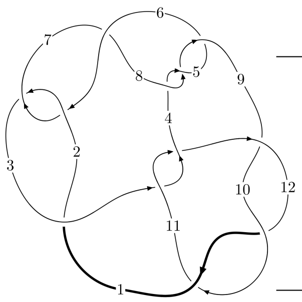
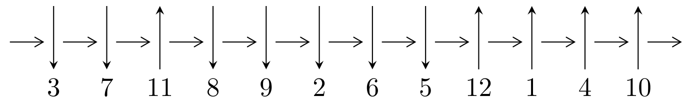
$12a_{0667}$ ($K12a_{0667}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -6.17038 \times 10^{20} u^{69} - 1.82582 \times 10^{21} u^{68} + \cdots + 1.91455 \times 10^{20} b - 4.81975 \times 10^{20}, \\
& -8.95967 \times 10^{20} u^{69} - 2.35544 \times 10^{21} u^{68} + \cdots + 9.57277 \times 10^{19} a - 1.80647 \times 10^{21}, \\
& u^{70} + 4u^{69} + \cdots - 12u + 1 \rangle \\
I_2^u = \langle & b,\ -u^7 - 2u^6 + 2u^5 + 4u^4 - 2u^3 - u^2 + a + u - 3,\ u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1 \rangle \\
I_3^u = \langle & b^2 + b - 1,\ a + 1,\ u - 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 80 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $I^u_1 = \langle -6.17 \times 10^{20} u^{69} - 1.83 \times 10^{21} u^{68} + \cdots + 1.91 \times 10^{20} b - 4.82 \times 10^{20},\ -8.96 \times 10^{20} u^{69} - 2.36 \times 10^{21} u^{68} + \cdots + 9.57 \times 10^{19} a - 1.81 \times 10^{21},\ u^{70} + 4u^{69} + \cdots - 12u + 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 9.35954u^{69} + 24.6057u^{68} + \cdots - 158.582u + 18.8709 \\ 3.22288u^{69} + 9.53652u^{68} + \cdots - 38.9678u + 2.51743 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 10.8850u^{69} + 29.1016u^{68} + \cdots - 165.811u + 18.2326 \\ 0.777120u^{69} + 2.46348u^{68} + \cdots - 10.0322u + 0.482574 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -5.12581u^{69} - 14.9838u^{68} + \cdots + 40.9018u - 1.06043 \\ 0.777120u^{69} + 2.46348u^{68} + \cdots - 10.0322u + 0.482574 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 6.13666u^{69} + 15.0692u^{68} + \cdots - 119.615u + 16.3535 \\ 3.22288u^{69} + 9.53652u^{68} + \cdots - 38.9678u + 2.51743 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -4.34064u^{69} - 10.9959u^{68} + \cdots + 62.9281u - 7.39444 \\ -1.66141u^{69} - 5.91374u^{68} + \cdots + 28.6144u - 1.97273 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.857437u^{69} + 3.79945u^{68} + \cdots + 1.94293u - 2.59562 \\ 3.53647u^{69} + 7.44091u^{68} + \cdots - 20.9351u + 1.99464 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{407739505172525880142}{95727673049700434881} u^{69} + \frac{445100059269514406149}{95727673049700434881} u^{68} + \cdots - \frac{14149863699302255302262}{95727673049700434881} u + \frac{2264603463256005582788}{95727673049700434881}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{70} + 18u^{69} + \cdots + 392u + 16$
c_2, c_6	$u^{70} - 2u^{69} + \cdots - 4u + 4$
c_3, c_{11}	$u^{70} - 2u^{69} + \cdots - 128u + 256$
c_4, c_5, c_8	$u^{70} - 4u^{69} + \cdots + 12u + 1$
c_9, c_{10}, c_{12}	$u^{70} + 10u^{69} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{70} + 66y^{69} + \cdots - 11552y + 256$
c_2, c_6	$y^{70} - 18y^{69} + \cdots - 392y + 16$
c_3, c_{11}	$y^{70} - 54y^{69} + \cdots - 573440y + 65536$
