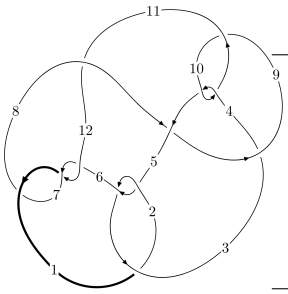
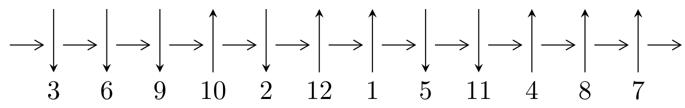
$12a_{0374}$ $(K12a_{0374})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle 3u^{69} + 4u^{68} + \cdots + 4b - 4,\ -2u^{70} - u^{69} + \cdots + 4a - 2,\ u^{71} + 2u^{70} + \cdots - 4u - 2 \rangle \\
I_2^u &= \langle -20u^3a^2 - 83u^3a + \cdots - 210a + 142, \\
&\quad - 2u^3a^2 + u^3a + a^3 - 2a^2u - 3u^2a - u^3 - 2a^2 - au - 2u^2 + 2a - u + 1,\ u^4 + u^2 + u + 1 \rangle \\
I_3^u &= \langle -u^3 + b - u + 1,\ -u^3 + 2u^2 + 2a + 4,\ u^4 + 2u^2 + 2 \rangle \\
I_4^u &= \langle -5u^5a^2 + 15u^5a + \cdots - 30a + 24,\ -2u^4a^2 - u^4a - 2a^2u^2 + 3u^3a - u^4 + a^3 + u^3 + 2au - u^2 + 1, \\
&\quad u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1 \rangle
\end{aligned}
$$

$$I_1^v = \langle a,\ b + 1,\ v - 1 \rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 106 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.

$$I_1^u = \langle 3u^{69}+4u^{68}+\cdots+4b-4,\ -2u^{70}-u^{69}+\cdots+4a-2,\ u^{71}+2u^{70}+\cdots-4u-2\rangle$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{2}u^{70} + \frac{1}{4}u^{69} + \cdots - \frac{3}{2}u + \frac{1}{2} \\ -\frac{3}{4}u^{69} - u^{68} + \cdots + \frac{1}{2}u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{2}u^{70} - u^{69} + \cdots + u + \frac{3}{2} \\ -u^{70} - u^{69} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{2}u^{70} + \frac{17}{2}u^{68} + \cdots - 2u - \frac{1}{2} \\ -u^{69} - u^{68} + \cdots + \frac{1}{2}u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^7 - u^5 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^{13} + 4u^{11} + 7u^9 + 6u^7 + 2u^5 + u \\ -u^{15} - 3u^{13} - 4u^{11} - u^9 + 2u^7 + 2u^5 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{1}{4}u^{56} + \frac{13}{4}u^{54} + \cdots + \frac{1}{2}u + \frac{1}{2} \\ \frac{1}{4}u^{56} + \frac{7}{2}u^{54} + \cdots - \frac{1}{2}u^2 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{70} - 4u^{69} + \cdots + 4u^2 - 2u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{71} + 34u^{70} + \cdots + 9u + 1$
c_2, c_5	$u^{71} + 2u^{70} + \cdots + u + 1$
c_3	$u^{71} + 2u^{70} + \cdots + 2308u + 202$
c_4, c_{10}	$u^{71} - 2u^{70} + \cdots - 4u + 2$
c_6, c_7, c_{12}	$u^{71} - 2u^{70} + \cdots + 13u + 1$
c_8	$u^{71} - 10u^{70} + \cdots - 1608u + 86$
c_9	$u^{71} + 34u^{70} + \cdots + 8u - 4$
c_{11}	$u^{71} + 6u^{70} + \cdots + 3584u + 256$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{71} + 14y^{70} + \cdots - 39y - 1$
c_2, c_5	$y^{71} - 34y^{70} + \cdots + 9y - 1$
c_3	$y^{71} - 22y^{70} + \cdots + 2098096y - 40804$
c_4, c_{10}	$y^{71} + 34y^{70} + \cdots + 8y - 4$
c_6, c_7, c_{12}	$y^{71} - 66y^{70} + \cdots - 71y - 1$
c_8	$y^{71} + 2y^{70} + \cdots - 2565048y - 7396$
