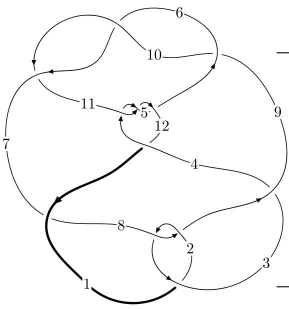
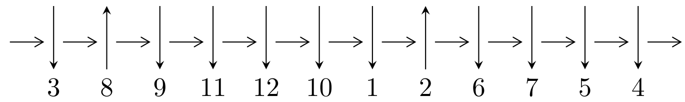
$12a_{0739}$ $(K12a_{0739})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3u^{31} + 6u^{30} + \cdots + b + 3,\ -7u^{31} - 17u^{30} + \cdots + 2a - 6,\ u^{32} + 3u^{31} + \cdots + 6u + 2\rangle$$
$$I_2^u = \langle u^{23}a + 7u^{23} + \cdots - a - 50,\ 2u^{23}a - u^{23} + \cdots + a^2 - a,\ u^{24} - u^{23} + \cdots - 2u + 1\rangle$$
$$I_3^u = \langle b - 1,\ u^3 + 2u^2 + 2a + 4,\ u^4 + 2u^2 + 2\rangle$$

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 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. $I_1^u = \langle 3u^{31}+6u^{30}+\cdots+b+3,\ -7u^{31}-17u^{30}+\cdots+2a-6,\ u^{32}+3u^{31}+\cdots+6u+2\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^3\\u^3+u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}\frac{7}{2}u^{31}+\frac{17}{2}u^{30}+\cdots+10u+3\\-3u^{31}-6u^{30}+\cdots-6u-3\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-\frac{1}{2}u^{31}-\frac{3}{2}u^{30}+\cdots-2u-1\\-u^{29}-u^{28}+\cdots-u-1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^3\\u^5+u^3+u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^6-u^4+1\\-u^8-2u^6-2u^4\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}\frac{3}{2}u^{31}+\frac{7}{2}u^{30}+\cdots+4u+2\\-u^{31}-2u^{30}+\cdots-2u-1\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u^{11}+2u^9+2u^7+u^3\\-u^{11}-3u^9-4u^7-u^5+u^3+u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-\frac{1}{2}u^{31}-\frac{3}{2}u^{30}+\cdots-4u-3\\-u^{29}-u^{28}+\cdots-2u-1\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 2u^{30}+6u^{29}+24u^{28}+48u^{27}+118u^{26}+184u^{25}+346u^{24}+442u^{23}+680u^{22}+734u^{21}+948u^{20}+882u^{19}+940u^{18}+750u^{17}+614u^{16}+384u^{15}+160u^{14}-26u^{13}-174u^{12}-266u^{11}-274u^{10}-286u^9-220u^8-170u^7-92u^6-46u^5-16u^4-6u^3+12u^2+14u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} + 17u^{31} + \cdots + 4u + 4$
c_2, c_8	$u^{32} - 3u^{31} + \cdots - 6u + 2$
c_3, c_7	$u^{32} + 3u^{31} + \cdots + 186u + 34$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$u^{32} + u^{31} + \cdots - 2u - 1$
c_{12}	$u^{32} - 3u^{31} + \cdots + 256u + 256$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} - 3y^{31} + \cdots - 240y + 16$
c_2, c_8	$y^{32} + 17y^{31} + \cdots + 4y + 4$
c_3, c_7	$y^{32} - 23y^{31} + \cdots + 1988y + 1156$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$y^{32} - 35y^{31} + \cdots - 8y + 1$
c_{12}	$y^{32} + y^{31} + \cdots - 1441792y + 65536$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.530176 + 0.767965I$ $a = -0.333698 + 1.088190I$ $b = -1.227720 - 0.174945I$	$3.24325 + 2.15228I$	$-1.95940 - 4.22418I$
$u = 0.530176 - 0.767965I$ $a = -0.333698 - 1.088190I$ $b = -1.227720 + 0.174945I$	$3.24325 - 2.15228I$	$-1.95940 + 4.22418I$
$u = 0.600367 + 0.882410I$ $a = 1.053060 - 0.667414I$ $b = 0.99155 + 1.32550I$	$-5.84755 + 9.45240I$	$-12.6198 - 8.2074I$
$u = 0.600367 - 0.882410I$ $a = 1.053060 + 0.667414I$ $b = 0.99155 - 1.32550I$	$-5.84755 - 9.45240I$	$-12.6198 + 8.2074I$
$u = 0.646120 + 0.645507I$ $a = -0.580073 - 1.083300I$ $b = 0.852194 - 1.117410I$	$-5.16481 - 4.62443I$	$-11.58848 + 2.31548I$
