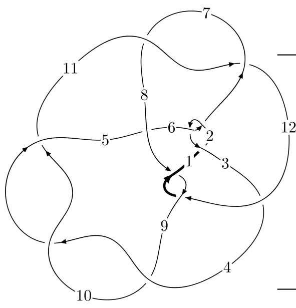
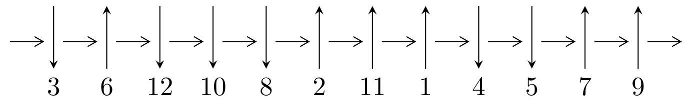
$12a_{0493}$ ($K12a_{0493}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -3.06014 \times 10^{50}u^{36} - 1.13950 \times 10^{51}u^{35} + \cdots + 1.85440 \times 10^{51}b - 1.47847 \times 10^{52}, \\
& -7.67176 \times 10^{51}u^{36} - 2.81819 \times 10^{52}u^{35} + \cdots + 1.48352 \times 10^{52}a - 4.05802 \times 10^{53}, \\
& u^{37} + 3u^{36} + \cdots + 128u - 32\rangle \\
I_2^u = \langle & 13u^{27}a + 13u^{27} + \cdots + 9a - 79,\ -126u^{27}a + 164u^{27} + \cdots + 105a - 202,\ u^{28} - u^{27} + \cdots - 2u - 1\rangle \\
I_3^u = \langle & b - 1,\ 8a^2 - 2au - 8a + u + 3,\ u^2 - 2\rangle \\
I_4^u = \langle & b - u,\ 3a - u - 1,\ u^2 + 1\rangle
\end{aligned}$$

