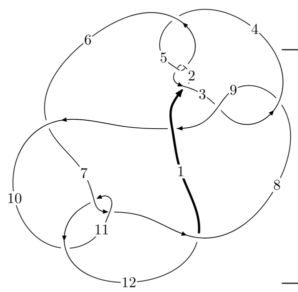
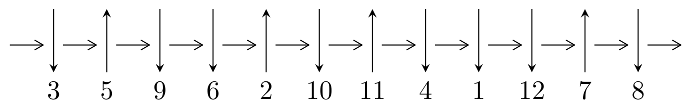
$12a_{0170}$ $(K12a_{0170})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$7,11 \xrightarrow[c_7]{} 4,8 \xrightarrow[c_8]{} 9 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_{12}]{} 1 \xrightarrow[c_3]{} 3 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_6]{} 6 \xrightarrow[c_4]{} 5 \xrightarrow[c_2]{} 2 \twoheadrightarrow c_1, c_5, c_9$

Ideals for irreducible components[2] of $X_{\textbf{par}}$

$$I_1^u = \langle 8u^{98} + 22u^{97} + \cdots + 2b - 8u,\ 8u^{98} + 24u^{97} + \cdots + 2a - 11,\ u^{99} + 3u^{98} + \cdots - 5u - 1\rangle$$
$$I_2^u = \langle u^2a + b,\ u^4 + u^2a - 2u^3 + a^2 - au + 3u^2 + a - 2u + 1,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 109 representations.

[1]The 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. $I^u_1 =$
$\langle 8u^{98}+22u^{97}+\cdots+2b-8u,\ 8u^{98}+24u^{97}+\cdots+2a-11,\ u^{99}+3u^{98}+\cdots-5u-1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-4u^{98}-12u^{97}+\cdots+27u+\frac{11}{2}\\-4u^{98}-11u^{97}+\cdots+\frac{19}{2}u^2+4u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^{11}+2u^9+2u^7+u^3\\-u^{13}-3u^{11}-5u^9-4u^7-2u^5+u^3+u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^3\\u^5+u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}4u^{97}+8u^{96}+\cdots-11u^2-\frac{1}{2}\\2u^{97}+\frac{7}{2}u^{96}+\cdots-\frac{25}{2}u^2-2u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^3\\u^3+u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-u^6-u^4+1\\-u^6-2u^4-u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-2u^{98}-\frac{9}{2}u^{97}+\cdots+13u+2\\-2u^{98}-\frac{9}{2}u^{97}+\cdots-2u^2+\frac{1}{2}u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-\frac{1}{2}u^{94}-u^{93}+\cdots+2u-\frac{1}{2}\\\frac{1}{2}u^{96}+u^{95}+\cdots+\frac{3}{2}u^2+2u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{98}-\frac{41}{2}u^{97}+\cdots+55u+\frac{15}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{99} + 32u^{98} + \cdots - 28u - 1$
c_2, c_5	$u^{99} + 6u^{98} + \cdots + 4u + 1$
c_3, c_8	$u^{99} + u^{98} + \cdots + 3072u + 1024$
c_6, c_{12}	$u^{99} + 3u^{98} + \cdots + 1403u + 73$
c_7, c_{11}	$u^{99} - 3u^{98} + \cdots - 5u + 1$
c_9	$u^{99} - 11u^{98} + \cdots + 27259u + 3341$
c_{10}	$u^{99} + 53u^{98} + \cdots - 13u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{99}+76y^{98}+\cdots+624y-1$
c_2, c_5	$y^{99}+32y^{98}+\cdots-28y-1$
