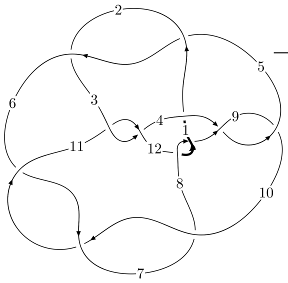
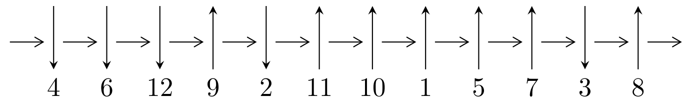
$12a_{1000}$ $(K12a_{1000})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-507973994943u^{25} - 5311743375735u^{24} + \cdots + 943195983256b + 10737106657608,\\
&1342138332201u^{25} + 13747573664325u^{24} + \cdots + 1886391966512a - 21946395856256,\\
&u^{26} + 11u^{25} + \cdots - 96u - 16\rangle\\
I_2^u = \langle &5u^{31} - 16u^{30} + \cdots + 8b + 64,\ -64u^{31}a + 832u^{31} + \cdots - 928a + 12721,\ u^{32} - 4u^{31} + \cdots + 12u + 1\rangle\\
I_3^u = \langle &-2u^{12} - u^{10} + 25u^9 + 60u^8 + 123u^7 + 200u^6 + 228u^5 + 255u^4 + 210u^3 + 144u^2 + 17b + 86u + 33,\\
&-33u^{12} - 68u^{11} + \cdots + 17a - 178,\\
&u^{13} + 2u^{12} + 9u^{11} + 14u^{10} + 30u^9 + 40u^8 + 49u^7 + 60u^6 + 44u^5 + 48u^4 + 24u^3 + 17u^2 + 8u + 1\rangle
\end{aligned}$$

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 104 representations.

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[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. $\boldsymbol{I_1^u = \langle -5.08\times 10^{11}u^{25} - 5.31\times 10^{12}u^{24} + \cdots + 9.43\times 10^{11}b + 1.07\times 10^{13},\ 1.34\times 10^{12}u^{25} + 1.37\times 10^{13}u^{24} + \cdots + 1.89\times 10^{12}a - 2.19\times 10^{13},\ u^{26} + 11u^{25} + \cdots - 96u - 16\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.711484u^{25} - 7.28776u^{24} + \cdots + 62.9142u + 11.6341\\0.538567u^{25} + 5.63164u^{24} + \cdots - 56.6684u - 11.3837\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.771582u^{25} + 7.93248u^{24} + \cdots - 61.5071u - 11.9585\\-0.554928u^{25} - 5.84051u^{24} + \cdots + 63.1134u + 12.3453\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.170627u^{25} - 1.82922u^{24} + \cdots + 29.2931u + 6.47328\\-0.244914u^{25} - 2.63645u^{24} + \cdots + 30.4117u + 5.88703\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.172918u^{25} - 1.65612u^{24} + \cdots + 6.24576u + 0.250310\\0.538567u^{25} + 5.63164u^{24} + \cdots - 56.6684u - 11.3837\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.503649u^{25} + 5.23569u^{24} + \cdots - 49.7132u - 11.2334\\-0.285246u^{25} - 2.91517u^{24} + \cdots + 26.0137u + 5.17604\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.216655u^{25} + 2.09197u^{24} + \cdots + 0.606288u + 1.38678\\-0.554928u^{25} - 5.84051u^{24} + \cdots + 62.1134u + 12.3453\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u^3 + u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^2 + 1\\-u^4 - 2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.0588908u^{25} + 0.409826u^{24} + \cdots + 8.22754u + 2.49800\\-0.437795u^{25} - 4.41833u^{24} + \cdots + 32.6510u + 6.31789\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{378381583910}{117899497907}u^{25} - \frac{3984664362651}{117899497907}u^{24} + \cdots + \frac{462488892072756}{117899497907}u + \frac{9858826741770}{117899497907}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{26} - 23u^{25} + \cdots + 512u - 256$