$$I_1^v = \langle a,\ b + 1,\ 4v^2 - 2v + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 101 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. $\boldsymbol{I_1^u = \langle -3.06 \times 10^{50} u^{36} - 1.14 \times 10^{51} u^{35} + \cdots + 1.85 \times 10^{51} b - 1.48 \times 10^{52},\ -7.67 \times 10^{51} u^{36} - 2.82 \times 10^{52} u^{35} + \cdots + 1.48 \times 10^{52} a - 4.06 \times 10^{53},\ u^{37} + 3u^{36} + \cdots + 128u - 32 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.517133u^{36} + 1.89967u^{35} + \cdots - 65.6808u + 27.3541 \\ 0.165020u^{36} + 0.614485u^{35} + \cdots - 22.3411u + 7.97281 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.378169u^{36} + 1.38393u^{35} + \cdots - 47.6562u + 20.0310 \\ 0.116597u^{36} + 0.438884u^{35} + \cdots - 15.5080u + 7.33172 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.260062u^{36} - 0.944298u^{35} + \cdots + 30.2985u - 13.1873 \\ -0.0118049u^{36} - 0.0559693u^{35} + \cdots + 2.23444u - 0.782090 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.489111u^{36} + 1.77691u^{35} + \cdots - 59.9917u + 24.1822 \\ 0.224162u^{36} + 0.829248u^{35} + \cdots - 29.6633u + 13.0783 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.352113u^{36} + 1.28518u^{35} + \cdots - 43.3397u + 19.3813 \\ 0.165020u^{36} + 0.614485u^{35} + \cdots - 22.3411u + 7.97281 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.164726u^{36} + 0.616077u^{35} + \cdots - 19.8484u + 8.71780 \\ 0.160328u^{36} + 0.586036u^{35} + \cdots - 20.7819u + 8.37031 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.304049u^{36} + 1.15112u^{35} + \cdots - 39.5480u + 15.8740 \\ 0.372272u^{36} + 1.37310u^{35} + \cdots - 49.4772u + 19.3370 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.647838u^{36} - 2.40428u^{35} + \cdots + 107.799u - 53.2159$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{37} + 14u^{36} + \cdots + 929u - 64$
c_2, c_6	$u^{37} - 2u^{36} + \cdots + 7u + 8$
c_3, c_5	$64(64u^{37} - 160u^{36} + \cdots - 41u - 19)$
c_4, c_9, c_{10}	$u^{37} - 3u^{36} + \cdots + 128u + 32$
c_7, c_8, c_{11} c_{12}	$u^{37} + 2u^{36} + \cdots + 39u + 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{37} + 6y^{36} + \cdots + 1952449y - 4096$
c_2, c_6	$y^{37} + 14y^{36} + \cdots + 929y - 64$
c_3, c_5	$4096(4096y^{37} - 87040y^{36} + \cdots + 1681y - 361)$
c_4, c_9, c_{10}	$y^{37} - 37y^{36} + \cdots + 10240y - 1024$
c_7, c_8, c_{11} c_{12}	$y^{37} + 20y^{36} + \cdots - 985y - 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.717759 + 0.816773I$ $a = -0.912312 - 0.929862I$ $b = 0.478496 - 1.321070I$	$-6.2593 - 13.4401I$	$-5.68141 + 9.41013I$
$u = 0.717759 - 0.816773I$ $a = -0.912312 + 0.929862I$ $b = 0.478496 + 1.321070I$	$-6.2593 + 13.4401I$	$-5.68141 - 9.41013I$
$u = 0.415681 + 1.039780I$ $a = -0.207547 - 0.355306I$ $b = -0.295825 - 1.226410I$	$-5.25287 + 7.46721I$	$-6.71313 - 6.59002I$
$u = 0.415681 - 1.039780I$ $a = -0.207547 + 0.355306I$ $b = -0.295825 + 1.226410I$	$-5.25287 - 7.46721I$	$-6.71313 + 6.59002I$
$u = -0.795182 + 0.815543I$ $a = -0.758362 + 0.992112I$ $b = 0.402574 + 1.213530I$	$-3.61367 + 7.50969I$	$-3.85082 - 6.86152I$
$u = -0.795182 - 0.815543I$ $a = -0.758362 - 0.992112I$ $b = 0.402574 - 1.213530I$	$-3.61367 - 7.50969I$	$-3.85082 + 6.86152I$
$u = -0.780739 + 0.195496I$ $a = 0.12973 + 1.67958I$ $b = 0.520268 + 0.618361I$	$0.70381 + 4.04876I$	$-0.98977 - 8.58412I$
$u = -0.780739 - 0.195496I$ $a = 0.12973 - 1.67958I$ $b = 0.520268 - 0.618361I$	$0.70381 - 4.04876I$	$-0.98977 + 8.58412I$
$u = 0.753713 + 1.012550I$ $a = -0.570904 - 0.720134I$ $b = 0.144902 - 1.297410I$	$-10.11250 - 3.50416I$	$-11.13565 + 4.29922I$
$u = 0.753713 - 1.012550I$ $a = -0.570904 + 0.720134I$ $b = 0.144902 + 1.297410I$	$-10.11250 + 3.50416I$	$-11.13565 - 4.29922I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.364950 + 0.053956I$ $a = -0.482374 + 0.537077I$ $b = 0.199987 + 0.285968I$	$-5.15018 + 2.40489I$	$-8.24367 - 5.51065I$
$u = -1.364950 - 0.053956I$ $a = -0.482374 - 0.537077I$ $b = 0.199987 - 0.285968I$	$-5.15018 - 2.40489I$	$-8.24367 + 5.51065I$
$u = 0.633091 + 0.002919I$ $a = 0.88132 - 1.53274I$ $b = 0.457881 - 0.454036I$	$0.564134 + 1.148360I$	$-2.41262 + 1.34947I$
$u = 0.633091 - 0.002919I$ $a = 0.88132 + 1.53274I$ $b = 0.457881 + 0.454036I$	$0.564134 - 1.148360I$	$-2.41262 - 1.34947I$
$u = 1.37208$ $a = 0.234496$ $b = 0.732338$	-3.38199	-0.506720
$u = -0.434378 + 1.324040I$ $a = -0.165219 + 0.603269I$ $b = -0.115926 + 1.115120I$	$-2.03465 - 0.92733I$	$-10.61628 + 8.02850I$
$u = -0.434378 - 1.324040I$ $a = -0.165219 - 0.603269I$ $b = -0.115926 - 1.115120I$	$-2.03465 + 0.92733I$	$-10.61628 - 8.02850I$
$u = 1.44111 + 0.07312I$ $a = 0.657076 + 0.293879I$ $b = 1.138240 + 0.387434I$	$-3.29453 + 0.35231I$	$-4.03504 + 0.I$
$u = 1.44111 - 0.07312I$ $a = 0.657076 - 0.293879I$ $b = 1.138240 - 0.387434I$	$-3.29453 - 0.35231I$	$-4.03504 + 0.I$
$u = 0.248091 + 0.440024I$ $a = 0.670055 + 0.392554I$ $b = -0.108331 + 0.395171I$	$0.042476 - 0.966476I$	$1.15246 + 6.51275I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.248091 - 0.440024I$ $a = 0.670055 - 0.392554I$ $b = -0.108331 - 0.395171I$	$0.042476 + 0.966476I$	$1.15246 - 6.51275I$
$u = -1.51529 + 0.03946I$ $a = 0.916910 - 0.146355I$ $b = 1.56997 - 0.24762I$	$-4.83143 + 3.15767I$	0
$u = -1.51529 - 0.03946I$ $a = 0.916910 + 0.146355I$ $b = 1.56997 + 0.24762I$	$-4.83143 - 3.15767I$	0
$u = -0.242484 + 0.378477I$ $a = 0.421990 - 0.025898I$ $b = -0.940128 + 0.390144I$	$2.26406 - 1.74820I$	$5.58765 - 3.71999I$
$u = -0.242484 - 0.378477I$ $a = 0.421990 + 0.025898I$ $b = -0.940128 - 0.390144I$	$2.26406 + 1.74820I$	$5.58765 + 3.71999I$
$u = 0.341813 + 0.196908I$ $a = 0.510424 + 0.063365I$ $b = -1.169100 - 0.216448I$	$1.56390 - 2.42880I$	$-6.3891 + 13.7681I$
$u = 0.341813 - 0.196908I$ $a = 0.510424 - 0.063365I$ $b = -1.169100 + 0.216448I$	$1.56390 + 2.42880I$	$-6.3891 - 13.7681I$
$u = -1.61409 + 0.26724I$ $a = 0.59418 - 1.86265I$ $b = -0.58352 - 1.43640I$	$-13.9496 + 17.5003I$	0
$u = -1.61409 - 0.26724I$ $a = 0.59418 + 1.86265I$ $b = -0.58352 + 1.43640I$	$-13.9496 - 17.5003I$	0
$u = 1.63110 + 0.25971I$ $a = 0.52663 + 1.83233I$ $b = -0.51959 + 1.38080I$	$-11.6103 - 11.5613I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.63110 - 0.25971I$ $a = 0.52663 - 1.83233I$ $b = -0.51959 - 1.38080I$	$-11.6103 + 11.5613I$	0
$u = -1.65342 + 0.29506I$ $a = 0.55360 - 1.67738I$ $b = -0.35735 - 1.45793I$	$-18.0870 + 8.2892I$	0
$u = -1.65342 - 0.29506I$ $a = 0.55360 + 1.67738I$ $b = -0.35735 + 1.45793I$	$-18.0870 - 8.2892I$	0
$u = -1.73297 + 0.43440I$ $a = 0.418669 - 1.324280I$ $b = -0.001916 - 1.266200I$	$-12.01220 - 1.49842I$	0
$u = -1.73297 - 0.43440I$ $a = 0.418669 + 1.324280I$ $b = -0.001916 + 1.266200I$	$-12.01220 + 1.49842I$	0
$u = 1.76511 + 0.30036I$ $a = 0.32388 + 1.51280I$ $b = -0.186791 + 1.230020I$	$-10.04750 - 5.61368I$	0
$u = 1.76511 - 0.30036I$ $a = 0.32388 - 1.51280I$ $b = -0.186791 - 1.230020I$	$-10.04750 + 5.61368I$	0