c_9	$y^{71} + 6y^{70} + \cdots + 160y - 16$
c_{11}	$y^{71} + 30y^{70} + \cdots - 3604480y - 65536$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.513487 + 0.874485I$ $a = -0.612533 - 0.514676I$ $b = -1.80080 - 0.15793I$	$-1.85439 - 1.13692I$	$-1.95543 + 1.42420I$
$u = 0.513487 - 0.874485I$ $a = -0.612533 + 0.514676I$ $b = -1.80080 + 0.15793I$	$-1.85439 + 1.13692I$	$-1.95543 - 1.42420I$
$u = -0.063916 + 1.045220I$ $a = 0.654592 + 0.217537I$ $b = -0.109398 + 0.923327I$	$3.27038 + 2.34753I$	$0. - 3.27632I$
$u = -0.063916 - 1.045220I$ $a = 0.654592 - 0.217537I$ $b = -0.109398 - 0.923327I$	$3.27038 - 2.34753I$	$0. + 3.27632I$
$u = -0.662691 + 0.682395I$ $a = 0.22635 + 2.15514I$ $b = -0.804600 + 0.848680I$	$3.81746 - 9.62606I$	$3.94934 + 8.10898I$
$u = -0.662691 - 0.682395I$ $a = 0.22635 - 2.15514I$ $b = -0.804600 - 0.848680I$	$3.81746 + 9.62606I$	$3.94934 - 8.10898I$
$u = -0.598790 + 0.882849I$ $a = -0.751708 + 0.316001I$ $b = -1.75329 - 0.07900I$	$3.22141 + 4.73439I$	0
$u = -0.598790 - 0.882849I$ $a = -0.751708 - 0.316001I$ $b = -1.75329 + 0.07900I$	$3.22141 - 4.73439I$	0
$u = 0.653038 + 0.634669I$ $a = 0.89558 + 1.18479I$ $b = 1.300590 + 0.058600I$	$6.19918 + 4.37861I$	$7.35250 - 4.00415I$
$u = 0.653038 - 0.634669I$ $a = 0.89558 - 1.18479I$ $b = 1.300590 - 0.058600I$	$6.19918 - 4.37861I$	$7.35250 + 4.00415I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.609895 + 0.669378I$ $a = 0.27854 - 2.39600I$ $b = -0.846051 - 0.904470I$	$-1.24344 + 5.64932I$	$-0.28766 - 7.43545I$
$u = 0.609895 - 0.669378I$ $a = 0.27854 + 2.39600I$ $b = -0.846051 + 0.904470I$	$-1.24344 - 5.64932I$	$-0.28766 + 7.43545I$
$u = 0.574306 + 0.932793I$ $a = 0.411839 + 1.347550I$ $b = 1.26857 + 1.08036I$	$5.32142 + 0.41145I$	0
$u = 0.574306 - 0.932793I$ $a = 0.411839 - 1.347550I$ $b = 1.26857 - 1.08036I$	$5.32142 - 0.41145I$	0
$u = 0.228446 + 0.838614I$ $a = 0.200792 - 0.458390I$ $b = -0.952126 - 0.674209I$	$-1.97287 - 0.88244I$	$-5.64875 + 2.81510I$
$u = 0.228446 - 0.838614I$ $a = 0.200792 + 0.458390I$ $b = -0.952126 + 0.674209I$	$-1.97287 + 0.88244I$	$-5.64875 - 2.81510I$
$u = 0.705528 + 0.505545I$ $a = 0.73725 - 1.67660I$ $b = -0.629527 - 0.851578I$	$8.46014 + 1.47314I$	$8.26420 - 2.78831I$
$u = 0.705528 - 0.505545I$ $a = 0.73725 + 1.67660I$ $b = -0.629527 + 0.851578I$	$8.46014 - 1.47314I$	$8.26420 + 2.78831I$
$u = -0.728728 + 0.451672I$ $a = 0.79061 - 1.61875I$ $b = 1.64604 + 0.34130I$	$8.18636 + 3.92680I$	$7.58253 - 3.44941I$
$u = -0.728728 - 0.451672I$ $a = 0.79061 + 1.61875I$ $b = 1.64604 - 0.34130I$	$8.18636 - 3.92680I$	$7.58253 + 3.44941I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.791382 + 0.314323I$ $a = 0.08069 + 1.75753I$ $b = 2.01785 - 0.39007I$	$1.92417 - 11.86780I$	$2.47956 + 7.18622I$