c_2, c_3, c_5 c_{11}	$u^{26} - 14u^{24} + \cdots - 6u + 1$
c_4, c_8, c_9 c_{12}	$u^{26} - 9u^{24} + \cdots + 3u + 1$
c_6, c_7, c_{10}	$u^{26} + 11u^{25} + \cdots - 96u - 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{26} - 5y^{25} + \cdots - 8060928y + 65536$
c_2, c_3, c_5 c_{11}	$y^{26} - 28y^{25} + \cdots - 18y + 1$
c_4, c_8, c_9 c_{12}	$y^{26} - 18y^{25} + \cdots - 13y + 1$
c_6, c_7, c_{10}	$y^{26} + 23y^{25} + \cdots + 2176y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.346632+0.992789I$ $a=\ \ 0.455057-0.670912I$ $b=\ \ 0.508337+0.684335I$	$4.03470-0.73141I$	$5.45646+3.23030I$
$u=-0.346632-0.992789I$ $a=\ \ 0.455057+0.670912I$ $b=\ \ 0.508337-0.684335I$	$4.03470+0.73141I$	$5.45646-3.23030I$
$u=-0.656581+0.547695I$ $a=-1.13998-1.20654I$ $b=\ \ 1.40930+0.16783I$	$-7.54501-2.22964I$	$-6.88659+1.47861I$
$u=-0.656581-0.547695I$ $a=-1.13998+1.20654I$ $b=\ \ 1.40930-0.16783I$	$-7.54501+2.22964I$	$-6.88659-1.47861I$
$u=-1.012690+0.638363I$ $a=\ \ 0.831253+0.884931I$ $b=-1.40671-0.36552I$	$-0.71270-12.30050I$	$0.84803+8.11656I$
$u=-1.012690-0.638363I$ $a=\ \ 0.831253-0.884931I$ $b=-1.40671+0.36552I$	$-0.71270+12.30050I$	$0.84803-8.11656I$
$u=-0.717925+0.120399I$ $a=-0.520959+0.998156I$ $b=\ \ 0.253833-0.779324I$	$6.67762-3.08794I$	$9.21380+1.80971I$
$u=-0.717925-0.120399I$ $a=-0.520959-0.998156I$ $b=\ \ 0.253833+0.779324I$	$6.67762+3.08794I$	$9.21380-1.80971I$
$u=-1.28198$ $a=-1.13116$ $b=\ \ 1.45012$	-4.99672	2.97320
$u=\ \ 0.126944+1.295060I$ $a=\ \ 0.265595-0.087832I$ $b=\ \ 0.147463+0.332812I$	$-3.35359+2.09018I$	$5.38222-3.50453I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.126944 - 1.295060I$ $a = 0.265595 + 0.087832I$ $b = 0.147463 - 0.332812I$	$-3.35359 - 2.09018I$	$5.38222 + 3.50453I$
$u = -0.309354 + 1.290100I$ $a = -0.511022 + 0.072506I$ $b = 0.064546 - 0.681699I$	$2.31636 - 6.78533I$	$4.90741 + 2.92210I$
$u = -0.309354 - 1.290100I$ $a = -0.511022 - 0.072506I$ $b = 0.064546 + 0.681699I$	$2.31636 + 6.78533I$	$4.90741 - 2.92210I$
$u = -1.082260 + 0.813357I$ $a = 0.813423 + 0.519935I$ $b = -1.303230 + 0.098901I$	$-1.01017 + 5.35308I$	$0. - 4.95781I$
$u = -1.082260 - 0.813357I$ $a = 0.813423 - 0.519935I$ $b = -1.303230 - 0.098901I$	$-1.01017 - 5.35308I$	$0. + 4.95781I$