$u = 0.646120 - 0.645507I$ $a = -0.580073 + 1.083300I$ $b = 0.852194 + 1.117410I$	$-5.16481 + 4.62443I$	$-11.58848 - 2.31548I$
$u = -0.131686 + 1.135040I$ $a = -0.83751 + 1.33294I$ $b = 0.240682 - 1.143010I$	$-11.15830 - 4.71723I$	$-19.1935 + 3.5978I$
$u = -0.131686 - 1.135040I$ $a = -0.83751 - 1.33294I$ $b = 0.240682 + 1.143010I$	$-11.15830 + 4.71723I$	$-19.1935 - 3.5978I$
$u = -0.837356 + 0.165249I$ $a = 0.404130 - 0.561898I$ $b = 1.02549 + 1.88978I$	$-9.6605 + 10.4842I$	$-13.3472 - 5.6777I$
$u = -0.837356 - 0.165249I$ $a = 0.404130 + 0.561898I$ $b = 1.02549 - 1.88978I$	$-9.6605 - 10.4842I$	$-13.3472 + 5.6777I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.850182$ $a = -0.699857$ $b = -0.827456$	-14.5114	-16.1110
$u = -0.716975 + 0.384483I$ $a = -0.620707 - 0.541693I$ $b = 0.537816 - 0.772266I$	$-6.35392 - 2.54841I$	$-12.91352 + 2.61370I$
$u = -0.716975 - 0.384483I$ $a = -0.620707 + 0.541693I$ $b = 0.537816 + 0.772266I$	$-6.35392 + 2.54841I$	$-12.91352 - 2.61370I$
$u = -0.556688 + 1.075410I$ $a = -1.58889 + 0.49107I$ $b = 0.474528 + 0.553995I$	$-8.36419 - 2.29995I$	$-16.4016 + 1.9872I$
$u = -0.556688 - 1.075410I$ $a = -1.58889 - 0.49107I$ $b = 0.474528 - 0.553995I$	$-8.36419 + 2.29995I$	$-16.4016 - 1.9872I$
$u = 0.446730 + 1.133610I$ $a = -0.174401 - 0.268039I$ $b = 0.451030 - 0.097453I$	$-4.05143 + 3.92335I$	$-11.83314 - 4.97716I$
$u = 0.446730 - 1.133610I$ $a = -0.174401 + 0.268039I$ $b = 0.451030 + 0.097453I$	$-4.05143 - 3.92335I$	$-11.83314 + 4.97716I$
$u = -0.385111 + 1.156080I$ $a = 1.50345 + 1.00275I$ $b = -0.605346 - 0.873356I$	$-2.81095 - 0.89291I$	$-9.61808 - 1.56697I$
$u = -0.385111 - 1.156080I$ $a = 1.50345 - 1.00275I$ $b = -0.605346 + 0.873356I$	$-2.81095 + 0.89291I$	$-9.61808 + 1.56697I$
$u = -0.727485 + 0.163192I$ $a = 0.025322 + 0.657062I$ $b = -0.937084 - 0.752441I$	$0.91865 + 2.74283I$	$-4.47712 - 4.42713I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.727485-0.163192I$ $a=\ \ 0.025322-0.657062I$ $b=-0.937084+0.752441I$	$0.91865-2.74283I$	$-4.47712+4.42713I$
$u=-0.156809+0.717859I$ $a=\ \ 0.551971-0.300182I$ $b=\ \ 0.009711+0.252381I$	$-0.500387-0.882970I$	$-9.10822+7.52488I$
$u=-0.156809-0.717859I$ $a=\ \ 0.551971+0.300182I$ $b=\ \ 0.009711-0.252381I$	$-0.500387+0.882970I$	$-9.10822-7.52488I$
$u=-0.502524+1.164790I$ $a=-0.02663-2.31078I$ $b=-1.016320+0.969217I$	$-1.97783-7.36348I$	$-8.22078+7.59115I$
$u=-0.502524-1.164790I$ $a=-0.02663+2.31078I$ $b=-1.016320-0.969217I$	$-1.97783+7.36348I$	$-8.22078-7.59115I$
$u=-0.355660+1.231240I$ $a=-1.84106-2.12601I$ $b=\ \ 0.82482+1.97592I$	$-13.9647+6.4949I$	$-17.9768-2.7490I$
$u=-0.355660-1.231240I$ $a=-1.84106+2.12601I$ $b=\ \ 0.82482-1.97592I$	$-13.9647-6.4949I$	$-17.9768+2.7490I$
$u=-0.529210+1.200000I$ $a=\ \ 1.21068+3.02446I$ $b=\ \ 1.12053-2.00398I$	$-12.7401-15.4900I$	$-16.2477+8.8219I$
$u=-0.529210-1.200000I$ $a=\ \ 1.21068-3.02446I$ $b=\ \ 1.12053+2.00398I$	$-12.7401+15.4900I$	$-16.2477-8.8219I$
$u=\ \ 0.455444+1.234730I$ $a=\ \ 0.384015+0.486298I$ $b=-0.986970+0.213554I$	$-18.2324+4.6426I$	$-19.4334-3.2455I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.455444 - 1.234730I$ $a = 0.384015 - 0.486298I$ $b = -0.986970 - 0.213554I$	$-18.2324 - 4.6426I$	$-19.4334 + 3.2455I$
$u = 0.591155$ $a = 0.440555$ $b = 0.317636$	-1.06479	-10.0120