$u = 0.791382 - 0.314323I$ $a = 0.08069 - 1.75753I$ $b = 2.01785 + 0.39007I$	$1.92417 + 11.86780I$	$2.47956 - 7.18622I$
$u = -0.231462 + 1.132740I$ $a = 0.214026 + 0.113049I$ $b = -0.010233 - 0.583159I$	$0.12300 + 3.78560I$	0
$u = -0.231462 - 1.132740I$ $a = 0.214026 - 0.113049I$ $b = -0.010233 + 0.583159I$	$0.12300 - 3.78560I$	0
$u = -0.767148 + 0.333935I$ $a = 0.624267 + 1.096350I$ $b = -0.599647 + 0.673879I$	$4.70435 + 6.54204I$	$5.79038 - 3.77114I$
$u = -0.767148 - 0.333935I$ $a = 0.624267 - 1.096350I$ $b = -0.599647 - 0.673879I$	$4.70435 - 6.54204I$	$5.79038 + 3.77114I$
$u = -0.365604 + 1.116320I$ $a = -0.259723 + 0.097301I$ $b = -0.298705 - 0.667149I$	$-1.29499 - 3.68632I$	0
$u = -0.365604 - 1.116320I$ $a = -0.259723 - 0.097301I$ $b = -0.298705 + 0.667149I$	$-1.29499 + 3.68632I$	0
$u = -0.259361 + 1.146110I$ $a = 1.42463 + 0.50253I$ $b = 0.30824 + 1.96322I$	$-7.44510 + 4.53951I$	0
$u = -0.259361 - 1.146110I$ $a = 1.42463 - 0.50253I$ $b = 0.30824 - 1.96322I$	$-7.44510 - 4.53951I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.444604 + 1.090210I$ $a = -1.08820 - 1.03201I$ $b = -1.056750 - 0.021697I$	$-4.15088 + 3.62944I$	0
$u = 0.444604 - 1.090210I$ $a = -1.08820 + 1.03201I$ $b = -1.056750 + 0.021697I$	$-4.15088 - 3.62944I$	0
$u = -0.762418 + 0.303958I$ $a = 0.05370 - 1.95721I$ $b = 2.03025 + 0.46470I$	$-2.99313 + 7.49280I$	$-1.58304 - 5.99856I$
$u = -0.762418 - 0.303958I$ $a = 0.05370 + 1.95721I$ $b = 2.03025 - 0.46470I$	$-2.99313 - 7.49280I$	$-1.58304 + 5.99856I$
$u = 0.539794 + 1.054410I$ $a = -0.00276 + 2.26244I$ $b = 1.81446 + 2.37519I$	$-0.18858 + 6.80979I$	0
$u = 0.539794 - 1.054410I$ $a = -0.00276 - 2.26244I$ $b = 1.81446 - 2.37519I$	$-0.18858 - 6.80979I$	0
$u = 0.586595 + 1.034960I$ $a = -1.157370 - 0.316824I$ $b = -1.92458 + 0.42111I$	$6.90012 + 3.48785I$	0
$u = 0.586595 - 1.034960I$ $a = -1.157370 + 0.316824I$ $b = -1.92458 - 0.42111I$	$6.90012 - 3.48785I$	0
$u = -0.319539 + 1.145970I$ $a = -1.74893 + 0.70644I$ $b = -1.45388 - 0.03347I$	$-8.13430 - 3.88779I$	0
$u = -0.319539 - 1.145970I$ $a = -1.74893 - 0.70644I$ $b = -1.45388 + 0.03347I$	$-8.13430 + 3.88779I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.238257 + 1.165620I$ $a = 1.373680 - 0.332254I$ $b = 0.41998 - 1.74584I$	$-2.75297 - 8.88088I$	0
$u = 0.238257 - 1.165620I$ $a = 1.373680 + 0.332254I$ $b = 0.41998 + 1.74584I$	$-2.75297 + 8.88088I$	0
$u = -0.515095 + 1.084290I$ $a = -1.366990 + 0.207634I$ $b = -1.80978 - 0.87821I$	$-0.42638 - 3.61243I$	0
$u = -0.515095 - 1.084290I$ $a = -1.366990 - 0.207634I$ $b = -1.80978 + 0.87821I$	$-0.42638 + 3.61243I$	0
$u = -0.587342 + 1.068190I$ $a = 0.60859 - 2.11445I$ $b = 2.25733 - 1.62807I$	$6.37174 - 8.94657I$	0