$u = 0.492337$ $a = 0.403546$ $b = 0.198681$	0.832719	12.0990
$u = -0.20866 + 1.55520I$ $a = 0.155152 - 1.028070I$ $b = 1.56648 + 0.45581I$	$-14.5475 - 5.3956I$	0
$u = -0.20866 - 1.55520I$ $a = 0.155152 + 1.028070I$ $b = 1.56648 - 0.45581I$	$-14.5475 + 5.3956I$	0
$u = 0.109643 + 0.356252I$ $a = -0.85111 + 1.69328I$ $b = -0.696554 - 0.117553I$	$-1.288240 - 0.193189I$	$-7.14857 + 0.44493I$
$u = 0.109643 - 0.356252I$ $a = -0.85111 - 1.69328I$ $b = -0.696554 + 0.117553I$	$-1.288240 + 0.193189I$	$-7.14857 - 0.44493I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.33614+1.61309I$ $a=-0.128911+1.022060I$ $b=-1.60534-0.55150I$	$-8.0518-17.2435I$	0
$u=-0.33614-1.61309I$ $a=-0.128911-1.022060I$ $b=-1.60534+0.55150I$	$-8.0518+17.2435I$	0
$u=-0.51814+1.56536I$ $a=-0.133329-0.923680I$ $b=\ \ 1.51497+0.26989I$	$-10.19140-6.55039I$	0
$u=-0.51814-1.56536I$ $a=-0.133329+0.923680I$ $b=\ \ 1.51497-0.26989I$	$-10.19140+6.55039I$	0
$u=-0.15338+1.72340I$ $a=-0.121371+0.752073I$ $b=-1.277510-0.324523I$	$-10.30440+0.51735I$	0
$u=-0.15338-1.72340I$ $a=-0.121371-0.752073I$ $b=-1.277510+0.324523I$	$-10.30440-0.51735I$	0

II. $I_2^u = \langle 5u^{31} - 16u^{30} + \cdots + 8b + 64,\ -64u^{31}a + 832u^{31} + \cdots - 928a + 12721,\ u^{32} - 4u^{31} + \cdots + 12u + 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ -\frac{5}{8}u^{31} + 2u^{30} + \cdots + 20u - 8 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{5}{8}u^{31}a - 7u^{31} + \cdots + 8a - 104 \\ -u^{31} + \frac{31}{8}u^{30} + \cdots + 21u - 7 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{25}{8}u^{31}a + \frac{515}{8}u^{31} + \cdots - 64a + 1002 \\ -\frac{1}{8}u^{31}a - \frac{5}{8}u^{31} + \cdots + a - 8 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{5}{8}u^{31} + 2u^{30} + \cdots + a - 8 \\ -\frac{5}{8}u^{31} + 2u^{30} + \cdots + 20u - 8 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{31}a - 8u^{31} + \cdots + \frac{65}{8}a - 112 \\ \frac{1}{8}u^{31}a - u^{31} + \cdots + \frac{1}{8}a - 7 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{1}{2}u^{31}a + \frac{31}{8}u^{31} + \cdots + \frac{5}{8}a + 40 \\ -\frac{1}{2}u^{31}a - \frac{25}{8}u^{31} + \cdots + \frac{5}{8}a - 65 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{2}u^{31}a - \frac{81}{8}u^{31} + \cdots + \frac{17}{2}a - 170 \\ -0.500000au^{31} + 5.25000u^{31} + \cdots - 194.625u + 69.3750 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{195}{2}u^{31} - 384u^{30} + \cdots - 4750u + 1496$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{32}+6u^{31}+\cdots+12u+1)^2$
c_2,c_3,c_5 c_{11}	$u^{64}+5u^{63}+\cdots+37990u+2243$