II. $\boldsymbol{I^u_2 = \langle 13u^{27}a + 13u^{27} + \cdots + 9a - 79,\ -126u^{27}a + 164u^{27} + \cdots + 105a - 202,\ u^{28} - u^{27} + \cdots - 2u - 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_1 = \begin{pmatrix} a \\ -0.147727au^{27} - 0.147727u^{27} + \cdots - 0.102273a + 0.897727 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.147727au^{27} + 1.57630u^{27} + \cdots - 0.897727a - 1.75487 \\ -0.147727au^{27} - 0.147727u^{27} + \cdots - 0.102273a - 1.10227 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.50974au^{27} - 0.183210u^{27} + \cdots + 1.72403a - 3.21475 \\ -0.306818au^{27} - 0.592532u^{27} + \cdots - 0.443182a + 2.12825 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.147727au^{27} + 1.57630u^{27} + \cdots - 0.897727a - 2.75487 \\ -1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.147727au^{27} + 0.147727u^{27} + \cdots + 1.10227a - 0.897727 \\ -0.147727au^{27} - 0.147727u^{27} + \cdots - 0.102273a + 0.897727 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.592532au^{27} + 0.938080u^{27} + \cdots + 2.12825a - 6.64726 \\ 0.204545au^{27} - 1.50974u^{27} + \cdots + 0.295455a + 1.72403 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.186688au^{27} - 0.309137u^{27} + \cdots + 1.79383a - 3.10413 \\ 0.738636au^{27} - 0.404221u^{27} + \cdots + 0.511364a + 1.79708 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{26} + 60u^{24} - 384u^{22} - 4u^{21} + 1364u^{20} + 48u^{19} - 2940u^{18} - 236u^{17} + 4000u^{16} + 608u^{15} - 3604u^{14} - 884u^{13} + 2428u^{12} + 784u^{11} - 1376u^{10} - 560u^9 + 576u^8 + 384u^7 - 180u^6 - 148u^5 + 40u^4 + 52u^3 - 4u^2 - 16u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{28} + 13u^{27} + \cdots - 2u + 1)^2$
c_2, c_6	$(u^{28} - u^{27} + \cdots + u^2 - 1)^2$
c_3, c_5	$49(49u^{56} - 91u^{55} + \cdots - 1.53507 \times 10^7 u + 3334724)$
c_4, c_9, c_{10}	$(u^{28} + u^{27} + \cdots + 2u - 1)^2$
c_7, c_8, c_{11} c_{12}	$u^{56} - 5u^{55} + \cdots - 107u + 10$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{28} + 5y^{27} + \cdots - 26y + 1)^2$
c_2, c_6	$(y^{28} + 13y^{27} + \cdots - 2y + 1)^2$
c_3, c_5	2401 $\cdot (2401y^{56} - 79233y^{55} + \cdots - 192404715942833y + 11120384156176)$
c_4, c_9, c_{10}	$(y^{28} - 31y^{27} + \cdots - 2y + 1)^2$
c_7, c_8, c_{11} c_{12}	$y^{56} + 39y^{55} + \cdots + 1011y + 100$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.586405 + 0.574893I$ $a = 0.934511 - 0.806392I$ $b = -0.509903 - 1.304970I$	$-2.17812 + 8.20859I$	$-2.53568 - 8.40980I$
$u = -0.586405 + 0.574893I$ $a = -0.428647 + 0.151255I$ $b = 0.991060 - 0.025480I$	$-2.17812 + 8.20859I$	$-2.53568 - 8.40980I$
$u = -0.586405 - 0.574893I$ $a = 0.934511 + 0.806392I$ $b = -0.509903 + 1.304970I$	$-2.17812 - 8.20859I$	$-2.53568 + 8.40980I$
$u = -0.586405 - 0.574893I$ $a = -0.428647 - 0.151255I$ $b = 0.991060 + 0.025480I$	$-2.17812 - 8.20859I$	$-2.53568 + 8.40980I$
$u = 0.543996 + 0.566433I$ $a = 0.925405 + 0.839471I$ $b = -0.447775 + 1.141120I$	$-0.24402 - 3.16640I$	$0.86244 + 4.02500I$
$u = 0.543996 + 0.566433I$ $a = -0.286979 + 0.026703I$ $b = 0.777119 + 0.122141I$	$-0.24402 - 3.16640I$	$0.86244 + 4.02500I$
