{V(8,1),1} = \frac{ip_3(-E(p)^3 - E(p)m_N^2 - 2E(p)p_1^2 - 2E(p)p_2^2 - E(p)p_3^2 - 2m_N^3 - 3m_N p_1^2 - 3m_N p_2^2 - 2m_N p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 124

$$O_4^{V(8,1),1} = O_{1,4,1}^V + O_{2,4,2}^V - 2O_{3,4,3}^V$$
$$K_4^{V(8,1),1} = p_1^2 + p_2^2 - 2p_3^2$$

Operator 125

$$O_5^{V(8,1),1} = O_{3,1,3}^V - O_{4,1,4}^V$$
$$K_5^{V(8,1),1} = \frac{-ip_1(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + 3E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p)+m_N))}$$

Operator 126

$$O_6^{V(8,1),1} = O_{3,2,3}^V - O_{4,2,4}^V$$
$$K_6^{V(8,1),1} = \frac{-ip_2(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + 3E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p)+m_N))}$$

Operator 127

$$O_7^{V(8,1),1} = O_{1,3,1}^V - O_{2,3,2}^V$$
$$K_7^{V(8,1),1} = \frac{ip_3(-p_1^2 + p_2^2)}{E(p)}$$

Operator 128

$$O_8^{V(8,1),1} = O_{1,4,1}^V - O_{2,4,2}^V$$
$$K_8^{V(8,1),1} = p_1^2 - p_2^2$$

(8, 1) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 129

$$O_1^{V(8,1),2} = O_{2,2,1}^V - \frac{1}{2}O_{3,3,1}^V - \frac{1}{2}O_{4,4,1}^V$$
$$K_1^{V(8,1),2} = \frac{ip_1(-E(p)^3 - E(p)m_N^2 - E(p)p_1^2 - 5E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 2m_N p_1^2 - 6m_N p_2^2)}{(4E(p)(E(p)+m_N))}$$

Operator 130

$$O_2^{V(8,1),2} = O_{1,1,2}^V - \frac{1}{2}O_{3,3,2}^V - \frac{1}{2}O_{4,4,2}^V$$
$$K_2^{V(8,1),2} = \frac{ip_2(-E(p)^3 - E(p)m_N^2 - 5E(p)p_1^2 - E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 6m_N p_1^2 - 2m_N p_2^2)}{(4E(p)(E(p)+m_N))}$$

Operator 131

$$O_3^{V(8,1),2} = O_{1,1,3}^V + O_{2,2,3}^V - 2O_{4,4,3}^V$$
$$K_3^{V(8,1),2} = \frac{ip_3(-E(p)^3 - E(p)m_N^2 - 2E(p)p_1^2 - 2E(p)p_2^2 - E(p)p_3^2 - 2m_N^3 - 3m_N p_1^2 - 3m_N p_2^2 - 2m_N p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 132

$$O_4^{V(8,1),2} = O_{1,1,4}^V + O_{2,2,4}^V - 2O_{3,3,4}^V$$
$$K_4^{V(8,1),2} = p_1^2 + p_2^2 - 2p_3^2$$

Operator 133

$$O_5^{V(8,1),2} = O_{3,3,1}^V - O_{4,4,1}^V$$
$$K_5^{V(8,1),2} = \frac{-ip_1(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + 3E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p)+m_N))}$$

Operator 134

$$O_6^{V(8,1),2} = O_{3,3,2}^V - O_{4,4,2}^V$$
$$K_6^{V(8,1),2} = \frac{-ip_2(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + 3E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p)+m_N))}$$

Operator 135

$$O_7^{V(8,1),2} = O_{1,1,3}^V - O_{2,2,3}^V$$
$$K_7^{V(8,1),2} = \frac{ip_3(-p_1^2 + p_2^2)}{E(p)}$$

Operator 136

$$O_8^{V(8,1),2} = O_{1,1,4}^V - O_{2,2,4}^V$$
$$K_8^{V(8,1),2} = p_1^2 - p_2^2$$

(8, 1) Block 3: Trace = 0, Mixed Symmetry, C = -1

Operator 137

$$O_1^{V(8,1),3} = O_{1,2,2}^V - \frac{1}{2}O_{1,3,3}^V - \frac{1}{2}O_{1,4,4}^V$$
$$K_1^{V(8,1),3} = \frac{-ip_1(m_N^2 + p_1^2 + 3p_2^2)}{(2E(p))}$$

Operator 138

$$O_2^{V(8,1),3} = O_{2,1,1}^V - \frac{1}{2}O_{2,3,3}^V - \frac{1}{2}O_{2,4,4}^V$$
$$K_2^{V(8,1),3} = \frac{-ip_2(m_N^2 + 3p_1^2 + p_2^2)}{(2E(p))}$$

Operator 139

$$O_3^{V(8,1),3} = O_{3,1,1}^V + O_{3,2,2}^V - 2O_{3,4,4}^V$$
$$K_3^{V(8,1),3} = \frac{-ip_3(2m_N^2 + 3p_1^2 + 3p_2^2 + 2p_3^2)}{E(p)}$$

Operator 140

$$O_4^{V(8,1),3} = O_{4,1,1}^V + O_{4,2,2}^V - 2O_{4,3,3}^V$$
$$K_4^{V(8,1),3} = \frac{(p_1^2 + p_2^2 - 2p_3^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N - p_3) + (E(p) + p}{(4E(p)(E(p) + m_N))}$$

Operator 141

$$O_5^{V(8,1),3} = O_{1,3,3}^V - O_{1,4,4}^V$$
$$K_5^{V(8,1),3} = \frac{-ip_1(m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{E(p)}$$

Operator 142

$$O_6^{V(8,1),3} = O_{2,3,3}^V - O_{2,4,4}^V$$
$$K_6^{V(8,1),3} = \frac{-ip_2(m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{E(p)}$$

Operator 143

$$O_7^{V(8,1),3} = O_{3,1,1}^V - O_{3,2,2}^V$$
$$K_7^{V(8,1),3} = \frac{ip_3(-p_1^2 + p_2^2)}{E(p)}$$

Operator 144

$$O_8^{V(8,1),3} = O_{4,1,1}^V - O_{4,2,2}^V$$
$$K_8^{V(8,1),3} = \frac{(p_1^2 - p_2^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N - p_3) + (E(p) + p_3)(E(}{(4E(p)(E(p) + m_N))}$$

(8, 2) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 145

$$O_1^{V(8,2),1} = O^V_{2,3,4} + O^V_{2,4,3} - O^V_{3,2,4} - O^V_{4,2,3}$$
$$K_1^{V(8,2),1} = 0$$

Operator 146

$$O_2^{V(8,2),1} = O^V_{1,3,4} + O^V_{1,4,3} - O^V_{3,1,4} - O^V_{4,1,3}$$
$$K_2^{V(8,2),1} = 0$$

Operator 147

$$O_3^{V(8,2),1} = O^V_{1,4,2} + O^V_{2,4,1} - O^V_{4,1,2} - O^V_{4,2,1}$$
$$K_3^{V(8,2),1} = 0$$

Operator 148

$$O_4^{V(8,2),1} = O^V_{1,3,2} + O^V_{2,3,1} - O^V_{3,1,2} - O^V_{3,2,1}$$
$$K_4^{V(8,2),1} = 0$$

Operator 149

$$O_5^{V(8,2),1} = O^V_{2,3,4} - O^V_{2,4,3} - O^V_{3,2,4} - 2O^V_{3,4,2} + O^V_{4,2,3} + 2O^V_{4,3,2}$$
$$K_5^{V(8,2),1} = 0$$

Operator 150

$$O_6^{V(8,2),1} = O^V_{1,3,4} - O^V_{1,4,3} - O^V_{3,1,4} - 2O^V_{3,4,1} + O^V_{4,1,3} + 2O^V_{4,3,1}$$
$$K_6^{V(8,2),1} = 0$$

Operator 151

$$O_7^{V(8,2),1} = O^V_{1,2,4} + \frac{1}{2}O^V_{1,4,2} - O^V_{2,1,4} - \frac{1}{2}O^V_{2,4,1} - \frac{1}{2}O^V_{4,1,2} + \frac{1}{2}O^V_{4,2,1}$$
$$K_7^{V(8,2),1} = 0$$

Operator 152

$$O_8^{V(8,2),1} = O^V_{1,2,3} + \frac{1}{2}O^V_{1,3,2} - O^V_{2,1,3} - \frac{1}{2}O^V_{2,3,1} - \frac{1}{2}O^V_{3,1,2} + \frac{1}{2}O^V_{3,2,1}$$
$$K_8^{V(8,2),1} = 0$$

(8, 2) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 153

$$O_1^{V(8,2),2} = O^V_{2,3,4} + O^V_{2,4,3} - O^V_{3,4,2} - O^V_{4,3,2}$$
$$K_1^{V(8,2),2} = 0$$

Operator 154

$$O_2^{V(8,2),2} = O^V_{1,3,4} + O^V_{1,4,3} - O^V_{3,4,1} - O^V_{4,3,1}$$
$$K_2^{V(8,2),2} = 0$$

Operator 155

$$O_3^{V(8,2),2} = O^V_{1,2,4} + O^V_{2,1,4} - O^V_{4,1,2} - O^V_{4,2,1}$$
$$K_3^{V(8,2),2} = 0$$

Operator 156

$$O_4^{V(8,2),2} = O^V_{1,2,3} + O^V_{2,1,3} - O^V_{3,1,2} - O^V_{3,2,1}$$
$$K_4^{V(8,2),2} = 0$$

Operator 157

$$O_5^{V(8,2),2} = O^V_{2,3,4} - O^V_{2,4,3} + 2O^V_{3,2,4} + O^V_{3,4,2} - 2O^V_{4,2,3} - O^V_{4,3,2}$$
$$K_5^{V(8,2),2} = 0$$

Operator 158

$$O_6^{V(8,2),2} = O^V_{1,3,4} - O^V_{1,4,3} + 2O^V_{3,1,4} + O^V_{3,4,1} - 2O^V_{4,1,3} - O^V_{4,3,1}$$
$$K_6^{V(8,2),2} = 0$$

Operator 159

$$O_7^{V(8,2),2} = O^V_{1,2,4} + 2O^V_{1,4,2} - O^V_{2,1,4} - 2O^V_{2,4,1} + O^V_{4,1,2} - O^V_{4,2,1}$$
$$K_7^{V(8,2),2} = 0$$

Operator 160

$$O_8^{V(8,2),2} = O^V_{1,2,3} + 2O^V_{1,3,2} - O^V_{2,1,3} - 2O^V_{2,3,1} + O^V_{3,1,2} - O^V_{3,2,1}$$
$$K_8^{V(8,2),2} = 0$$

X=A, n=3

(4, 1) Block 1: Trace = 0, Antisymmetric, C = -1

Operator 161

$$O_1^{A(4,1),1} = O^A_{2,3,4} - O^A_{2,4,3} - O^A_{3,2,4} + O^A_{3,4,2} + O^A_{4,2,3} - O^A_{4,3,2}$$
$$K_1^{A(4,1),1} = 0$$

Operator 162

$$O_2^{A(4,1),1} = O^A_{1,3,4} - O^A_{1,4,3} - O^A_{3,1,4} + O^A_{3,4,1} + O^A_{4,1,3} - O^A_{4,3,1}$$
$$K_2^{A(4,1),1} = 0$$

Operator 163

$$O_3^{A(4,1),1} = O^A_{1,2,4} - O^A_{1,4,2} - O^A_{2,1,4} + O^A_{2,4,1} + O^A_{4,1,2} - O^A_{4,2,1}$$
$$K_3^{A(4,1),1} = 0$$

Operator 164

$$O_4^{A(4,1),1} = O^A_{1,2,3} - O^A_{1,3,2} - O^A_{2,1,3} + O^A_{2,3,1} + O^A_{3,1,2} - O^A_{3,2,1}$$
$$K_4^{A(4,1),1} = 0$$

(4, 3) Block 1: Trace = 0, Symmetric, C = 1

Operator 165

$$O_1^{A(4,3),1} = O^A_{2,3,4} + O^A_{2,4,3} + O^A_{3,2,4} + O^A_{3,4,2} + O^A_{4,2,3} + O^A_{4,3,2}$$
$$K_1^{A(4,3),1} = \frac{-p_2(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 + 5E(p)p_3^2 + 2m_N p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 166

$$O_2^{A(4,3),1} = O^A_{1,3,4} + O^A_{1,4,3} + O^A_{3,1,4} + O^A_{3,4,1} + O^A_{4,1,3} + O^A_{4,3,1}$$
$$K_2^{A(4,3),1} = \frac{-p_1(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 + 5E(p)p_3^2 + 2m_N p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 167

$$O_3^{A(4,3),1} = O^A_{1,2,4} + O^A_{1,4,2} + O^A_{2,1,4} + O^A_{2,4,1} + O^A_{4,1,2} + O^A_{4,2,1}$$
$$K_3^{A(4,3),1} = \frac{-2p_1 p_2 p_3(3E(p) + m_N)}{(E(p)(E(p) + m_N))}$$

Operator 168

$$O_4^{A(4,3),1} = O^A_{1,2,3} + O^A_{1,3,2} + O^A_{2,1,3} + O^A_{2,3,1} + O^A_{3,1,2} + O^A_{3,2,1}$$
$$K_4^{A(4,3),1} = \frac{2ip_1 p_2(E(p)m_N + m_N^2 + 3p_3^2)}{(E(p)(E(p) + m_N))}$$

(4, 4) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 169

$$O_1^{A(4,4),1} = O^A_{2,2,1} + O^A_{3,3,1} + O^A_{4,4,1}$$
$$K_1^{A(4,4),1} = \frac{-ip_1^3 p_3}{(E(p)(E(p)+m_N))}$$

Operator 170

$$O_2^{A(4,4),1} = O^A_{1,1,2} + O^A_{3,3,2} + O^A_{4,4,2}$$
$$K_2^{A(4,4),1} = \frac{-ip_2^3 p_3}{(E(p)(E(p)+m_N))}$$

Operator 171

$$O_3^{A(4,4),1} = O^A_{1,1,3} + O^A_{2,2,3} + O^A_{4,4,3}$$
$$K_3^{A(4,4),1} = \frac{ip_3^2(-E(p)m_N - m_N^2 - p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 172

$$O_4^{A(4,4),1} = O^A_{1,1,4} + O^A_{2,2,4} + O^A_{3,3,4}$$
$$K_4^{A(4,4),1} = \frac{-p_3(E(p)^2 + E(p)m_N)}{(E(p)+m_N)}$$

(4, 4) Block 2: Trace = 0, Mixed Symmetry, C = 1

Operator 173

$$O_1^{A(4,4),2} = O^A_{1,2,2} + O^A_{1,3,3} + O^A_{1,4,4}$$
$$K_1^{A(4,4),2} = \frac{-ip_1p_3(m_N^2 + p_1^2)}{(E(p)(E(p) + m_N))}$$

Operator 174

$$O_2^{A(4,4),2} = O^A_{2,1,1} + O^A_{2,3,3} + O^A_{2,4,4}$$
$$K_2^{A(4,4),2} = \frac{-ip_2p_3(m_N^2 + p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 175

$$O_3^{A(4,4),2} = O^A_{3,1,1} + O^A_{3,2,2} + O^A_{3,4,4}$$
$$K_3^{A(4,4),2} = \frac{-i(m_N^2 + p_3^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N - p_3) + (E(p) + p_3)}{(4E(p)(E(p) + m_N))}$$

Operator 176

$$O_4^{A(4,4),2} = O^A_{4,1,1} + O^A_{4,2,2} + O^A_{4,3,3}$$
$$K_4^{A(4,4),2} = \frac{-p_3(p_1^2 + p_2^2 + p_3^2)}{E(p)}$$

