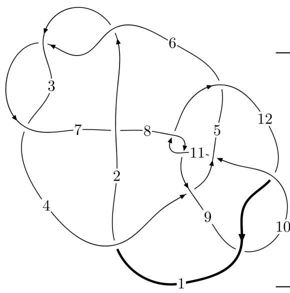
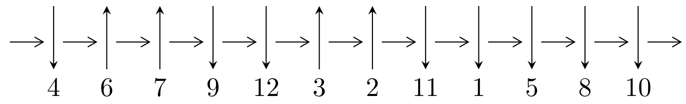
$12a_{0873}$ ($K12a_{0873}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 108691u^{38} - 518522u^{37} + \cdots + 524288b - 511627, \\
&\quad 688007u^{38} - 3615026u^{37} + \cdots + 524288a - 2014079,\ u^{39} - 5u^{38} + \cdots - 6u - 1\rangle \\
I_2^u &= \langle 6.85428 \times 10^{68}u^{61} + 3.56097 \times 10^{69}u^{60} + \cdots + 4.46626 \times 10^{69}b - 6.45538 \times 10^{69}, \\
&\quad - 3.56475 \times 10^{68}u^{61} - 1.48838 \times 10^{68}u^{60} + \cdots + 4.46626 \times 10^{69}a + 1.70079 \times 10^{70}, \\
&\quad u^{62} + 11u^{61} + \cdots + 11u + 2\rangle \\
I_3^u &= \langle b - a,\ 32a^5 - 16a^4 + 16a^3 - 4a^2 + 2a - 1,\ u - 1\rangle \\
I_4^u &= \langle b - u - 1,\ a + 2u + 1,\ u^2 + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 108 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. $\boldsymbol{I^u_1 = \langle 1.09 \times 10^5 u^{38} - 5.19 \times 10^5 u^{37} + \cdots + 5.24 \times 10^5 b - 5.12 \times 10^5,\ 6.88 \times 10^5 u^{38} - 3.62 \times 10^6 u^{37} + \cdots + 5.24 \times 10^5 a - 2.01 \times 10^6,\ u^{39} - 5u^{38} + \cdots - 6u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -1.31227u^{38} + 6.89511u^{37} + \cdots + 14.1550u + 3.84155 \\ -0.207312u^{38} + 0.989002u^{37} + \cdots + 2.65564u + 0.975851 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{8}u^{37} + \frac{5}{8}u^{36} + \cdots + \frac{11}{4}u + \frac{1}{8} \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.51958u^{38} + 7.88412u^{37} + \cdots + 16.8107u + 4.81740 \\ -0.207312u^{38} + 0.989002u^{37} + \cdots + 2.65564u + 0.975851 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.124998u^{38} - 0.624989u^{37} + \cdots + 5.87501u - 0.999998 \\ -9.53674 \times 10^{-7}u^{38} + 5.72205 \times 10^{-6}u^{37} + \cdots + 2.00000u + 9.53674 \times 10^{-7} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{8}u^{38} - \frac{5}{8}u^{37} + \cdots - \frac{1}{8}u + 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.125425u^{38} - 0.627522u^{37} + \cdots - 2.12725u + 0.999544 \\ 0.000203133u^{38} - 0.00120354u^{37} + \cdots - 0.00107670u - 0.000218391 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.000410080u^{38} + 0.00242996u^{37} + \cdots + 4.00217u + 0.000440598 \\ -0.000540733u^{38} + 0.00319862u^{37} + \cdots + 1.00289u + 0.000586510 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.26471u^{38} + 6.61468u^{37} + \cdots + 14.4231u + 4.04886 \\ -0.315355u^{38} + 1.65487u^{37} + \cdots + 2.71527u + 1.14050 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{3999055}{2097152}u^{38} + \frac{10274157}{1048576}u^{37} + \cdots + \frac{37199499}{2097152}u + \frac{9939535}{2097152}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{39} - 8u^{38} + \cdots + 78583u - 7136$