II.

$$\boldsymbol{I_2^u = \langle u^{23}a+7u^{23}+\cdots-a-50,\ 2u^{23}a-u^{23}+\cdots+a^2-a,\ u^{24}-u^{23}+\cdots-2u+1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -0.0232558au^{23}-0.162791u^{23}+\cdots+0.0232558a+1.16279 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.162791au^{23}-0.139535u^{23}+\cdots-0.837209a+0.139535 \\ 0.186047au^{23}+0.302326u^{23}+\cdots-0.186047a+0.697674 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5+u^3+u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^6-u^4+1 \\ -u^8-2u^6-2u^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0232558au^{23}-0.162791u^{23}+\cdots+1.02326a+1.16279 \\ -0.139535au^{23}+0.0232558u^{23}+\cdots+0.139535a+0.976744 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{11}+2u^9+2u^7+u^3 \\ -u^{11}-3u^9-4u^7-u^5+u^3+u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.0232558au^{23}-0.162791u^{23}+\cdots-0.976744a+0.162791 \\ 0.0232558au^{23}+0.162791u^{23}+\cdots-0.0232558a+0.837209 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{23}+4u^{22}-24u^{21}+20u^{20}-68u^{19}+52u^{18}-108u^{17}+80u^{16}-96u^{15}+84u^{14}-32u^{13}+52u^{12}+24u^{11}+8u^{10}+32u^9-28u^8+16u^7-20u^6-4u^4+4u^3+4u^2-4u-6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{24}+13u^{23}+\cdots-2u^2+1)^2$
c_2, c_8	$(u^{24}+u^{23}+\cdots+2u+1)^2$
c_3, c_7	$(u^{24}-u^{23}+\cdots-10u+1)^2$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$u^{48}+u^{47}+\cdots-4u+1$
c_{12}	$(u^{24}-3u^{23}+\cdots-4u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{24} - 3y^{23} + \cdots - 4y + 1)^2$
c_2, c_8	$(y^{24} + 13y^{23} + \cdots - 2y^2 + 1)^2$
c_3, c_7	$(y^{24} - 19y^{23} + \cdots - 48y + 1)^2$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$y^{48} - 37y^{47} + \cdots + 20y + 1$
c_{12}	$(y^{24} + y^{23} + \cdots + 20y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.539628 + 0.849352I$ $a = -0.810554 - 0.445397I$ $b = -1.20576 + 0.87004I$	$-0.84994 - 5.71321I$	$-7.89177 + 7.50361I$
$u = -0.539628 + 0.849352I$ $a = 0.69898 + 1.48637I$ $b = 1.20415 - 0.78961I$	$-0.84994 - 5.71321I$	$-7.89177 + 7.50361I$
$u = -0.539628 - 0.849352I$ $a = -0.810554 + 0.445397I$ $b = -1.20576 - 0.87004I$	$-0.84994 + 5.71321I$	$-7.89177 - 7.50361I$
$u = -0.539628 - 0.849352I$ $a = 0.69898 - 1.48637I$ $b = 1.20415 + 0.78961I$	$-0.84994 + 5.71321I$	$-7.89177 - 7.50361I$
$u = 0.096397 + 0.986281I$ $a = 0.335716 + 0.777902I$ $b = 0.148186 - 1.237850I$	$-5.03371 + 2.05721I$	$-16.2730 - 4.0179I$
$u = 0.096397 + 0.986281I$ $a = -1.83300 - 0.82815I$ $b = 0.584267 + 0.297623I$	$-5.03371 + 2.05721I$	$-16.2730 - 4.0179I$
$u = 0.096397 - 0.986281I$ $a = 0.335716 - 0.777902I$ $b = 0.148186 + 1.237850I$	$-5.03371 - 2.05721I$	$-16.2730 + 4.0179I$
$u = 0.096397 - 0.986281I$ $a = -1.83300 + 0.82815I$ $b = 0.584267 - 0.297623I$	$-5.03371 - 2.05721I$	$-16.2730 + 4.0179I$