(4, 4) Block 3: Trace = 0, Symmetric, C = 1

Operator 177

$$O_1^{A(4,4),3} = O^A_{1,1,1}$$
$$K_1^{A(4,4),3} = \frac{ip_1^3 p_3}{(E(p)(E(p)+m_N))}$$

Operator 178

$$O_2^{A(4,4),3} = O^A_{2,2,2}$$
$$K_2^{A(4,4),3} = \frac{ip_2^3 p_3}{(E(p)(E(p)+m_N))}$$

Operator 179

$$O_3^{A(4,4),3} = O^A_{3,3,3}$$
$$K_3^{A(4,4),3} = \frac{ip_3^2(E(p)m_N + m_N^2 + p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 180

$$O_4^{A(4,4),3} = O^A_{4,4,4}$$
$$K_4^{A(4,4),3} = E(p)p_3$$

(4, 4) Block 4: Trace = 0, Mixed Symmetry, C = mixed

Operator 181

$$O_1^{A(4,4),4} = O^A_{2,1,2} + O^A_{3,1,3} + O^A_{4,1,4}$$
$$K_1^{A(4,4),4} = \frac{-ip_1^3 p_3}{(E(p)(E(p)+m_N))}$$

Operator 182

$$O_2^{A(4,4),4} = O^A_{1,2,1} + O^A_{3,2,3} + O^A_{4,2,4}$$
$$K_2^{A(4,4),4} = \frac{-ip_2^3 p_3}{(E(p)(E(p)+m_N))}$$

Operator 183

$$O_3^{A(4,4),4} = O^A_{1,3,1} + O^A_{2,3,2} + O^A_{4,3,4}$$
$$K_3^{A(4,4),4} = \frac{ip_3^2(-E(p)m_N - m_N^2 - p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 184

$$O_4^{A(4,4),4} = O^A_{1,4,1} + O^A_{2,4,2} + O^A_{3,4,3}$$
$$K_4^{A(4,4),4} = \frac{-p_3(E(p)^2 + E(p)m_N)}{(E(p)+m_N)}$$

(8, 1) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 185

$$O_1^{A(8,1),1} = O^A_{2,3,4} - O^A_{2,4,3} - O^A_{3,4,2} + O^A_{4,3,2}$$
$$K_1^{A(8,1),1} = \frac{p_2(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 + 2m_N p_1^2 + 2m_N p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 186

$$O_2^{A(8,1),1} = O^A_{1,3,4} - O^A_{1,4,3} - O^A_{3,4,1} + O^A_{4,3,1}$$
$$K_2^{A(8,1),1} = \frac{p_1(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 + 2m_N p_1^2 + 2m_N p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 187

$$O_3^{A(8,1),1} = O^A_{1,2,4} - O^A_{2,1,4} - O^A_{4,1,2} + O^A_{4,2,1}$$
$$K_3^{A(8,1),1} = 0$$

Operator 188

$$O_4^{A(8,1),1} = O^A_{1,2,3} - O^A_{2,1,3} - O^A_{3,1,2} + O^A_{3,2,1}$$
$$K_4^{A(8,1),1} = 0$$

Operator 189

$$O_5^{A(8,1),1} = O^A_{2,3,4} + O^A_{2,4,3} - 2O^A_{3,2,4} + O^A_{3,4,2} - 2O^A_{4,2,3} + O^A_{4,3,2}$$
$$K_5^{A(8,1),1} = \frac{p_2(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p) + m_N))}$$

Operator 190

$$O_6^{A(8,1),1} = O^A_{1,3,4} + O^A_{1,4,3} - 2O^A_{3,1,4} + O^A_{3,4,1} - 2O^A_{4,1,3} + O^A_{4,3,1}$$
$$K_6^{A(8,1),1} = \frac{p_1(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p) + m_N))}$$

Operator 191

$$O_7^{A(8,1),1} = O^A_{1,2,4} - 2O^A_{1,4,2} + O^A_{2,1,4} - 2O^A_{2,4,1} + O^A_{4,1,2} + O^A_{4,2,1}$$
$$K_7^{A(8,1),1} = \frac{-2m_N p_1 p_2 p_3}{(E(p)(E(p) + m_N))}$$

Operator 192

$$O_8^{A(8,1),1} = O^A_{1,2,3} - 2O^A_{1,3,2} + O^A_{2,1,3} - 2O^A_{2,3,1} + O^A_{3,1,2} + O^A_{3,2,1}$$
$$K_8^{A(8,1),1} = \frac{2im_N p_1 p_2}{E(p)}$$

(8, 1) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 193

$$O_1^{A(8,1),2} = O^A_{2,3,4} - O^A_{2,4,3} + O^A_{3,2,4} - O^A_{4,2,3}$$
$$K_1^{A(8,1),2} = \frac{p_2(-E(p)^3 - E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 2m_N p_1^2 - 2m_N p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 194

$$O_2^{A(8,1),2} = O^A_{1,3,4} - O^A_{1,4,3} + O^A_{3,1,4} - O^A_{4,1,3}$$
$$K_2^{A(8,1),2} = \frac{p_1(-E(p)^3 - E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 2m_N p_1^2 - 2m_N p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 195

$$O_3^{A(8,1),2} = O^A_{1,4,2} - O^A_{2,4,1} + O^A_{4,1,2} - O^A_{4,2,1}$$
$$K_3^{A(8,1),2} = 0$$

Operator 196

$$O_4^{A(8,1),2} = O^A_{1,3,2} - O^A_{2,3,1} + O^A_{3,1,2} - O^A_{3,2,1}$$
$$K_4^{A(8,1),2} = 0$$

Operator 197

$$O_5^{A(8,1),2} = O^A_{2,3,4} + O^A_{2,4,3} + O^A_{3,2,4} - 2O^A_{3,4,2} + O^A_{4,2,3} - 2O^A_{4,3,2}$$
$$K_5^{A(8,1),2} = \frac{p_2(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p) + m_N))}$$

Operator 198

$$O_6^{A(8,1),2} = O^A_{1,3,4} + O^A_{1,4,3} + O^A_{3,1,4} - 2O^A_{3,4,1} + O^A_{4,1,3} - 2O^A_{4,3,1}$$
$$K_6^{A(8,1),2} = \frac{p_1(E(p)^3 + 2E(p)^2 m_N + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N p_3^2)}{(2E(p)(E(p) + m_N))}$$

Operator 199

$$O_7^{A(8,1),2} = O^A_{1,2,4} - \frac{1}{2}O^A_{1,4,2} + O^A_{2,1,4} - \frac{1}{2}O^A_{2,4,1} - \frac{1}{2}O^A_{4,1,2} - \frac{1}{2}O^A_{4,2,1}$$
$$K_7^{A(8,1),2} = \frac{m_N p_1 p_2 p_3}{(E(p)(E(p) + m_N))}$$

Operator 200

$$O_8^{A(8,1),2} = O^A_{1,2,3} - \frac{1}{2}O^A_{1,3,2} + O^A_{2,1,3} - \frac{1}{2}O^A_{2,3,1} - \frac{1}{2}O^A_{3,1,2} - \frac{1}{2}O^A_{3,2,1}$$
$$K_8^{A(8,1),2} = \frac{-im_N p_1 p_2}{E(p)}$$

(8, 2) Block 1: Trace = 0, Mixed Symmetry, C = 1

Operator 201

$$O_1^{A(8,2),1} = O_{1,3,3}^A - O_{1,4,4}^A$$
$$K_1^{A(8,2),1} = \frac{ip_1p_3(m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 202

$$O_2^{A(8,2),1} = O_{2,3,3}^A - O_{2,4,4}^A$$
$$K_2^{A(8,2),1} = \frac{ip_2p_3(m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 203

$$O_3^{A(8,2),1} = O_{3,1,1}^A - O_{3,2,2}^A$$
$$K_3^{A(8,2),1} = \frac{i(p_1^2 - p_2^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N - p_3) + (E(p) + p_3)(E($$
$$(4E(p)(E(p) + m_N))$$

Operator 204

$$O_4^{A(8,2),1} = O_{4,1,1}^A - O_{4,2,2}^A$$
$$K_4^{A(8,2),1} = \frac{p_3(-p_1^2 + p_2^2)}{E(p)}$$

Operator 205

$$O_5^{A(8,2),1} = O_{1,2,2}^A - \frac{1}{2}O_{1,3,3}^A - \frac{1}{2}O_{1,4,4}^A$$
$$K_5^{A(8,2),1} = \frac{ip_1p_3(m_N^2 + p_1^2 + 3p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 206

$$O_6^{A(8,2),1} = O_{2,1,1}^A - \frac{1}{2}O_{2,3,3}^A - \frac{1}{2}O_{2,4,4}^A$$
$$K_6^{A(8,2),1} = \frac{ip_2p_3(m_N^2 + 3p_1^2 + p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 207

$$O_7^{A(8,2),1} = O_{3,1,1}^A + O_{3,2,2}^A - 2O_{3,4,4}^A$$
$$K_7^{A(8,2),1} = \frac{i(2m_N^2 + 3p_1^2 + 3p_2^2 + 2p_3^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N - p_3) +}{(4E(p)(E(p) + m_N))}$$

Operator 208

$$O_8^{A(8,2),1} = O_{4,1,1}^A + O_{4,2,2}^A - 2O_{4,3,3}^A$$
$$K_8^{A(8,2),1} = \frac{p_3(-p_1^2 - p_2^2 + 2p_3^2)}{E(p)}$$

(8, 2) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 209

$$O_1^{A(8,2),2} = O_{3,3,1}^A - O_{4,4,1}^A$$
$$K_1^{A(8,2),2} = \frac{ip_1p_3(2E(p)m_N + 2m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 210

$$O_2^{A(8,2),2} = O_{3,3,2}^A - O_{4,4,2}^A$$
$$K_2^{A(8,2),2} = \frac{ip_2p_3(2E(p)m_N + 2m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 211

$$O_3^{A(8,2),2} = O_{1,1,3}^A - O_{2,2,3}^A$$
$$K_3^{A(8,2),2} = \frac{ip_3^2(p_1^2 - p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 212

$$O_4^{A(8,2),2} = O_{1,1,4}^A - O_{2,2,4}^A$$
$$K_4^{A(8,2),2} = \frac{p_3(-p_1^2 + p_2^2)}{(E(p) + m_N)}$$

Operator 213

$$O_5^{A(8,2),2} = O_{2,2,1}^A - \frac{1}{2}O_{3,3,1}^A - \frac{1}{2}O_{4,4,1}^A$$
$$K_5^{A(8,2),2} = \frac{ip_1p_3(p_1^2 + 3p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 214

$$O_6^{A(8,2),2} = O_{1,1,2}^A - \frac{1}{2}O_{3,3,2}^A - \frac{1}{2}O_{4,4,2}^A$$
$$K_6^{A(8,2),2} = \frac{ip_2p_3(3p_1^2 + p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 215

$$O_7^{A(8,2),2} = O_{1,1,3}^A + O_{2,2,3}^A - 2O_{4,4,3}^A$$
$$K_7^{A(8,2),2} = \frac{ip_3^2(2E(p)m_N + 2m_N^2 + 3p_1^2 + 3p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 216

$$O_8^{A(8,2),2} = O_{1,1,4}^A + O_{2,2,4}^A - 2O_{3,3,4}^A$$
$$K_8^{A(8,2),2} = \frac{p_3(2E(p)m_N + 2m_N^2 - p_1^2 - p_2^2 + 2p_3^2)}{(E(p) + m_N)}$$

(8, 2) Block 3: Trace = 0, Mixed Symmetry, C = mixed

Operator 217

$$O_1^{A(8,2),3} = O_{3,1,3}^A - O_{4,1,4}^A$$
$$K_1^{A(8,2),3} = \frac{ip_1p_3(2E(p)m_N + 2m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 218

$$O_2^{A(8,2),3} = O_{3,2,3}^A - O_{4,2,4}^A$$
$$K_2^{A(8,2),3} = \frac{ip_2p_3(2E(p)m_N + 2m_N^2 + p_1^2 + p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 219

$$O_3^{A(8,2),3} = O_{1,3,1}^A - O_{2,3,2}^A$$
$$K_3^{A(8,2),3} = \frac{ip_3^2(p_1^2 - p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 220

$$O_4^{A(8,2),3} = O_{1,4,1}^A - O_{2,4,2}^A$$
$$K_4^{A(8,2),3} = \frac{p_3(-p_1^2 + p_2^2)}{(E(p) + m_N)}$$

Operator 221

$$O_5^{A(8,2),3} = O_{2,1,2}^A - \frac{1}{2}O_{3,1,3}^A - \frac{1}{2}O_{4,1,4}^A$$
$$K_5^{A(8,2),3} = \frac{ip_1p_3(p_1^2 + 3p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 222

$$O_6^{A(8,2),3} = O_{1,2,1}^A - \frac{1}{2}O_{3,2,3}^A - \frac{1}{2}O_{4,2,4}^A$$
$$K_6^{A(8,2),3} = \frac{ip_2p_3(3p_1^2 + p_2^2)}{(2E(p)(E(p) + m_N))}$$

Operator 223

$$O_7^{A(8,2),3} = O_{1,3,1}^A + O_{2,3,2}^A - 2O_{4,3,4}^A$$
$$K_7^{A(8,2),3} = \frac{ip_3^2(2E(p)m_N + 2m_N^2 + 3p_1^2 + 3p_2^2 + 2p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 224

$$O_8^{A(8,2),3} = O_{1,4,1}^A + O_{2,4,2}^A - 2O_{3,4,3}^A$$
$$K_8^{A(8,2),3} = \frac{p_3(2E(p)m_N + 2m_N^2 - p_1^2 - p_2^2 + 2p_3^2)}{(E(p) + m_N)}$$

X=T, n=4

(1, 1) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 225

$O_1^{T(1,1),1} = O^T_{1,2,1,2} + O^T_{1,3,1,3} + O^T_{1,4,1,4} + O^T_{2,1,2,1} + O^T_{2,3,2,3} + O^T_{2,4,2,4} + O^T_{3,1,3,1} + O^T_{3,2,3,2} + O^T_{3,4,3,4} + O^T_{4,1,4,1} + O^T_{4,2}$

$K_1^{T(1,1),1} = 0$

(1, 1) Block 2: Trace = 0, Mixed Symmetry, C = -1

Operator 226

$O_1^{T(1,1),2} = O^T_{1,1,2,2} + O^T_{1,1,3,3} + O^T_{1,1,4,4} + O^T_{2,2,1,1} + O^T_{2,2,3,3} + O^T_{2,2,4,4} + O^T_{3,3,1,1} + O^T_{3,3,2,2} + O^T_{3,3,4,4} + O^T_{4,4,1,1} + O^T_{4,4}$

$K_1^{T(1,1),2} = 0$

(1, 1) Block 3: Trace = 0, Symmetric, C = -1

Operator 227

$O_1^{T(1,1),3} = O^T_{1,1,1,1} + O^T_{2,2,2,2} + O^T_{3,3,3,3} + O^T_{4,4,4,4}$

$K_1^{T(1,1),3} = 0$

(1, 1) Block 4: Trace = 0, Mixed Symmetry, C = mixed

Operator 228

$O_1^{T(1,1),4} = O^T_{1,2,2,1} + O^T_{1,3,3,1} + O^T_{1,4,4,1} + O^T_{2,1,1,2} + O^T_{2,3,3,2} + O^T_{2,4,4,2} + O^T_{3,1,1,3} + O^T_{3,2,2,3} + O^T_{3,4,4,3} + O^T_{4,1,1,4} + O^T_{4,2}$