$u = 0.543996 - 0.566433I$ $a = 0.925405 - 0.839471I$ $b = -0.447775 - 1.141120I$	$-0.24402 + 3.16640I$	$0.86244 - 4.02500I$
$u = 0.543996 - 0.566433I$ $a = -0.286979 - 0.026703I$ $b = 0.777119 - 0.122141I$	$-0.24402 + 3.16640I$	$0.86244 - 4.02500I$
$u = 0.755212 + 0.133146I$ $a = -0.540919 + 0.740300I$ $b = 0.327975 + 1.320330I$	$-6.69395 - 3.35246I$	$-9.30317 + 5.30916I$
$u = 0.755212 + 0.133146I$ $a = -1.287460 - 0.454067I$ $b = 0.512318 - 1.140390I$	$-6.69395 - 3.35246I$	$-9.30317 + 5.30916I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.755212 - 0.133146I$ $a = -0.540919 - 0.740300I$ $b = 0.327975 - 1.320330I$	$-6.69395 + 3.35246I$	$-9.30317 - 5.30916I$
$u = 0.755212 - 0.133146I$ $a = -1.287460 + 0.454067I$ $b = 0.512318 + 1.140390I$	$-6.69395 + 3.35246I$	$-9.30317 - 5.30916I$
$u = 0.430218 + 0.577744I$ $a = 0.472399 + 0.979629I$ $b = -0.260873 + 0.295035I$	$0.091207 - 0.758227I$	$2.08172 + 3.18448I$
$u = 0.430218 + 0.577744I$ $a = 0.786867 + 0.267464I$ $b = 0.188478 + 0.847031I$	$0.091207 - 0.758227I$	$2.08172 + 3.18448I$
$u = 0.430218 - 0.577744I$ $a = 0.472399 - 0.979629I$ $b = -0.260873 - 0.295035I$	$0.091207 + 0.758227I$	$2.08172 - 3.18448I$
$u = 0.430218 - 0.577744I$ $a = 0.786867 - 0.267464I$ $b = 0.188478 - 0.847031I$	$0.091207 + 0.758227I$	$2.08172 - 3.18448I$
$u = -0.567490 + 0.434707I$ $a = -0.953091 - 0.262766I$ $b = 0.607189 + 0.445832I$	$-4.87389 + 1.32970I$	$-6.44616 - 3.85928I$
$u = -0.567490 + 0.434707I$ $a = 0.809747 - 1.000910I$ $b = -0.115321 - 1.301290I$	$-4.87389 + 1.32970I$	$-6.44616 - 3.85928I$
$u = -0.567490 - 0.434707I$ $a = -0.953091 + 0.262766I$ $b = 0.607189 - 0.445832I$	$-4.87389 - 1.32970I$	$-6.44616 + 3.85928I$
$u = -0.567490 - 0.434707I$ $a = 0.809747 + 1.000910I$ $b = -0.115321 + 1.301290I$	$-4.87389 - 1.32970I$	$-6.44616 + 3.85928I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.376046 + 0.601172I$ $a = 1.089170 + 0.134073I$ $b = 0.273285 - 1.117400I$	$-1.56209 - 4.19313I$	$-0.61655 + 2.23475I$
$u = -0.376046 + 0.601172I$ $a = 0.56846 - 1.38218I$ $b = -0.557250 + 0.014188I$	$-1.56209 - 4.19313I$	$-0.61655 + 2.23475I$
$u = -0.376046 - 0.601172I$ $a = 1.089170 - 0.134073I$ $b = 0.273285 + 1.117400I$	$-1.56209 + 4.19313I$	$-0.61655 - 2.23475I$
$u = -0.376046 - 0.601172I$ $a = 0.56846 + 1.38218I$ $b = -0.557250 - 0.014188I$	$-1.56209 + 4.19313I$	$-0.61655 - 2.23475I$
$u = -0.561801$ $a = -1.53884 + 1.41722I$ $b = 0.265812 + 1.100900I$	-4.21146	-6.53310
$u = -0.561801$ $a = -1.53884 - 1.41722I$ $b = 0.265812 - 1.100900I$	-4.21146	-6.53310
$u = 1.45325 + 0.12481I$ $a = 0.497932 - 0.933897I$ $b = -0.092728 + 0.331998I$	$-7.39140 + 1.71282I$	$-4.00356 - 2.41214I$
$u = 1.45325 + 0.12481I$ $a = -1.37354 - 1.92368I$ $b = 0.022349 - 1.127440I$	$-7.39140 + 1.71282I$	$-4.00356 - 2.41214I$
$u = 1.45325 - 0.12481I$ $a = 0.497932 + 0.933897I$ $b = -0.092728 - 0.331998I$	$-7.39140 - 1.71282I$	$-4.00356 + 2.41214I$
$u = 1.45325 - 0.12481I$ $a = -1.37354 + 1.92368I$ $b = 0.022349 + 1.127440I$	$-7.39140 - 1.71282I$	$-4.00356 + 2.41214I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.48911 + 0.14533I$ $a = -0.006064 + 0.424503I$ $b = -0.444666 - 0.069093I$	$-6.17088 + 3.25978I$	$-1.92342 - 3.24223I$