c_4,c_8,c_9 c_{12}	$u^{64}+15u^{63}+\cdots+1020u+389$
c_6,c_7,c_{10}	$(u^{32}-4u^{31}+\cdots+12u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{32}+8y^{31}+\cdots-80y+1)^2$
c_2, c_3, c_5 c_{11}	$y^{64}-125y^{63}+\cdots-105577704y+5031049$
c_4, c_8, c_9 c_{12}	$y^{64}-113y^{63}+\cdots+2826260y+151321$
c_6, c_7, c_{10}	$(y^{32}+36y^{31}+\cdots-224y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.431291 + 0.935489I$ $a = -0.956425 - 0.649337I$ $b = -0.249448 - 0.237320I$	$2.64508 + 4.13131I$	$2.00000 - 1.07938I$
$u = -0.431291 + 0.935489I$ $a = -0.107831 + 0.316363I$ $b = 1.019950 - 0.614672I$	$2.64508 + 4.13131I$	$2.00000 - 1.07938I$
$u = -0.431291 - 0.935489I$ $a = -0.956425 + 0.649337I$ $b = -0.249448 + 0.237320I$	$2.64508 - 4.13131I$	$2.00000 + 1.07938I$
$u = -0.431291 - 0.935489I$ $a = -0.107831 - 0.316363I$ $b = 1.019950 + 0.614672I$	$2.64508 - 4.13131I$	$2.00000 + 1.07938I$
$u = 0.772766 + 0.711176I$ $a = 0.805503 - 1.026110I$ $b = -1.37402 + 0.41443I$	$-4.52142 + 6.63284I$	$-2.00159 - 6.22856I$
$u = 0.772766 + 0.711176I$ $a = -0.695473 + 1.176340I$ $b = 1.352210 - 0.220085I$	$-4.52142 + 6.63284I$	$-2.00159 - 6.22856I$
$u = 0.772766 - 0.711176I$ $a = 0.805503 + 1.026110I$ $b = -1.37402 - 0.41443I$	$-4.52142 - 6.63284I$	$-2.00159 + 6.22856I$
$u = 0.772766 - 0.711176I$ $a = -0.695473 - 1.176340I$ $b = 1.352210 + 0.220085I$	$-4.52142 - 6.63284I$	$-2.00159 + 6.22856I$
$u = 1.042100 + 0.409476I$ $a = -1.038010 + 0.351756I$ $b = 1.379790 - 0.010337I$	$-3.43055 - 0.83324I$	0
$u = 1.042100 + 0.409476I$ $a = 1.143580 - 0.459271I$ $b = -1.225740 - 0.058473I$	$-3.43055 - 0.83324I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.042100 - 0.409476I$ $a = -1.038010 - 0.351756I$ $b = 1.379790 + 0.010337I$	$-3.43055 + 0.83324I$	0
$u = 1.042100 - 0.409476I$ $a = 1.143580 + 0.459271I$ $b = -1.225740 + 0.058473I$	$-3.43055 + 0.83324I$	0
$u = 0.396831 + 0.630762I$ $a = 0.541000 + 0.721874I$ $b = 0.905643 - 0.460146I$	$0.45224 + 3.64045I$	$2.24261 - 7.23107I$
$u = 0.396831 + 0.630762I$ $a = 0.124510 - 1.357460I$ $b = -0.240645 + 0.627704I$	$0.45224 + 3.64045I$	$2.24261 - 7.23107I$
$u = 0.396831 - 0.630762I$ $a = 0.541000 - 0.721874I$ $b = 0.905643 + 0.460146I$	$0.45224 - 3.64045I$	$2.24261 + 7.23107I$
$u = 0.396831 - 0.630762I$ $a = 0.124510 + 1.357460I$ $b = -0.240645 - 0.627704I$	$0.45224 - 3.64045I$	$2.24261 + 7.23107I$
$u = -0.539207 + 0.347535I$ $a = 0.63868 - 1.40504I$ $b = 1.059540 + 0.479611I$	$4.27736 - 7.62552I$	$5.45701 + 7.52207I$
$u = -0.539207 + 0.347535I$ $a = -0.98325 - 1.52321I$ $b = 0.143917 + 0.979573I$	$4.27736 - 7.62552I$	$5.45701 + 7.52207I$