$K_1^{T(1,1),4} = 0$

(1, 2) Block 1: Trace = 0, Symmetric, C = -1

Operator 229

$$O_1^{T(1,2),1} = O^T_{1,2,3,4} + O^T_{1,2,4,3} + O^T_{1,3,2,4} + O^T_{1,3,4,2} + O^T_{1,4,2,3} + O^T_{1,4,3,2} + O^T_{2,1,3,4} + O^T_{2,1,4,3} + O^T_{2,3,1,4} + O^T_{2,3,4,1} + O^T_{2,4}$$

$$K_1^{T(1,2),1} = 0$$

(1, 4) Block 1: Trace = 0, Antisymmetric, C = 1

Operator 230

$$O_1^{T(1,4),1} = O^T_{1,2,3,4} - O^T_{1,2,4,3} - O^T_{1,3,2,4} + O^T_{1,3,4,2} + O^T_{1,4,2,3} - O^T_{1,4,3,2} - O^T_{2,1,3,4} + O^T_{2,1,4,3} + O^T_{2,3,1,4} - O^T_{2,3,4,1} - O^T_{2,4}$$

$$K_1^{T(1,4),1} = 0$$

(2, 1) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 231

$$O_1^{T(2,1),1} = O^T_{1,2,2,1} - \frac{1}{2}O^T_{1,3,3,1} - \frac{1}{2}O^T_{1,4,4,1} + O^T_{2,1,1,2} - \frac{1}{2}O^T_{2,3,3,2} - \frac{1}{2}O^T_{2,4,4,2} - \frac{1}{2}O^T_{3,1,1,3} - \frac{1}{2}O^T_{3,2,2,3} + O^T_{3,4,4,3} - \frac{1}{2}O$$

$$K_1^{T(2,1),1} = 0$$

Operator 232

$$O_2^{T(2,1),1} = O^T_{1,3,3,1} - O^T_{1,4,4,1} - O^T_{2,3,3,2} + O^T_{2,4,4,2} + O^T_{3,1,1,3} - O^T_{3,2,2,3} - O^T_{4,1,1,4} + O^T_{4,2,2,4}$$

$$K_2^{T(2,1),1} = 0$$

(2, 1) Block 2: Trace = 0, Mixed Symmetry, C = -1

Operator 233

$$O_1^{T(2,1),2} = O^T_{1,1,2,2} - \frac{1}{2}O^T_{1,1,3,3} - \frac{1}{2}O^T_{1,1,4,4} + O^T_{2,2,1,1} - \frac{1}{2}O^T_{2,2,3,3} - \frac{1}{2}O^T_{2,2,4,4} - \frac{1}{2}O^T_{3,3,1,1} - \frac{1}{2}O^T_{3,3,2,2} + O^T_{3,3,4,4} - \frac{1}{2}O$$

$$K_1^{T(2,1),2} = 0$$

Operator 234

$$O_2^{T(2,1),2} = O^T_{1,1,3,3} - O^T_{1,1,4,4} - O^T_{2,2,3,3} + O^T_{2,2,4,4} + O^T_{3,3,1,1} - O^T_{3,3,2,2} - O^T_{4,4,1,1} + O^T_{4,4,2,2}$$

$$K_2^{T(2,1),2} = 0$$

(2, 1) Block 3: Trace = 0, Mixed Symmetry, C = mixed

Operator 235

$$O_1^{T(2,1),3} = O^T_{1,2,1,2} - \frac{1}{2}O^T_{1,3,1,3} - \frac{1}{2}O^T_{1,4,1,4} + O^T_{2,1,2,1} - \frac{1}{2}O^T_{2,3,2,3} - \frac{1}{2}O^T_{2,4,2,4} - \frac{1}{2}O^T_{3,1,3,1} - \frac{1}{2}O^T_{3,2,3,2} + O^T_{3,4,3,4} - \frac{1}{2}O$$

$$K_1^{T(2,1),3} = 0$$

Operator 236

$$O_2^{T(2,1),3} = O^T_{1,3,1,3} - O^T_{1,4,1,4} - O^T_{2,3,2,3} + O^T_{2,4,2,4} + O^T_{3,1,3,1} - O^T_{3,2,3,2} - O^T_{4,1,4,1} + O^T_{4,2,4,2}$$

$$K_2^{T(2,1),3} = 0$$

(2, 2) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 237

$$O_1^{T(2,2),1} = O^T_{1,2,3,4} + O^T_{1,2,4,3} + O^T_{1,3,4,2} + O^T_{2,1,3,4} + O^T_{2,1,4,3} + O^T_{2,4,3,1} + O^T_{3,1,2,4} + O^T_{3,4,1,2} + O^T_{3,4,2,1} + O^T_{4,2,1,3} + O^T_{4,3}$$

$$K_1^{T(2,2),1} = 0$$

Operator 238

$$O_2^{T(2,2),1} = O^T_{1,3,2,4} + O^T_{1,4,2,3} + O^T_{1,4,3,2} + O^T_{2,3,1,4} + O^T_{2,3,4,1} + O^T_{2,4,1,3} + O^T_{3,1,4,2} + O^T_{3,2,1,4} + O^T_{3,2,4,1} + O^T_{4,1,2,3} + O^T_{4,1}$$

$$K_2^{T(2,2),1} = 0$$

(2, 2) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 239

$$O_1^{T(2,2),2} = O^T_{1,2,3,4} + O^T_{1,3,2,4} + O^T_{1,4,2,3} + O^T_{2,1,4,3} + O^T_{2,3,1,4} + O^T_{2,4,1,3} + O^T_{3,1,4,2} + O^T_{3,2,4,1} + O^T_{3,4,1,2} + O^T_{4,1,3,2} + O^T_{4,2}$$

$$K_1^{T(2,2),2} = 0$$

Operator 240

$$O_2^{T(2,2),2} = O^T_{1,2,4,3} + O^T_{1,3,4,2} + O^T_{1,4,3,2} + O^T_{2,1,3,4} + O^T_{2,3,4,1} + O^T_{2,4,3,1} + O^T_{3,1,2,4} + O^T_{3,2,1,4} + O^T_{3,4,2,1} + O^T_{4,1,2,3} + O^T_{4,2}$$

$$K_2^{T(2,2),2} = 0$$

(3, 1) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 241

$$O_1^{T(3,1),1} = O^T_{1,4,4,1} + O^T_{2,4,4,2} + O^T_{3,4,4,3} - O^T_{4,1,1,4} - O^T_{4,2,2,4} - O^T_{4,3,3,4}$$
$$K_1^{T(3,1),1} = 0$$

Operator 242

$$O_2^{T(3,1),1} = O^T_{1,3,3,1} + \frac{33}{100}O^T_{1,4,4,1} + O^T_{2,3,3,2} + \frac{33}{100}O^T_{2,4,4,2} - O^T_{3,1,1,3} - O^T_{3,2,2,3} - \frac{67}{100}O^T_{3,4,4,3} - \frac{33}{100}O^T_{4,1,1,4} - \frac{33}{100}O^T_{4,2}$$
$$K_2^{T(3,1),1} = 0$$

Operator 243

$$O_3^{T(3,1),1} = O^T_{1,2,2,1} + \frac{1}{2}O^T_{1,3,3,1} + \frac{1}{2}O^T_{1,4,4,1} - O^T_{2,1,1,2} - \frac{1}{2}O^T_{2,3,3,2} - \frac{1}{2}O^T_{2,4,4,2} - \frac{1}{2}O^T_{3,1,1,3} + \frac{1}{2}O^T_{3,2,2,3} - \frac{1}{2}O^T_{4,1,1,4} + \frac{1}{2}$$
$$K_3^{T(3,1),1} = 0$$

(3, 1) Block 2: Trace = 0, Mixed Symmetry, C = -1

Operator 244

$$O_1^{T(3,1),2} = O^T_{1,1,2,2} + O^T_{1,1,3,3} - 2O^T_{1,1,4,4} + O^T_{2,2,1,1} + O^T_{2,2,3,3} - 2O^T_{2,2,4,4} + O^T_{3,3,1,1} + O^T_{3,3,2,2} - 2O^T_{3,3,4,4}$$
$$K_1^{T(3,1),2} = 0$$

Operator 245

$$O_2^{T(3,1),2} = O^T_{1,1,2,2} - \frac{5}{4}O^T_{1,1,3,3} + \frac{1}{4}O^T_{1,1,4,4} + O^T_{2,2,1,1} - \frac{5}{4}O^T_{2,2,3,3} + \frac{1}{4}O^T_{2,2,4,4} + \frac{1}{4}O^T_{3,3,1,1} + \frac{1}{4}O^T_{3,3,2,2} - \frac{1}{2}O^T_{3,3,4,4} + \frac{3}{4}$$
$$K_2^{T(3,1),2} = 0$$

Operator 246

$$O_3^{T(3,1),2} = O^T_{1,1,2,2} - \frac{1}{2}O^T_{1,1,3,3} - \frac{1}{2}O^T_{1,1,4,4} - O^T_{2,2,1,1} + \frac{1}{2}O^T_{2,2,3,3} + \frac{1}{2}O^T_{2,2,4,4} - \frac{3}{2}O^T_{3,3,1,1} + \frac{3}{2}O^T_{3,3,2,2} - \frac{3}{2}O^T_{4,4,1,1} + \frac{3}{2}$$
$$K_3^{T(3,1),2} = 0$$

(3, 1) Block 3: Trace = 0, Mixed Symmetry, C = -1

Operator 247

$$O_1^{T(3,1),3} = O^T_{1,1,2,2} + O^T_{1,1,3,3} + O^T_{2,2,1,1} + O^T_{2,2,3,3} + O^T_{3,3,1,1} + O^T_{3,3,2,2} - 2O^T_{4,4,1,1} - 2O^T_{4,4,2,2} - 2O^T_{4,4,3,3}$$
$$K_1^{T(3,1),3} = 0$$

Operator 248

$$O_2^{T(3,1),3} = O^T_{1,1,2,2} + \frac{1}{4}O^T_{1,1,3,3} + \frac{3}{4}O^T_{1,1,4,4} + O^T_{2,2,1,1} + \frac{1}{4}O^T_{2,2,3,3} + \frac{3}{4}O^T_{2,2,4,4} - \frac{5}{4}O^T_{3,3,1,1} - \frac{5}{4}O^T_{3,3,2,2} - \frac{3}{2}O^T_{3,3,4,4} + \frac{1}{4}$$
$$K_2^{T(3,1),3} = 0$$

Operator 249

$$O_3^{T(3,1),3} = O^T_{1,1,2,2} + \frac{3}{2}O^T_{1,1,3,3} + \frac{3}{2}O^T_{1,1,4,4} - O^T_{2,2,1,1} - \frac{3}{2}O^T_{2,2,3,3} - \frac{3}{2}O^T_{2,2,4,4} + \frac{1}{2}O^T_{3,3,1,1} - \frac{1}{2}O^T_{3,3,2,2} + \frac{1}{2}O^T_{4,4,1,1} - \frac{1}{2}$$
$$K_3^{T(3,1),3} = 0$$

(3, 1) Block 4: Trace = 0, Mixed Symmetry, C = -1

Operator 250

$$O_1^{T(3,1),4} = O^T_{1,1,4,4} + O^T_{2,2,4,4} + O^T_{3,3,4,4} - O^T_{4,4,1,1} - O^T_{4,4,2,2} - O^T_{4,4,3,3}$$
$$K_1^{T(3,1),4} = 0$$

Operator 251

$$O_2^{T(3,1),4} = O^T_{1,1,3,3} + \frac{33}{100}O^T_{1,1,4,4} + O^T_{2,2,3,3} + \frac{33}{100}O^T_{2,2,4,4} - O^T_{3,3,1,1} - O^T_{3,3,2,2} - \frac{67}{100}O^T_{3,3,4,4} - \frac{33}{100}O^T_{4,4,1,1} - \frac{33}{100}O^T_{4,4}$$
$$K_2^{T(3,1),4} = 0$$

Operator 252

$$O_3^{T(3,1),4} = O^T_{1,1,2,2} + \frac{1}{2}O^T_{1,1,3,3} + \frac{1}{2}O^T_{1,1,4,4} - O^T_{2,2,1,1} - \frac{1}{2}O^T_{2,2,3,3} - \frac{1}{2}O^T_{2,2,4,4} - \frac{1}{2}O^T_{3,3,1,1} + \frac{1}{2}O^T_{3,3,2,2} - \frac{1}{2}O^T_{4,4,1,1} + \frac{1}{2}$$
$$K_3^{T(3,1),4} = 0$$

(3, 1) Block 5: Trace = 0, Mixed Symmetry, C = mixed

Operator 253

$$O_1^{T(3,1),5} = O^T_{1,4,1,4} + O^T_{2,4,2,4} + O^T_{3,4,3,4} - O^T_{4,1,4,1} - O^T_{4,2,4,2} - O^T_{4,3,4,3}$$
$$K_1^{T(3,1),5} = 0$$

Operator 254

$$O_2^{T(3,1),5} = O^T_{1,3,1,3} + \frac{33}{100}O^T_{1,4,1,4} + O^T_{2,3,2,3} + \frac{33}{100}O^T_{2,4,2,4} - O^T_{3,1,3,1} - O^T_{3,2,3,2} - \frac{67}{100}O^T_{3,4,3,4} - \frac{33}{100}O^T_{4,1,4,1} - \frac{33}{100}O^T_{4,2}$$
$$K_2^{T(3,1),5} = 0$$

Operator 255

$$O_3^{T(3,1),5} = O^T_{1,2,1,2} + \frac{1}{2}O^T_{1,3,1,3} + \frac{1}{2}O^T_{1,4,1,4} - O^T_{2,1,2,1} - \frac{1}{2}O^T_{2,3,2,3} - \frac{1}{2}O^T_{2,4,2,4} - \frac{1}{2}O^T_{3,1,3,1} + \frac{1}{2}O^T_{3,2,3,2} - \frac{1}{2}O^T_{4,1,4,1} + \frac{1}{2}$$
$$K_3^{T(3,1),5} = 0$$

(3, 1) Block 6: Trace = 0, Mixed Symmetry, C = mixed

Operator 256

$$O_1^{T(3,1),6} = O^T_{1,2,1,2} + O^T_{1,3,1,3} + O^T_{2,1,2,1} + O^T_{2,3,2,3} + O^T_{3,1,3,1} + O^T_{3,2,3,2} - 2O^T_{4,1,4,1} - 2O^T_{4,2,4,2} - 2O^T_{4,3,4,3}$$
$$K_1^{T(3,1),6} = 0$$

Operator 257

$$O_2^{T(3,1),6} = O^T_{1,2,1,2} + \frac{1}{4}O^T_{1,3,1,3} + \frac{3}{4}O^T_{1,4,1,4} + O^T_{2,1,2,1} + \frac{1}{4}O^T_{2,3,2,3} + \frac{3}{4}O^T_{2,4,2,4} - \frac{5}{4}O^T_{3,1,3,1} - \frac{5}{4}O^T_{3,2,3,2} - \frac{3}{2}O^T_{3,4,3,4} + \frac{1}{4}$$
$$K_2^{T(3,1),6} = 0$$

Operator 258

$$O_3^{T(3,1),6} = O^T_{1,2,1,2} + \frac{3}{2}O^T_{1,3,1,3} + \frac{3}{2}O^T_{1,4,1,4} - O^T_{2,1,2,1} - \frac{3}{2}O^T_{2,3,2,3} - \frac{3}{2}O^T_{2,4,2,4} + \frac{1}{2}O^T_{3,1,3,1} - \frac{1}{2}O^T_{3,2,3,2} + \frac{1}{2}O^T_{4,1,4,1} - \frac{1}{2}$$
$$K_3^{T(3,1),6} = 0$$