$u = -0.587342 - 1.068190I$ $a = 0.60859 + 2.11445I$ $b = 2.25733 + 1.62807I$	$6.37174 + 8.94657I$	0
$u = 0.344494 + 1.171720I$ $a = -1.65618 - 0.61457I$ $b = -1.44820 + 0.09476I$	$-4.05007 + 7.75611I$	0
$u = 0.344494 - 1.171720I$ $a = -1.65618 + 0.61457I$ $b = -1.44820 - 0.09476I$	$-4.05007 - 7.75611I$	0
$u = -0.450939 + 1.138550I$ $a = -1.100670 + 0.417658I$ $b = -1.152270 - 0.460227I$	$-0.84961 - 3.91539I$	0
$u = -0.450939 - 1.138550I$ $a = -1.100670 - 0.417658I$ $b = -1.152270 + 0.460227I$	$-0.84961 + 3.91539I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.754204 + 0.167987I$ $a = -0.024470 + 0.354598I$ $b = -0.979566 + 0.287647I$	$-0.06219 + 4.14718I$	$1.27520 - 4.45466I$
$u = 0.754204 - 0.167987I$ $a = -0.024470 - 0.354598I$ $b = -0.979566 - 0.287647I$	$-0.06219 - 4.14718I$	$1.27520 + 4.45466I$
$u = 0.618925 + 0.436315I$ $a = 1.37547 + 1.71414I$ $b = 1.35948 - 0.60832I$	$1.60270 - 2.22709I$	$4.83541 + 5.16175I$
$u = 0.618925 - 0.436315I$ $a = 1.37547 - 1.71414I$ $b = 1.35948 + 0.60832I$	$1.60270 + 2.22709I$	$4.83541 - 5.16175I$
$u = -0.718360 + 0.226691I$ $a = -0.077274 - 0.287120I$ $b = -1.027460 - 0.246380I$	$-4.12951 - 0.62986I$	$-4.18016 + 0.87931I$
$u = -0.718360 - 0.226691I$ $a = -0.077274 + 0.287120I$ $b = -1.027460 + 0.246380I$	$-4.12951 + 0.62986I$	$-4.18016 - 0.87931I$
$u = -0.525110 + 1.137140I$ $a = -0.558679 + 1.098690I$ $b = -0.696208 + 0.110571I$	$-6.74053 - 4.06635I$	0
$u = -0.525110 - 1.137140I$ $a = -0.558679 - 1.098690I$ $b = -0.696208 - 0.110571I$	$-6.74053 + 4.06635I$	0
$u = -0.569447 + 1.127590I$ $a = -1.277050 + 0.206790I$ $b = -1.71725 - 0.54419I$	$2.36963 - 11.57700I$	0
$u = -0.569447 - 1.127590I$ $a = -1.277050 - 0.206790I$ $b = -1.71725 + 0.54419I$	$2.36963 + 11.57700I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.559285 + 1.134790I$ $a = 1.32203 - 2.59601I$ $b = 3.42052 - 1.38075I$	$-5.42747 - 12.46830I$	0
$u = -0.559285 - 1.134790I$ $a = 1.32203 + 2.59601I$ $b = 3.42052 + 1.38075I$	$-5.42747 + 12.46830I$	0
$u = 0.507677 + 1.159500I$ $a = -0.512282 - 0.989208I$ $b = -0.641800 - 0.033222I$	$-2.94176 + 0.53130I$	0
$u = 0.507677 - 1.159500I$ $a = -0.512282 + 0.989208I$ $b = -0.641800 + 0.033222I$	$-2.94176 - 0.53130I$	0
$u = 0.570790 + 1.141150I$ $a = 1.34343 + 2.41774I$ $b = 3.26126 + 1.18859I$	$-0.5177 + 16.9633I$	0
$u = 0.570790 - 1.141150I$ $a = 1.34343 - 2.41774I$ $b = 3.26126 - 1.18859I$	$-0.5177 - 16.9633I$	0
$u = -0.582646 + 0.406188I$ $a = 1.51368 + 1.21207I$ $b = -0.328432 + 0.887581I$	$1.57381 - 0.78601I$	$6.17132 + 3.59193I$
$u = -0.582646 - 0.406188I$ $a = 1.51368 - 1.21207I$ $b = -0.328432 - 0.887581I$	$1.57381 + 0.78601I$	$6.17132 - 3.59193I$