$u = -1.48911 + 0.14533I$ $a = -0.75937 + 1.83812I$ $b = 0.200801 + 1.104680I$	$-6.17088 + 3.25978I$	$-1.92342 - 3.24223I$
$u = -1.48911 - 0.14533I$ $a = -0.006064 - 0.424503I$ $b = -0.444666 + 0.069093I$	$-6.17088 - 3.25978I$	$-1.92342 + 3.24223I$
$u = -1.48911 - 0.14533I$ $a = -0.75937 - 1.83812I$ $b = 0.200801 - 1.104680I$	$-6.17088 - 3.25978I$	$-1.92342 + 3.24223I$
$u = -1.54219 + 0.16548I$ $a = -0.467553 - 0.176793I$ $b = -1.110050 - 0.015985I$	$-7.18158 + 5.80125I$	$-2.94144 - 3.19136I$
$u = -1.54219 + 0.16548I$ $a = -0.37493 + 1.92923I$ $b = 0.54543 + 1.39509I$	$-7.18158 + 5.80125I$	$-2.94144 - 3.19136I$
$u = -1.54219 - 0.16548I$ $a = -0.467553 + 0.176793I$ $b = -1.110050 + 0.015985I$	$-7.18158 - 5.80125I$	$-2.94144 + 3.19136I$
$u = -1.54219 - 0.16548I$ $a = -0.37493 - 1.92923I$ $b = 0.54543 - 1.39509I$	$-7.18158 - 5.80125I$	$-2.94144 + 3.19136I$
$u = -0.144411 + 0.424497I$ $a = 3.71627 + 0.89342I$ $b = -0.095241 - 1.154760I$	$-3.83479 + 1.50370I$	$-0.95413 - 4.12502I$
$u = -0.144411 + 0.424497I$ $a = 0.92345 - 3.77771I$ $b = -0.233804 + 0.870476I$	$-3.83479 + 1.50370I$	$-0.95413 - 4.12502I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.144411 - 0.424497I$ $a = 3.71627 - 0.89342I$ $b = -0.095241 + 1.154760I$	$-3.83479 - 1.50370I$	$-0.95413 + 4.12502I$
$u = -0.144411 - 0.424497I$ $a = 0.92345 + 3.77771I$ $b = -0.233804 - 0.870476I$	$-3.83479 - 1.50370I$	$-0.95413 + 4.12502I$
$u = 1.55614 + 0.12966I$ $a = -0.198340 + 0.485848I$ $b = -1.093620 + 0.434411I$	$-12.02270 - 3.39810I$	$-9.35777 + 1.97434I$
$u = 1.55614 + 0.12966I$ $a = -0.37182 - 2.05675I$ $b = 0.28306 - 1.56814I$	$-12.02270 - 3.39810I$	$-9.35777 + 1.97434I$
$u = 1.55614 - 0.12966I$ $a = -0.198340 - 0.485848I$ $b = -1.093620 - 0.434411I$	$-12.02270 + 3.39810I$	$-9.35777 - 1.97434I$
$u = 1.55614 - 0.12966I$ $a = -0.37182 + 2.05675I$ $b = 0.28306 + 1.56814I$	$-12.02270 + 3.39810I$	$-9.35777 - 1.97434I$
$u = 1.56158$ $a = 0.21585 + 1.83347I$ $b = -0.53469 + 1.36297I$	-11.5046	-6.31040
$u = 1.56158$ $a = 0.21585 - 1.83347I$ $b = -0.53469 - 1.36297I$	-11.5046	-6.31040
$u = 1.55803 + 0.17307I$ $a = -0.589352 + 0.296556I$ $b = -1.310590 + 0.010597I$	$-9.3292 - 10.9377I$	$-6.01109 + 7.20566I$
$u = 1.55803 + 0.17307I$ $a = -0.31959 - 1.94804I$ $b = 0.64841 - 1.51798I$	$-9.3292 - 10.9377I$	$-6.01109 + 7.20566I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.55803 - 0.17307I$ $a = -0.589352 - 0.296556I$ $b = -1.310590 - 0.010597I$	$-9.3292 + 10.9377I$	$-6.01109 - 7.20566I$
$u = 1.55803 - 0.17307I$ $a = -0.31959 + 1.94804I$ $b = 0.64841 + 1.51798I$	$-9.3292 + 10.9377I$	$-6.01109 - 7.20566I$
$u = -1.59109 + 0.02596I$ $a = -0.00141 - 1.54816I$ $b = -0.83487 - 1.39668I$	$-14.6422 + 3.8713I$	$-10.42941 - 3.80957I$
$u = -1.59109 + 0.02596I$ $a = -0.08503 + 1.90406I$ $b = -0.50190 + 1.64960I$	$-14.6422 + 3.8713I$	$-10.42941 - 3.80957I$
$u = -1.59109 - 0.02596I$ $a = -0.00141 + 1.54816I$ $b = -0.83487 + 1.39668I$	$-14.6422 - 3.8713I$	$-10.42941 + 3.80957I$
$u = -1.59109 - 0.02596I$ $a = -0.08503 - 1.90406I$ $b = -0.50190 - 1.64960I$	$-14.6422 - 3.8713I$	$-10.42941 + 3.80957I$