c_3, c_8	$y^{99}+55y^{98}+\cdots-17825792y-1048576$
c_6, c_{12}	$y^{99}-75y^{98}+\cdots+237579y-5329$
c_7, c_{11}	$y^{99}+53y^{98}+\cdots-13y-1$
c_9	$y^{99}+25y^{98}+\cdots-762194377y-11162281$
c_{10}	$y^{99}-11y^{98}+\cdots+27y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.429848+0.885673I$ $a=-0.153546-0.767268I$ $b=-0.0361333-0.0736755I$	$-1.19873-2.05854I$	0
$u=-0.429848-0.885673I$ $a=-0.153546+0.767268I$ $b=-0.0361333+0.0736755I$	$-1.19873+2.05854I$	0
$u=0.520030+0.825601I$ $a=1.59459+1.62990I$ $b=1.73104+0.30568I$	$0.30032+5.50967I$	0
$u=0.520030-0.825601I$ $a=1.59459-1.62990I$ $b=1.73104-0.30568I$	$0.30032-5.50967I$	0
$u=-0.067585+0.970965I$ $a=1.71635+0.65270I$ $b=0.985452+0.092942I$	$-3.46773-2.14043I$	0
$u=-0.067585-0.970965I$ $a=1.71635-0.65270I$ $b=0.985452-0.092942I$	$-3.46773+2.14043I$	0
$u=0.589960+0.841124I$ $a=-1.72526-1.03952I$ $b=-1.192410-0.035831I$	$7.81127+4.92186I$	0
$u=0.589960-0.841124I$ $a=-1.72526+1.03952I$ $b=-1.192410+0.035831I$	$7.81127-4.92186I$	0
$u=0.587785+0.858222I$ $a=1.85438+1.06685I$ $b=1.239810-0.106984I$	$6.97384+11.00210I$	0
$u=0.587785-0.858222I$ $a=1.85438-1.06685I$ $b=1.239810+0.106984I$	$6.97384-11.00210I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.539698 + 0.786920I$ $a = 0.322917 - 1.006990I$ $b = -0.159118 + 0.087102I$	$3.08688 - 4.97900I$	0
$u = -0.539698 - 0.786920I$ $a = 0.322917 + 1.006990I$ $b = -0.159118 - 0.087102I$	$3.08688 + 4.97900I$	0
$u = 0.547960 + 0.768863I$ $a = -1.07630 - 1.33495I$ $b = -1.38296 - 0.64272I$	$3.91657 + 2.20363I$	0
$u = 0.547960 - 0.768863I$ $a = -1.07630 + 1.33495I$ $b = -1.38296 + 0.64272I$	$3.91657 - 2.20363I$	0
$u = -0.537978 + 0.751303I$ $a = -0.405247 + 0.942552I$ $b = 0.237597 - 0.042309I$	$3.19000 + 0.62409I$	0
$u = -0.537978 - 0.751303I$ $a = -0.405247 - 0.942552I$ $b = 0.237597 + 0.042309I$	$3.19000 - 0.62409I$	0
$u = 0.610078 + 0.689564I$ $a = -0.538676 - 0.708628I$ $b = -1.03942 - 1.00260I$	$8.24446 - 0.21969I$	0
$u = 0.610078 - 0.689564I$ $a = -0.538676 + 0.708628I$ $b = -1.03942 + 1.00260I$	$8.24446 + 0.21969I$	0
$u = 0.613989 + 0.666989I$ $a = 0.385176 + 0.652596I$ $b = 1.05850 + 1.08315I$	$7.51964 - 6.29705I$	0
$u = 0.613989 - 0.666989I$ $a = 0.385176 - 0.652596I$ $b = 1.05850 - 1.08315I$	$7.51964 + 6.29705I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.148795 + 1.100110I$ $a = 1.30891 + 1.51158I$ $b = 0.641318 + 1.037130I$	$1.74742 - 6.77346I$	0