(3, 1) Block 7: Trace = 0, Symmetric, C = -1

Operator 259

$$O_1^{T(3,1),7} = O^T_{1,1,1,1} + O^T_{2,2,2,2} + O^T_{3,3,3,3} - 3O^T_{4,4,4,4}$$
$$K_1^{T(3,1),7} = 0$$

Operator 260

$$O_2^{T(3,1),7} = O^T_{1,1,1,1} + O^T_{2,2,2,2} - 2O^T_{3,3,3,3}$$
$$K_2^{T(3,1),7} = 0$$

Operator 261

$$O_3^{T(3,1),7} = O^T_{1,1,1,1} - O^T_{2,2,2,2}$$
$$K_3^{T(3,1),7} = 0$$

(3, 2) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 262

$$O_1^{T(3,2),1} = O^T_{1,2,3,4} + O^T_{1,3,2,4} + O^T_{2,1,3,4} + O^T_{2,3,1,4} + O^T_{3,1,2,4} + O^T_{3,2,1,4} - O^T_{4,1,2,3} - O^T_{4,1,3,2} - O^T_{4,2,1,3} - O^T_{4,2,3,1} - O^T_{4,3}$$

$$K_1^{T(3,2),1} = \frac{2ip_3(p_1^2 - p_2^2)}{E(p)}$$

Operator 263

$$O_2^{T(3,2),1} = O^T_{1,2,3,4} + 3O^T_{1,2,4,3} + O^T_{1,3,2,4} + 3O^T_{1,4,2,3} + O^T_{2,1,3,4} + 3O^T_{2,1,4,3} + O^T_{2,3,1,4} + 3O^T_{2,4,1,3} - 2O^T_{3,1,2,4} - 3O^T_{3,1,4,2}$$

$$K_2^{T(3,2),1} = \frac{2ip_3(4E(p)p_1^2 - 4E(p)p_2^2 + m_N p_1^2 - m_N p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 264

$$O_3^{T(3,2),1} = O^T_{1,2,3,4} + O^T_{1,2,4,3} + O^T_{1,3,2,4} + 2O^T_{1,3,4,2} + O^T_{1,4,2,3} + 2O^T_{1,4,3,2} - O^T_{2,1,3,4} - O^T_{2,1,4,3} - O^T_{2,3,1,4} - 2O^T_{2,3,4,1} - $$

$$K_3^{T(3,2),1} = \frac{2ip_3(-E(p)^3 - E(p)m_N^2 - 3E(p)p_1^2 - 3E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 3m_N p_1^2 - 3m_N p_2^2 - 2m_N p_3^2)}{(E(p)(E(p) + m_N))}$$

(3, 2) Block 2: Trace = 0, Mixed Symmetry, C = 1

Operator 265

$$O_1^{T(3,2),2} = O^T_{1,2,3,4} - O^T_{1,2,4,3} + O^T_{1,3,2,4} - O^T_{1,3,4,2} + O^T_{2,1,3,4} - O^T_{2,1,4,3} + O^T_{2,3,1,4} - O^T_{2,3,4,1} + O^T_{3,1,2,4} - O^T_{3,1,4,2} + O^T_{3,2}$$

$$K_1^{T(3,2),2} = 0$$

Operator 266

$$O_2^{T(3,2),2} = O^T_{1,2,3,4} - O^T_{1,2,4,3} - \frac{1}{2}O^T_{1,3,2,4} + \frac{1}{2}O^T_{1,3,4,2} - \frac{3}{2}O^T_{1,4,2,3} + \frac{3}{2}O^T_{1,4,3,2} + O^T_{2,1,3,4} - O^T_{2,1,4,3} - \frac{1}{2}O^T_{2,3,1,4} + \frac{1}{2}O^T_{2,}$$

$$K_2^{T(3,2),2} = 0$$

Operator 267

$$O_3^{T(3,2),2} = -\frac{1}{2}O^T_{1,3,2,4} + \frac{1}{2}O^T_{1,3,4,2} - \frac{1}{2}O^T_{1,4,2,3} + \frac{1}{2}O^T_{1,4,3,2} + \frac{1}{2}O^T_{2,3,1,4} - \frac{1}{2}O^T_{2,3,4,1} + \frac{1}{2}O^T_{2,4,1,3} - \frac{1}{2}O^T_{2,4,3,1} - \frac{1}{2}O^T_{3,1,2,}$$

$$K_3^{T(3,2),2} = 0$$

(3, 2) Block 3: Trace = 0, Mixed Symmetry, C = mixed

Operator 268

$$O_1^{T(3,2),3} = O^T_{1,2,3,4} + O^T_{1,3,2,4} - O^T_{1,4,2,3} - O^T_{1,4,3,2} + O^T_{2,1,3,4} + O^T_{2,3,1,4} - O^T_{2,4,1,3} - O^T_{2,4,3,1} + O^T_{3,1,2,4} + O^T_{3,2,1,4} - O^T_{3,4}$$

$$K_1^{T(3,2),3} = \frac{2ip_3(-p_1^2 + p_2^2)}{E(p)}$$

Operator 269

$$O_2^{T(3,2),3} = O^T_{1,2,3,4} + 3O^T_{1,2,4,3} - 2O^T_{1,3,2,4} - 3O^T_{1,3,4,2} + 2O^T_{1,4,2,3} - O^T_{1,4,3,2} + O^T_{2,1,3,4} + 3O^T_{2,1,4,3} - 2O^T_{2,3,1,4} - 3O^T_{2,3,4,}$$

$$K_2^{T(3,2),3} = \frac{2ip_3(-4E(p)p_1^2 + 4E(p)p_2^2 - m_N p_1^2 + m_N p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 270

$$O_3^{T(3,2),3} = O^T_{1,2,3,4} + O^T_{1,2,4,3} - O^T_{1,3,4,2} - O^T_{1,4,3,2} - O^T_{2,1,3,4} - O^T_{2,1,4,3} + O^T_{2,3,4,1} + O^T_{2,4,3,1} - O^T_{3,1,2,4} - 2O^T_{3,1,4,2} + O^T_{3}$$

$$K_3^{T(3,2),3} = \frac{2ip_3(-E(p)^3 - E(p)m_N^2 - 3E(p)p_1^2 - 3E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 - 3m_N p_1^2 - 3m_N p_2^2 - 2m_N p_3^2)}{(E(p)(E(p) + m_N))}$$

(3, 3) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 271

$$O_1^{T(3,3),1} = O^T_{1,2,2,1} - O^T_{1,3,3,1} - O^T_{2,1,1,2} + O^T_{2,3,3,2} + O^T_{3,1,1,3} - O^T_{3,2,2,3}$$
$$K_1^{T(3,3),1} = \frac{2p_1p_2(-E(p)m_N - m_N^2 - p_1^2 - p_2^2 + 2p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 272

$$O_2^{T(3,3),1} = O^T_{1,2,2,1} + \frac{1}{2}O^T_{1,3,3,1} - \frac{3}{2}O^T_{1,4,4,1} - O^T_{2,1,1,2} - \frac{1}{2}O^T_{2,3,3,2} + \frac{3}{2}O^T_{2,4,4,2} - \frac{1}{2}O^T_{3,1,1,3} + \frac{1}{2}O^T_{3,2,2,3} + \frac{3}{2}O^T_{4,1,1,4} - \frac{3}{2}$$
$$K_2^{T(3,3),1} = \frac{-8p_1p_2(E(p)^2 + E(p)m_N)}{(E(p)(E(p)+m_N))}$$

Operator 273

$$O_3^{T(3,3),1} = O^T_{1,3,3,1} - O^T_{1,4,4,1} + O^T_{2,3,3,2} - O^T_{2,4,4,2} - O^T_{3,1,1,3} - O^T_{3,2,2,3} + 2O^T_{3,4,4,3} + O^T_{4,1,1,4} + O^T_{4,2,2,4} - 2O^T_{4,3,3,4}$$
$$K_3^{T(3,3),1} = 0$$

(3, 3) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 274

$$O_1^{T(3,3),2} = O^T_{1,2,1,2} - O^T_{1,3,1,3} - O^T_{2,1,2,1} + O^T_{2,3,2,3} + O^T_{3,1,3,1} - O^T_{3,2,3,2}$$
$$K_1^{T(3,3),2} = \frac{2p_1p_2(-E(p)m_N - m_N^2 - p_1^2 - p_2^2 + 2p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 275

$$O_2^{T(3,3),2} = O^T_{1,2,1,2} + \frac{1}{2}O^T_{1,3,1,3} - \frac{3}{2}O^T_{1,4,1,4} - O^T_{2,1,2,1} - \frac{1}{2}O^T_{2,3,2,3} + \frac{3}{2}O^T_{2,4,2,4} - \frac{1}{2}O^T_{3,1,3,1} + \frac{1}{2}O^T_{3,2,3,2} + \frac{3}{2}O^T_{4,1,4,1} - \frac{3}{2}$$
$$K_2^{T(3,3),2} = \frac{-8p_1p_2(E(p)^2 + E(p)m_N)}{(E(p)(E(p)+m_N))}$$

Operator 276

$$O_3^{T(3,3),2} = O^T_{1,3,1,3} - O^T_{1,4,1,4} + O^T_{2,3,2,3} - O^T_{2,4,2,4} - O^T_{3,1,3,1} - O^T_{3,2,3,2} + 2O^T_{3,4,3,4} + O^T_{4,1,4,1} + O^T_{4,2,4,2} - 2O^T_{4,3,4,3}$$
$$K_3^{T(3,3),2} = 0$$

(3, 3) Block 3: Trace = 0, Mixed Symmetry, C = -1

Operator 277

$$O_1^{T(3,3),3} = O^T_{1,1,2,2} - O^T_{1,1,3,3} - O^T_{2,2,1,1} + O^T_{2,2,3,3} + O^T_{3,3,1,1} - O^T_{3,3,2,2}$$
$$K_1^{T(3,3),3} = 0$$

Operator 278

$$O_2^{T(3,3),3} = O^T_{1,1,2,2} + \frac{1}{2}O^T_{1,1,3,3} - \frac{3}{2}O^T_{1,1,4,4} - O^T_{2,2,1,1} - \frac{1}{2}O^T_{2,2,3,3} + \frac{3}{2}O^T_{2,2,4,4} - \frac{1}{2}O^T_{3,3,1,1} + \frac{1}{2}O^T_{3,3,2,2} + \frac{3}{2}O^T_{4,4,1,1} - \frac{3}{2}$$
$$K_2^{T(3,3),3} = 0$$

Operator 279

$$O_3^{T(3,3),3} = O^T_{1,1,3,3} - O^T_{1,1,4,4} + O^T_{2,2,3,3} - O^T_{2,2,4,4} - O^T_{3,3,1,1} - O^T_{3,3,2,2} + 2O^T_{3,3,4,4} + O^T_{4,4,1,1} + O^T_{4,4,2,2} - 2O^T_{4,4,3,3}$$
$$K_3^{T(3,3),3} = 0$$

(3, 4) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 280

$$O_1^{T(3,4),1} = O^T_{1,2,3,4} - O^T_{1,3,2,4} - O^T_{1,4,2,3} + O^T_{1,4,3,2} - O^T_{2,1,3,4} + O^T_{2,3,1,4} + O^T_{2,4,1,3} - O^T_{2,4,3,1} + O^T_{3,1,2,4} - O^T_{3,2,1,4} - O^T_{3,4}$$

$$K_1^{T(3,4),1} = -2im_N p_3$$

Operator 281

$$O_2^{T(3,4),1} = O^T_{1,2,3,4} - 3O^T_{1,2,4,3} + 2O^T_{1,3,2,4} - 3O^T_{1,3,4,2} + 2O^T_{1,4,2,3} + O^T_{1,4,3,2} - O^T_{2,1,3,4} + 3O^T_{2,1,4,3} - 2O^T_{2,3,1,4} + 3O^T_{2,3,4,}$$

$$K_2^{T(3,4),1} = \frac{2ip_3(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 - m_N p_1^2 - m_N p_2^2 + 2m_N p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 282

$$O_3^{T(3,4),1} = O^T_{1,2,3,4} - O^T_{1,2,4,3} - O^T_{1,3,4,2} + O^T_{1,4,3,2} + O^T_{2,1,3,4} - O^T_{2,1,4,3} - O^T_{2,3,4,1} + O^T_{2,4,3,1} - O^T_{3,1,2,4} + 2O^T_{3,1,4,2} - O^T_3$$

$$K_3^{T(3,4),1} = \frac{2im_N p_3(p_1^2 - p_2^2)}{(E(p)(E(p) + m_N))}$$

(3, 4) Block 2: Trace = 0, Mixed Symmetry, C = -1

Operator 283

$$O_1^{T(3,4),2} = O^T_{1,2,3,4} + O^T_{1,2,4,3} - O^T_{1,3,2,4} - O^T_{1,3,4,2} - O^T_{2,1,3,4} - O^T_{2,1,4,3} + O^T_{2,3,1,4} + O^T_{2,3,4,1} + O^T_{3,1,2,4} + O^T_{3,1,4,2} - O^T_{3,2}$$

$$K_1^{T(3,4),2} = -4im_N p_3$$

Operator 284

$$O_2^{T(3,4),2} = O^T_{1,2,3,4} + O^T_{1,2,4,3} + \frac{1}{2}O^T_{1,3,2,4} + \frac{1}{2}O^T_{1,3,4,2} - \frac{3}{2}O^T_{1,4,2,3} - \frac{3}{2}O^T_{1,4,3,2} - O^T_{2,1,3,4} - O^T_{2,1,4,3} - \frac{1}{2}O^T_{2,3,1,4} - \frac{1}{2}O^T_{2,}$$

$$K_2^{T(3,4),2} = \frac{2ip_3(-E(p)^3 - E(p)m_N^2 + E(p)p_1^2 + E(p)p_2^2 + E(p)p_3^2 - 2m_N^3 + m_N p_1^2 + m_N p_2^2 - 2m_N p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 285

$$O_3^{T(3,4),2} = \frac{1}{2}O^T_{1,3,2,4} + \frac{1}{2}O^T_{1,3,4,2} - \frac{1}{2}O^T_{1,4,2,3} - \frac{1}{2}O^T_{1,4,3,2} + \frac{1}{2}O^T_{2,3,1,4} + \frac{1}{2}O^T_{2,3,4,1} - \frac{1}{2}O^T_{2,4,1,3} - \frac{1}{2}O^T_{2,4,3,1} - \frac{1}{2}O^T_{3,1,2,4} -$$

$$K_3^{T(3,4),2} = \frac{2im_N p_3(-p_1^2 + p_2^2)}{(E(p)(E(p) + m_N))}$$

(3, 4) Block 3: Trace = 0, Mixed Symmetry, C = mixed

Operator 286

$$O_1^{T(3,4),3} = O^T_{1,2,3,4} - O^T_{1,3,2,4} - O^T_{2,1,3,4} + O^T_{2,3,1,4} + O^T_{3,1,2,4} - O^T_{3,2,1,4} + O^T_{4,1,2,3} - O^T_{4,1,3,2} - O^T_{4,2,1,3} + O^T_{4,2,3,1} + O^T_{4,}$$

$$K_1^{T(3,4),3} = -2im_N p_3$$

Operator 287

$$O_2^{T(3,4),3} = O^T_{1,2,3,4} - 3O^T_{1,2,4,3} - O^T_{1,3,2,4} + 3O^T_{1,4,2,3} - O^T_{2,1,3,4} + 3O^T_{2,1,4,3} + O^T_{2,3,1,4} - 3O^T_{2,4,1,3} - 2O^T_{3,1,2,4} + 3O^T_{3,1,4,2}$$

$$K_2^{T(3,4),3} = \frac{2ip_3(E(p)^3 + E(p)m_N^2 - E(p)p_1^2 - E(p)p_2^2 - E(p)p_3^2 + 2m_N^3 - m_N p_1^2 - m_N p_2^2 + 2m_N p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 288

$$O_3^{T(3,4),3} = O^T_{1,2,3,4} - O^T_{1,2,4,3} - O^T_{1,3,2,4} + 2O^T_{1,3,4,2} + O^T_{1,4,2,3} - 2O^T_{1,4,3,2} + O^T_{2,1,3,4} - O^T_{2,1,4,3} - O^T_{2,3,1,4} + 2O^T_{2,3,4,1} + O$$

$$K_3^{T(3,4),3} = \frac{2im_N p_3(-p_1^2 + p_2^2)}{(E(p)(E(p) + m_N))}$$

(6, 1) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 289

$$O_1^{T(6,1),1} = O^T_{1,1,2,1} - O^T_{2,2,1,2}$$
$$K_1^{T(6,1),1} = 0$$

Operator 290

$$O_2^{T(6,1),1} = O^T_{1,1,3,1} - O^T_{3,3,1,3}$$
$$K_2^{T(6,1),1} = 0$$

Operator 291

$$O_3^{T(6,1),1} = O^T_{2,2,3,2} - O^T_{3,3,2,3}$$
$$K_3^{T(6,1),1} = 0$$

Operator 292

$$O_4^{T(6,1),1} = O^T_{1,1,4,1} - O^T_{4,4,1,4}$$
$$K_4^{T(6,1),1} = 0$$

Operator 293

$$O_5^{T(6,1),1} = O^T_{2,2,4,2} - O^T_{4,4,2,4}$$
$$K_5^{T(6,1),1} = 0$$

Operator 294

$$O_6^{T(6,1),1} = O^T_{3,3,4,3} - O^T_{4,4,3,4}$$
$$K_6^{T(6,1),1} = 0$$

(6, 1) Block 2: Trace = 0, Mixed Symmetry, C = -1

Operator 295

$$O_1^{T(6,1),2} = O_{1,2,1,1}^T - O_{2,1,2,2}^T$$

$$K_1^{T(6,1),2} = \frac{-(p_1^2+p_2^2)(m_N(E(p)+m_N-p_3)+m_N(E(p)+m_N+p_3)+(E(p)-p_3)(E(p)+m_N+p_3)+(E(p)+p_3)(E}{(4E(p)(E(p)+m_N))}$$