c_4, c_5, c_8	$y^{70} - 56y^{69} + \cdots - 16y + 1$
c_9, c_{10}, c_{12}	$y^{70} - 74y^{69} + \cdots - 29y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.817401 + 0.528957I$ $a = -0.697679 + 0.470803I$ $b = -1.269240 - 0.137383I$	$4.41806 + 0.85765I$	0
$u = 0.817401 - 0.528957I$ $a = -0.697679 - 0.470803I$ $b = -1.269240 + 0.137383I$	$4.41806 - 0.85765I$	0
$u = 0.092064 + 0.919453I$ $a = 0.846984 + 0.675426I$ $b = -1.51562 + 0.63048I$	$13.9368 - 10.3001I$	$4.79104 + 5.95830I$
$u = 0.092064 - 0.919453I$ $a = 0.846984 - 0.675426I$ $b = -1.51562 - 0.63048I$	$13.9368 + 10.3001I$	$4.79104 - 5.95830I$
$u = 1.104440 + 0.096151I$ $a = -0.13603 + 3.19897I$ $b = 0.257699 + 0.472682I$	$-0.029984 - 0.580196I$	0
$u = 1.104440 - 0.096151I$ $a = -0.13603 - 3.19897I$ $b = 0.257699 - 0.472682I$	$-0.029984 + 0.580196I$	0
$u = -1.11750$ $a = 0.916637$ $b = 1.71816$	6.85417	0
$u = 0.062255 + 0.875793I$ $a = -1.267380 - 0.330024I$ $b = 1.322790 - 0.267712I$	$6.93192 - 5.96613I$	$3.25852 + 5.54743I$
$u = 0.062255 - 0.875793I$ $a = -1.267380 + 0.330024I$ $b = 1.322790 + 0.267712I$	$6.93192 + 5.96613I$	$3.25852 - 5.54743I$
$u = 0.033826 + 0.870423I$ $a = 0.060066 - 0.195647I$ $b = -0.059201 - 1.381390I$	$9.25108 - 3.13331I$	$4.39715 + 2.61893I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.033826 - 0.870423I$ $a = 0.060066 + 0.195647I$ $b = -0.059201 + 1.381390I$	$9.25108 + 3.13331I$	$4.39715 - 2.61893I$
$u = -0.057165 + 0.862768I$ $a = -0.958752 + 0.804540I$ $b = 1.56506 + 0.55688I$	$14.5560 + 3.8421I$	$5.88746 - 1.13079I$
$u = -0.057165 - 0.862768I$ $a = -0.958752 - 0.804540I$ $b = 1.56506 - 0.55688I$	$14.5560 - 3.8421I$	$5.88746 + 1.13079I$
$u = 0.010182 + 0.850415I$ $a = 1.350140 - 0.323162I$ $b = -1.323590 - 0.156129I$	$7.15687 - 0.24094I$	$4.01638 - 0.21668I$
$u = 0.010182 - 0.850415I$ $a = 1.350140 + 0.323162I$ $b = -1.323590 + 0.156129I$	$7.15687 + 0.24094I$	$4.01638 + 0.21668I$
$u = 0.375035 + 0.735499I$ $a = 0.059630 + 0.986262I$ $b = -1.272940 + 0.299722I$	$5.73321 - 5.43269I$	$2.26764 + 6.32769I$
$u = 0.375035 - 0.735499I$ $a = 0.059630 - 0.986262I$ $b = -1.272940 - 0.299722I$	$5.73321 + 5.43269I$	$2.26764 - 6.32769I$
$u = 0.819505$ $a = -0.555435$ $b = 0.476341$	-1.06753	-12.4450
$u = 0.083907 + 0.778419I$ $a = 0.0072775 - 0.0342586I$ $b = 0.030796 + 0.592717I$	$2.76619 - 2.72730I$	$-3.14275 + 3.54347I$
$u = 0.083907 - 0.778419I$ $a = 0.0072775 + 0.0342586I$ $b = 0.030796 - 0.592717I$	$2.76619 + 2.72730I$	$-3.14275 - 3.54347I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.222300 + 0.088016I$ $a = -0.89405 + 1.85771I$ $b = -0.677538 + 0.339165I$	$-2.29879 - 1.51453I$	0
$u = 1.222300 - 0.088016I$ $a = -0.89405 - 1.85771I$ $b = -0.677538 - 0.339165I$	$-2.29879 + 1.51453I$	0
$u = 1.192390 + 0.314674I$ $a = -0.633153 - 0.565521I$ $b = -0.031337 - 0.548172I$	$-0.598685 - 1.239580I$	0
$u = 1.192390 - 0.314674I$ $a = -0.633153 + 0.565521I$ $b = -0.031337 + 0.548172I$	$-0.598685 + 1.239580I$	0