$u = -0.148795 - 1.100110I$ $a = 1.30891 - 1.51158I$ $b = 0.641318 - 1.037130I$	$1.74742 + 6.77346I$	0
$u = -0.186308 + 1.098120I$ $a = -1.03578 - 1.47748I$ $b = -0.333673 - 0.963763I$	$2.34741 - 1.01757I$	0
$u = -0.186308 - 1.098120I$ $a = -1.03578 + 1.47748I$ $b = -0.333673 + 0.963763I$	$2.34741 + 1.01757I$	0
$u = 0.498411 + 0.706670I$ $a = 0.38383 + 1.60293I$ $b = 1.42427 + 1.06732I$	$0.65077 - 1.31271I$	$-0.53545 + 1.30950I$
$u = 0.498411 - 0.706670I$ $a = 0.38383 - 1.60293I$ $b = 1.42427 - 1.06732I$	$0.65077 + 1.31271I$	$-0.53545 - 1.30950I$
$u = -0.820785 + 0.171758I$ $a = 1.304340 + 0.375554I$ $b = -1.60855 + 1.40861I$	$3.47980 + 11.99530I$	$-1.53503 - 7.47840I$
$u = -0.820785 - 0.171758I$ $a = 1.304340 - 0.375554I$ $b = -1.60855 - 1.40861I$	$3.47980 - 11.99530I$	$-1.53503 + 7.47840I$
$u = 0.833946 + 0.012856I$ $a = 0.084871 - 0.732326I$ $b = -0.19316 + 1.42037I$	$-1.20309 + 2.61578I$	$-0.20305 - 3.89462I$
$u = 0.833946 - 0.012856I$ $a = 0.084871 + 0.732326I$ $b = -0.19316 - 1.42037I$	$-1.20309 - 2.61578I$	$-0.20305 + 3.89462I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.810571 + 0.181206I$ $a = -1.195870 - 0.405767I$ $b = 1.44493 - 1.40454I$	$4.51727 + 5.99226I$	$0.25329 - 2.79129I$
$u = -0.810571 - 0.181206I$ $a = -1.195870 + 0.405767I$ $b = 1.44493 + 1.40454I$	$4.51727 - 5.99226I$	$0.25329 + 2.79129I$
$u = 0.116457 + 0.819121I$ $a = 2.36072 - 0.47151I$ $b = 0.92714 - 1.16497I$	$-0.91323 + 2.95442I$	$-9.15892 - 0.78061I$
$u = 0.116457 - 0.819121I$ $a = 2.36072 + 0.47151I$ $b = 0.92714 + 1.16497I$	$-0.91323 - 2.95442I$	$-9.15892 + 0.78061I$
$u = -0.278900 + 0.753215I$ $a = -0.665243 + 0.280196I$ $b = -0.087537 + 0.193088I$	$-0.383982 - 1.218840I$	$-4.66040 + 5.43923I$
$u = -0.278900 - 0.753215I$ $a = -0.665243 - 0.280196I$ $b = -0.087537 - 0.193088I$	$-0.383982 + 1.218840I$	$-4.66040 - 5.43923I$
$u = -0.521477 + 1.085120I$ $a = -1.18894 - 0.85234I$ $b = -0.378212 - 0.754350I$	$4.02781 - 0.01979I$	0
$u = -0.521477 - 1.085120I$ $a = -1.18894 + 0.85234I$ $b = -0.378212 + 0.754350I$	$4.02781 + 0.01979I$	0
$u = -0.780382 + 0.143990I$ $a = 1.30030 + 0.80184I$ $b = -1.44582 + 0.86730I$	$-2.65965 + 5.88729I$	$-5.59627 - 5.93514I$
$u = -0.780382 - 0.143990I$ $a = 1.30030 - 0.80184I$ $b = -1.44582 - 0.86730I$	$-2.65965 - 5.88729I$	$-5.59627 + 5.93514I$

Solutions to I^u_1	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.782638 + 0.077219I$ $a = 0.512667 - 0.508839I$ $b = -1.042870 + 0.788319I$	$-4.26717 - 1.31247I$	$-9.29800 + 0.03301I$