c_2, c_3, c_6	$u^{39} - 2u^{38} + \cdots + 13u + 4$
c_4, c_5	$32(32u^{39} - 16u^{38} + \cdots + 2u + 2)$
c_7	$u^{39} - 5u^{37} + \cdots + 3664u + 704$
c_8, c_9, c_{11} c_{12}	$u^{39} + 5u^{38} + \cdots - 6u + 1$
c_{10}	$u^{39} + 3u^{38} + \cdots + 5632u + 2048$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{39}+24y^{38}+\cdots+2799146385y-50922496$
c_2, c_3, c_6	$y^{39}-36y^{38}+\cdots+145y-16$
c_4, c_5	$1024(1024y^{39}+21248y^{38}+\cdots-20y-4)$
c_7	$y^{39}-10y^{38}+\cdots+9786624y-495616$
c_8, c_9, c_{11} c_{12}	$y^{39}+23y^{38}+\cdots+16y-1$
c_{10}	$y^{39}+13y^{38}+\cdots-77332480y-4194304$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.724185 + 0.655758I$ $a = 0.330095 + 0.170004I$ $b = 0.738223 - 0.031571I$	$2.17537 - 4.39053I$	$-3.44910 + 4.97696I$
$u = 0.724185 - 0.655758I$ $a = 0.330095 - 0.170004I$ $b = 0.738223 + 0.031571I$	$2.17537 + 4.39053I$	$-3.44910 - 4.97696I$
$u = 0.798846 + 0.475502I$ $a = -0.164314 - 0.150407I$ $b = -0.630420 + 0.127305I$	$-2.50450 - 1.68373I$	$-12.13938 + 2.32742I$
$u = 0.798846 - 0.475502I$ $a = -0.164314 + 0.150407I$ $b = -0.630420 - 0.127305I$	$-2.50450 + 1.68373I$	$-12.13938 - 2.32742I$
$u = 1.066700 + 0.355106I$ $a = 0.0961583 + 0.0078123I$ $b = 0.524239 - 0.376281I$	$0.475249 + 0.503953I$	$-4.00000 - 8.90257I$
$u = 1.066700 - 0.355106I$ $a = 0.0961583 - 0.0078123I$ $b = 0.524239 + 0.376281I$	$0.475249 - 0.503953I$	$-4.00000 + 8.90257I$
$u = -0.211517 + 1.137440I$ $a = 0.23998 - 2.28740I$ $b = -0.464258 + 0.732877I$	$5.31272 + 2.00033I$	$4.35226 - 5.73915I$
$u = -0.211517 - 1.137440I$ $a = 0.23998 + 2.28740I$ $b = -0.464258 - 0.732877I$	$5.31272 - 2.00033I$	$4.35226 + 5.73915I$
$u = -0.324360 + 1.156690I$ $a = 0.02796 + 2.07352I$ $b = 0.697354 - 0.867496I$	$2.21977 + 6.32089I$	$0. - 7.80217I$
$u = -0.324360 - 1.156690I$ $a = 0.02796 - 2.07352I$ $b = 0.697354 + 0.867496I$	$2.21977 - 6.32089I$	$0. + 7.80217I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.026900 + 1.214660I$ $a = 1.23416 - 1.59634I$ $b = 0.132335 + 0.743058I$	$7.44405 + 0.69867I$	$9.09911 + 0.I$
$u = 0.026900 - 1.214660I$ $a = 1.23416 + 1.59634I$ $b = 0.132335 - 0.743058I$	$7.44405 - 0.69867I$	$9.09911 + 0.I$
$u = 0.122259 + 1.210610I$ $a = -1.34335 + 1.13263I$ $b = -0.327572 - 0.697824I$	$6.47328 - 4.27244I$	0
$u = 0.122259 - 1.210610I$ $a = -1.34335 - 1.13263I$ $b = -0.327572 + 0.697824I$	$6.47328 + 4.27244I$	0
$u = 0.182168 + 1.256440I$ $a = 1.13163 - 0.93796I$ $b = 0.456095 + 0.759995I$	$12.6122 - 8.2561I$	0