III. $I_3^u = \langle b-1,\ 8a^2-2au-8a+u+3,\ u^2-2\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} a \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a+1 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 2au+\frac{1}{2}a-\frac{11}{8}u-\frac{1}{4} \\ au-u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} a \\ 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} a-1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -au+\frac{1}{2}a+\frac{5}{8}u-\frac{1}{4} \\ au \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -au+2a+\frac{3}{8}u \\ au+2a-\frac{1}{2}u-\frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8au-4u-4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u^2 - u + 1)^2$
c_3	$16(16u^4 + 16u^3 - 4u^2 - 4u + 7)$
c_4, c_9, c_{10}	$(u^2 - 2)^2$
c_5	$16(16u^4 - 16u^3 - 4u^2 + 4u + 7)$
c_6	$(u^2 + u + 1)^2$
c_7, c_8	$(u - 1)^4$
c_{11}, c_{12}	$(u + 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	$(y^2+y+1)^2$
c_3, c_5	$256(256y^4-384y^3+368y^2-72y+49)$
c_4, c_9, c_{10}	$(y-2)^4$
c_7, c_8, c_{11} c_{12}	$(y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.41421$ $a = 0.676777 + 0.306186I$ $b = 1.00000$	$-3.28987 - 2.02988I$	$-2.00000 + 3.46410I$
$u = 1.41421$ $a = 0.676777 - 0.306186I$ $b = 1.00000$	$-3.28987 + 2.02988I$	$-2.00000 - 3.46410I$
$u = -1.41421$ $a = 0.323223 + 0.306186I$ $b = 1.00000$	$-3.28987 + 2.02988I$	$-2.00000 - 3.46410I$
$u = -1.41421$ $a = 0.323223 - 0.306186I$ $b = 1.00000$	$-3.28987 - 2.02988I$	$-2.00000 + 3.46410I$