$u = 0.782638 - 0.077219I$ $a = 0.512667 + 0.508839I$ $b = -1.042870 - 0.788319I$	$-4.26717 + 1.31247I$	$-9.29800 - 0.03301I$
$u = 0.387534 + 1.152560I$ $a = 2.31597 + 0.24090I$ $b = 1.94984 - 1.44963I$	$-2.70236 + 3.53975I$	0
$u = 0.387534 - 1.152560I$ $a = 2.31597 - 0.24090I$ $b = 1.94984 + 1.44963I$	$-2.70236 - 3.53975I$	0
$u = -0.374340 + 1.157870I$ $a = 0.439971 - 0.718676I$ $b = 0.791182 + 0.555743I$	$-2.30156 - 0.62216I$	0
$u = -0.374340 - 1.157870I$ $a = 0.439971 + 0.718676I$ $b = 0.791182 - 0.555743I$	$-2.30156 + 0.62216I$	0
$u = -0.524450 + 1.104260I$ $a = 1.39278 + 0.74600I$ $b = 0.598909 + 0.920885I$	$4.36503 - 6.08039I$	0
$u = -0.524450 - 1.104260I$ $a = 1.39278 - 0.74600I$ $b = 0.598909 - 0.920885I$	$4.36503 + 6.08039I$	0
$u = 0.754778 + 0.164359I$ $a = 0.809503 - 0.494638I$ $b = -1.66362 + 0.41793I$	$0.49832 - 5.62398I$	$-2.47133 + 4.97773I$
$u = 0.754778 - 0.164359I$ $a = 0.809503 + 0.494638I$ $b = -1.66362 - 0.41793I$	$0.49832 + 5.62398I$	$-2.47133 - 4.97773I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.374341 + 1.174030I$ $a = -2.42621 + 0.01899I$ $b = -1.94987 + 1.72785I$	$-3.38821 - 1.91522I$	0
$u = 0.374341 - 1.174030I$ $a = -2.42621 - 0.01899I$ $b = -1.94987 - 1.72785I$	$-3.38821 + 1.91522I$	0
$u = -0.698389 + 0.314322I$ $a = -0.145640 - 0.527804I$ $b = 0.057658 - 1.217660I$	$6.65889 + 1.40997I$	$2.43753 - 1.73189I$
$u = -0.698389 - 0.314322I$ $a = -0.145640 + 0.527804I$ $b = 0.057658 + 1.217660I$	$6.65889 - 1.40997I$	$2.43753 + 1.73189I$
$u = -0.411903 + 1.165120I$ $a = -0.540539 - 0.017453I$ $b = -0.29700 - 1.42113I$	$-4.64701 - 4.92563I$	0
$u = -0.411903 - 1.165120I$ $a = -0.540539 + 0.017453I$ $b = -0.29700 + 1.42113I$	$-4.64701 + 4.92563I$	0
$u = -0.682190 + 0.343573I$ $a = 0.007635 + 0.534085I$ $b = 0.102783 + 1.150590I$	$6.17569 - 4.60385I$	$1.65384 + 3.69650I$
$u = -0.682190 - 0.343573I$ $a = 0.007635 - 0.534085I$ $b = 0.102783 - 1.150590I$	$6.17569 + 4.60385I$	$1.65384 - 3.69650I$
$u = -0.738443 + 0.176958I$ $a = -0.862283 - 0.850695I$ $b = 0.929841 - 0.910793I$	$1.52040 + 2.97072I$	$1.42440 - 3.39297I$
$u = -0.738443 - 0.176958I$ $a = -0.862283 + 0.850695I$ $b = 0.929841 + 0.910793I$	$1.52040 - 2.97072I$	$1.42440 + 3.39297I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.379010+1.195960I$ $a=-1.13248+0.86493I$ $b=-1.68666-0.92984I$	$-6.62005+2.00043I$	0
$u=-0.379010-1.195960I$ $a=-1.13248-0.86493I$ $b=-1.68666+0.92984I$	$-6.62005-2.00043I$	0