$u = -0.539207 - 0.347535I$ $a = 0.63868 + 1.40504I$ $b = 1.059540 - 0.479611I$	$4.27736 + 7.62552I$	$5.45701 - 7.52207I$
$u = -0.539207 - 0.347535I$ $a = -0.98325 + 1.52321I$ $b = 0.143917 - 0.979573I$	$4.27736 + 7.62552I$	$5.45701 - 7.52207I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.582148$ $a=\ \ 0.662437$ $b=-1.33289$	0.971767	9.58410
$u=-0.582148$ $a=\ \ 2.28961$ $b=-0.385636$	0.971767	9.58410
$u=\ \ 0.490519+0.301188I$ $a=\ \ 1.53553+0.29469I$ $b=-0.178851-0.166315I$	$1.47460-0.45386I$	$7.73807-0.08751I$
$u=\ \ 0.490519+0.301188I$ $a=-0.415975-0.083643I$ $b=\ \ 0.664449+0.607034I$	$1.47460-0.45386I$	$7.73807-0.08751I$
$u=\ \ 0.490519-0.301188I$ $a=\ \ 1.53553-0.29469I$ $b=-0.178851+0.166315I$	$1.47460+0.45386I$	$7.73807+0.08751I$
$u=\ \ 0.490519-0.301188I$ $a=-0.415975+0.083643I$ $b=\ \ 0.664449-0.607034I$	$1.47460+0.45386I$	$7.73807+0.08751I$
$u=-0.18830+1.42349I$ $a=\ \ 0.202038+1.104330I$ $b=-0.414850-0.754593I$	$-3.83881-2.75921I$	0
$u=-0.18830+1.42349I$ $a=-0.483097+0.355334I$ $b=-1.61005+0.07966I$	$-3.83881-2.75921I$	0
$u=-0.18830-1.42349I$ $a=\ \ 0.202038-1.104330I$ $b=-0.414850+0.754593I$	$-3.83881+2.75921I$	0
$u=-0.18830-1.42349I$ $a=-0.483097-0.355334I$ $b=-1.61005-0.07966I$	$-3.83881+2.75921I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.03982 + 1.44524I$ $a = 0.057513 + 0.785575I$ $b = 2.64086 - 2.38897I$	$-5.23105 + 0.39376I$	0
$u = 0.03982 + 1.44524I$ $a = -1.60143 - 1.87142I$ $b = -1.133050 + 0.114406I$	$-5.23105 + 0.39376I$	0
$u = 0.03982 - 1.44524I$ $a = 0.057513 - 0.785575I$ $b = 2.64086 + 2.38897I$	$-5.23105 - 0.39376I$	0
$u = 0.03982 - 1.44524I$ $a = -1.60143 + 1.87142I$ $b = -1.133050 - 0.114406I$	$-5.23105 - 0.39376I$	0
$u = 0.09697 + 1.46165I$ $a = 0.395493 - 0.884437I$ $b = -0.410137 + 0.605887I$	$-4.24943 + 1.41411I$	0
$u = 0.09697 + 1.46165I$ $a = 0.394172 + 0.306749I$ $b = 1.33109 + 0.49231I$	$-4.24943 + 1.41411I$	0
$u = 0.09697 - 1.46165I$ $a = 0.395493 + 0.884437I$ $b = -0.410137 - 0.605887I$	$-4.24943 - 1.41411I$	0
$u = 0.09697 - 1.46165I$ $a = 0.394172 - 0.306749I$ $b = 1.33109 - 0.49231I$	$-4.24943 - 1.41411I$	0
$u = 0.076052 + 0.502619I$ $a = -0.01589 + 1.53409I$ $b = -0.789172 - 0.391993I$	$-1.275510 - 0.126168I$	$-6.13877 - 0.17917I$
$u = 0.076052 + 0.502619I$ $a = -0.99470 + 1.41961I$ $b = -0.772271 + 0.108685I$	$-1.275510 - 0.126168I$	$-6.13877 - 0.17917I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.076052 - 0.502619I$ $a = -0.01589 - 1.53409I$ $b = -0.789172 + 0.391993I$	$-1.275510 + 0.126168I$	$-6.13877 + 0.17917I$