$u = 0.182168 - 1.256440I$ $a = 1.13163 + 0.93796I$ $b = 0.456095 - 0.759995I$	$12.6122 + 8.2561I$	0
$u = -0.407095 + 1.204330I$ $a = -0.13247 - 1.90492I$ $b = -0.843449 + 1.039000I$	$6.42042 + 10.35860I$	0
$u = -0.407095 - 1.204330I$ $a = -0.13247 + 1.90492I$ $b = -0.843449 - 1.039000I$	$6.42042 - 10.35860I$	0
$u = 1.319840 + 0.082124I$ $a = -0.0186151 + 0.0626784I$ $b = -0.127627 + 0.707014I$	$-0.85359 + 1.74269I$	0
$u = 1.319840 - 0.082124I$ $a = -0.0186151 - 0.0626784I$ $b = -0.127627 - 0.707014I$	$-0.85359 - 1.74269I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.036557 + 1.324810I$ $a = -0.73447 + 1.53147I$ $b = -0.062358 - 1.015090I$	$15.0323 + 3.2046I$	0
$u = -0.036557 - 1.324810I$ $a = -0.73447 - 1.53147I$ $b = -0.062358 + 1.015090I$	$15.0323 - 3.2046I$	0
$u = 0.594439$ $a = -0.228045$ $b = 0.452360$	-0.941763	-9.94040
$u = 1.41463 + 0.10708I$ $a = 0.0231744 - 0.0841694I$ $b = 0.166254 - 0.853051I$	$4.93767 + 4.69901I$	0
$u = 1.41463 - 0.10708I$ $a = 0.0231744 + 0.0841694I$ $b = 0.166254 + 0.853051I$	$4.93767 - 4.69901I$	0
$u = -0.47769 + 1.37991I$ $a = -0.14495 - 1.60254I$ $b = -0.85620 + 1.49381I$	$9.12652 + 9.53608I$	0
$u = -0.47769 - 1.37991I$ $a = -0.14495 + 1.60254I$ $b = -0.85620 - 1.49381I$	$9.12652 - 9.53608I$	0
$u = -0.52260 + 1.38710I$ $a = 0.20032 + 1.57749I$ $b = 0.95190 - 1.54963I$	$8.2828 + 13.9866I$	0
$u = -0.52260 - 1.38710I$ $a = 0.20032 - 1.57749I$ $b = 0.95190 + 1.54963I$	$8.2828 - 13.9866I$	0
$u = -0.43911 + 1.42736I$ $a = 0.08082 + 1.54888I$ $b = 0.72748 - 1.56656I$	$16.0878 + 7.0331I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.43911 - 1.42736I$ $a = 0.08082 - 1.54888I$ $b = 0.72748 + 1.56656I$	$16.0878 - 7.0331I$	0
$u = -0.54482 + 1.40917I$ $a = -0.21934 - 1.54269I$ $b = -0.98301 + 1.61986I$	$14.2175 + 17.6988I$	0
$u = -0.54482 - 1.40917I$ $a = -0.21934 + 1.54269I$ $b = -0.98301 - 1.61986I$	$14.2175 - 17.6988I$	0
$u = 0.015211 + 0.418244I$ $a = -0.00352 - 1.79696I$ $b = -0.539074 - 0.214516I$	$2.76604 + 0.58348I$	$-0.871646 + 0.155316I$
$u = 0.015211 - 0.418244I$ $a = -0.00352 + 1.79696I$ $b = -0.539074 + 0.214516I$	$2.76604 - 0.58348I$	$-0.871646 - 0.155316I$
$u = -0.310457 + 0.116493I$ $a = -0.01154 - 3.00812I$ $b = -0.275051 - 0.775463I$	$5.36389 - 4.18845I$	$5.68066 + 2.80926I$
$u = -0.310457 - 0.116493I$ $a = -0.01154 + 3.00812I$ $b = -0.275051 + 0.775463I$	$5.36389 + 4.18845I$	$5.68066 - 2.80926I$
$u = -0.193758 + 0.118859I$ $a = -0.22771 + 3.00764I$ $b = 0.238959 + 0.534501I$	$0.026832 - 1.339450I$	$0.33272 + 4.35005I$
$u = -0.193758 - 0.118859I$ $a = -0.22771 - 3.00764I$ $b = 0.238959 - 0.534501I$	$0.026832 + 1.339450I$	$0.33272 - 4.35005I$