$u = -0.656905 + 0.092000I$ $a = 0.529384 + 0.412476I$ $b = -0.595806 + 0.310286I$	$2.09873 - 0.21123I$	$4.89242 - 0.61064I$
$u = -0.656905 - 0.092000I$ $a = 0.529384 - 0.412476I$ $b = -0.595806 - 0.310286I$	$2.09873 + 0.21123I$	$4.89242 + 0.61064I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.486728$ $a = 0.0713723$ $b = -0.936469$	-1.48811	-6.39640

II. $I^u_2 =$
$\langle -20u^3a^2-83u^3a+\cdots-210a+142,\ -2u^3a^2+u^3a+\cdots+2a+1,\ u^4+u^2+u+1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}a\\0.0947867a^2u^3+0.393365au^3+\cdots+0.995261a-0.672986\end{pmatrix}$$

$$a_5 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.0426540a^2u^3-0.327014au^3+\cdots+0.0521327a+1.40284\\-0.0568720a^2u^3-0.436019au^3+\cdots-0.597156a+1.20379\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}u^3\\u^3+u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}u^3+u^2+1\\u^3+u^2+u+1\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.554502a^2u^3+0.251185au^3+\cdots+2.32227a-0.236967\\0.388626a^2u^3+0.312796au^3+\cdots+2.08057a-0.559242\end{pmatrix}$$

$$a_8 = \begin{pmatrix}u^3-u^2\\u^3-u^2-1\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-u^3-u^2-1\\-u^3-u^2-u-1\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0.0568720a^2u^3-0.563981au^3+\cdots-0.402844a+2.79621\\0.175355a^2u^3-1.32227au^3+\cdots-0.658768a+2.45498\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^3-4u^2+2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{12} + 8u^{11} + \cdots - u + 1$
c_2, c_5, c_6 c_7, c_{12}	$u^{12} - 4u^{10} + 6u^8 - 3u^6 - u^4 + u^3 + u^2 - u + 1$
c_3	$(u^4 - 3u^3 + 4u^2 - 3u + 2)^3$
c_4, c_{10}, c_{11}	$(u^4 + u^2 - u + 1)^3$
c_8, c_9	$(u^4 + 2u^3 + 3u^2 + u + 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{12} - 8y^{11} + \cdots + y + 1$
c_2, c_5, c_6 c_7, c_{12}	$y^{12} - 8y^{11} + \cdots + y + 1$
c_3	$(y^4 - y^3 + 2y^2 + 7y + 4)^3$
c_4, c_{10}, c_{11}	$(y^4 + 2y^3 + 3y^2 + y + 1)^3$
c_8, c_9	$(y^4 + 2y^3 + 7y^2 + 5y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = 1.07789 - 1.00535I$ $b = 0.987548 + 0.089110I$	$0.98010 - 1.39709I$	$3.77019 + 3.86736I$
$u = -0.547424 + 0.585652I$ $a = -0.293671 + 0.061787I$ $b = -1.287260 - 0.020553I$	$0.98010 - 1.39709I$	$3.77019 + 3.86736I$
$u = -0.547424 + 0.585652I$ $a = 0.91940 + 2.76614I$ $b = -0.795135 + 1.102750I$	$0.98010 - 1.39709I$	$3.77019 + 3.86736I$
$u = -0.547424 - 0.585652I$ $a = 1.07789 + 1.00535I$ $b = 0.987548 - 0.089110I$	$0.98010 + 1.39709I$	$3.77019 - 3.86736I$
$u = -0.547424 - 0.585652I$ $a = -0.293671 - 0.061787I$ $b = -1.287260 + 0.020553I$	$0.98010 + 1.39709I$	$3.77019 - 3.86736I$
$u = -0.547424 - 0.585652I$ $a = 0.91940 - 2.76614I$ $b = -0.795135 - 1.102750I$	$0.98010 + 1.39709I$	$3.77019 - 3.86736I$
