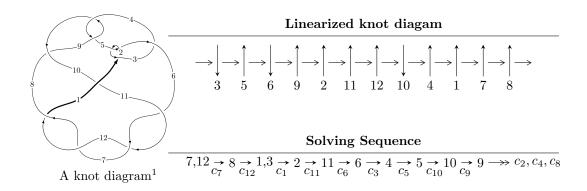
$12a_{0026} (K12a_{0026})$



Ideals for irreducible components² of X_{par}

$$I_1^u = \langle 15u^{75} + 20u^{74} + \dots + 2b - 12, -3u^{75} + 135u^{73} + \dots + 2a + 8, u^{76} + 3u^{75} + \dots + 2u - 1 \rangle$$

$$I_2^u = \langle b + a, a^2 - a + 1, u^2 - u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 80 representations.

¹The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(http://www.layer8.co.uk/maths/draw/index.htm#Running-draw), where we modified some parts for our purpose(https://github.com/CATsTAILs/LinksPainter).

² All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.
$$I_1^u = \langle 15u^{75} + 20u^{74} + \dots + 2b - 12, -3u^{75} + 135u^{73} + \dots + 2a + 8, u^{76} + 3u^{75} + \dots + 2u - 1 \rangle$$

(i) Arc colorings

$$a_{7} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{8} = \begin{pmatrix} 1 \\ -u^{2} \end{pmatrix}$$

$$a_{1} = \begin{pmatrix} \frac{3}{2}u^{75} - \frac{135}{2}u^{73} + \dots + \frac{11}{2}u - 4 \\ -\frac{15}{2}u^{75} - 10u^{74} + \dots - \frac{25}{2}u + 6 \end{pmatrix}$$

$$a_{2} = \begin{pmatrix} -\frac{1}{2}u^{75} - u^{74} + \dots + \frac{3}{2}u + 1 \\ \frac{1}{2}u^{75} + u^{74} + \dots - \frac{3}{2}u^{2} + \frac{1}{2}u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} -u^{2} + 1 \\ u^{2} \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} 8u^{75} + \frac{17}{2}u^{74} + \dots + \frac{33}{2}u - \frac{19}{2} \\ -\frac{39}{2}u^{75} - \frac{55}{2}u^{74} + \dots - 33u + \frac{27}{2} \end{pmatrix}$$

$$a_{5} = \begin{pmatrix} 6u^{75} + \frac{21}{2}u^{74} + \dots + \frac{17}{2}u - \frac{1}{2} \\ -\frac{9}{2}u^{75} - \frac{15}{2}u^{74} + \dots - 7u + \frac{3}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{5} - 2u^{3} - u \\ -u^{7} + 3u^{5} - 2u^{3} + u \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} u^{10} - 5u^{8} + 6u^{6} + u^{4} - u^{2} + 1 \\ -u^{12} + 6u^{10} - 12u^{8} + 10u^{6} - 5u^{4} \end{pmatrix}$$