$u=-0.346442+1.209000I$ $a=0.96703-1.51555I$ $b=1.98850+0.02317I$	$0.27744+2.18746I$	0
$u=-0.346442-1.209000I$ $a=0.96703+1.51555I$ $b=1.98850-0.02317I$	$0.27744-2.18746I$	0
$u=0.452028+1.176960I$ $a=1.236010+0.526170I$ $b=1.34024-0.62452I$	$-5.10216+4.23297I$	0
$u=0.452028-1.176960I$ $a=1.236010-0.526170I$ $b=1.34024+0.62452I$	$-5.10216-4.23297I$	0
$u=0.719026+0.170250I$ $a=-0.833141+0.430733I$ $b=1.57941-0.21403I$	$0.993260-0.058078I$	$-1.295895-0.376120I$
$u=0.719026-0.170250I$ $a=-0.833141-0.430733I$ $b=1.57941+0.21403I$	$0.993260+0.058078I$	$-1.295895+0.376120I$
$u=-0.487714+1.164570I$ $a=-1.72264+0.58508I$ $b=-2.39046-0.31875I$	$-4.10280-3.36875I$	0
$u=-0.487714-1.164570I$ $a=-1.72264-0.58508I$ $b=-2.39046+0.31875I$	$-4.10280+3.36875I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.503436 + 1.161720I$ $a = 1.47678 + 1.56908I$ $b = 2.32069 - 0.26656I$	$-1.86940 + 4.66794I$	0
$u = 0.503436 - 1.161720I$ $a = 1.47678 - 1.56908I$ $b = 2.32069 + 0.26656I$	$-1.86940 - 4.66794I$	0
$u = -0.352655 + 1.218600I$ $a = -1.16981 + 1.55509I$ $b = -2.26963 - 0.12608I$	$-0.77297 + 8.10127I$	0
$u = -0.352655 - 1.218600I$ $a = -1.16981 - 1.55509I$ $b = -2.26963 + 0.12608I$	$-0.77297 - 8.10127I$	0
$u = -0.509251 + 1.164960I$ $a = 2.09954 - 0.12613I$ $b = 2.14061 + 1.17805I$	$-1.34809 - 7.65104I$	0
$u = -0.509251 - 1.164960I$ $a = 2.09954 + 0.12613I$ $b = 2.14061 - 1.17805I$	$-1.34809 + 7.65104I$	0
$u = 0.416202 + 1.203500I$ $a = -1.73679 + 0.46421I$ $b = -1.04501 + 1.75863I$	$-8.02373 + 2.85549I$	0
$u = 0.416202 - 1.203500I$ $a = -1.73679 - 0.46421I$ $b = -1.04501 - 1.75863I$	$-8.02373 - 2.85549I$	0
$u = 0.509764 + 1.172190I$ $a = -1.35700 - 1.73404I$ $b = -2.43461 + 0.07894I$	$-2.43547 + 10.33970I$	0
$u = 0.509764 - 1.172190I$ $a = -1.35700 + 1.73404I$ $b = -2.43461 - 0.07894I$	$-2.43547 - 10.33970I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.509023+1.184160I$ $a=-2.54283+0.34458I$ $b=-2.80285-1.58586I$	$-5.70404-10.65240I$	0
$u=-0.509023-1.184160I$ $a=-2.54283-0.34458I$ $b=-2.80285+1.58586I$	$-5.70404+10.65240I$	0
$u=\ \ 0.710489$ $a=-0.571018$ $b=\ \ 0.888949$	-1.79024	-5.42720
$u=\ \ 0.484422+1.196790I$ $a=-0.64077-1.44346I$ $b=-1.74928-0.47465I$	$-7.54053+5.94143I$	0
$u=\ \ 0.484422-1.196790I$ $a=-0.64077+1.44346I$ $b=-1.74928+0.47465I$	$-7.54053-5.94143I$	0
$u=-0.695291+0.114360I$ $a=\ \ 0.77783+1.42657I$ $b=-0.769943+0.326838I$	$-1.12536-1.09410I$	$-1.82519+0.22936I$