$u = 0.547424 + 1.120870I$ $a = -1.287880 - 0.217456I$ $b = -1.70041 + 0.60693I$	$-2.62503 + 7.64338I$	$-1.77019 - 6.51087I$
$u = 0.547424 + 1.120870I$ $a = -0.550722 - 1.202610I$ $b = -0.710961 - 0.189039I$	$-2.62503 + 7.64338I$	$-1.77019 - 6.51087I$
$u = 0.547424 + 1.120870I$ $a = 1.13499 + 2.86075I$ $b = 3.50622 + 1.82385I$	$-2.62503 + 7.64338I$	$-1.77019 - 6.51087I$
$u = 0.547424 - 1.120870I$ $a = -1.287880 + 0.217456I$ $b = -1.70041 - 0.60693I$	$-2.62503 - 7.64338I$	$-1.77019 + 6.51087I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.547424 - 1.120870I$ $a = -0.550722 + 1.202610I$ $b = -0.710961 + 0.189039I$	$-2.62503 - 7.64338I$	$-1.77019 + 6.51087I$
$u = 0.547424 - 1.120870I$ $a = 1.13499 - 2.86075I$ $b = 3.50622 - 1.82385I$	$-2.62503 - 7.64338I$	$-1.77019 + 6.51087I$

III. $\boldsymbol{I_3^u = \langle -u^3 + b - u + 1,\ -u^3 + 2u^2 + 2a + 4,\ u^4 + 2u^2 + 2\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{2}u^3 - u^2 - 2 \\ u^3 + u - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{2}u^3 - u^2 - 1 \\ u^3 - u^2 + u - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{1}{2}u^3 - u^2 - 1 \\ u^3 - u^2 + u - 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{1}{2}u^3 - u^2 - u - 1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2 - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.455090 + 1.098680I$ $a = -1.77689 - 1.32180I$ $b = -2.09868 + 0.45509I$	$-2.46740 + 3.66386I$	$-4.00000 - 4.00000I$
$u = 0.455090 - 1.098680I$ $a = -1.77689 + 1.32180I$ $b = -2.09868 - 0.45509I$	$-2.46740 - 3.66386I$	$-4.00000 + 4.00000I$
$u = -0.455090 + 1.098680I$ $a = -0.223113 + 0.678203I$ $b = 0.098684 + 0.455090I$	$-2.46740 - 3.66386I$	$-4.00000 + 4.00000I$
$u = -0.455090 - 1.098680I$ $a = -0.223113 - 0.678203I$ $b = 0.098684 - 0.455090I$	$-2.46740 + 3.66386I$	$-4.00000 - 4.00000I$

IV. $I^u_4 = \langle -5u^5a^2 + 15u^5a + \cdots - 30a + 24,\ -2u^4a^2 - u^4a + \cdots + a^3 + 1,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a \\ 0.217391a^2u^5 - 0.652174au^5 + \cdots + 1.30435a - 1.04348 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.391304a^2u^5 + 0.173913au^5 + \cdots + 0.652174a + 1.47826 \\ -0.0869565a^2u^5 + 0.260870au^5 + \cdots - 0.521739a + 1.21739 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^5 + u^4 - 2u^3 + 2u^2 - 2u + 2 \\ -u^5 - 2u^3 + u^2 - 2u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.869565a^2u^5 - 0.608696au^5 + \cdots + 2.21739a - 2.17391 \\ 0.391304a^2u^5 - 1.17391au^5 + \cdots + 2.34783a - 1.47826 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^5 + 2u^3 + u \\ 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^5 - u^4 + 2u^3 - 2u^2 + 2u - 2 \\ u^5 + 2u^3 - u^2 + 2u - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.826087a^2u^5 + 1.47826au^5 + \cdots - 0.956522a + 3.56522 \\ -0.173913a^2u^5 + 1.52174au^5 + \cdots - 1.04348a + 2.43478 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^3 + 4u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} + 12u^{17} + \cdots - 2u^3 + 1$