- (ii) Obstruction class = -1
- (iii) Cusp Shapes = $\frac{29}{2}u^{75} + 24u^{74} + \cdots + \frac{13}{2}u + 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{76} + 35u^{75} + \dots - 34u + 1$
c_2, c_5	$u^{76} + 3u^{75} + \dots - 2u + 1$
c_3	$u^{76} - 3u^{75} + \dots - 458u + 41$
c_4, c_9	$u^{76} + u^{75} + \dots - 124u^2 - 16$
c_6, c_7, c_{11} c_{12}	$u^{76} - 3u^{75} + \dots - 2u - 1$
<i>c</i> ₈	$u^{76} + 25u^{75} + \dots + 3968u + 256$
c_{10}	$u^{76} + 23u^{75} + \dots - 53922u - 8023$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{76} + 15y^{75} + \dots - 1370y + 1$
c_2, c_5	$y^{76} + 35y^{75} + \dots - 34y + 1$
c_3	$y^{76} - 5y^{75} + \dots - 135554y + 1681$
c_4, c_9	$y^{76} + 25y^{75} + \dots + 3968y + 256$
$c_6, c_7, c_{11} \\ c_{12}$	$y^{76} - 89y^{75} + \dots - 14y + 1$
<i>c</i> ₈	$y^{76} + 45y^{75} + \dots - 4202496y + 65536$
c ₁₀	$y^{76} - 29y^{75} + \dots - 1605176402y + 64368529$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.885990 + 0.333160I		
a = 0.872634 - 0.542118I	1.97205 + 5.49296I	0
b = -0.67077 + 1.24857I		
u = -0.885990 - 0.333160I		
a = 0.872634 + 0.542118I	1.97205 - 5.49296I	0
b = -0.67077 - 1.24857I		
u = 0.751786 + 0.507447I		
a = -1.107940 - 0.282272I	0.67458 + 12.58000I	0
b = -0.99521 - 1.10936I		
u = 0.751786 - 0.507447I		
a = -1.107940 + 0.282272I	0.67458 - 12.58000I	0
b = -0.99521 + 1.10936I		
u = -0.836373 + 0.339607I		
a = -0.755203 + 0.432767I	3.83321 + 0.59439I	0
b = -0.004969 - 0.761767I		
u = -0.836373 - 0.339607I		
a = -0.755203 - 0.432767I	3.83321 - 0.59439I	0
b = -0.004969 + 0.761767I		
u = 0.747341 + 0.484979I		
a = 0.910922 + 0.390103I	2.79991 + 7.37350I	0
b = 0.844895 + 0.477346I		
u = 0.747341 - 0.484979I		
a = 0.910922 - 0.390103I	2.79991 - 7.37350I	0
b = 0.844895 - 0.477346I		
u = -0.867041 + 0.154083I		
a = 0.590113 + 0.095531I	-0.213421 - 1.034600I	0
b = -0.737271 - 0.597559I		
u = -0.867041 - 0.154083I		
a = 0.590113 - 0.095531I	-0.213421 + 1.034600I	0
b = -0.737271 + 0.597559I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.694227 + 0.488418I		
a = -0.862705 - 0.739564I	-2.20786 + 5.00695I	0
b = 0.268689 - 0.485835I		
u = 0.694227 - 0.488418I		
a = -0.862705 + 0.739564I	-2.20786 - 5.00695I	0
b = 0.268689 + 0.485835I		
u = 0.740484 + 0.411101I		
a = 0.765867 + 0.569492I	3.76796 + 4.58951I	0
b = 0.136180 - 0.867389I		
u = 0.740484 - 0.411101I		
a = 0.765867 - 0.569492I	3.76796 - 4.58951I	0
b = 0.136180 + 0.867389I		
u = -0.745942 + 0.396837I		
a = -1.022130 + 0.377114I	3.86486 - 1.58644I	0
b = -0.892114 + 0.438279I		
u = -0.745942 - 0.396837I		
a = -1.022130 - 0.377114I	3.86486 + 1.58644I	0
b = -0.892114 - 0.438279I		
u = -0.719638 + 0.432491I		
a = 1.39607 - 0.37314I	2.04591 - 6.50107I	0
b = 1.09423 - 1.13795I		
u = -0.719638 - 0.432491I		
a = 1.39607 + 0.37314I	2.04591 + 6.50107I	0
b = 1.09423 + 1.13795I		
u = 0.731033 + 0.364174I		
a = -0.925187 - 0.555287I	2.50490 - 0.55456I	9.61533 - 2.91728I
b = 0.510713 + 1.186120I		
u = 0.731033 - 0.364174I		
a = -0.925187 + 0.555287I	2.50490 + 0.55456I	9.61533 + 2.91728I
b = 0.510713 - 1.186120I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.505111 + 0.534579I	,	