$u = 0.076052 - 0.502619I$ $a = -0.99470 - 1.41961I$ $b = -0.772271 - 0.108685I$	$-1.275510 + 0.126168I$	$-6.13877 + 0.17917I$
$u = -0.15788 + 1.49111I$ $a = 0.990763 - 0.348619I$ $b = 1.334190 + 0.255540I$	$-1.85151 - 10.06120I$	0
$u = -0.15788 + 1.49111I$ $a = 0.075786 - 0.902790I$ $b = 0.36340 + 1.53238I$	$-1.85151 - 10.06120I$	0
$u = -0.15788 - 1.49111I$ $a = 0.990763 + 0.348619I$ $b = 1.334190 - 0.255540I$	$-1.85151 + 10.06120I$	0
$u = -0.15788 - 1.49111I$ $a = 0.075786 + 0.902790I$ $b = 0.36340 - 1.53238I$	$-1.85151 + 10.06120I$	0
$u = 0.03260 + 1.52702I$ $a = -0.105052 + 0.896857I$ $b = -0.468227 - 1.029110I$	$-8.11506 + 0.32962I$	0
$u = 0.03260 + 1.52702I$ $a = -0.680170 + 0.292106I$ $b = -1.372940 - 0.131175I$	$-8.11506 + 0.32962I$	0
$u = 0.03260 - 1.52702I$ $a = -0.105052 - 0.896857I$ $b = -0.468227 + 1.029110I$	$-8.11506 - 0.32962I$	0
$u = 0.03260 - 1.52702I$ $a = -0.680170 - 0.292106I$ $b = -1.372940 + 0.131175I$	$-8.11506 - 0.32962I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.07478 + 1.55930I$ $a = -0.126779 - 0.865817I$ $b = -0.175645 + 0.991240I$	$-6.95948 + 5.18070I$	0
$u = 0.07478 + 1.55930I$ $a = 0.628848 + 0.142802I$ $b = 1.340590 - 0.262433I$	$-6.95948 + 5.18070I$	0
$u = 0.07478 - 1.55930I$ $a = -0.126779 + 0.865817I$ $b = -0.175645 - 0.991240I$	$-6.95948 - 5.18070I$	0
$u = 0.07478 - 1.55930I$ $a = 0.628848 - 0.142802I$ $b = 1.340590 + 0.262433I$	$-6.95948 - 5.18070I$	0
$u = 0.24956 + 1.60155I$ $a = -0.136197 - 0.928161I$ $b = -1.67985 + 0.63113I$	$-12.1519 + 10.4459I$	0
$u = 0.24956 + 1.60155I$ $a = 0.225165 + 1.083980I$ $b = 1.45251 - 0.44976I$	$-12.1519 + 10.4459I$	0
$u = 0.24956 - 1.60155I$ $a = -0.136197 + 0.928161I$ $b = -1.67985 - 0.63113I$	$-12.1519 - 10.4459I$	0
$u = 0.24956 - 1.60155I$ $a = 0.225165 - 1.083980I$ $b = 1.45251 + 0.44976I$	$-12.1519 - 10.4459I$	0
$u = 0.36857 + 1.67271I$ $a = 0.037760 - 0.877985I$ $b = -1.219860 + 0.318063I$	$-10.34730 + 4.76510I$	0
$u = 0.36857 + 1.67271I$ $a = 0.028092 + 0.735464I$ $b = 1.48253 - 0.26044I$	$-10.34730 + 4.76510I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.36857 - 1.67271I$ $a = 0.037760 + 0.877985I$ $b = -1.219860 - 0.318063I$	$-10.34730 - 4.76510I$	0
$u = 0.36857 - 1.67271I$ $a = 0.028092 - 0.735464I$ $b = 1.48253 + 0.26044I$	$-10.34730 - 4.76510I$	0
$u = -0.0656714$ $a = 15.2618$ $b = -8.59100$	-0.00222484	1871.50
$u = -0.0656714$ $a = 130.818$ $b = -1.00226$	-0.00222484	1871.50