Operator 296

$$O_2^{T(6,1),2} = O_{1,3,1,1}^T - O_{3,1,3,3}^T$$

$$K_2^{T(6,1),2} = \frac{-p_2p_3(p_1^2+p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 297

$$O_3^{T(6,1),2} = O_{2,3,2,2}^T - O_{3,2,3,3}^T$$

$$K_3^{T(6,1),2} = \frac{p_1p_3(p_2^2+p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 298

$$O_4^{T(6,1),2} = O_{1,4,1,1}^T - O_{4,1,4,4}^T$$

$$K_4^{T(6,1),2} = \frac{ip_2(m_N^2+p_2^2+p_3^2)}{E(p)}$$

Operator 299

$$O_5^{T(6,1),2} = O_{2,4,2,2}^T - O_{4,2,4,4}^T$$

$$K_5^{T(6,1),2} = \frac{-ip_1(m_N^2+p_1^2+p_3^2)}{E(p)}$$

Operator 300

$$O_6^{T(6,1),2} = O_{3,4,3,3}^T - O_{4,3,4,4}^T$$

$$K_6^{T(6,1),2} = 0$$

(6, 1) Block 3: Trace = 0, Mixed Symmetry, C = mixed

Operator 301

$$O_1^{T(6,1),3} = O^T_{1,1,1,2} + \frac{1}{2}O^T_{1,1,1,3} - O^T_{2,2,2,1}$$
$$K_1^{T(6,1),3} = 0$$

Operator 302

$$O_2^{T(6,1),3} = O^T_{1,1,1,2} + 14O^T_{1,1,1,3} + 9O^T_{1,1,1,4} + 8O^T_{2,2,2,1} - 18O^T_{3,3,3,1} - 9O^T_{3,3,3,2} - 9O^T_{3,3,3,4}$$
$$K_2^{T(6,1),3} = 0$$

Operator 303

$$O_3^{T(6,1),3} = O^T_{1,1,1,2} - \frac{23}{25}O^T_{1,1,1,3} - \frac{19}{20}O^T_{1,1,1,4} + \frac{27}{50}O^T_{2,2,2,1} + \frac{497}{100}O^T_{2,2,2,3} + \frac{249}{100}O^T_{2,2,2,4} + \frac{189}{100}O^T_{3,3,3,1} - \frac{403}{100}O^T_{3,3,3,2} -$$
$$K_3^{T(6,1),3} = 0$$

Operator 304

$$O_4^{T(6,1),3} = O^T_{1,1,1,2} - \frac{207}{50}O^T_{1,1,1,3} + 16.79000000000000O^T_{1,1,1,4} - \frac{107}{100}O^T_{2,2,2,1} - \frac{389}{100}O^T_{2,2,2,3} + \frac{151}{50}O^T_{2,2,2,4} + \frac{619}{100}O^T_{3,3,3,1}$$
$$K_4^{T(6,1),3} = 0$$

Operator 305

$$O_5^{T(6,1),3} = O^T_{1,1,1,2} - \frac{167}{100}O^T_{1,1,1,3} + \frac{159}{50}O^T_{1,1,1,4} + \frac{17}{100}O^T_{2,2,2,1} - \frac{71}{50}O^T_{2,2,2,3} - \frac{121}{20}O^T_{2,2,2,4} + \frac{289}{100}O^T_{3,3,3,1} - \frac{189}{50}O^T_{3,3,3,2}$$
$$K_5^{T(6,1),3} = 0$$

Operator 306

$$O_6^{T(6,1),3} = O^T_{1,1,1,2} + \frac{57}{100}O^T_{1,1,1,3} + \frac{11}{100}O^T_{1,1,1,4} + \frac{129}{100}O^T_{2,2,2,1} + \frac{59}{100}O^T_{2,2,2,3} - \frac{23}{100}O^T_{2,2,2,4} + \frac{21}{100}O^T_{3,3,3,1} + \frac{41}{100}O^T_{3,3,3,}$$
$$K_6^{T(6,1),3} = 0$$

(6, 1) Block 4: Trace = 0, Mixed Symmetry, C = mixed

Operator 307

$$O_1^{T(6,1),4} = O^T_{1,1,1,2} - O^T_{2,2,2,1} - \frac{1}{2}O^T_{3,3,3,2}$$
$$K_1^{T(6,1),4} = 0$$

Operator 308

$$O_2^{T(6,1),4} = O^T_{1,1,1,3} - O^T_{3,3,3,1}$$
$$K_2^{T(6,1),4} = 0$$

Operator 309

$$O_3^{T(6,1),4} = O^T_{1,1,1,2} - O^T_{2,2,2,1} - \frac{9}{2}O^T_{2,2,2,3} + 4O^T_{3,3,3,2}$$
$$K_3^{T(6,1),4} = 0$$

Operator 310

$$O_4^{T(6,1),4} = O^T_{1,1,1,2} + \frac{17}{5}O^T_{1,1,1,4} + \frac{7}{10}O^T_{2,2,2,1} + \frac{3}{5}O^T_{2,2,2,3} + \frac{3}{5}O^T_{3,3,3,2} - \frac{17}{5}O^T_{4,4,4,1}$$
$$K_4^{T(6,1),4} = 0$$

Operator 311

$$O_5^{T(6,1),4} = O^T_{1,1,1,2} - \frac{27}{100}O^T_{1,1,1,4} + \frac{9}{10}O^T_{2,2,2,1} + \frac{19}{100}O^T_{2,2,2,3} + \frac{102}{25}O^T_{2,2,2,4} + \frac{19}{100}O^T_{3,3,3,2} + \frac{27}{100}O^T_{4,4,4,1} - \frac{102}{25}O^T_{4,4,4,2}$$
$$K_5^{T(6,1),4} = 0$$

Operator 312

$$O_6^{T(6,1),4} = O^T_{1,1,1,2} - \frac{29}{100}O^T_{1,1,1,4} + \frac{83}{100}O^T_{2,2,2,1} + \frac{7}{20}O^T_{2,2,2,3} - \frac{1}{4}O^T_{2,2,2,4} + \frac{7}{20}O^T_{3,3,3,2} - \frac{14}{5}O^T_{3,3,3,4} + \frac{29}{100}O^T_{4,4,4,1} + \frac{1}{4}$$
$$K_6^{T(6,1),4} = 0$$

(6, 1) Block 5: Trace = 0, Mixed Symmetry, C = mixed

Operator 313

$$O_1^{T(6,1),5} = O^T_{1,1,1,2} - O^T_{2,2,2,1} + \frac{1}{2}O^T_{2,2,2,3}$$
$$K_1^{T(6,1),5} = 0$$

Operator 314

$$O_2^{T(6,1),5} = O^T_{1,1,1,2} + \frac{18}{5}O^T_{1,1,1,3} + \frac{4}{5}O^T_{2,2,2,1} - \frac{2}{5}O^T_{2,2,2,3} - \frac{18}{5}O^T_{3,3,3,1} - \frac{9}{5}O^T_{3,3,3,4}$$
$$K_2^{T(6,1),5} = 0$$

Operator 315

$$O_3^{T(6,1),5} = O^T_{1,1,1,2} + \frac{18}{5}O^T_{1,1,1,3} - \frac{82}{5}O^T_{2,2,2,1} - \frac{174}{5}O^T_{2,2,2,3} - \frac{18}{5}O^T_{3,3,3,1} + \frac{172}{5}O^T_{3,3,3,2} + \frac{77}{5}O^T_{3,3,3,4}$$
$$K_3^{T(6,1),5} = 0$$

Operator 316

$$O_4^{T(6,1),5} = O^T_{1,1,1,2} - \frac{9}{100}O^T_{1,1,1,3} - \frac{307}{50}O^T_{1,1,1,4} + \frac{71}{50}O^T_{2,2,2,1} + \frac{21}{25}O^T_{2,2,2,3} + \frac{9}{100}O^T_{3,3,3,1} + \frac{61}{50}O^T_{3,3,3,2} + \frac{13}{20}O^T_{3,3,3,4} +$$
$$K_4^{T(6,1),5} = 0$$

Operator 317

$$O_5^{T(6,1),5} = O^T_{1,1,1,2} - \frac{29}{100}O^T_{1,1,1,3} + \frac{19}{20}O^T_{1,1,1,4} + \frac{53}{100}O^T_{2,2,2,1} - \frac{93}{100}O^T_{2,2,2,3} - \frac{371}{100}O^T_{2,2,2,4} + \frac{29}{100}O^T_{3,3,3,1} - \frac{59}{100}O^T_{3,3,3,2}$$
$$K_5^{T(6,1),5} = 0$$

Operator 318

$$O_6^{T(6,1),5} = O^T_{1,1,1,2} + \frac{47}{100}O^T_{1,1,1,3} + \frac{21}{50}O^T_{1,1,1,4} + \frac{34}{25}O^T_{2,2,2,1} + \frac{73}{100}O^T_{2,2,2,3} + \frac{1}{20}O^T_{2,2,2,4} - \frac{47}{100}O^T_{3,3,3,1} - \frac{3}{100}O^T_{3,3,3,2} +$$
$$K_6^{T(6,1),5} = 0$$

(6, 1) Block 6: Trace = 0, Mixed Symmetry, C = -1

Operator 319

$$O_1^{T(6,1),6} = O_{1,2,2,2}^T - O_{2,1,1,1}^T$$

$$K_1^{T(6,1),6} = \frac{-(p_1^2+p_2^2)(m_N(E(p)+m_N-p_3)+m_N(E(p)+m_N+p_3)+(E(p)-p_3)(E(p)+m_N+p_3)+(E(p)+p_3)(E}{(4E(p)(E(p)+m_N))}$$

Operator 320

$$O_2^{T(6,1),6} = O_{1,3,3,3}^T - O_{3,1,1,1}^T$$

$$K_2^{T(6,1),6} = \frac{-p_2p_3(p_1^2+p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 321

$$O_3^{T(6,1),6} = O_{2,3,3,3}^T - O_{3,2,2,2}^T$$

$$K_3^{T(6,1),6} = \frac{p_1p_3(p_2^2+p_3^2)}{(E(p)(E(p)+m_N))}$$

Operator 322

$$O_4^{T(6,1),6} = O_{1,4,4,4}^T - O_{4,1,1,1}^T$$

$$K_4^{T(6,1),6} = \frac{ip_2(m_N^2+p_2^2+p_3^2)}{E(p)}$$

Operator 323

$$O_5^{T(6,1),6} = O_{2,4,4,4}^T - O_{4,2,2,2}^T$$

$$K_5^{T(6,1),6} = \frac{-ip_1(m_N^2+p_1^2+p_3^2)}{E(p)}$$

Operator 324

$$O_6^{T(6,1),6} = O_{3,4,4,4}^T - O_{4,3,3,3}^T$$

$$K_6^{T(6,1),6} = 0$$

(6, 1) Block 7: Trace = 0, Mixed Symmetry, C = mixed

Operator 325

$$O_1^{T(6,1),7} = O^T_{1,1,2,1} - O^T_{2,2,1,2} - \frac{1}{2}O^T_{3,3,2,3}$$
$$K_1^{T(6,1),7} = 0$$

Operator 326

$$O_2^{T(6,1),7} = O^T_{1,1,3,1} - O^T_{3,3,1,3}$$
$$K_2^{T(6,1),7} = 0$$

Operator 327

$$O_3^{T(6,1),7} = O^T_{1,1,2,1} - O^T_{2,2,1,2} - \frac{9}{2}O^T_{2,2,3,2} + 4O^T_{3,3,2,3}$$
$$K_3^{T(6,1),7} = 0$$

Operator 328

$$O_4^{T(6,1),7} = O^T_{1,1,2,1} + \frac{17}{5}O^T_{1,1,4,1} + \frac{7}{10}O^T_{2,2,1,2} + \frac{3}{5}O^T_{2,2,3,2} + \frac{3}{5}O^T_{3,3,2,3} - \frac{17}{5}O^T_{4,4,1,4}$$
$$K_4^{T(6,1),7} = 0$$

Operator 329

$$O_5^{T(6,1),7} = O^T_{1,1,2,1} - \frac{27}{100}O^T_{1,1,4,1} + \frac{9}{10}O^T_{2,2,1,2} + \frac{19}{100}O^T_{2,2,3,2} + \frac{102}{25}O^T_{2,2,4,2} + \frac{19}{100}O^T_{3,3,2,3} + \frac{27}{100}O^T_{4,4,1,4} - \frac{102}{25}O^T_{4,4,2,4}$$
$$K_5^{T(6,1),7} = 0$$

Operator 330

$$O_6^{T(6,1),7} = O^T_{1,1,2,1} - \frac{29}{100}O^T_{1,1,4,1} + \frac{83}{100}O^T_{2,2,1,2} + \frac{7}{20}O^T_{2,2,3,2} - \frac{1}{4}O^T_{2,2,4,2} + \frac{7}{20}O^T_{3,3,2,3} - \frac{14}{5}O^T_{3,3,4,3} + \frac{29}{100}O^T_{4,4,1,4} + \frac{1}{4}$$
$$K_6^{T(6,1),7} = 0$$

(6, 1) Block 8: Trace = 0, Mixed Symmetry, C = mixed

Operator 331

$$O_1^{T(6,1),8} = O^T_{1,1,1,2} - O^T_{2,2,2,1} - \frac{1}{2}O^T_{3,3,3,1}$$
$$K_1^{T(6,1),8} = 0$$