IV. $I_4^u = \langle b - u,\ 3a - u - 1,\ u^2 + 1 \rangle$

(i) Arc colorings

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

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

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

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

$$a_1 = \begin{pmatrix} \frac{1}{3}u + \frac{1}{3} \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2 \\ -3 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -u + \frac{5}{9} \\ \frac{7}{3}u - \frac{2}{3} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{5}{3}u + \frac{2}{3} \\ 3u - 1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -\frac{1}{3}u + \frac{4}{9} \\ \frac{5}{3}u - \frac{1}{3} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{2}{3}u - \frac{1}{9} \\ -\frac{2}{3}u + \frac{1}{3} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u+1)^2$
c_3	$9(9u^2+12u+5)$
c_4, c_7, c_8 c_9, c_{10}, c_{11} c_{12}	u^2+1
c_5	$9(9u^2-12u+5)$
c_6	$(u-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	$(y-1)^2$
c_3, c_5	$81(81y^2 - 54y + 25)$
c_4, c_7, 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
$u =$	$1.000000I$		
$a =$	$0.333333 + 0.333333I$	-1.64493	-4.00000
$b =$	$1.000000I$		
$u =$	$-1.000000I$		
$a =$	$0.333333 - 0.333333I$	-1.64493	-4.00000
$b =$	$-1.000000I$		