III. $I_3^u = \langle -2u^{12} - u^{10} + \cdots + 17b + 33,\ -33u^{12} - 68u^{11} + \cdots + 17a - 178,\ u^{13} + 2u^{12} + \cdots + 8u + 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1.94118u^{12} + 4u^{11} + \cdots + 24.5294u + 10.4706 \\ 0.117647u^{12} + 0.0588235u^{10} + \cdots - 5.05882u - 1.94118 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.05882u^{12} + 4u^{11} + \cdots + 33.4706u + 13.5294 \\ -0.117647u^{12} - 1.05882u^{10} + \cdots - 1.94118u - 2.05882 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.05882u^{12} - 2u^{11} + \cdots - 18.4706u - 6.52941 \\ -0.117647u^{12} - u^{11} + \cdots - 0.941176u + 0.941176 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2.05882u^{12} + 4u^{11} + \cdots + 19.4706u + 8.52941 \\ 0.117647u^{12} + 0.0588235u^{10} + \cdots - 5.05882u - 1.94118 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2.17647u^{12} + 4u^{11} + \cdots + 28.4118u + 11.5882 \\ \frac{2}{17}u^{12} + u^{11} + \cdots - \frac{18}{17}u - \frac{33}{17} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.94118u^{12} + 4u^{11} + \cdots + 30.5294u + 12.4706 \\ -0.117647u^{12} - 1.05882u^{10} + \cdots - 2.94118u - 2.05882 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2.17647u^{12} + 3u^{11} + \cdots + 31.4118u + 14.5882 \\ -u^{12} - 2u^{11} + \cdots - 7u - 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $=$
$\frac{32}{17}u^{12} + \frac{101}{17}u^{10} - \frac{162}{17}u^9 - \frac{246}{17}u^8 - \frac{710}{17}u^7 - \frac{1347}{17}u^6 - \frac{1149}{17}u^5 - 106u^4 - \frac{1014}{17}u^3 - \frac{774}{17}u^2 - \frac{509}{17}u - \frac{69}{17}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} - u^{12} + \cdots - 12u + 1$
c_2, c_{11}	$u^{13} + u^{12} + \cdots - u + 1$
c_3, c_5	$u^{13} - u^{12} + \cdots - u - 1$
c_4, c_8	$u^{13} - u^{12} + \cdots + 5u^2 - 1$
c_6, c_7	$u^{13} + 2u^{12} + \cdots + 8u + 1$
c_9, c_{12}	$u^{13} + u^{12} + \cdots - 5u^2 + 1$
c_{10}	$u^{13} - 2u^{12} + \cdots + 8u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 5y^{12} + \cdots + 24y - 1$
c_2, c_3, c_5 c_{11}	$y^{13} - 13y^{12} + \cdots + 11y - 1$
c_4, c_8, c_9 c_{12}	$y^{13} - 11y^{12} + \cdots + 10y - 1$
c_6, c_7, c_{10}	$y^{13} + 14y^{12} + \cdots + 30y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.369408 + 0.844268I$ $a = 0.855966 - 0.556779I$ $b = 0.786271 + 0.516986I$	$2.48419 - 5.58074I$	$0.98028 + 7.34042I$
$u = 0.369408 - 0.844268I$ $a = 0.855966 + 0.556779I$ $b = 0.786271 - 0.516986I$	$2.48419 + 5.58074I$	$0.98028 - 7.34042I$
$u = 0.207504 + 1.124570I$ $a = -0.341943 - 0.545748I$ $b = 0.542776 - 0.497782I$	$1.35916 + 7.74713I$	$-0.66321 - 6.70613I$
$u = 0.207504 - 1.124570I$ $a = -0.341943 + 0.545748I$ $b = 0.542776 + 0.497782I$	$1.35916 - 7.74713I$	$-0.66321 + 6.70613I$
$u = -1.25079$ $a = -1.12601$ $b = 1.40840$	-5.72243	-9.02310