$u = -1.273260 + 0.103339I$ $a = 0.193105 - 1.137600I$ $b = -0.976495 - 0.415875I$	$-2.87928 + 1.19855I$	0
$u = -1.273260 - 0.103339I$ $a = 0.193105 + 1.137600I$ $b = -0.976495 + 0.415875I$	$-2.87928 - 1.19855I$	0
$u = -1.221250 + 0.407858I$ $a = 0.766170 + 0.123778I$ $b = 1.62804 - 0.49593I$	$10.96800 + 0.71316I$	0
$u = -1.221250 - 0.407858I$ $a = 0.766170 - 0.123778I$ $b = 1.62804 + 0.49593I$	$10.96800 - 0.71316I$	0
$u = 1.216830 + 0.424213I$ $a = -0.065916 - 0.625238I$ $b = 1.273500 + 0.190068I$	$3.37423 + 1.31428I$	0
$u = 1.216830 - 0.424213I$ $a = -0.065916 + 0.625238I$ $b = 1.273500 - 0.190068I$	$3.37423 - 1.31428I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.202860 + 0.484691I$ $a = -0.732064 + 0.135694I$ $b = -1.51639 - 0.56369I$	$10.52640 + 5.31077I$	0
$u = 1.202860 - 0.484691I$ $a = -0.732064 - 0.135694I$ $b = -1.51639 + 0.56369I$	$10.52640 - 5.31077I$	0
$u = -1.290110 + 0.161362I$ $a = -0.44688 + 1.68716I$ $b = -0.542031 + 0.941291I$	$-2.14802 + 3.82567I$	0
$u = -1.290110 - 0.161362I$ $a = -0.44688 - 1.68716I$ $b = -0.542031 - 0.941291I$	$-2.14802 - 3.82567I$	0
$u = 1.245330 + 0.412665I$ $a = 1.12163 + 1.42898I$ $b = 0.027402 + 1.331840I$	$5.50508 - 1.46175I$	0
$u = 1.245330 - 0.412665I$ $a = 1.12163 - 1.42898I$ $b = 0.027402 - 1.331840I$	$5.50508 + 1.46175I$	0
$u = 1.264760 + 0.391396I$ $a = 0.24842 + 1.62749I$ $b = -1.278590 + 0.241779I$	$3.26582 - 4.21478I$	0
$u = 1.264760 - 0.391396I$ $a = 0.24842 - 1.62749I$ $b = -1.278590 - 0.241779I$	$3.26582 + 4.21478I$	0
$u = -1.281160 + 0.389589I$ $a = 0.038433 - 0.693152I$ $b = -1.357220 + 0.068668I$	$3.14091 + 4.69097I$	0
$u = -1.281160 - 0.389589I$ $a = 0.038433 + 0.693152I$ $b = -1.357220 - 0.068668I$	$3.14091 - 4.69097I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.350210 + 0.062844I$ $a = 0.622603 - 1.117160I$ $b = 0.419600 - 0.660924I$	$-6.65005 + 1.01942I$	0
$u = -1.350210 - 0.062844I$ $a = 0.622603 + 1.117160I$ $b = 0.419600 + 0.660924I$	$-6.65005 - 1.01942I$	0
$u = 1.346040 + 0.140036I$ $a = 2.16278 - 1.54711I$ $b = 1.245680 - 0.222159I$	$3.15551 - 3.32548I$	0
$u = 1.346040 - 0.140036I$ $a = 2.16278 + 1.54711I$ $b = 1.245680 + 0.222159I$	$3.15551 + 3.32548I$	0
$u = -1.344330 + 0.179173I$ $a = 0.30073 + 1.60507I$ $b = 0.919661 + 0.547737I$	$-5.16563 + 5.58267I$	0
$u = -1.344330 - 0.179173I$ $a = 0.30073 - 1.60507I$ $b = 0.919661 - 0.547737I$	$-5.16563 - 5.58267I$	0
$u = -1.300510 + 0.401241I$ $a = -1.00810 + 1.38334I$ $b = -0.14268 + 1.40895I$	$5.09074 + 7.69181I$	0
$u = -1.300510 - 0.401241I$ $a = -1.00810 - 1.38334I$ $b = -0.14268 - 1.40895I$	$5.09074 - 7.69181I$	0
$u = -1.320910 + 0.336659I$ $a = 0.483780 - 0.643166I$ $b = 0.043065 - 0.637222I$	$-1.63951 + 6.75482I$	0
$u = -1.320910 - 0.336659I$ $a = 0.483780 + 0.643166I$ $b = 0.043065 + 0.637222I$	$-1.63951 - 6.75482I$	0