$u = 0.414627 + 0.808476I$ $a = 0.562342 - 0.117972I$ $b = 1.45444 + 0.06431I$	$-3.34583 + 1.77225I$	$-12.01088 - 4.04184I$
$u = 0.414627 + 0.808476I$ $a = -0.18786 - 2.56978I$ $b = 1.160570 + 0.339960I$	$-3.34583 + 1.77225I$	$-12.01088 - 4.04184I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.414627 - 0.808476I$ $a = 0.562342 + 0.117972I$ $b = 1.45444 - 0.06431I$	$-3.34583 - 1.77225I$	$-12.01088 + 4.04184I$
$u = 0.414627 - 0.808476I$ $a = -0.18786 + 2.56978I$ $b = 1.160570 - 0.339960I$	$-3.34583 - 1.77225I$	$-12.01088 + 4.04184I$
$u = -0.542169 + 0.664263I$ $a = -0.013199 + 0.714741I$ $b = 1.221860 + 0.515853I$	$-0.325618 + 1.343200I$	$-5.97036 - 0.62000I$
$u = -0.542169 + 0.664263I$ $a = 0.35358 - 1.62117I$ $b = -0.898839 - 0.548932I$	$-0.325618 + 1.343200I$	$-5.97036 - 0.62000I$
$u = -0.542169 - 0.664263I$ $a = -0.013199 - 0.714741I$ $b = 1.221860 - 0.515853I$	$-0.325618 - 1.343200I$	$-5.97036 + 0.62000I$
$u = -0.542169 - 0.664263I$ $a = 0.35358 + 1.62117I$ $b = -0.898839 + 0.548932I$	$-0.325618 - 1.343200I$	$-5.97036 + 0.62000I$
$u = 0.796432 + 0.144602I$ $a = -0.024899 + 0.947038I$ $b = 0.86856 - 1.22361I$	$-4.08687 - 6.17959I$	$-10.21479 + 5.04555I$
$u = 0.796432 + 0.144602I$ $a = -0.352028 - 0.405762I$ $b = -1.41700 + 1.69394I$	$-4.08687 - 6.17959I$	$-10.21479 + 5.04555I$
$u = 0.796432 - 0.144602I$ $a = -0.024899 - 0.947038I$ $b = 0.86856 + 1.22361I$	$-4.08687 + 6.17959I$	$-10.21479 - 5.04555I$
$u = 0.796432 - 0.144602I$ $a = -0.352028 + 0.405762I$ $b = -1.41700 - 1.69394I$	$-4.08687 + 6.17959I$	$-10.21479 - 5.04555I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.472424 + 1.121720I$ $a = 0.617013 + 0.630854I$ $b = -0.105671 - 0.147261I$	$-4.03801 + 3.77265I$	$-10.10807 - 3.49106I$
$u = 0.472424 + 1.121720I$ $a = -0.87913 - 1.24478I$ $b = 1.079170 + 0.069000I$	$-4.03801 + 3.77265I$	$-10.10807 - 3.49106I$
$u = 0.472424 - 1.121720I$ $a = 0.617013 - 0.630854I$ $b = -0.105671 + 0.147261I$	$-4.03801 - 3.77265I$	$-10.10807 + 3.49106I$
$u = 0.472424 - 1.121720I$ $a = -0.87913 + 1.24478I$ $b = 1.079170 - 0.069000I$	$-4.03801 - 3.77265I$	$-10.10807 + 3.49106I$
$u = -0.766849 + 0.083191I$ $a = -0.847511 - 0.813506I$ $b = 0.475866 + 0.640007I$	$-5.92424 + 1.18290I$	$-13.39246 - 0.39910I$
$u = -0.766849 + 0.083191I$ $a = 0.381935 - 0.210219I$ $b = 1.81850 + 1.06364I$	$-5.92424 + 1.18290I$	$-13.39246 - 0.39910I$
$u = -0.766849 - 0.083191I$ $a = -0.847511 + 0.813506I$ $b = 0.475866 - 0.640007I$	$-5.92424 - 1.18290I$	$-13.39246 + 0.39910I$
$u = -0.766849 - 0.083191I$ $a = 0.381935 + 0.210219I$ $b = 1.81850 - 1.06364I$	$-5.92424 - 1.18290I$	$-13.39246 + 0.39910I$
$u = 0.376287 + 1.204930I$ $a = -1.74160 + 1.67094I$ $b = 0.647235 - 1.204540I$	$-8.11968 - 2.24524I$	$-15.0270 + 1.8938I$