V. $I_1^v = \langle a,\ b+1,\ 4v^2 - 2v + 1 \rangle$

(i) Arc colorings

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

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

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

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

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

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

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

$$a_6 = \begin{pmatrix} 2v \\ v \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} 2v \\ -v \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2v - 1 \\ -v - \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7v - \frac{1}{2}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.250000 + 0.433013I$ $a = 0$ $b = -1.00000$	$1.64493 - 2.02988I$	$-2.25000 - 3.03109I$
$v = 0.250000 - 0.433013I$ $a = 0$ $b = -1.00000$	$1.64493 + 2.02988I$	$-2.25000 + 3.03109I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u+1)^2)(u^2-u+1)^3(u^{28}+13u^{27}+\cdots-2u+1)^2$ $\cdot(u^{37}+14u^{36}+\cdots+929u-64)$
c_2	$((u+1)^2)(u^2-u+1)^2(u^2+u+1)(u^{28}-u^{27}+\cdots+u^2-1)^2$ $\cdot(u^{37}-2u^{36}+\cdots+7u+8)$
c_3	$1806336(4u^2+2u+1)(9u^2+12u+5)(16u^4+16u^3+\cdots-4u+7)$ $\cdot(64u^{37}-160u^{36}+\cdots-41u-19)$ $\cdot(49u^{56}-91u^{55}+\cdots-15350701u+3334724)$
c_4, c_9, c_{10}	$u^2(u^2-2)^2(u^2+1)(u^{28}+u^{27}+\cdots+2u-1)^2$ $\cdot(u^{37}-3u^{36}+\cdots+128u+32)$
c_5	$1806336(4u^2-2u+1)(9u^2-12u+5)(16u^4-16u^3+\cdots+4u+7)$ $\cdot(64u^{37}-160u^{36}+\cdots-41u-19)$ $\cdot(49u^{56}-91u^{55}+\cdots-15350701u+3334724)$
c_6	$((u-1)^2)(u^2-u+1)(u^2+u+1)^2(u^{28}-u^{27}+\cdots+u^2-1)^2$ $\cdot(u^{37}-2u^{36}+\cdots+7u+8)$
c_7, c_8	$((u-1)^4)(u+1)^2(u^2+1)(u^{37}+2u^{36}+\cdots+39u+7)$ $\cdot(u^{56}-5u^{55}+\cdots-107u+10)$
c_{11}, c_{12}	$((u-1)^2)(u+1)^4(u^2+1)(u^{37}+2u^{36}+\cdots+39u+7)$ $\cdot(u^{56}-5u^{55}+\cdots-107u+10)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^2)(y^2+y+1)^3(y^{28}+5y^{27}+\cdots-26y+1)^2$ $\cdot\,(y^{37}+6y^{36}+\cdots+1952449y-4096)$
c_2, c_6	$((y-1)^2)(y^2+y+1)^3(y^{28}+13y^{27}+\cdots-2y+1)^2$ $\cdot\,(y^{37}+14y^{36}+\cdots+929y-64)$
c_3, c_5	$3262849744896(16y^2+4y+1)(81y^2-54y+25)$ $\cdot\,(256y^4-384y^3+368y^2-72y+49)$ $\cdot\,(4096y^{37}-87040y^{36}+\cdots+1681y-361)$ $\cdot\,(2401y^{56}-79233y^{55}+\cdots-192404715942833y+11120384156176)$
c_4, c_9, c_{10}	$y^2(y-2)^4(y+1)^2(y^{28}-31y^{27}+\cdots-2y+1)^2$ $\cdot\,(y^{37}-37y^{36}+\cdots+10240y-1024)$
c_7, c_8, c_{11} c_{12}	$((y-1)^6)(y+1)^2(y^{37}+20y^{36}+\cdots-985y-49)$ $\cdot\,(y^{56}+39y^{55}+\cdots+1011y+100)$