c_2, c_5, c_6 c_7, c_{12}	$u^{18} - 6u^{16} + \cdots + 2u + 1$
c_3	$(u^3 + u^2 - 1)^6$
c_4, c_{10}, c_{11}	$(u^6 + u^5 + 2u^4 + 2u^3 + 2u^2 + 2u + 1)^3$
c_8, c_9	$(u^6 + 3u^5 + 4u^4 + 2u^3 + 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} - 12y^{17} + \cdots - 16y^2 + 1$
c_2, c_5, c_6 c_7, c_{12}	$y^{18} - 12y^{17} + \cdots + 2y^3 + 1$
c_3	$(y^3 - y^2 + 2y - 1)^6$
c_4, c_{10}, c_{11}	$(y^6 + 3y^5 + 4y^4 + 2y^3 + 1)^3$
c_8, c_9	$(y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.498832 + 1.001300I$ $a = -0.223235 - 1.354840I$ $b = \ \ 0.72220 - 1.74636I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$
$u = -0.498832 + 1.001300I$ $a = -1.21428 + 0.80097I$ $b = -2.51209 - 0.18863I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$
$u = -0.498832 + 1.001300I$ $a = -0.92954 + 1.56791I$ $b = -1.007320 + 0.334757I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$
$u = -0.498832 - 1.001300I$ $a = -0.223235 + 1.354840I$ $b = \ \ 0.72220 + 1.74636I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$
$u = -0.498832 - 1.001300I$ $a = -1.21428 - 0.80097I$ $b = -2.51209 + 0.18863I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$
$u = -0.498832 - 1.001300I$ $a = -0.92954 - 1.56791I$ $b = -1.007320 - 0.334757I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$
$u = \ \ 0.284920 + 1.115140I$ $a = \ \ 1.41549 - 0.81369I$ $b = -0.00186 - 2.26530I$	-4.40332	$-5.01951 + 0.I$
$u = \ \ 0.284920 + 1.115140I$ $a = \ \ 0.0617346 - 0.0738124I$ $b = -0.083715 + 0.613470I$	-4.40332	$-5.01951 + 0.I$
$u = \ \ 0.284920 + 1.115140I$ $a = -1.90738 - 0.79608I$ $b = -1.48427 - 0.03176I$	-4.40332	$-5.01951 + 0.I$
$u = \ \ 0.284920 - 1.115140I$ $a = \ \ 1.41549 + 0.81369I$ $b = -0.00186 + 2.26530I$	-4.40332	$-5.01951 + 0.I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.284920 - 1.115140I$ $a = 0.0617346 + 0.0738124I$ $b = -0.083715 - 0.613470I$	-4.40332	$-5.01951 + 0.I$
$u = 0.284920 - 1.115140I$ $a = -1.90738 + 0.79608I$ $b = -1.48427 + 0.03176I$	-4.40332	$-5.01951 + 0.I$
$u = 0.713912 + 0.305839I$ $a = 0.748472 - 0.975138I$ $b = -0.538111 - 0.638486I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$
$u = 0.713912 + 0.305839I$ $a = -0.157375 + 0.249093I$ $b = -1.093530 + 0.232040I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$
$u = 0.713912 + 0.305839I$ $a = 0.20612 + 2.32629I$ $b = 1.99869 - 0.60760I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$