a = -1.202510 + 0.531702I	-5.36892 + 5.69274I	0.38490 - 7.89158I
b = -0.942344 - 0.780413I		
u = 0.505111 - 0.534579I		
a = -1.202510 - 0.531702I	-5.36892 - 5.69274I	0.38490 + 7.89158I
b = -0.942344 + 0.780413I		
u = -0.596247 + 0.341693I		
a = 0.55214 - 1.30810I	-0.315070 - 0.076640I	5.64186 + 2.36469I
b = -0.441166 - 0.807337I		
u = -0.596247 - 0.341693I		
a = 0.55214 + 1.30810I	-0.315070 + 0.076640I	5.64186 - 2.36469I
b = -0.441166 + 0.807337I		
u = 0.404061 + 0.546779I		
a = -1.53472 - 0.82950I	-5.65998 - 1.97285I	-0.963134 + 0.338595I
b = -0.103415 - 0.768073I		
u = 0.404061 - 0.546779I		
a = -1.53472 + 0.82950I	-5.65998 + 1.97285I	-0.963134 - 0.338595I
b = -0.103415 + 0.768073I		
u = 0.456233 + 0.476408I		
a = 0.807953 + 0.259709I	-2.40945 + 1.67574I	3.56432 - 4.46273I
b = 0.581862 + 0.454575I		
u = 0.456233 - 0.476408I	0.40045 1.05554	0 50 100 . 4 100 50 5
a = 0.807953 - 0.259709I	-2.40945 - 1.67574I	3.56432 + 4.46273I
b = 0.581862 - 0.454575I		
u = 0.121254 + 0.636401I	1 10044 0 700007	0.05140 + 0.440055
a = -1.82213 - 0.10923I	-1.18944 - 8.72098I	3.35149 + 6.41865I
b = -0.352065 - 0.838752I $u = 0.121254 - 0.636401I$		
	1 10044 + 0 700001	2 25140 - 6 41065 7
a = -1.82213 + 0.10923I	-1.18944 + 8.72098I	3.35149 - 6.41865I
b = -0.352065 + 0.838752I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.105876 + 0.603977I		
a = 0.938724 + 0.288370I	0.91644 - 3.68473I	6.38251 + 2.47980I
b = 0.264725 + 0.759368I		
u = 0.105876 - 0.603977I		
a = 0.938724 - 0.288370I	0.91644 + 3.68473I	6.38251 - 2.47980I
b = 0.264725 - 0.759368I		
u = 0.187489 + 0.573478I		
a = -0.431525 + 1.144150I	-3.68972 - 1.37288I	-0.612694 + 0.508979I
b = -0.402625 - 0.455153I		
u = 0.187489 - 0.573478I		
a = -0.431525 - 1.144150I	-3.68972 + 1.37288I	-0.612694 - 0.508979I
b = -0.402625 + 0.455153I		
u = -1.46039 + 0.08103I		
a = 1.46326 - 1.34448I	0.265608 - 0.146440I	0
b = -2.15619 + 2.33527I		
u = -1.46039 - 0.08103I		
a = 1.46326 + 1.34448I	0.265608 + 0.146440I	0
b = -2.15619 - 2.33527I		
u = 0.013313 + 0.514387I		
a = -1.138510 + 0.344338I	1.70461 - 1.46252I	7.24578 + 3.00546I
b = -0.070209 + 0.768340I		
u = 0.013313 - 0.514387I		
a = -1.138510 - 0.344338I	1.70461 + 1.46252I	7.24578 - 3.00546I
b = -0.070209 - 0.768340I		
u = -0.082708 + 0.494197I		
a = 2.30376 - 0.01004I	0.24315 + 3.28654I	4.66258 - 2.10063I
b = 0.338632 - 0.907658I		
u = -0.082708 - 0.494197I		
a = 2.30376 + 0.01004I	0.24315 - 3.28654I	4.66258 + 2.10063I
b = 0.338632 + 0.907658I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -1.50687 + 0.12545I		
a = 2.62859 - 0.35369I	1.23477 - 8.00671I	0
b = -3.79993 + 0.65614I		
u = -1.50687 - 0.12545I		
a = 2.62859 + 0.35369I	1.23477 + 8.00671I	0
b = -3.79993 - 0.65614I		
u = -1.50985 + 0.09146I		
a = -1.82204 + 0.35941I	4.06697 - 3.56308I	0
b = 2.53314 - 0.79410I		
u = -1.50985 - 0.09146I		
a = -1.82204 - 0.35941I	4.06697 + 3.56308I	0
b = 2.53314 + 0.79410I		
u = -0.485277		
a = -0.607470	0.739641	13.5000
b = -0.408478		
u = -0.332468 + 0.348514I		
a = 1.46781 + 1.80245I	-1.06070 - 2.50916I	3.18547 + 6.68598I