$u = 0.376287 + 1.204930I$ $a = 2.37658 - 1.59469I$ $b = -1.20203 + 1.95399I$	$-8.11968 - 2.24524I$	$-15.0270 + 1.8938I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.376287 - 1.204930I$ $a = -1.74160 - 1.67094I$ $b = 0.647235 + 1.204540I$	$-8.11968 + 2.24524I$	$-15.0270 - 1.8938I$
$u = 0.376287 - 1.204930I$ $a = 2.37658 + 1.59469I$ $b = -1.20203 - 1.95399I$	$-8.11968 + 2.24524I$	$-15.0270 - 1.8938I$
$u = -0.413902 + 1.197930I$ $a = -1.53766 - 0.93732I$ $b = 0.235526 + 0.577363I$	$-9.64981 - 2.92383I$	$-17.2902 + 3.2930I$
$u = -0.413902 + 1.197930I$ $a = -2.50614 - 0.27466I$ $b = 1.77795 + 1.42801I$	$-9.64981 - 2.92383I$	$-17.2902 + 3.2930I$
$u = -0.413902 - 1.197930I$ $a = -1.53766 + 0.93732I$ $b = 0.235526 - 0.577363I$	$-9.64981 + 2.92383I$	$-17.2902 - 3.2930I$
$u = -0.413902 - 1.197930I$ $a = -2.50614 + 0.27466I$ $b = 1.77795 - 1.42801I$	$-9.64981 + 2.92383I$	$-17.2902 - 3.2930I$
$u = -0.486243 + 1.189530I$ $a = -0.30991 + 1.87168I$ $b = 0.445465 - 0.845894I$	$-9.13493 - 5.78082I$	$-16.3753 + 3.7263I$
$u = -0.486243 + 1.189530I$ $a = -0.56299 + 2.89522I$ $b = 2.11445 - 1.07258I$	$-9.13493 - 5.78082I$	$-16.3753 + 3.7263I$
$u = -0.486243 - 1.189530I$ $a = -0.30991 - 1.87168I$ $b = 0.445465 + 0.845894I$	$-9.13493 + 5.78082I$	$-16.3753 - 3.7263I$
$u = -0.486243 - 1.189530I$ $a = -0.56299 - 2.89522I$ $b = 2.11445 + 1.07258I$	$-9.13493 + 5.78082I$	$-16.3753 - 3.7263I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.512242 + 1.189930I$ $a = 0.47428 - 2.72028I$ $b = 0.88509 + 1.37979I$	$-7.16211 + 11.00000I$	$-13.3183 - 8.0528I$
$u = 0.512242 + 1.189930I$ $a = -0.56654 + 3.23218I$ $b = -1.62178 - 1.80958I$	$-7.16211 + 11.00000I$	$-13.3183 - 8.0528I$
$u = 0.512242 - 1.189930I$ $a = 0.47428 + 2.72028I$ $b = 0.88509 - 1.37979I$	$-7.16211 - 11.00000I$	$-13.3183 + 8.0528I$
$u = 0.512242 - 1.189930I$ $a = -0.56654 - 3.23218I$ $b = -1.62178 + 1.80958I$	$-7.16211 - 11.00000I$	$-13.3183 + 8.0528I$
$u = 0.580381 + 0.259924I$ $a = 0.972618 - 0.860339I$ $b = -0.239708 - 0.201327I$	$-1.54689 + 0.40841I$	$-6.12800 - 0.75563I$
$u = 0.580381 + 0.259924I$ $a = -0.100026 + 0.215685I$ $b = 1.069500 + 0.131935I$	$-1.54689 + 0.40841I$	$-6.12800 - 0.75563I$
$u = 0.580381 - 0.259924I$ $a = 0.972618 + 0.860339I$ $b = -0.239708 + 0.201327I$	$-1.54689 - 0.40841I$	$-6.12800 + 0.75563I$
$u = 0.580381 - 0.259924I$ $a = -0.100026 - 0.215685I$ $b = 1.069500 - 0.131935I$	$-1.54689 - 0.40841I$	$-6.12800 + 0.75563I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2-20$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.455090 + 1.098680I$ $a = -0.223113 - 0.678203I$ $b = 1.00000$	$-5.75727 + 3.66386I$	$-16.0000 - 4.0000I$
$u = 0.455090 - 1.098680I$ $a = -0.223113 + 0.678203I$ $b = 1.00000$	$-5.75727 - 3.66386I$	$-16.0000 + 4.0000I$
$u = -0.455090 + 1.098680I$ $a = -1.77689 + 1.32180I$ $b = 1.00000$	$-5.75727 - 3.66386I$	$-16.0000 + 4.0000I$
$u = -0.455090 - 1.098680I$ $a = -1.77689 - 1.32180I$ $b = 1.00000$	$-5.75727 + 3.66386I$	$-16.0000 - 4.0000I$