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.308688 + 0.550304I$ $a = -0.918995 - 0.683177I$ $b = 0.821372 - 0.340072I$	$-3.06118I$	$-2.00068 + 8.85874I$
$u = 0.308688 - 0.550304I$ $a = -0.918995 + 0.683177I$ $b = 0.821372 + 0.340072I$	$3.06118I$	$-2.00068 - 8.85874I$
$u = 1.315760 + 0.392744I$ $a = 0.21638 - 2.33271I$ $b = 1.50161 - 0.59687I$	$10.26400 - 8.34810I$	0
$u = 1.315760 - 0.392744I$ $a = 0.21638 + 2.33271I$ $b = 1.50161 + 0.59687I$	$10.26400 + 8.34810I$	0
$u = -1.320220 + 0.400178I$ $a = -0.17686 + 1.53471I$ $b = 1.344730 + 0.338262I$	$2.60924 + 10.54110I$	0
$u = -1.320220 - 0.400178I$ $a = -0.17686 - 1.53471I$ $b = 1.344730 - 0.338262I$	$2.60924 - 10.54110I$	0
$u = -1.347670 + 0.419839I$ $a = -0.11657 - 2.13013I$ $b = -1.49498 - 0.68093I$	$9.4229 + 15.0909I$	0
$u = -1.347670 - 0.419839I$ $a = -0.11657 + 2.13013I$ $b = -1.49498 + 0.68093I$	$9.4229 - 15.0909I$	0
$u = 0.540431 + 0.219713I$ $a = -0.174418 - 0.008470I$ $b = 0.431863 + 0.284604I$	$-1.050260 - 0.096802I$	$-9.26762 - 0.13740I$
$u = 0.540431 - 0.219713I$ $a = -0.174418 + 0.008470I$ $b = 0.431863 - 0.284604I$	$-1.050260 + 0.096802I$	$-9.26762 + 0.13740I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.41264+0.23660I$ $a=-1.12820-1.57936I$ $b=-1.171970-0.426637I$	$-0.02016+8.81445I$	0
$u=-1.41264-0.23660I$ $a=-1.12820+1.57936I$ $b=-1.171970+0.426637I$	$-0.02016-8.81445I$	0
$u=-1.45402$ $a=-1.76666$ $b=-1.04331$	-3.23881	0
$u=-0.324618+0.427664I$ $a=\ \ 0.66119+1.88807I$ $b=\ \ 1.44762+0.13518I$	$8.35020+1.34425I$	$7.83795-1.26764I$
$u=-0.324618-0.427664I$ $a=\ \ 0.66119-1.88807I$ $b=\ \ 1.44762-0.13518I$	$8.35020-1.34425I$	$7.83795+1.26764I$
$u=\ \ 0.176682+0.474018I$ $a=\ \ 0.89919-1.18021I$ $b=-0.249486-0.754350I$	$2.34320-1.58119I$	$1.22087+3.59711I$
$u=\ \ 0.176682-0.474018I$ $a=\ \ 0.89919+1.18021I$ $b=-0.249486+0.754350I$	$2.34320+1.58119I$	$1.22087-3.59711I$
$u=\ \ 0.031462+0.272546I$ $a=\ \ 1.94920-2.01252I$ $b=-0.736009+0.023221I$	$1.228040+0.145895I$	$6.62969+0.43006I$
$u=\ \ 0.031462-0.272546I$ $a=\ \ 1.94920+2.01252I$ $b=-0.736009-0.023221I$	$1.228040-0.145895I$	$6.62969-0.43006I$
$u=\ \ 0.154844$ $a=\ \ 6.14014$ $b=-0.481532$	1.16432	11.8160

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle b,\ -u^7-2u^6+2u^5+4u^4-2u^3-u^2+a+u-3,\ u^8+u^7-3u^6-2u^5+3u^4+2u-1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^2+1 \\ -u^4+2u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^7+2u^6-2u^5-4u^4+2u^3+u^2-u+3 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^7+2u^6-2u^5-4u^4+2u^3+u^2-2u+3 \\ -u^3+u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u^3-u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^5-2u^3+u \\ u^7-3u^5+2u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^7+2u^6-2u^5-4u^4+2u^3+u^2-u+3 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^3+2u \\ u^3-u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^7-10u^6+7u^5+25u^4-9u^3-12u^2+8u-13$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 - 3u^7 + 7u^6 - 10u^5 + 11u^4 - 10u^3 + 6u^2 - 4u + 1$