II. $I_2^u = \langle 6.85\times 10^{68}u^{61} + 3.56\times 10^{69}u^{60} + \cdots + 4.47\times 10^{69}b - 6.46\times 10^{69},\ -3.56\times 10^{68}u^{61} - 1.49\times 10^{68}u^{60} + \cdots + 4.47\times 10^{69}a + 1.70\times 10^{70},\ u^{62} + 11u^{61} + \cdots + 11u + 2\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 0.0798151u^{61} + 0.0333250u^{60} + \cdots - 20.7102u - 3.80808 \\ -0.153468u^{61} - 0.797304u^{60} + \cdots + 10.2193u + 1.44537 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^{61} + \frac{11}{2}u^{60} + \cdots + \frac{45}{2}u + \frac{11}{2} \\ 0.573998u^{61} + 5.87664u^{60} + \cdots + 1.67615u + 0.498297 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0736529u^{61} - 0.763979u^{60} + \cdots - 10.4908u - 2.36271 \\ -0.153468u^{61} - 0.797304u^{60} + \cdots + 10.2193u + 1.44537 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.636727u^{61} + 7.29918u^{60} + \cdots + 7.35507u + 2.59664 \\ 0.175214u^{61} + 2.55480u^{60} + \cdots + 10.5476u + 2.81253 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.249149u^{61} - 2.16664u^{60} + \cdots - 0.729108u - 0.0644857 \\ -0.437334u^{61} - 4.84227u^{60} + \cdots - 5.81568u - 0.147996 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0660678u^{61} - 0.546435u^{60} + \cdots + 9.22039u + 2.55081 \\ -0.00796357u^{61} - 0.597986u^{60} + \cdots - 8.29547u - 1.03845 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.127793u^{61} + 1.67388u^{60} + \cdots - 0.711897u + 0.745056 \\ -0.0486349u^{61} + 0.0587942u^{60} + \cdots + 8.88154u + 1.74770 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.118114u^{61} - 1.24898u^{60} + \cdots - 12.0046u - 2.25218 \\ -0.157786u^{61} - 1.09012u^{60} + \cdots + 9.47656u + 1.21142 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.03298u^{61} - 9.77347u^{60} + \cdots - 1.48702u - 3.35758$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{31} - 5u^{30} + \cdots + 40u - 7)^2$
c_2, c_3, c_6	$(u^{31} - u^{30} + \cdots + 2u - 1)^2$
c_4, c_5	$u^{62} + u^{61} + \cdots - 768736u + 1008568$
c_7	$(u^{31} + 3u^{30} + \cdots - 13u + 16)^2$
c_8, c_9, c_{11} c_{12}	$u^{62} - 11u^{61} + \cdots - 11u + 2$
c_{10}	$(u^{31} - u^{30} + \cdots + 2u^2 + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{31} + 23y^{30} + \cdots - 640y - 49)^2$
c_2, c_3, c_6	$(y^{31} - 29y^{30} + \cdots - 4y - 1)^2$
c_4, c_5	$y^{62} + 35y^{61} + \cdots + 17185261710176y + 1017209410624$
c_7	$(y^{31} - 9y^{30} + \cdots + 1481y - 256)^2$
c_8, c_9, c_{11} c_{12}	$y^{62} + 43y^{61} + \cdots + 59y + 4$
c_{10}	$(y^{31} + 11y^{30} + \cdots - 4y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.610259 + 0.825368I$ $a = -0.931690 - 0.150611I$ $b = 0.443710 + 0.094556I$	$8.51398 + 2.56488I$	0
$u = -0.610259 - 0.825368I$ $a = -0.931690 + 0.150611I$ $b = 0.443710 - 0.094556I$	$8.51398 - 2.56488I$	0
$u = 0.122937 + 1.022420I$ $a = -2.25050 + 1.94438I$ $b = 2.32560 - 2.56890I$	6.04268	0
$u = 0.122937 - 1.022420I$ $a = -2.25050 - 1.94438I$ $b = 2.32560 + 2.56890I$	6.04268	0
$u = -1.057470 + 0.122121I$ $a = 0.1061940 - 0.0014004I$ $b = -0.525447 + 0.977392I$	$4.43131 + 4.14236I$	0