Operator 332

$$O_2^{T(6,1),8} = O^T_{1,1,1,2} - \frac{9}{4}O^T_{1,1,1,3} + \frac{13}{100}O^T_{2,2,2,1} - \frac{28}{25}O^T_{2,2,2,3} + \frac{7}{4}O^T_{3,3,3,1} + \frac{28}{25}O^T_{4,4,4,1} - \frac{28}{25}O^T_{4,4,4,3}$$
$$K_2^{T(6,1),8} = 0$$

Operator 333

$$O_3^{T(6,1),8} = O^T_{1,1,1,2} + \frac{7}{2}O^T_{1,1,1,3} + \frac{37}{20}O^T_{2,2,2,1} - \frac{149}{20}O^T_{2,2,2,3} - \frac{17}{10}O^T_{3,3,3,1} + \frac{46}{5}O^T_{3,3,3,2} - \frac{7}{4}O^T_{4,4,4,1} + \frac{23}{5}O^T_{4,4,4,2} - \frac{57}{20}O^T_{4}$$
$$K_3^{T(6,1),8} = 0$$

Operator 334

$$O_4^{T(6,1),8} = O^T_{1,1,1,2} - \frac{289}{50}O^T_{1,1,1,3} + \frac{464}{25}O^T_{1,1,1,4} - \frac{93}{100}O^T_{2,2,2,1} + \frac{69}{25}O^T_{2,2,2,3} + \frac{232}{25}O^T_{2,2,2,4} + \frac{387}{100}O^T_{3,3,3,1} + \frac{363}{100}O^T_{3,3,3,2}$$
$$K_4^{T(6,1),8} = 0$$

Operator 335

$$O_5^{T(6,1),8} = O^T_{1,1,1,2} + \frac{873}{50}O^T_{1,1,1,3} - \frac{89}{50}O^T_{1,1,1,4} + \frac{151}{25}O^T_{2,2,2,1} - 22.8100000000000O^T_{2,2,2,3} + 38.3300000000000O^T_{2,2,2,4} -$$
$$K_5^{T(6,1),8} = 0$$

Operator 336

$$O_6^{T(6,1),8} = O^T_{1,1,1,2} + \frac{17}{100}O^T_{1,1,1,3} + \frac{31}{100}O^T_{1,1,1,4} + \frac{39}{50}O^T_{2,2,2,1} + \frac{8}{25}O^T_{2,2,2,3} + \frac{69}{100}O^T_{2,2,2,4} + \frac{11}{25}O^T_{3,3,3,1} + \frac{23}{50}O^T_{3,3,3,2} -$$
$$K_6^{T(6,1),8} = 0$$

(6, 1) Block 9: Trace = 0, Mixed Symmetry, C = mixed

Operator 337

$$O_1^{T(6,1),9} = O^T_{1,1,1,2} - O^T_{2,2,2,1}$$
$$K_1^{T(6,1),9} = 0$$

Operator 338

$$O_2^{T(6,1),9} = O^T_{1,1,1,3} - O^T_{3,3,3,1}$$
$$K_2^{T(6,1),9} = 0$$

Operator 339

$$O_3^{T(6,1),9} = O^T_{2,2,2,3} - O^T_{3,3,3,2}$$
$$K_3^{T(6,1),9} = 0$$

Operator 340

$$O_4^{T(6,1),9} = O^T_{1,1,1,4} - O^T_{4,4,4,1}$$
$$K_4^{T(6,1),9} = 0$$

Operator 341

$$O_5^{T(6,1),9} = O^T_{2,2,2,4} - O^T_{4,4,4,2}$$
$$K_5^{T(6,1),9} = 0$$

Operator 342

$$O_6^{T(6,1),9} = O^T_{3,3,3,4} - O^T_{4,4,4,3}$$
$$K_6^{T(6,1),9} = 0$$

(6, 1) Block 10: Trace = 0, Mixed Symmetry, C = mixed

Operator 343

$$O_1^{T(6,1),10} = O^T_{1,1,2,1} + \frac{1}{2}O^T_{1,1,3,1} - O^T_{2,2,1,2}$$
$$K_1^{T(6,1),10} = 0$$

Operator 344

$$O_2^{T(6,1),10} = O^T_{1,1,2,1} + 14O^T_{1,1,3,1} + 9O^T_{1,1,4,1} + 8O^T_{2,2,1,2} - 18O^T_{3,3,1,3} - 9O^T_{3,3,2,3} - 9O^T_{3,3,4,3}$$
$$K_2^{T(6,1),10} = 0$$

Operator 345

$$O_3^{T(6,1),10} = O^T_{1,1,2,1} - \frac{23}{25}O^T_{1,1,3,1} - \frac{19}{20}O^T_{1,1,4,1} + \frac{27}{50}O^T_{2,2,1,2} + \frac{497}{100}O^T_{2,2,3,2} + \frac{249}{100}O^T_{2,2,4,2} + \frac{189}{100}O^T_{3,3,1,3} - \frac{403}{100}O^T_{3,3,2,3} -$$
$$K_3^{T(6,1),10} = 0$$

Operator 346

$$O_4^{T(6,1),10} = O^T_{1,1,2,1} - \frac{207}{50}O^T_{1,1,3,1} + 16.79000000000000O^T_{1,1,4,1} - \frac{107}{100}O^T_{2,2,1,2} - \frac{389}{100}O^T_{2,2,3,2} + \frac{151}{50}O^T_{2,2,4,2} + \frac{619}{100}O^T_{3,3,1,3}$$
$$K_4^{T(6,1),10} = 0$$

Operator 347

$$O_5^{T(6,1),10} = O^T_{1,1,2,1} - \frac{167}{100}O^T_{1,1,3,1} + \frac{159}{50}O^T_{1,1,4,1} + \frac{17}{100}O^T_{2,2,1,2} - \frac{71}{50}O^T_{2,2,3,2} - \frac{121}{20}O^T_{2,2,4,2} + \frac{289}{100}O^T_{3,3,1,3} - \frac{189}{50}O^T_{3,3,2,3}$$
$$K_5^{T(6,1),10} = 0$$

Operator 348

$$O_6^{T(6,1),10} = O^T_{1,1,2,1} + \frac{57}{100}O^T_{1,1,3,1} + \frac{11}{100}O^T_{1,1,4,1} + \frac{129}{100}O^T_{2,2,1,2} + \frac{59}{100}O^T_{2,2,3,2} - \frac{23}{100}O^T_{2,2,4,2} + \frac{21}{100}O^T_{3,3,1,3} + \frac{41}{100}O^T_{3,3,2,}$$
$$K_6^{T(6,1),10} = 0$$

(6, 2) Block 1: Trace = 0, Mixed Symmetry, C = -1

Operator 349

$$O_1^{T(6,2),1} = O^T_{1,4,4,4}$$
$$K_1^{T(6,2),1} = iE(p)p_2$$

Operator 350

$$O_2^{T(6,2),1} = O^T_{2,1,1,1} - O^T_{4,3,3,3}$$
$$K_2^{T(6,2),1} = \frac{p_1^2(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 351

$$O_3^{T(6,2),1} = O^T_{1,2,2,2} - \frac{1}{2}O^T_{2,1,1,1} - \frac{1}{2}O^T_{4,3,3,3}$$
$$K_3^{T(6,2),1} = \frac{(-E(p)m_N p_1^2 - 2E(p)m_N p_2^2 - m_N^2 p_1^2 - 2m_N^2 p_2^2 - p_1^4 - 3p_1^2 p_2^2 - 2p_2^4)}{(2E(p)(E(p) + m_N))}$$

Operator 352

$$O_4^{T(6,2),1} = O^T_{1,2,2,2} + O^T_{2,1,1,1} + O^T_{4,3,3,3}$$
$$K_4^{T(6,2),1} = \frac{(E(p)m_N p_1^2 - E(p)m_N p_2^2 + m_N^2 p_1^2 - m_N^2 p_2^2 + p_1^4 - p_2^4)}{(E(p)(E(p) + m_N))}$$

Operator 353

$$O_5^{T(6,2),1} = O^T_{3,2,2,2}$$
$$K_5^{T(6,2),1} = \frac{-p_1 p_2^2 p_3}{(E(p)(E(p) + m_N))}$$

Operator 354

$$O_6^{T(6,2),1} = O^T_{2,3,3,3}$$
$$K_6^{T(6,2),1} = \frac{p_1 p_3^3}{(E(p)(E(p) + m_N))}$$

(6, 2) Block 2: Trace = 0, Mixed Symmetry, C = mixed

Operator 355

$$O_1^{T(6,2),2} = O^T_{1,1,1,4}$$
$$K_1^{T(6,2),2} = 0$$

Operator 356

$$O_2^{T(6,2),2} = O^T_{2,2,2,1} - O^T_{4,4,4,3}$$
$$K_2^{T(6,2),2} = 0$$

Operator 357

$$O_3^{T(6,2),2} = O^T_{1,1,1,2} - \frac{1}{2}O^T_{2,2,2,1} - \frac{1}{2}O^T_{4,4,4,3}$$
$$K_3^{T(6,2),2} = 0$$

Operator 358

$$O_4^{T(6,2),2} = O^T_{1,1,1,2} + O^T_{2,2,2,1} + O^T_{4,4,4,3}$$
$$K_4^{T(6,2),2} = 0$$

Operator 359

$$O_5^{T(6,2),2} = O^T_{3,3,3,2}$$
$$K_5^{T(6,2),2} = 0$$

Operator 360

$$O_6^{T(6,2),2} = O^T_{2,2,2,3}$$
$$K_6^{T(6,2),2} = 0$$

(6, 2) Block 3: Trace = 0, Mixed Symmetry, C = mixed

Operator 361

$$O_1^{T(6,2),3} = O^T_{1,1,4,1}$$
$$K_1^{T(6,2),3} = 0$$

Operator 362

$$O_2^{T(6,2),3} = O^T_{2,2,1,2} - O^T_{4,4,3,4}$$
$$K_2^{T(6,2),3} = 0$$

Operator 363

$$O_3^{T(6,2),3} = O^T_{1,1,2,1} - \frac{1}{2}O^T_{2,2,1,2} - \frac{1}{2}O^T_{4,4,3,4}$$
$$K_3^{T(6,2),3} = 0$$

Operator 364

$$O_4^{T(6,2),3} = O^T_{1,1,2,1} + O^T_{2,2,1,2} + O^T_{4,4,3,4}$$
$$K_4^{T(6,2),3} = 0$$

Operator 365

$$O_5^{T(6,2),3} = O^T_{3,3,2,3}$$
$$K_5^{T(6,2),3} = 0$$

Operator 366

$$O_6^{T(6,2),3} = O^T_{2,2,3,2}$$
$$K_6^{T(6,2),3} = 0$$

(6, 2) Block 4: Trace = 0, Mixed Symmetry, C = -1

Operator 367

$$O_1^{T(6,2),4} = O^T_{4,1,1,1}$$
$$K_1^{T(6,2),4} = \frac{ip_1^2 p_2}{E(p)}$$

Operator 368

$$O_2^{T(6,2),4} = O^T_{1,2,2,2} - O^T_{3,4,4,4}$$
$$K_2^{T(6,2),4} = \frac{p_2^2(-E(p)m_N - m_N^2 - p_1^2 - p_2^2)}{(E(p)(E(p)+m_N))}$$

Operator 369

$$O_3^{T(6,2),4} = O^T_{1,2,2,2} - 2O^T_{2,1,1,1} + O^T_{3,4,4,4}$$
$$K_3^{T(6,2),4} = \frac{(-2E(p)m_N p_1^2 - E(p)m_N p_2^2 - 2m_N^2 p_1^2 - m_N^2 p_2^2 - 2p_1^4 - 3p_1^2 p_2^2 - p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 370

$$O_4^{T(6,2),4} = O^T_{1,2,2,2} + O^T_{2,1,1,1} + O^T_{3,4,4,4}$$
$$K_4^{T(6,2),4} = \frac{(E(p)m_N p_1^2 - E(p)m_N p_2^2 + m_N^2 p_1^2 - m_N^2 p_2^2 + p_1^4 - p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 371

$$O_5^{T(6,2),4} = O^T_{2,3,3,3}$$
$$K_5^{T(6,2),4} = \frac{p_1 p_3^3}{(E(p)(E(p)+m_N))}$$

Operator 372

$$O_6^{T(6,2),4} = -O^T_{3,2,2,2}$$
$$K_6^{T(6,2),4} = \frac{p_1 p_2^2 p_3}{(E(p)(E(p)+m_N))}$$

(6, 2) Block 5: Trace = 0, Mixed Symmetry, C = -1

Operator 373

$$O_1^{T(6,2),5} = O^T_{4,1,4,4}$$
$$K_1^{T(6,2),5} = -iE(p)p_2$$

Operator 374

$$O_2^{T(6,2),5} = O^T_{1,2,1,1} - O^T_{3,4,3,3}$$
$$K_2^{T(6,2),5} = \frac{p_1^2(-E(p)m_N - m_N^2 - p_1^2 - p_2^2)}{(E(p)(E(p)+m_N))}$$

Operator 375

$$O_3^{T(6,2),5} = O^T_{1,2,1,1} - 2O^T_{2,1,2,2} + O^T_{3,4,3,3}$$
$$K_3^{T(6,2),5} = \frac{(-E(p)m_N p_1^2 - 2E(p)m_N p_2^2 - m_N^2 p_1^2 - 2m_N^2 p_2^2 - p_1^4 - 3p_1^2 p_2^2 - 2p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 376

$$O_4^{T(6,2),5} = O^T_{1,2,1,1} + O^T_{2,1,2,2} + O^T_{3,4,3,3}$$
$$K_4^{T(6,2),5} = \frac{(-E(p)m_N p_1^2 + E(p)m_N p_2^2 - m_N^2 p_1^2 + m_N^2 p_2^2 - p_1^4 + p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 377

$$O_5^{T(6,2),5} = O^T_{2,3,2,2}$$
$$K_5^{T(6,2),5} = \frac{p_1 p_2^2 p_3}{(E(p)(E(p)+m_N))}$$

Operator 378

$$O_6^{T(6,2),5} = -O^T_{3,2,3,3}$$
$$K_6^{T(6,2),5} = \frac{p_1 p_3^3}{(E(p)(E(p)+m_N))}$$

(6, 2) Block 6: Trace = 0, Mixed Symmetry, C = -1

Operator 379

$$O_1^{T(6,2),6} = O^T_{1,4,1,1}$$
$$K_1^{T(6,2),6} = \frac{-ip_1^2 p_2}{E(p)}$$

Operator 380

$$O_2^{T(6,2),6} = O^T_{2,1,2,2} - O^T_{4,3,4,4}$$
$$K_2^{T(6,2),6} = \frac{p_2^2(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 381

$$O_3^{T(6,2),6} = O^T_{1,2,1,1} - \frac{1}{2}O^T_{2,1,2,2} - \frac{1}{2}O^T_{4,3,4,4}$$
$$K_3^{T(6,2),6} = \frac{(-2E(p)m_N p_1^2 - E(p)m_N p_2^2 - 2m_N^2 p_1^2 - m_N^2 p_2^2 - 2p_1^4 - 3p_1^2 p_2^2 - p_2^4)}{(2E(p)(E(p) + m_N))}$$

Operator 382

$$O_4^{T(6,2),6} = O^T_{1,2,1,1} + O^T_{2,1,2,2} + O^T_{4,3,4,4}$$
$$K_4^{T(6,2),6} = \frac{(-E(p)m_N p_1^2 + E(p)m_N p_2^2 - m_N^2 p_1^2 + m_N^2 p_2^2 - p_1^4 + p_2^4)}{(E(p)(E(p) + m_N))}$$

Operator 383

$$O_5^{T(6,2),6} = O^T_{3,2,3,3}$$
$$K_5^{T(6,2),6} = \frac{-p_1 p_3^3}{(E(p)(E(p) + m_N))}$$