$u=-0.695291-0.114360I$ $a=\ \ 0.77783-1.42657I$ $b=-0.769943-0.326838I$	$-1.12536+1.09410I$	$-1.82519-0.22936I$
$u=-0.528378+1.185890I$ $a=\ \ 2.72795+0.08627I$ $b=\ \ 2.35066+2.20158I$	$1.54708-10.92930I$	0
$u=-0.528378-1.185890I$ $a=\ \ 2.72795-0.08627I$ $b=\ \ 2.35066-2.20158I$	$1.54708+10.92930I$	0
$u=-0.527736+1.192030I$ $a=-2.85528-0.03375I$ $b=-2.52719-2.34386I$	$0.4566-16.9531I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.527736-1.192030I$ $a=-2.85528+0.03375I$ $b=-2.52719+2.34386I$	$0.4566+16.9531I$	0
$u=\ \ 0.449018+1.228580I$ $a=-0.98209+1.33643I$ $b=\ \ 0.36514+1.95200I$	$-4.92044+7.16923I$	0
$u=\ \ 0.449018-1.228580I$ $a=-0.98209-1.33643I$ $b=\ \ 0.36514-1.95200I$	$-4.92044-7.16923I$	0
$u=\ \ 0.462089+1.225950I$ $a=\ \ 0.57144-1.48085I$ $b=-0.86568-1.69204I$	$-4.82712+2.01419I$	0
$u=\ \ 0.462089-1.225950I$ $a=\ \ 0.57144+1.48085I$ $b=-0.86568+1.69204I$	$-4.82712-2.01419I$	0
$u=\ \ 0.081757+0.549346I$ $a=-1.45862+1.02333I$ $b=\ \ 0.109324+0.863020I$	$-0.145510-1.386820I$	$-3.10450+5.15080I$
$u=\ \ 0.081757-0.549346I$ $a=-1.45862-1.02333I$ $b=\ \ 0.109324-0.863020I$	$-0.145510+1.386820I$	$-3.10450-5.15080I$
$u=-0.263352+0.425309I$ $a=-0.775004+1.052880I$ $b=\ \ 0.092361+0.476526I$	$-0.208093-1.367100I$	$-1.94407+4.53430I$
$u=-0.263352-0.425309I$ $a=-0.775004-1.052880I$ $b=\ \ 0.092361-0.476526I$	$-0.208093+1.367100I$	$-1.94407-4.53430I$

II.

$\boldsymbol{I_2^u = \langle u^2a+b,\ u^4+u^2a-2u^3+a^2-au+3u^2+a-2u+1,\ u^5-u^4+2u^3-u^2+u-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a \\ -u^2a \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^3 \\ u^4 - u^3 + u^2 + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} a \\ -u^2a \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^3 \\ -u^4 + u^3 - u^2 - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3a \\ u^3a + au \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^3 + u^2 + a - u + 1 \\ -u^2a + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^3a - u^4 + 6u^3 - 2au - 7u^2 - a + 6u - 11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$(u^2 - u + 1)^5$
c_2	$(u^2 + u + 1)^5$
c_3, c_8	u^{10}
c_6, c_9	$(u^5 + u^4 - 2u^3 - u^2 + u - 1)^2$
c_7	$(u^5 - u^4 + 2u^3 - u^2 + u - 1)^2$
c_{10}	$(u^5 - 3u^4 + 4u^3 - u^2 - u + 1)^2$
c_{11}	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)^2$
c_{12}	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2+y+1)^5$
c_3, c_8	y^{10}
c_6, c_9, c_{12}	$(y^5-5y^4+8y^3-3y^2-y-1)^2$
c_7, c_{11}	$(y^5+3y^4+4y^3+y^2-y-1)^2$