$u = -1.057470 - 0.122121I$ $a = 0.1061940 + 0.0014004I$ $b = -0.525447 - 0.977392I$	$4.43131 - 4.14236I$	0
$u = 0.384544 + 1.032370I$ $a = -0.165227 + 1.398420I$ $b = -0.249020 - 0.556976I$	$-0.70604 - 2.71284I$	0
$u = 0.384544 - 1.032370I$ $a = -0.165227 - 1.398420I$ $b = -0.249020 + 0.556976I$	$-0.70604 + 2.71284I$	0
$u = 0.229731 + 0.865676I$ $a = 0.07431 - 1.55871I$ $b = -0.161828 + 0.324905I$	$2.78691 + 0.40298I$	0
$u = 0.229731 - 0.865676I$ $a = 0.07431 + 1.55871I$ $b = -0.161828 - 0.324905I$	$2.78691 - 0.40298I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.107024+1.111770I$ $a=-0.146050+1.303810I$ $b=\ \ 1.24176-0.94499I$	$2.56011+2.73446I$	0
$u=-0.107024-1.111770I$ $a=-0.146050-1.303810I$ $b=\ \ 1.24176+0.94499I$	$2.56011-2.73446I$	0
$u=-0.032223+1.128520I$ $a=-0.31654-2.21125I$ $b=-0.08856+2.34874I$	$3.39700-1.02630I$	0
$u=-0.032223-1.128520I$ $a=-0.31654+2.21125I$ $b=-0.08856-2.34874I$	$3.39700+1.02630I$	0
$u=-0.006360+1.130480I$ $a=\ \ 0.11158-1.51204I$ $b=-0.79447+1.31914I$	$3.28194-0.92992I$	0
$u=-0.006360-1.130480I$ $a=\ \ 0.11158+1.51204I$ $b=-0.79447-1.31914I$	$3.28194+0.92992I$	0
$u=-1.133880+0.044405I$ $a=-0.0770874-0.0659382I$ $b=\ \ 0.568051-1.100450I$	$3.76549+8.17190I$	0
$u=-1.133880-0.044405I$ $a=-0.0770874+0.0659382I$ $b=\ \ 0.568051+1.100450I$	$3.76549-8.17190I$	0
$u=-1.117680+0.233912I$ $a=-0.188714-0.026500I$ $b=\ \ 0.372056-0.969425I$	$10.80180+1.64856I$	0
$u=-1.117680-0.233912I$ $a=-0.188714+0.026500I$ $b=\ \ 0.372056+0.969425I$	$10.80180-1.64856I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.822502 + 0.158011I$ $a = -0.244805 - 0.001735I$ $b = -0.871196 - 0.852594I$	$3.16164 - 5.89464I$	$-2.05487 + 6.44091I$
$u = -0.822502 - 0.158011I$ $a = -0.244805 + 0.001735I$ $b = -0.871196 + 0.852594I$	$3.16164 + 5.89464I$	$-2.05487 - 6.44091I$
$u = -0.146870 + 1.159030I$ $a = 0.207882 - 1.224920I$ $b = -1.48581 + 0.95451I$	$8.28224 + 6.04082I$	0
$u = -0.146870 - 1.159030I$ $a = 0.207882 + 1.224920I$ $b = -1.48581 - 0.95451I$	$8.28224 - 6.04082I$	0
$u = -0.096782 + 0.805839I$ $a = 2.52966 + 0.03471I$ $b = -1.94413 + 0.07132I$	$3.39700 + 1.02630I$	$-2.18992 - 6.41690I$
$u = -0.096782 - 0.805839I$ $a = 2.52966 - 0.03471I$ $b = -1.94413 - 0.07132I$	$3.39700 - 1.02630I$	$-2.18992 + 6.41690I$
$u = -1.199600 + 0.041449I$ $a = 0.0927293 + 0.0998903I$ $b = -0.537596 + 1.177980I$	$9.6232 + 11.6029I$	0
$u = -1.199600 - 0.041449I$ $a = 0.0927293 - 0.0998903I$ $b = -0.537596 - 1.177980I$	$9.6232 - 11.6029I$	0
$u = -0.006726 + 1.201560I$ $a = -0.46955 + 1.49677I$ $b = 1.39820 - 1.70670I$	$9.18224 - 3.33239I$	0
$u = -0.006726 - 1.201560I$ $a = -0.46955 - 1.49677I$ $b = 1.39820 + 1.70670I$	$9.18224 + 3.33239I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.490970 + 1.143700I$ $a = 0.194340 - 1.288080I$ $b = 0.527968 + 0.677538I$	$3.16164 - 5.89464I$	0
$u = 0.490970 - 1.143700I$ $a = 0.194340 + 1.288080I$ $b = 0.527968 - 0.677538I$	$3.16164 + 5.89464I$	0
$u = 0.291842 + 0.579770I$ $a = -2.62106 + 0.29524I$ $b = 1.25399 - 1.40768I$	$9.18224 + 3.33239I$	$1.23670 - 3.21859I$