b = 1.019820 - 0.128661I		
u = -0.332468 - 0.348514I		
a = 1.46781 - 1.80245I	-1.06070 + 2.50916I	3.18547 - 6.68598I
b = 1.019820 + 0.128661I		
u = 1.51846 + 0.03177I		
a = -3.24068 + 1.10209I	5.15855 + 3.46829I	0
b = 4.94954 - 1.73737I		
u = 1.51846 - 0.03177I		
a = -3.24068 - 1.10209I	5.15855 - 3.46829I	0
b = 4.94954 + 1.73737I		
u = -1.54556 + 0.01387I		
a = -0.439333 - 0.753773I	7.25856 - 2.56091I	0
b = 0.502805 + 0.325969I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -1.54556 - 0.01387I		
a = -0.439333 + 0.753773I	7.25856 + 2.56091I	0
b = 0.502805 - 0.325969I		
u = 1.55696		
a = 2.02517	7.77426	0
b = -3.03221		
u = 0.398202 + 0.093446I		
a = -0.14340 + 1.82967I	0.51331 + 2.24257I	-1.43172 - 6.93184I
b = 0.405564 - 0.876916I		
u = 0.398202 - 0.093446I		
a = -0.14340 - 1.82967I	0.51331 - 2.24257I	-1.43172 + 6.93184I
b = 0.405564 + 0.876916I		
u = 1.59191 + 0.09160I		
a = -0.24009 - 2.06938I	7.23380 + 1.61258I	0
b = 0.42940 + 3.38884I		
u = 1.59191 - 0.09160I		
a = -0.24009 + 2.06938I	7.23380 - 1.61258I	0
b = 0.42940 - 3.38884I		
u = -1.60359 + 0.14007I		
a = 0.34694 - 1.56141I	5.58997 - 7.33867I	0
b = -0.66188 + 2.68266I		
u = -1.60359 - 0.14007I		
a = 0.34694 + 1.56141I	5.58997 + 7.33867I	0
b = -0.66188 - 2.68266I		
u = 1.61266 + 0.12405I		
a = -2.90463 - 1.94112I	10.00480 + 8.58426I	0
b = 4.28379 + 3.40715I		
u = 1.61266 - 0.12405I		
a = -2.90463 + 1.94112I	10.00480 - 8.58426I	0
b = 4.28379 - 3.40715I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -1.61463 + 0.10575I		
a = -0.383616 + 0.816434I	10.53420 - 1.22209I	0
b = -0.096006 - 0.643122I		
u = -1.61463 - 0.10575I		
a = -0.383616 - 0.816434I	10.53420 + 1.22209I	0
b = -0.096006 + 0.643122I		
u = -1.61807 + 0.11768I		
a = -0.465116 - 0.496373I	11.83030 - 6.57887I	0
b = 1.131700 + 0.081107I		
u = -1.61807 - 0.11768I		
a = -0.465116 + 0.496373I	11.83030 + 6.57887I	0
b = 1.131700 - 0.081107I		
u = 1.61915 + 0.11332I		
a = 2.22775 + 1.07424I	11.95540 + 3.50791I	0
b = -3.39037 - 2.13749I		
u = 1.61915 - 0.11332I		
a = 2.22775 - 1.07424I	11.95540 - 3.50791I	0
b = -3.39037 + 2.13749I		
u = -1.62160 + 0.14108I		
a = -1.95698 + 1.11347I	10.8692 - 9.7340I	0
b = 2.90889 - 2.25295I		
u = -1.62160 - 0.14108I		
a = -1.95698 - 1.11347I	10.8692 + 9.7340I	0
b = 2.90889 + 2.25295I		
u = -1.62326 + 0.14883I		
a = 2.44619 - 1.87526I	8.7544 - 15.0591I	0
b = -3.49846 + 3.32410I		
u = -1.62326 - 0.14883I		
a = 2.44619 + 1.87526I	8.7544 + 15.0591I	0
b = -3.49846 - 3.32410I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 1.64269 + 0.01976I		
a = 0.543002 - 1.001810I	8.41907 + 1.56630I	0
b = -0.599317 + 1.275470I		
u = 1.64269 - 0.01976I		
a = 0.543002 + 1.001810I	8.41907 - 1.56630I	0
b = -0.599317 - 1.275470I		
u = 1.64045 + 0.09059I		
a = 0.559579 - 0.461479I	12.34950 + 1.02749I	0
b = -1.254220 + 0.186662I		
u = 1.64045 - 0.09059I		
a = 0.559579 + 0.461479I	12.34950 - 1.02749I	0
b = -1.254220 - 0.186662I		
u = 1.65268 + 0.08154I		
a = 0.368277 + 0.846944I	10.73130 - 3.95211I	0
b = 0.084298 - 0.838477I		
u = 1.65268 - 0.08154I		
a = 0.368277 - 0.846944I	10.73130 + 3.95211I	0
b = 0.084298 + 0.838477I		