c_{10}	$(y^5-y^4+8y^3-3y^2+3y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = 0.80632 + 1.36366I$ $b = -0.307991 + 1.215160I$	$-0.329100 + 0.499304I$	$-5.91654 + 2.81652I$
$u = -0.339110 + 0.822375I$ $a = -1.58413 + 0.01647I$ $b = -0.898363 - 0.874307I$	$-0.32910 - 3.56046I$	$-1.60756 + 7.85087I$
$u = -0.339110 - 0.822375I$ $a = 0.80632 - 1.36366I$ $b = -0.307991 - 1.215160I$	$-0.329100 - 0.499304I$	$-5.91654 - 2.81652I$
$u = -0.339110 - 0.822375I$ $a = -1.58413 - 0.01647I$ $b = -0.898363 + 0.874307I$	$-0.32910 + 3.56046I$	$-1.60756 - 7.85087I$
$u = 0.766826$ $a = -0.410598 + 0.711177I$ $b = 0.241441 - 0.418187I$	$-2.40108 + 2.02988I$	$-6.55976 - 2.76390I$
$u = 0.766826$ $a = -0.410598 - 0.711177I$ $b = 0.241441 + 0.418187I$	$-2.40108 - 2.02988I$	$-6.55976 + 2.76390I$
$u = 0.455697 + 1.200150I$ $a = 0.252108 + 0.649344I$ $b = 1.021040 + 0.524691I$	$-5.87256 + 2.37095I$	$-10.62344 - 1.09779I$
$u = 0.455697 + 1.200150I$ $a = 0.436295 - 0.543004I$ $b = -0.056121 - 1.146590I$	$-5.87256 + 6.43072I$	$-9.29269 - 5.42389I$
$u = 0.455697 - 1.200150I$ $a = 0.252108 - 0.649344I$ $b = 1.021040 - 0.524691I$	$-5.87256 - 2.37095I$	$-10.62344 + 1.09779I$
$u = 0.455697 - 1.200150I$ $a = 0.436295 + 0.543004I$ $b = -0.056121 + 1.146590I$	$-5.87256 - 6.43072I$	$-9.29269 + 5.42389I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$((u^2-u+1)^5)(u^{99}+32u^{98}+\cdots-28u-1)$
c_2	$((u^2+u+1)^5)(u^{99}+6u^{98}+\cdots+4u+1)$
c_3, c_8	$u^{10}(u^{99}+u^{98}+\cdots+3072u+1024)$
c_5	$((u^2-u+1)^5)(u^{99}+6u^{98}+\cdots+4u+1)$
c_6	$((u^5+u^4-2u^3-u^2+u-1)^2)(u^{99}+3u^{98}+\cdots+1403u+73)$
c_7	$((u^5-u^4+2u^3-u^2+u-1)^2)(u^{99}-3u^{98}+\cdots-5u+1)$
c_9	$((u^5+u^4-2u^3-u^2+u-1)^2)(u^{99}-11u^{98}+\cdots+27259u+3341)$
c_{10}	$((u^5-3u^4+4u^3-u^2-u+1)^2)(u^{99}+53u^{98}+\cdots-13u-1)$
c_{11}	$((u^5+u^4+2u^3+u^2+u+1)^2)(u^{99}-3u^{98}+\cdots-5u+1)$
c_{12}	$((u^5-u^4-2u^3+u^2+u+1)^2)(u^{99}+3u^{98}+\cdots+1403u+73)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^5)(y^{99}+76y^{98}+\cdots+624y-1)$
c_2, c_5	$((y^2+y+1)^5)(y^{99}+32y^{98}+\cdots-28y-1)$
c_3, c_8	$y^{10}(y^{99}+55y^{98}+\cdots-1.78258\times10^7y-1048576)$
c_6, c_{12}	$((y^5-5y^4+8y^3-3y^2-y-1)^2)(y^{99}-75y^{98}+\cdots+237579y-5329)$
c_7, c_{11}	$((y^5+3y^4+4y^3+y^2-y-1)^2)(y^{99}+53y^{98}+\cdots-13y-1)$
c_9	$(y^5-5y^4+8y^3-3y^2-y-1)^2$ $\cdot(y^{99}+25y^{98}+\cdots-762194377y-11162281)$
c_{10}	$((y^5-y^4+8y^3-3y^2+3y-1)^2)(y^{99}-11y^{98}+\cdots+27y-1)$