$u = 0.291842 - 0.579770I$ $a = -2.62106 - 0.29524I$ $b = 1.25399 + 1.40768I$	$9.18224 - 3.33239I$	$1.23670 + 3.21859I$
$u = -0.616831 + 0.185116I$ $a = 0.587876 - 0.081679I$ $b = 0.894509 + 0.695294I$	$-0.70604 - 2.71284I$	$-7.89942 + 3.44665I$
$u = -0.616831 - 0.185116I$ $a = 0.587876 + 0.081679I$ $b = 0.894509 - 0.695294I$	$-0.70604 + 2.71284I$	$-7.89942 - 3.44665I$
$u = -0.088079 + 1.373410I$ $a = 0.396910 + 1.207870I$ $b = -0.14566 - 1.47450I$	$8.51398 - 2.56488I$	0
$u = -0.088079 - 1.373410I$ $a = 0.396910 - 1.207870I$ $b = -0.14566 + 1.47450I$	$8.51398 + 2.56488I$	0
$u = 0.45719 + 1.41480I$ $a = 0.091928 - 1.140510I$ $b = 0.668394 + 1.157090I$	$4.43131 - 4.14236I$	0
$u = 0.45719 - 1.41480I$ $a = 0.091928 + 1.140510I$ $b = 0.668394 - 1.157090I$	$4.43131 + 4.14236I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.61476+1.38269I$ $a=\ 0.579567+0.665230I$ $b=\ 0.213331-0.930964I$	$8.18677+1.99617I$	0
$u=-0.61476-1.38269I$ $a=\ 0.579567-0.665230I$ $b=\ 0.213331+0.930964I$	$8.18677-1.99617I$	0
$u=\ 0.53999+1.42345I$ $a=-0.134520+1.116050I$ $b=-0.808721-1.119170I$	$3.76549-8.17190I$	0
$u=\ 0.53999-1.42345I$ $a=-0.134520-1.116050I$ $b=-0.808721+1.119170I$	$3.76549+8.17190I$	0
$u=\ 0.424736+0.216093I$ $a=\ 2.89315+0.96518I$ $b=-0.584354+1.253910I$	$8.28224-6.04082I$	$0.35365+3.16093I$
$u=\ 0.424736-0.216093I$ $a=\ 2.89315-0.96518I$ $b=-0.584354-1.253910I$	$8.28224+6.04082I$	$0.35365-3.16093I$
$u=-0.53947+1.44416I$ $a=-0.545874-0.733782I$ $b=-0.192340+1.092650I$	$8.18677-1.99617I$	0
$u=-0.53947-1.44416I$ $a=-0.545874+0.733782I$ $b=-0.192340-1.092650I$	$8.18677+1.99617I$	0
$u=\ 0.41718+1.50113I$ $a=-0.052109+1.099920I$ $b=-0.65795-1.31593I$	$10.80180-1.64856I$	0
$u=\ 0.41718-1.50113I$ $a=-0.052109-1.099920I$ $b=-0.65795+1.31593I$	$10.80180+1.64856I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.321647+0.288477I$ $a=-1.51095-0.48074I$ $b=-0.849824-0.519815I$	$2.78691+0.40298I$	$-3.07070-0.52831I$
$u=-0.321647-0.288477I$ $a=-1.51095+0.48074I$ $b=-0.849824+0.519815I$	$2.78691-0.40298I$	$-3.07070+0.52831I$
$u=-0.68722+1.41015I$ $a=-0.541909-0.623677I$ $b=-0.338522+0.882572I$	$14.2937+5.0494I$	0
$u=-0.68722-1.41015I$ $a=-0.541909+0.623677I$ $b=-0.338522-0.882572I$	$14.2937-5.0494I$	0
$u=\ \ 0.57393+1.46248I$ $a=\ \ 0.142172-1.088250I$ $b=\ \ 0.88882+1.16417I$	$9.6232-11.6029I$	0
$u=\ \ 0.57393-1.46248I$ $a=\ \ 0.142172+1.088250I$ $b=\ \ 0.88882-1.16417I$	$9.6232+11.6029I$	0
$u=-0.55005+1.51837I$ $a=\ \ 0.491032+0.730161I$ $b=\ \ 0.284759-1.169250I$	$14.2937-5.0494I$	0
$u=-0.55005-1.51837I$ $a=\ \ 0.491032-0.730161I$ $b=\ \ 0.284759+1.169250I$	$14.2937+5.0494I$	0
$u=\ \ 0.029418+0.359742I$ $a=\ \ 3.19180-1.28434I$ $b=-1.013250+0.844224I$	$3.28194+0.92992I$	$-1.59628-3.68841I$
$u=\ \ 0.029418-0.359742I$ $a=\ \ 3.19180+1.28434I$ $b=-1.013250-0.844224I$	$3.28194-0.92992I$	$-1.59628+3.68841I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.292960 + 0.183199I$ $a = -3.74455 - 1.03027I$ $b = 0.667529 - 1.072660I$	$2.56011 - 2.73446I$	$-3.76690 + 3.38925I$
$u = 0.292960 - 0.183199I$ $a = -3.74455 + 1.03027I$ $b = 0.667529 + 1.072660I$	$2.56011 + 2.73446I$	$-3.76690 - 3.38925I$