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

(i) Arc colorings

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

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

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

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

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

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

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

$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = \quad 0$ $b = \quad 1.00000$	-3.28987	-12.0000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u^2-2u+2)^2(u^{24}+13u^{23}+\cdots-2u^2+1)^2$ $\cdot(u^{32}+17u^{31}+\cdots+4u+4)$
c_2, c_8	$u(u^4+2u^2+2)(u^{24}+u^{23}+\cdots+2u+1)^2(u^{32}-3u^{31}+\cdots-6u+2)$
c_3, c_7	$u(u^4-2u^2+2)(u^{24}-u^{23}+\cdots-10u+1)^2$ $\cdot(u^{32}+3u^{31}+\cdots+186u+34)$
c_4, c_5, c_9 c_{10}	$((u-1)^4)(u+1)(u^{32}+u^{31}+\cdots-2u-1)(u^{48}+u^{47}+\cdots-4u+1)$
c_6, c_{11}	$(u-1)(u+1)^4(u^{32}+u^{31}+\cdots-2u-1)(u^{48}+u^{47}+\cdots-4u+1)$
c_{12}	$u^5(u^{24}-3u^{23}+\cdots-4u+1)^2(u^{32}-3u^{31}+\cdots+256u+256)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y^2+4)^2(y^{24}-3y^{23}+\cdots-4y+1)^2(y^{32}-3y^{31}+\cdots-240y+16)$
c_2, c_8	$y(y^2+2y+2)^2(y^{24}+13y^{23}+\cdots-2y^2+1)^2$ $\cdot(y^{32}+17y^{31}+\cdots+4y+4)$
c_3, c_7	$y(y^2-2y+2)^2(y^{24}-19y^{23}+\cdots-48y+1)^2$ $\cdot(y^{32}-23y^{31}+\cdots+1988y+1156)$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$((y-1)^5)(y^{32}-35y^{31}+\cdots-8y+1)(y^{48}-37y^{47}+\cdots+20y+1)$
c_{12}	$y^5(y^{24}+y^{23}+\cdots+20y+1)^2(y^{32}+y^{31}+\cdots-1441792y+65536)$