Operator 384

$$O_6^{T(6,2),6} = O^T_{2,3,2,2}$$
$$K_6^{T(6,2),6} = \frac{p_1 p_2^2 p_3}{(E(p)(E(p) + m_N))}$$

(6, 3) Block 1: Trace = 0, Mixed Symmetry, C = mixed

Operator 385

$$O_1^{T(6,3),1} = O^T_{1,1,2,1} + O^T_{2,2,1,2} + \frac{1}{2}O^T_{3,3,2,3}$$
$$K_1^{T(6,3),1} = 0$$

Operator 386

$$O_2^{T(6,3),1} = O^T_{1,1,3,1} + O^T_{3,3,1,3}$$
$$K_2^{T(6,3),1} = 0$$

Operator 387

$$O_3^{T(6,3),1} = O^T_{1,1,2,1} + O^T_{2,2,1,2} - \frac{9}{2}O^T_{2,2,3,2} - 4O^T_{3,3,2,3}$$
$$K_3^{T(6,3),1} = 0$$

Operator 388

$$O_4^{T(6,3),1} = O^T_{1,1,2,1} - \frac{17}{5}O^T_{1,1,4,1} - \frac{7}{10}O^T_{2,2,1,2} + \frac{3}{5}O^T_{2,2,3,2} - \frac{3}{5}O^T_{3,3,2,3} - \frac{17}{5}O^T_{4,4,1,4}$$
$$K_4^{T(6,3),1} = 0$$

Operator 389

$$O_5^{T(6,3),1} = O^T_{1,1,2,1} + \frac{27}{100}O^T_{1,1,4,1} - \frac{9}{10}O^T_{2,2,1,2} + \frac{19}{100}O^T_{2,2,3,2} + \frac{102}{25}O^T_{2,2,4,2} - \frac{19}{100}O^T_{3,3,2,3} + \frac{27}{100}O^T_{4,4,1,4} + \frac{102}{25}O^T_{4,4,2,4}$$
$$K_5^{T(6,3),1} = 0$$

Operator 390

$$O_6^{T(6,3),1} = O^T_{1,1,2,1} + \frac{21}{100}O^T_{1,1,4,1} - \frac{117}{100}O^T_{2,2,1,2} - \frac{33}{100}O^T_{2,2,3,2} - \frac{1}{4}O^T_{2,2,4,2} + \frac{33}{100}O^T_{3,3,2,3} + \frac{479}{50}O^T_{3,3,4,3} + \frac{21}{100}O^T_{4,4,1,4}$$
$$K_6^{T(6,3),1} = 0$$

(6, 3) Block 2: Trace = 0, Mixed Symmetry, C = -1

Operator 391

$$O_1^{T(6,3),2} = O_{1,2,1,1}^T + O_{2,1,2,2}^T$$
$$K_1^{T(6,3),2} = \frac{-(p_1^2 - p_2^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N + p_3) + (E(p) + p_3)(E}{(4E(p)(E(p) + m_N))}$$

Operator 392

$$O_2^{T(6,3),2} = O_{1,3,1,1}^T + O_{3,1,3,3}^T$$
$$K_2^{T(6,3),2} = \frac{p_2 p_3(-p_1^2 + p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 393

$$O_3^{T(6,3),2} = O_{2,3,2,2}^T + O_{3,2,3,3}^T$$
$$K_3^{T(6,3),2} = \frac{p_1 p_3(p_2^2 - p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 394

$$O_4^{T(6,3),2} = O_{1,4,1,1}^T + O_{4,1,4,4}^T$$
$$K_4^{T(6,3),2} = \frac{-ip_2(m_N^2 + 2p_1^2 + p_2^2 + p_3^2)}{E(p)}$$

Operator 395

$$O_5^{T(6,3),2} = O_{2,4,2,2}^T + O_{4,2,4,4}^T$$
$$K_5^{T(6,3),2} = \frac{ip_1(m_N^2 + p_1^2 + 2p_2^2 + p_3^2)}{E(p)}$$

Operator 396

$$O_6^{T(6,3),2} = O_{3,4,3,3}^T + O_{4,3,4,4}^T$$
$$K_6^{T(6,3),2} = 0$$

(6, 3) Block 3: Trace = 0, Mixed Symmetry, C = -1

Operator 397

$$O_1^{T(6,3),3} = O_{1,2,2,2}^T + O_{2,1,1,1}^T$$
$$K_1^{T(6,3),3} = \frac{(p_1^2 - p_2^2)(m_N(E(p) + m_N - p_3) + m_N(E(p) + m_N + p_3) + (E(p) - p_3)(E(p) + m_N + p_3) + (E(p) + p_3)(E(}{(4E(p)(E(p) + m_N))}$$

Operator 398

$$O_2^{T(6,3),3} = O_{1,3,3,3}^T + O_{3,1,1,1}^T$$
$$K_2^{T(6,3),3} = \frac{p_2 p_3 (p_1^2 - p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 399

$$O_3^{T(6,3),3} = O_{2,3,3,3}^T + O_{3,2,2,2}^T$$
$$K_3^{T(6,3),3} = \frac{p_1 p_3 (-p_2^2 + p_3^2)}{(E(p)(E(p) + m_N))}$$

Operator 400

$$O_4^{T(6,3),3} = O_{1,4,4,4}^T + O_{4,1,1,1}^T$$
$$K_4^{T(6,3),3} = \frac{i p_2 (m_N^2 + 2p_1^2 + p_2^2 + p_3^2)}{E(p)}$$

Operator 401

$$O_5^{T(6,3),3} = O_{2,4,4,4}^T + O_{4,2,2,2}^T$$
$$K_5^{T(6,3),3} = \frac{-i p_1 (m_N^2 + p_1^2 + 2p_2^2 + p_3^2)}{E(p)}$$

Operator 402

$$O_6^{T(6,3),3} = O_{3,4,4,4}^T + O_{4,3,3,3}^T$$
$$K_6^{T(6,3),3} = 0$$

(6, 3) Block 4: Trace = 0, Mixed Symmetry, C = mixed

Operator 403

$$O_1^{T(6,3),4} = O^T_{1,1,1,2} + O^T_{2,2,2,1} - \frac{1}{2}O^T_{3,3,3,1}$$
$$K_1^{T(6,3),4} = 0$$

Operator 404

$$O_2^{T(6,3),4} = O^T_{1,1,1,2} + \frac{9}{4}O^T_{1,1,1,3} - \frac{13}{100}O^T_{2,2,2,1} - \frac{28}{25}O^T_{2,2,2,3} + \frac{7}{4}O^T_{3,3,3,1} - \frac{28}{25}O^T_{4,4,4,1} - \frac{28}{25}O^T_{4,4,4,3}$$
$$K_2^{T(6,3),4} = 0$$

Operator 405

$$O_3^{T(6,3),4} = O^T_{1,1,1,2} - \frac{47}{50}O^T_{1,1,1,3} - \frac{27}{25}O^T_{2,2,2,1} - \frac{116}{25}O^T_{2,2,2,3} - \frac{17}{100}O^T_{3,3,3,1} - \frac{511}{100}O^T_{3,3,3,2} + \frac{47}{100}O^T_{4,4,4,1} + \frac{64}{25}O^T_{4,4,4,2} +$$
$$K_3^{T(6,3),4} = 0$$

Operator 406

$$O_4^{T(6,3),4} = O^T_{1,1,1,2} + \frac{141}{100}O^T_{1,1,1,3} + \frac{423}{50}O^T_{1,1,1,4} - \frac{19}{50}O^T_{2,2,2,1} - \frac{41}{20}O^T_{2,2,2,3} - \frac{423}{100}O^T_{2,2,2,4} + \frac{31}{25}O^T_{3,3,3,1} + \frac{72}{25}O^T_{3,3,3,2} -$$
$$K_4^{T(6,3),4} = 0$$

Operator 407

$$O_5^{T(6,3),4} = O^T_{1,1,1,2} - \frac{33}{10}O^T_{1,1,1,3} + \frac{229}{50}O^T_{1,1,1,4} - \frac{179}{100}O^T_{2,2,2,1} - \frac{723}{100}O^T_{2,2,2,3} - \frac{547}{25}O^T_{2,2,2,4} - \frac{79}{50}O^T_{3,3,3,1} - \frac{3}{50}O^T_{3,3,3,2} +$$
$$K_5^{T(6,3),4} = 0$$

Operator 408

$$O_6^{T(6,3),4} = O^T_{1,1,1,2} - \frac{147}{100}O^T_{1,1,1,3} + \frac{7}{50}O^T_{1,1,1,4} + \frac{43}{20}O^T_{2,2,2,1} - \frac{183}{100}O^T_{2,2,2,3} + \frac{73}{20}O^T_{2,2,2,4} + \frac{631}{100}O^T_{3,3,3,1} + \frac{218}{25}O^T_{3,3,3,2} +$$
$$K_6^{T(6,3),4} = 0$$

(6, 3) Block 5: Trace = 0, Mixed Symmetry, C = mixed

Operator 409

$$O_1^{T(6,3),5} = O^T_{1,1,1,2} - \frac{1}{2}O^T_{1,1,1,3} + O^T_{2,2,2,1}$$
$$K_1^{T(6,3),5} = 0$$

Operator 410

$$O_2^{T(6,3),5} = O^T_{1,1,1,2} - 14O^T_{1,1,1,3} + 9O^T_{1,1,1,4} - 8O^T_{2,2,2,1} - 18O^T_{3,3,3,1} + 9O^T_{3,3,3,2} + 9O^T_{3,3,3,4}$$
$$K_2^{T(6,3),5} = 0$$

Operator 411

$$O_3^{T(6,3),5} = O^T_{1,1,1,2} + \frac{3}{20}O^T_{1,1,1,3} - \frac{11}{25}O^T_{1,1,1,4} - \frac{23}{25}O^T_{2,2,2,1} + \frac{118}{25}O^T_{2,2,2,3} - \frac{59}{25}O^T_{2,2,2,4} + \frac{87}{100}O^T_{3,3,3,1} + \frac{107}{25}O^T_{3,3,3,2} -$$
$$K_3^{T(6,3),5} = 0$$

Operator 412

$$O_4^{T(6,3),5} = O^T_{1,1,1,2} - \frac{329}{100}O^T_{1,1,1,3} - \frac{41}{2}O^T_{1,1,1,4} - \frac{66}{25}O^T_{2,2,2,1} - \frac{761}{100}O^T_{2,2,2,3} - \frac{179}{100}O^T_{2,2,2,4} - \frac{371}{100}O^T_{3,3,3,1} + \frac{543}{100}O^T_{3,3,3,2} -$$
$$K_4^{T(6,3),5} = 0$$

Operator 413

$$O_5^{T(6,3),5} = O^T_{1,1,1,2} + \frac{22}{25}O^T_{1,1,1,3} + \frac{191}{50}O^T_{1,1,1,4} - \frac{14}{25}O^T_{2,2,2,1} + \frac{1}{25}O^T_{2,2,2,3} + 12.1100000000000O^T_{2,2,2,4} + \frac{46}{25}O^T_{3,3,3,1} +$$
$$K_5^{T(6,3),5} = 0$$

Operator 414

$$O_6^{T(6,3),5} = O^T_{1,1,1,2} + \frac{293}{100}O^T_{1,1,1,3} + \frac{103}{100}O^T_{1,1,1,4} + \frac{23}{50}O^T_{2,2,2,1} + \frac{81}{20}O^T_{2,2,2,3} + \frac{66}{25}O^T_{2,2,2,4} - \frac{17}{25}O^T_{3,3,3,1} - \frac{17}{20}O^T_{3,3,3,2} +$$
$$K_6^{T(6,3),5} = 0$$

(6, 3) Block 6: Trace = 0, Mixed Symmetry, C = mixed

Operator 415

$$O_1^{T(6,3),6} = O^T_{1,1,1,2} + O^T_{2,2,2,1} + \frac{1}{2}O^T_{3,3,3,2}$$
$$K_1^{T(6,3),6} = 0$$

Operator 416

$$O_2^{T(6,3),6} = O^T_{1,1,1,3} + O^T_{3,3,3,1}$$
$$K_2^{T(6,3),6} = 0$$

Operator 417

$$O_3^{T(6,3),6} = O^T_{1,1,1,2} + O^T_{2,2,2,1} - \frac{9}{2}O^T_{2,2,2,3} - 4O^T_{3,3,3,2}$$
$$K_3^{T(6,3),6} = 0$$

Operator 418

$$O_4^{T(6,3),6} = O^T_{1,1,1,2} - \frac{17}{5}O^T_{1,1,1,4} - \frac{7}{10}O^T_{2,2,2,1} + \frac{3}{5}O^T_{2,2,2,3} - \frac{3}{5}O^T_{3,3,3,2} - \frac{17}{5}O^T_{4,4,4,1}$$
$$K_4^{T(6,3),6} = 0$$

Operator 419

$$O_5^{T(6,3),6} = O^T_{1,1,1,2} + \frac{27}{100}O^T_{1,1,1,4} - \frac{9}{10}O^T_{2,2,2,1} + \frac{19}{100}O^T_{2,2,2,3} + \frac{102}{25}O^T_{2,2,2,4} - \frac{19}{100}O^T_{3,3,3,2} + \frac{27}{100}O^T_{4,4,4,1} + \frac{102}{25}O^T_{4,4,4,2}$$
$$K_5^{T(6,3),6} = 0$$

Operator 420

$$O_6^{T(6,3),6} = O^T_{1,1,1,2} + \frac{21}{100}O^T_{1,1,1,4} - \frac{117}{100}O^T_{2,2,2,1} - \frac{33}{100}O^T_{2,2,2,3} - \frac{1}{4}O^T_{2,2,2,4} + \frac{33}{100}O^T_{3,3,3,2} + \frac{479}{50}O^T_{3,3,3,4} + \frac{21}{100}O^T_{4,4,4,1}$$
$$K_6^{T(6,3),6} = 0$$

(6, 3) Block 7: Trace = 0, Mixed Symmetry, C = mixed

Operator 421

$$O_1^{T(6,3),7} = O^T_{1,1,1,2} + O^T_{2,2,2,1} + \frac{1}{2}O^T_{2,2,2,3}$$
$$K_1^{T(6,3),7} = 0$$

Operator 422

$$O_2^{T(6,3),7} = O^T_{1,1,1,2} - \frac{18}{5}O^T_{1,1,1,3} - \frac{4}{5}O^T_{2,2,2,1} - \frac{2}{5}O^T_{2,2,2,3} - \frac{18}{5}O^T_{3,3,3,1} + \frac{9}{5}O^T_{3,3,3,4}$$
$$K_2^{T(6,3),7} = 0$$

Operator 423

$$O_3^{T(6,3),7} = O^T_{1,1,1,2} - \frac{18}{5}O^T_{1,1,1,3} - 18O^T_{2,2,2,1} + 34O^T_{2,2,2,3} - \frac{18}{5}O^T_{3,3,3,1} + \frac{172}{5}O^T_{3,3,3,2} - \frac{77}{5}O^T_{3,3,3,4}$$
$$K_3^{T(6,3),7} = 0$$

Operator 424

$$O_4^{T(6,3),7} = O^T_{1,1,1,2} + \frac{37}{100}O^T_{1,1,1,3} + \frac{331}{50}O^T_{1,1,1,4} - \frac{36}{25}O^T_{2,2,2,1} + \frac{89}{100}O^T_{2,2,2,3} + \frac{37}{100}O^T_{3,3,3,1} - \frac{34}{25}O^T_{3,3,3,2} + \frac{49}{100}O^T_{3,3,3,4} -$$
$$K_4^{T(6,3),7} = 0$$