III. $\boldsymbol{I_3^u = \langle b - a,\ 32a^5 - 16a^4 + 16a^3 - 4a^2 + 2a - 1,\ u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} a \\ a \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 2a \\ a \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -4a^2 \\ -2a^2 + 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 16a^4 \\ 8a^4 - 4a^2 - 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 16a^4 \\ 24a^4 + 4a^2 + 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 2a \\ 3a \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 64a^4 - 32a^3 + 33a^2 - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^5 + u^4 + 2u^3 + u^2 + u + 1$
c_2, c_3	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_4	$32(32u^5 + 16u^4 + 16u^3 + 4u^2 + 2u + 1)$
c_5	$32(32u^5 - 16u^4 + 16u^3 - 4u^2 + 2u - 1)$
c_6	$u^5 + u^4 - 2u^3 - u^2 + u - 1$
c_7	$u^5 - 3u^4 + 4u^3 - u^2 - u + 1$
c_8, c_9	$(u - 1)^5$
c_{10}	u^5
c_{11}, c_{12}	$(u + 1)^5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_2, c_3, c_6	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_4, c_5	$1024(1024y^5 + 768y^4 + 256y^3 + 16y^2 - 4y - 1)$
c_7	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_8, c_9, c_{11} c_{12}	$(y-1)^5$
c_{10}	y^5