$u = 0.713912 - 0.305839I$ $a = 0.748472 + 0.975138I$ $b = -0.538111 + 0.638486I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$
$u = 0.713912 - 0.305839I$ $a = -0.157375 - 0.249093I$ $b = -1.093530 - 0.232040I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$
$u = 0.713912 - 0.305839I$ $a = 0.20612 - 2.32629I$ $b = 1.99869 + 0.60760I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$

V. $I_1^v = \langle a,\ b+1,\ v-1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7, c_{12}	$y-1$
c_3, c_4, c_8 c_9, c_{10}, c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$		
$a = 0$	0	0
$b = -1.00000$		

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{12}+8u^{11}+\cdots-u+1)(u^{18}+12u^{17}+\cdots-2u^3+1)$ $\cdot(u^{71}+34u^{70}+\cdots+9u+1)$
c_2	$(u-1)(u+1)^4(u^{12}-4u^{10}+6u^8-3u^6-u^4+u^3+u^2-u+1)$ $\cdot(u^{18}-6u^{16}+\cdots+2u+1)(u^{71}+2u^{70}+\cdots+u+1)$
c_3	$u(u^3+u^2-1)^6(u^4-2u^2+2)(u^4-3u^3+4u^2-3u+2)^3$ $\cdot(u^{71}+2u^{70}+\cdots+2308u+202)$
c_4, c_{10}	$u(u^4+u^2-u+1)^3(u^4+2u^2+2)(u^6+u^5+\cdots+2u+1)^3$ $\cdot(u^{71}-2u^{70}+\cdots-4u+2)$
c_5	$(u-1)^4(u+1)(u^{12}-4u^{10}+6u^8-3u^6-u^4+u^3+u^2-u+1)$ $\cdot(u^{18}-6u^{16}+\cdots+2u+1)(u^{71}+2u^{70}+\cdots+u+1)$
c_6, c_7	$(u-1)^4(u+1)(u^{12}-4u^{10}+6u^8-3u^6-u^4+u^3+u^2-u+1)$ $\cdot(u^{18}-6u^{16}+\cdots+2u+1)(u^{71}-2u^{70}+\cdots+13u+1)$
c_8	$u(u^4-2u^2+2)(u^4+2u^3+3u^2+u+1)^3(u^6+3u^5+4u^4+2u^3+1)^3$ $\cdot(u^{71}-10u^{70}+\cdots-1608u+86)$
c_9	$u(u^2-2u+2)^2(u^4+2u^3+3u^2+u+1)^3(u^6+3u^5+4u^4+2u^3+1)^3$ $\cdot(u^{71}+34u^{70}+\cdots+8u-4)$
c_{11}	$u^5(u^4+u^2-u+1)^3(u^6+u^5+2u^4+2u^3+2u^2+2u+1)^3$ $\cdot(u^{71}+6u^{70}+\cdots+3584u+256)$
c_{12}	$(u-1)(u+1)^4(u^{12}-4u^{10}+6u^8-3u^6-u^4+u^3+u^2-u+1)$ $\cdot(u^{18}-6u^{16}+\cdots+2u+1)(u^{71}-2u^{70}+\cdots+13u+1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^5)(y^{12}-8y^{11}+\cdots+y+1)(y^{18}-12y^{17}+\cdots-16y^2+1)$ $\cdot(y^{71}+14y^{70}+\cdots-39y-1)$
c_2, c_5	$((y-1)^5)(y^{12}-8y^{11}+\cdots+y+1)(y^{18}-12y^{17}+\cdots+2y^3+1)$ $\cdot(y^{71}-34y^{70}+\cdots+9y-1)$
c_3	$y(y^2-2y+2)^2(y^3-y^2+2y-1)^6(y^4-y^3+2y^2+7y+4)^3$ $\cdot(y^{71}-22y^{70}+\cdots+2098096y-40804)$
c_4, c_{10}	$y(y^2+2y+2)^2(y^4+2y^3+3y^2+y+1)^3(y^6+3y^5+4y^4+2y^3+1)^3$ $\cdot(y^{71}+34y^{70}+\cdots+8y-4)$
c_6, c_7, c_{12}	$((y-1)^5)(y^{12}-8y^{11}+\cdots+y+1)(y^{18}-12y^{17}+\cdots+2y^3+1)$ $\cdot(y^{71}-66y^{70}+\cdots-71y-1)$
c_8	$y(y^2-2y+2)^2(y^4+2y^3+7y^2+5y+1)^3$ $\cdot(y^6-y^5+4y^4-2y^3+8y^2+1)^3$ $\cdot(y^{71}+2y^{70}+\cdots-2565048y-7396)$
c_9	$y(y^2+4)^2(y^4+2y^3+\cdots+5y+1)^3(y^6-y^5+\cdots+8y^2+1)^3$ $\cdot(y^{71}+6y^{70}+\cdots+160y-16)$
c_{11}	$y^5(y^4+2y^3+3y^2+y+1)^3(y^6+3y^5+4y^4+2y^3+1)^3$ $\cdot(y^{71}+30y^{70}+\cdots-3604480y-65536)$