c_2	$u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1$
c_3, c_{11}	u^8
c_4, c_5	$u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1$
c_6	$u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1$
c_7	$u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1$
c_8	$u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1$
c_9, c_{10}	$(u + 1)^8$
c_{12}	$(u - 1)^8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_2, c_6	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_3, c_{11}	y^8
c_4, c_5, c_8	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_9, c_{10}, c_{12}	$(y-1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.180120 + 0.268597I$ $a = -0.281371 + 1.128550I$ $b = 0$	$0.604279 - 1.131230I$	$2.43193 + 0.79885I$
$u = 1.180120 - 0.268597I$ $a = -0.281371 - 1.128550I$ $b = 0$	$0.604279 + 1.131230I$	$2.43193 - 0.79885I$
$u = 0.108090 + 0.747508I$ $a = 0.208670 - 0.825203I$ $b = 0$	$3.80435 - 2.57849I$	$5.57469 + 3.25625I$
$u = 0.108090 - 0.747508I$ $a = 0.208670 + 0.825203I$ $b = 0$	$3.80435 + 2.57849I$	$5.57469 - 3.25625I$
$u = -1.37100$ $a = 0.829189$ $b = 0$	-4.85780	-8.00600
$u = -1.334530 + 0.318930I$ $a = 0.284386 + 0.605794I$ $b = 0$	$-0.73474 + 6.44354I$	$0.28408 - 3.92092I$
$u = -1.334530 - 0.318930I$ $a = 0.284386 - 0.605794I$ $b = 0$	$-0.73474 - 6.44354I$	$0.28408 + 3.92092I$
$u = 0.463640$ $a = 2.74744$ $b = 0$	0.799899	-11.5750

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.00000$ $b = 0.618034$	-0.657974	9.00000
$u = 1.00000$ $a = -1.00000$ $b = -1.61803$	7.23771	9.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^2(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{70}+18u^{69}+\cdots+392u+16)$
c_2	$u^2(u^8-u^7+\cdots+2u-1)(u^{70}-2u^{69}+\cdots-4u+4)$
c_3	$u^8(u^2+u-1)(u^{70}-2u^{69}+\cdots-128u+256)$
c_4, c_5	$(u-1)^2(u^8+u^7-3u^6-2u^5+3u^4+2u-1)$ $\cdot(u^{70}-4u^{69}+\cdots+12u+1)$
c_6	$u^2(u^8+u^7+\cdots-2u-1)(u^{70}-2u^{69}+\cdots-4u+4)$
c_7	$u^2(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)$ $\cdot(u^{70}+18u^{69}+\cdots+392u+16)$
c_8	$(u+1)^2(u^8-u^7-3u^6+2u^5+3u^4-2u-1)$ $\cdot(u^{70}-4u^{69}+\cdots+12u+1)$
c_9, c_{10}	$((u+1)^8)(u^2-u-1)(u^{70}+10u^{69}+\cdots-u+1)$
c_{11}	$u^8(u^2-u-1)(u^{70}-2u^{69}+\cdots-128u+256)$
c_{12}	$((u-1)^8)(u^2+u-1)(u^{70}+10u^{69}+\cdots-u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^2(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)$ $\cdot (y^{70} + 66y^{69} + \cdots - 11552y + 256)$
c_2, c_6	$y^2(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)$ $\cdot (y^{70} - 18y^{69} + \cdots - 392y + 16)$
c_3, c_{11}	$y^8(y^2 - 3y + 1)(y^{70} - 54y^{69} + \cdots - 573440y + 65536)$
c_4, c_5, c_8	$(y-1)^2(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)$ $\cdot (y^{70} - 56y^{69} + \cdots - 16y + 1)$
c_9, c_{10}, c_{12}	$((y-1)^8)(y^2 - 3y + 1)(y^{70} - 74y^{69} + \cdots - 29y + 1)$