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0.227849 + 0.600076I$ $b = 0.227849 + 0.600076I$	$4.22763 - 4.40083I$	$-3.37934 + 2.16111I$
$u = 1.00000$ $a = 0.227849 - 0.600076I$ $b = 0.227849 - 0.600076I$	$4.22763 + 4.40083I$	$-3.37934 - 2.16111I$
$u = 1.00000$ $a = -0.169555 + 0.411188I$ $b = -0.169555 + 0.411188I$	$-1.31583 + 1.53058I$	$-9.21097 - 1.00704I$
$u = 1.00000$ $a = -0.169555 - 0.411188I$ $b = -0.169555 - 0.411188I$	$-1.31583 - 1.53058I$	$-9.21097 + 1.00704I$
$u = 1.00000$ $a = 0.383413$ $b = 0.383413$	0.756147	2.43060

IV. $I_4^u = \langle b - u - 1,\ a + 2u + 1,\ u^2 + 1 \rangle$

(i) Arc colorings

$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$

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

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

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

$a_{11} = \begin{pmatrix} u - 1 \\ -u \end{pmatrix}$

$a_4 = \begin{pmatrix} -u \\ u + 1 \end{pmatrix}$

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

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

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

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

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

$a_6 = \begin{pmatrix} -u \\ u + 1 \end{pmatrix}$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -1.00000 - 2.00000I$ $b = 1.00000 + 1.00000I$	4.93480	4.00000
$u = -1.000000I$ $a = -1.00000 + 2.00000I$ $b = 1.00000 - 1.00000I$	4.93480	4.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u+1)^2)(u^5+u^4+\cdots+u+1)(u^{31}-5u^{30}+\cdots+40u-7)^2$ $\cdot(u^{39}-8u^{38}+\cdots+78583u-7136)$
c_2, c_3	$((u+1)^2)(u^5-u^4+\cdots+u+1)(u^{31}-u^{30}+\cdots+2u-1)^2$ $\cdot(u^{39}-2u^{38}+\cdots+13u+4)$
c_4	$1024(u^2+2u+2)(32u^5+16u^4+16u^3+4u^2+2u+1)$ $\cdot(32u^{39}-16u^{38}+\cdots+2u+2)(u^{62}+u^{61}+\cdots-768736u+1008568)$
c_5	$1024(u^2-2u+2)(32u^5-16u^4+16u^3-4u^2+2u-1)$ $\cdot(32u^{39}-16u^{38}+\cdots+2u+2)(u^{62}+u^{61}+\cdots-768736u+1008568)$
c_6	$((u-1)^2)(u^5+u^4+\cdots+u-1)(u^{31}-u^{30}+\cdots+2u-1)^2$ $\cdot(u^{39}-2u^{38}+\cdots+13u+4)$
c_7	$u^2(u^5-3u^4+\cdots-u+1)(u^{31}+3u^{30}+\cdots-13u+16)^2$ $\cdot(u^{39}-5u^{37}+\cdots+3664u+704)$
c_8, c_9	$((u-1)^5)(u^2+1)(u^{39}+5u^{38}+\cdots-6u+1)(u^{62}-11u^{61}+\cdots-11u+2)$
c_{10}	$u^5(u^2+1)(u^{31}-u^{30}+\cdots+2u^2+1)^2(u^{39}+3u^{38}+\cdots+5632u+2048)$
c_{11}, c_{12}	$((u+1)^5)(u^2+1)(u^{39}+5u^{38}+\cdots-6u+1)(u^{62}-11u^{61}+\cdots-11u+2)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^2(y^5+3y^4+4y^3+y^2-y-1)$ $\cdot(y^{31}+23y^{30}+\cdots-640y-49)^2$ $\cdot(y^{39}+24y^{38}+\cdots+2799146385y-50922496)$
c_2, c_3, c_6	$((y-1)^2)(y^5-5y^4+\cdots-y-1)(y^{31}-29y^{30}+\cdots-4y-1)^2$ $\cdot(y^{39}-36y^{38}+\cdots+145y-16)$
c_4, c_5	$1048576(y^2+4)(1024y^5+768y^4+256y^3+16y^2-4y-1)$ $\cdot(1024y^{39}+21248y^{38}+\cdots-20y-4)$ $\cdot(y^{62}+35y^{61}+\cdots+17185261710176y+1017209410624)$
c_7	$y^2(y^5-y^4+\cdots+3y-1)(y^{31}-9y^{30}+\cdots+1481y-256)^2$ $\cdot(y^{39}-10y^{38}+\cdots+9786624y-495616)$
c_8, c_9, c_{11} c_{12}	$((y-1)^5)(y+1)^2(y^{39}+23y^{38}+\cdots+16y-1)$ $\cdot(y^{62}+43y^{61}+\cdots+59y+4)$
c_{10}	$y^5(y+1)^2(y^{31}+11y^{30}+\cdots-4y-1)^2$ $\cdot(y^{39}+13y^{38}+\cdots-77332480y-4194304)$