II.
$$I_2^u = \langle b+a, a^2-a+1, u^2-u-1 \rangle$$

(i) Arc colorings

$$a_{7} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{8} = \begin{pmatrix} 1 \\ -u - 1 \end{pmatrix}$$

$$a_{1} = \begin{pmatrix} u \\ -u - 1 \end{pmatrix}$$

$$a_{3} = \begin{pmatrix} a \\ -a \end{pmatrix}$$

$$a_{2} = \begin{pmatrix} a + u - 1 \\ -a - u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} -u \\ u + 1 \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} -au + a \\ au \end{pmatrix}$$

$$a_{5} = \begin{pmatrix} -au + a \\ au \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ -u - 1 \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} 1 \\ -u - 1 \end{pmatrix}$$

- (ii) Obstruction class = 1
- (iii) Cusp Shapes = 2au + 3a u + 12

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5	$(u^2 - u + 1)^2$
c_2	$(u^2+u+1)^2$
c_4, c_8, c_9	u^4
c_6, c_7, c_{10}	$(u^2-u-1)^2$
c_{11}, c_{12}	$(u^2+u-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_5	$(y^2 + y + 1)^2$
c_4, c_8, c_9	y^4
c_6, c_7, c_{10} c_{11}, c_{12}	$(y^2 - 3y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.618034		
a = 0.500000 + 0.866025I	0.98696 - 2.02988I	13.50000 + 1.52761I
b = -0.500000 - 0.866025I		
u = -0.618034		
a = 0.500000 - 0.866025I	0.98696 + 2.02988I	13.50000 - 1.52761I
b = -0.500000 + 0.866025I		
u = 1.61803		
a = 0.500000 + 0.866025I	8.88264 - 2.02988I	13.5000 + 5.4006I
b = -0.500000 - 0.866025I		
u = 1.61803		
a = 0.500000 - 0.866025I	8.88264 + 2.02988I	13.5000 - 5.4006I
b = -0.500000 + 0.866025I		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2 - u + 1)^2)(u^{76} + 35u^{75} + \dots - 34u + 1)$
c_2	$((u^2+u+1)^2)(u^{76}+3u^{75}+\cdots-2u+1)$
c_3	$((u^2 - u + 1)^2)(u^{76} - 3u^{75} + \dots - 458u + 41)$
c_4, c_9	$u^4(u^{76} + u^{75} + \dots - 124u^2 - 16)$
c_5	$((u^2 - u + 1)^2)(u^{76} + 3u^{75} + \dots - 2u + 1)$
c_6, c_7	$((u^2 - u - 1)^2)(u^{76} - 3u^{75} + \dots - 2u - 1)$
c ₈	$u^4(u^{76} + 25u^{75} + \dots + 3968u + 256)$
c_{10}	$((u^2 - u - 1)^2)(u^{76} + 23u^{75} + \dots - 53922u - 8023)$
c_{11}, c_{12}	$((u^2 + u - 1)^2)(u^{76} - 3u^{75} + \dots - 2u - 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^2)(y^{76}+15y^{75}+\cdots-1370y+1)$
c_2, c_5	$((y^2+y+1)^2)(y^{76}+35y^{75}+\cdots-34y+1)$
c_3	$((y^2 + y + 1)^2)(y^{76} - 5y^{75} + \dots - 135554y + 1681)$
c_4, c_9	$y^4(y^{76} + 25y^{75} + \dots + 3968y + 256)$
c_6, c_7, c_{11} c_{12}	$((y^2 - 3y + 1)^2)(y^{76} - 89y^{75} + \dots - 14y + 1)$
<i>C</i> ₈	$y^4(y^{76} + 45y^{75} + \dots - 4202496y + 65536)$
c_{10}	$((y^2 - 3y + 1)^2)(y^{76} - 29y^{75} + \dots - 1.60518 \times 10^9 y + 6.43685 \times 10^7)$