Operator 425

$$O_5^{T(6,3),7} = O^T_{1,1,1,2} + \frac{39}{50}O^T_{1,1,1,3} - \frac{164}{25}O^T_{1,1,1,4} - \frac{161}{50}O^T_{2,2,2,1} + \frac{111}{25}O^T_{2,2,2,3} - 20.7800000000000O^T_{2,2,2,4} + \frac{39}{50}O^T_{3,3,3,1} -$$
$$K_5^{T(6,3),7} = 0$$

Operator 426

$$O_6^{T(6,3),7} = O^T_{1,1,1,2} - \frac{21}{25}O^T_{1,1,1,3} + \frac{3}{100}O^T_{1,1,1,4} - \frac{17}{50}O^T_{2,2,2,1} - \frac{131}{100}O^T_{2,2,2,3} - \frac{21}{100}O^T_{2,2,2,4} - \frac{21}{25}O^T_{3,3,3,1} - \frac{21}{20}O^T_{3,3,3,2} -$$
$$K_6^{T(6,3),7} = 0$$

(6, 3) Block 8: Trace = 0, Mixed Symmetry, C = mixed

Operator 427

$$O_1^{T(6,3),8} = O_{1,1,2,1}^T - \frac{1}{2}O_{1,1,3,1}^T + O_{2,2,1,2}^T$$
$$K_1^{T(6,3),8} = 0$$

Operator 428

$$O_2^{T(6,3),8} = O_{1,1,2,1}^T - 14O_{1,1,3,1}^T + 9O_{1,1,4,1}^T - 8O_{2,2,1,2}^T - 18O_{3,3,1,3}^T + 9O_{3,3,2,3}^T + 9O_{3,3,4,3}^T$$
$$K_2^{T(6,3),8} = 0$$

Operator 429

$$O_3^{T(6,3),8} = O_{1,1,2,1}^T + \frac{3}{20}O_{1,1,3,1}^T - \frac{11}{25}O_{1,1,4,1}^T - \frac{23}{25}O_{2,2,1,2}^T + \frac{118}{25}O_{2,2,3,2}^T - \frac{59}{25}O_{2,2,4,2}^T + \frac{87}{100}O_{3,3,1,3}^T + \frac{107}{25}O_{3,3,2,3}^T -$$
$$K_3^{T(6,3),8} = 0$$

Operator 430

$$O_4^{T(6,3),8} = O_{1,1,2,1}^T - \frac{329}{100}O_{1,1,3,1}^T - \frac{41}{2}O_{1,1,4,1}^T - \frac{66}{25}O_{2,2,1,2}^T - \frac{761}{100}O_{2,2,3,2}^T - \frac{179}{100}O_{2,2,4,2}^T - \frac{371}{100}O_{3,3,1,3}^T + \frac{543}{100}O_{3,3,2,3}^T +$$
$$K_4^{T(6,3),8} = 0$$

Operator 431

$$O_5^{T(6,3),8} = O_{1,1,2,1}^T + \frac{22}{25}O_{1,1,3,1}^T + \frac{191}{50}O_{1,1,4,1}^T - \frac{14}{25}O_{2,2,1,2}^T + \frac{1}{25}O_{2,2,3,2}^T + 12.1100000000000O_{2,2,4,2}^T + \frac{46}{25}O_{3,3,1,3}^T +$$
$$K_5^{T(6,3),8} = 0$$

Operator 432

$$O_6^{T(6,3),8} = O_{1,1,2,1}^T + \frac{293}{100}O_{1,1,3,1}^T + \frac{103}{100}O_{1,1,4,1}^T + \frac{23}{50}O_{2,2,1,2}^T + \frac{81}{20}O_{2,2,3,2}^T + \frac{66}{25}O_{2,2,4,2}^T - \frac{17}{25}O_{3,3,1,3}^T - \frac{17}{20}O_{3,3,2,3}^T +$$
$$K_6^{T(6,3),8} = 0$$

(6, 3) Block 9: Trace = 0, Mixed Symmetry, C = mixed

Operator 433

$$O_1^{T(6,3),9} = O^T_{1,1,1,2} + O^T_{2,2,2,1}$$
$$K_1^{T(6,3),9} = 0$$

Operator 434

$$O_2^{T(6,3),9} = O^T_{1,1,1,3} + O^T_{3,3,3,1}$$
$$K_2^{T(6,3),9} = 0$$

Operator 435

$$O_3^{T(6,3),9} = O^T_{2,2,2,3} + O^T_{3,3,3,2}$$
$$K_3^{T(6,3),9} = 0$$

Operator 436

$$O_4^{T(6,3),9} = O^T_{1,1,1,4} + O^T_{4,4,4,1}$$
$$K_4^{T(6,3),9} = 0$$

Operator 437

$$O_5^{T(6,3),9} = O^T_{2,2,2,4} + O^T_{4,4,4,2}$$
$$K_5^{T(6,3),9} = 0$$

Operator 438

$$O_6^{T(6,3),9} = O^T_{3,3,3,4} + O^T_{4,4,4,3}$$
$$K_6^{T(6,3),9} = 0$$

(6, 3) Block 10: Trace = 0, Mixed Symmetry, C = mixed

Operator 439

$$O_1^{T(6,3),10} = O_{1,1,2,1}^T + O_{2,2,1,2}^T$$
$$K_1^{T(6,3),10} = 0$$

Operator 440

$$O_2^{T(6,3),10} = O_{1,1,3,1}^T + O_{3,3,1,3}^T$$
$$K_2^{T(6,3),10} = 0$$

Operator 441

$$O_3^{T(6,3),10} = O_{2,2,3,2}^T + O_{3,3,2,3}^T$$
$$K_3^{T(6,3),10} = 0$$

Operator 442

$$O_4^{T(6,3),10} = O_{1,1,4,1}^T + O_{4,4,1,4}^T$$
$$K_4^{T(6,3),10} = 0$$

Operator 443

$$O_5^{T(6,3),10} = O_{2,2,4,2}^T + O_{4,4,2,4}^T$$
$$K_5^{T(6,3),10} = 0$$

Operator 444

$$O_6^{T(6,3),10} = O_{3,3,4,3}^T + O_{4,4,3,4}^T$$
$$K_6^{T(6,3),10} = 0$$

(6, 4) Block 1: Trace = 0, Mixed Symmetry, C = -1

Operator 445

$$O_1^{T(6,4),1} = O^T_{1,4,1,1}$$
$$K_1^{T(6,4),1} = \frac{-ip_1^2 p_2}{E(p)}$$

Operator 446

$$O_2^{T(6,4),1} = O^T_{2,1,2,2} + O^T_{4,3,4,4}$$
$$K_2^{T(6,4),1} = \frac{p_2^2(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 447

$$O_3^{T(6,4),1} = O^T_{1,2,1,1} - \frac{1}{2}O^T_{2,1,2,2} + \frac{1}{2}O^T_{4,3,4,4}$$
$$K_3^{T(6,4),1} = \frac{(-2E(p)m_N p_1^2 - E(p)m_N p_2^2 - 2m_N^2 p_1^2 - m_N^2 p_2^2 - 2p_1^4 - 3p_1^2 p_2^2 - p_2^4)}{(2E(p)(E(p) + m_N))}$$

Operator 448

$$O_4^{T(6,4),1} = O^T_{1,2,1,1} + O^T_{2,1,2,2} - O^T_{4,3,4,4}$$
$$K_4^{T(6,4),1} = \frac{(-E(p)m_N p_1^2 + E(p)m_N p_2^2 - m_N^2 p_1^2 + m_N^2 p_2^2 - p_1^4 + p_2^4)}{(E(p)(E(p) + m_N))}$$

Operator 449

$$O_5^{T(6,4),1} = O^T_{3,2,3,3}$$
$$K_5^{T(6,4),1} = \frac{-p_1 p_3^3}{(E(p)(E(p) + m_N))}$$

Operator 450

$$O_6^{T(6,4),1} = O^T_{2,3,2,2}$$
$$K_6^{T(6,4),1} = \frac{p_1 p_2^2 p_3}{(E(p)(E(p) + m_N))}$$

(6, 4) Block 2: Trace = 0, Mixed Symmetry, C = -1

Operator 451

$$O_1^{T(6,4),2} = O^T_{4,1,4,4}$$
$$K_1^{T(6,4),2} = -iE(p)p_2$$

Operator 452

$$O_2^{T(6,4),2} = O^T_{1,2,1,1} + O^T_{3,4,3,3}$$
$$K_2^{T(6,4),2} = \frac{p_1^2(-E(p)m_N - m_N^2 - p_1^2 - p_2^2)}{(E(p)(E(p)+m_N))}$$

Operator 453

$$O_3^{T(6,4),2} = O^T_{1,2,1,1} - 2O^T_{2,1,2,2} - O^T_{3,4,3,3}$$
$$K_3^{T(6,4),2} = \frac{(-E(p)m_N p_1^2 - 2E(p)m_N p_2^2 - m_N^2 p_1^2 - 2m_N^2 p_2^2 - p_1^4 - 3p_1^2 p_2^2 - 2p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 454

$$O_4^{T(6,4),2} = O^T_{1,2,1,1} + O^T_{2,1,2,2} - O^T_{3,4,3,3}$$
$$K_4^{T(6,4),2} = \frac{(-E(p)m_N p_1^2 + E(p)m_N p_2^2 - m_N^2 p_1^2 + m_N^2 p_2^2 - p_1^4 + p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 455

$$O_5^{T(6,4),2} = O^T_{2,3,2,2}$$
$$K_5^{T(6,4),2} = \frac{p_1 p_2^2 p_3}{(E(p)(E(p)+m_N))}$$

Operator 456

$$O_6^{T(6,4),2} = -O^T_{3,2,3,3}$$
$$K_6^{T(6,4),2} = \frac{p_1 p_3^3}{(E(p)(E(p)+m_N))}$$

(6, 4) Block 3: Trace = 0, Mixed Symmetry, C = mixed

Operator 457

$$O_1^{T(6,4),3} = O^T_{1,1,4,1}$$
$$K_1^{T(6,4),3} = 0$$

Operator 458

$$O_2^{T(6,4),3} = O^T_{2,2,1,2} + O^T_{4,4,3,4}$$
$$K_2^{T(6,4),3} = 0$$

Operator 459

$$O_3^{T(6,4),3} = O^T_{1,1,2,1} - \frac{1}{2}O^T_{2,2,1,2} + \frac{1}{2}O^T_{4,4,3,4}$$
$$K_3^{T(6,4),3} = 0$$

Operator 460

$$O_4^{T(6,4),3} = O^T_{1,1,2,1} + O^T_{2,2,1,2} - O^T_{4,4,3,4}$$
$$K_4^{T(6,4),3} = 0$$

Operator 461

$$O_5^{T(6,4),3} = O^T_{3,3,2,3}$$
$$K_5^{T(6,4),3} = 0$$

Operator 462

$$O_6^{T(6,4),3} = O^T_{2,2,3,2}$$
$$K_6^{T(6,4),3} = 0$$

(6, 4) Block 4: Trace = 0, Mixed Symmetry, C = -1

Operator 463

$$O_1^{T(6,4),4} = O^T_{1,4,4,4}$$
$$K_1^{T(6,4),4} = iE(p)p_2$$

Operator 464

$$O_2^{T(6,4),4} = O^T_{2,1,1,1} + O^T_{4,3,3,3}$$
$$K_2^{T(6,4),4} = \frac{p_1^2(E(p)m_N + m_N^2 + p_1^2 + p_2^2)}{(E(p)(E(p) + m_N))}$$

Operator 465

$$O_3^{T(6,4),4} = O^T_{1,2,2,2} - \frac{1}{2}O^T_{2,1,1,1} + \frac{1}{2}O^T_{4,3,3,3}$$
$$K_3^{T(6,4),4} = \frac{(-E(p)m_N p_1^2 - 2E(p)m_N p_2^2 - m_N^2 p_1^2 - 2m_N^2 p_2^2 - p_1^4 - 3p_1^2 p_2^2 - 2p_2^4)}{(2E(p)(E(p) + m_N))}$$

Operator 466

$$O_4^{T(6,4),4} = O^T_{1,2,2,2} + O^T_{2,1,1,1} - O^T_{4,3,3,3}$$
$$K_4^{T(6,4),4} = \frac{(E(p)m_N p_1^2 - E(p)m_N p_2^2 + m_N^2 p_1^2 - m_N^2 p_2^2 + p_1^4 - p_2^4)}{(E(p)(E(p) + m_N))}$$

Operator 467

$$O_5^{T(6,4),4} = O^T_{3,2,2,2}$$
$$K_5^{T(6,4),4} = \frac{-p_1 p_2^2 p_3}{(E(p)(E(p) + m_N))}$$

Operator 468

$$O_6^{T(6,4),4} = O^T_{2,3,3,3}$$
$$K_6^{T(6,4),4} = \frac{p_1 p_3^3}{(E(p)(E(p) + m_N))}$$

(6, 4) Block 5: Trace = 0, Mixed Symmetry, C = mixed

Operator 469

$$O_1^{T(6,4),5} = O^T_{1,1,1,4}$$
$$K_1^{T(6,4),5} = 0$$

Operator 470

$$O_2^{T(6,4),5} = O^T_{2,2,2,1} + O^T_{4,4,4,3}$$
$$K_2^{T(6,4),5} = 0$$

Operator 471

$$O_3^{T(6,4),5} = O^T_{1,1,1,2} - \frac{1}{2}O^T_{2,2,2,1} + \frac{1}{2}O^T_{4,4,4,3}$$
$$K_3^{T(6,4),5} = 0$$

Operator 472

$$O_4^{T(6,4),5} = O^T_{1,1,1,2} + O^T_{2,2,2,1} - O^T_{4,4,4,3}$$
$$K_4^{T(6,4),5} = 0$$

Operator 473

$$O_5^{T(6,4),5} = O^T_{3,3,3,2}$$
$$K_5^{T(6,4),5} = 0$$

Operator 474

$$O_6^{T(6,4),5} = O^T_{2,2,2,3}$$
$$K_6^{T(6,4),5} = 0$$

(6, 4) Block 6: Trace = 0, Mixed Symmetry, C = -1

Operator 475

$$O_1^{T(6,4),6} = O^T_{4,1,1,1}$$
$$K_1^{T(6,4),6} = \frac{ip_1^2 p_2}{E(p)}$$

Operator 476

$$O_2^{T(6,4),6} = O^T_{1,2,2,2} + O^T_{3,4,4,4}$$
$$K_2^{T(6,4),6} = \frac{p_2^2(-E(p)m_N - m_N^2 - p_1^2 - p_2^2)}{(E(p)(E(p)+m_N))}$$

Operator 477

$$O_3^{T(6,4),6} = O^T_{1,2,2,2} - 2O^T_{2,1,1,1} - O^T_{3,4,4,4}$$
$$K_3^{T(6,4),6} = \frac{(-2E(p)m_N p_1^2 - E(p)m_N p_2^2 - 2m_N^2 p_1^2 - m_N^2 p_2^2 - 2p_1^4 - 3p_1^2 p_2^2 - p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 478

$$O_4^{T(6,4),6} = O^T_{1,2,2,2} + O^T_{2,1,1,1} - O^T_{3,4,4,4}$$
$$K_4^{T(6,4),6} = \frac{(E(p)m_N p_1^2 - E(p)m_N p_2^2 + m_N^2 p_1^2 - m_N^2 p_2^2 + p_1^4 - p_2^4)}{(E(p)(E(p)+m_N))}$$

Operator 479

$$O_5^{T(6,4),6} = O^T_{2,3,3,3}$$
$$K_5^{T(6,4),6} = \frac{p_1 p_3^3}{(E(p)(E(p)+m_N))}$$

Operator 480

$$O_6^{T(6,4),6} = -O^T_{3,2,2,2}$$
$$K_6^{T(6,4),6} = \frac{p_1 p_2^2 p_3}{(E(p)(E(p)+m_N))}$$