$u = -0.148482 + 1.242790I$ $a = 0.182382 + 0.401286I$ $b = -0.525793 + 0.167078I$	$-3.94795 - 2.05500I$	$-8.88235 + 2.80157I$
$u = -0.148482 - 1.242790I$ $a = 0.182382 - 0.401286I$ $b = -0.525793 - 0.167078I$	$-3.94795 + 2.05500I$	$-8.88235 - 2.80157I$
$u = -0.06029 + 1.44510I$ $a = -0.330672 + 1.024240I$ $b = -1.46018 - 0.53960I$	$-5.25730 - 0.86581I$	$0.601613 + 0.345135I$
$u = -0.06029 - 1.44510I$ $a = -0.330672 - 1.024240I$ $b = -1.46018 + 0.53960I$	$-5.25730 + 0.86581I$	$0.601613 - 0.345135I$
$u = -0.414245$ $a = 1.80075$ $b = -0.745951$	-0.231166	2.15330

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.44334 + 1.63602I$ $a = -0.044120 - 0.869667I$ $b = 1.44235 + 0.31338I$	$-11.35960 - 6.33356I$	$-6.19149 + 5.07091I$
$u = -0.44334 - 1.63602I$ $a = -0.044120 + 0.869667I$ $b = 1.44235 - 0.31338I$	$-11.35960 + 6.33356I$	$-6.19149 - 5.07091I$
$u = -0.184571$ $a = 6.68203$ $b = -1.23331$	-0.0818132	0.180080

IV. $\boldsymbol{I_1^v = \langle a,\ b+1,\ v+1\rangle}$

(i) Arc colorings

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

(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_9 c_{11}, c_{12}	$u-1$
c_3, c_4, c_5 c_8	$u+1$
c_6, c_7, c_{10}	u

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)(u^{13}-u^{12}+\cdots-12u+1)(u^{26}-23u^{25}+\cdots+512u-256)$ $\cdot(u^{32}+6u^{31}+\cdots+12u+1)^2$
c_2, c_{11}	$(u-1)(u^{13}+u^{12}+\cdots-u+1)(u^{26}-14u^{24}+\cdots-6u+1)$ $\cdot(u^{64}+5u^{63}+\cdots+37990u+2243)$
c_3, c_5	$(u+1)(u^{13}-u^{12}+\cdots-u-1)(u^{26}-14u^{24}+\cdots-6u+1)$ $\cdot(u^{64}+5u^{63}+\cdots+37990u+2243)$
c_4, c_8	$(u+1)(u^{13}-u^{12}+\cdots+5u^2-1)(u^{26}-9u^{24}+\cdots+3u+1)$ $\cdot(u^{64}+15u^{63}+\cdots+1020u+389)$
c_6, c_7	$u(u^{13}+2u^{12}+\cdots+8u+1)(u^{26}+11u^{25}+\cdots-96u-16)$ $\cdot(u^{32}-4u^{31}+\cdots+12u+1)^2$
c_9, c_{12}	$(u-1)(u^{13}+u^{12}+\cdots-5u^2+1)(u^{26}-9u^{24}+\cdots+3u+1)$ $\cdot(u^{64}+15u^{63}+\cdots+1020u+389)$
c_{10}	$u(u^{13}-2u^{12}+\cdots+8u-1)(u^{26}+11u^{25}+\cdots-96u-16)$ $\cdot(u^{32}-4u^{31}+\cdots+12u+1)^2$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)(y^{13}-5y^{12}+\cdots+24y-1)$ $\cdot(y^{26}-5y^{25}+\cdots-8060928y+65536)(y^{32}+8y^{31}+\cdots-80y+1)^2$
c_2, c_3, c_5 c_{11}	$(y-1)(y^{13}-13y^{12}+\cdots+11y-1)(y^{26}-28y^{25}+\cdots-18y+1)$ $\cdot(y^{64}-125y^{63}+\cdots-105577704y+5031049)$
c_4, c_8, c_9 c_{12}	$(y-1)(y^{13}-11y^{12}+\cdots+10y-1)(y^{26}-18y^{25}+\cdots-13y+1)$ $\cdot(y^{64}-113y^{63}+\cdots+2826260y+151321)$
c_6, c_7, c_{10}	$y(y^{13}+14y^{12}+\cdots+30y-1)(y^{26}+23y^{25}+\cdots+2176y+256)$ $\cdot(y^{32}+36y^{31}+\cdots-224y+1)^2$