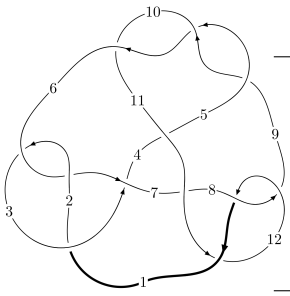
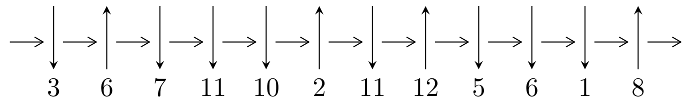
$12n_{0294}$ $(K12n_{0294})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^{10} + u^9 + 5u^8 + 4u^7 + 9u^6 + 6u^5 + 3u^4 + 3u^3 - 5u^2 + 2b - 1, \\
& u^{10} + u^9 + 5u^8 + 4u^7 + 9u^6 + 6u^5 + 3u^4 + 3u^3 - 7u^2 + 2a - 3, \\
& u^{12} + u^{11} + 5u^{10} + 4u^9 + 10u^8 + 7u^7 + 7u^6 + 6u^5 - 2u^4 + 3u^3 - 3u^2 - 1\rangle \\
I_2^u = \langle & -78963686u^{21} - 109276521u^{20} + \cdots + 2723477338b + 755541991, \\
& 207732146u^{21} + 642690277u^{20} + \cdots + 1906434166a + 152323303,\ u^{22} + 2u^{21} + \cdots + u + 7\rangle \\
I_3^u = \langle & b - a - u,\ a^2 + 2u,\ u^2 - u + 1\rangle \\
I_4^u = \langle & b + u,\ a,\ u^2 + u + 1\rangle \\
I_5^u = \langle & b - a + 1,\ a^2 + 2u,\ u^2 - u + 1\rangle \\
I_6^u = \langle & b + 1,\ a,\ u^2 + u + 1\rangle
\end{aligned}$$

* 6 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 46 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.

$$I_1^u = \langle u^{10}+u^9+\cdots+2b-1,\ u^{10}+u^9+\cdots+2a-3,\ u^{12}+u^{11}+\cdots-3u^2-1\rangle$$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -5u^{11}-3u^{10}-21u^9-9u^8-34u^7-12u^6-8u^5-10u^4+26u^3-12u^2+13u-9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{12} + 9u^{11} + \cdots + 6u + 1$
c_2, c_6, c_8 c_{12}	$u^{12} - u^{11} + 5u^{10} - 4u^9 + 10u^8 - 7u^7 + 7u^6 - 6u^5 - 2u^4 - 3u^3 - 3u^2 - 1$
c_3, c_7	$u^{12} + u^{11} + \cdots - u - 2$
c_4	$u^{12} + 15u^{11} + \cdots + 596u + 32$
c_5, c_9, c_{10}	$u^{12} - 5u^{11} + \cdots - 4u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{12} - 7y^{11} + \cdots - 10y + 1$
c_2, c_6, c_8 c_{12}	$y^{12} + 9y^{11} + \cdots + 6y + 1$
c_3, c_7	$y^{12} - 23y^{11} + \cdots + 51y + 4$
c_4	$y^{12} - 35y^{11} + \cdots - 202128y + 1024$
c_5, c_9, c_{10}	$y^{12} - 15y^{11} + \cdots + 16y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.07086$ $a = \ \ 1.66252$ $b = -0.484232$	-12.1281	-5.69090
$u = \ \ 0.296087 + 0.741679I$ $a = -0.55750 + 1.66481I$ $b = -1.09508 + 1.22561I$	$-5.57527 + 2.63814I$	$-11.42884 - 2.06673I$
$u = \ \ 0.296087 - 0.741679I$ $a = -0.55750 - 1.66481I$ $b = -1.09508 - 1.22561I$	$-5.57527 - 2.63814I$	$-11.42884 + 2.06673I$
$u = -0.162478 + 1.257750I$ $a = -0.651223 + 0.357840I$ $b = -0.095679 + 0.766555I$	$-5.08721 - 2.66459I$	$-10.23667 + 3.12657I$
$u = -0.162478 - 1.257750I$ $a = -0.651223 - 0.357840I$ $b = -0.095679 - 0.766555I$	$-5.08721 + 2.66459I$	$-10.23667 - 3.12657I$
$u = \ \ 0.635067$ $a = \ \ 1.51509$ $b = \ \ 0.111783$	-1.87851	-4.23810
$u = \ \ 0.416797 + 1.329220I$ $a = -0.199126 - 0.960314I$ $b = \ \ 0.39398 - 2.06834I$	$-9.65412 + 7.95397I$	$-10.78779 - 5.64533I$
$u = \ \ 0.416797 - 1.329220I$ $a = -0.199126 + 0.960314I$ $b = \ \ 0.39398 + 2.06834I$	$-9.65412 - 7.95397I$	$-10.78779 + 5.64533I$
$u = -0.206233 + 0.541920I$ $a = \ \ 0.438428 - 0.668694I$ $b = -0.310427 - 0.445170I$	$-0.276323 - 1.063990I$	$-4.38658 + 6.25986I$
$u = -0.206233 - 0.541920I$ $a = \ \ 0.438428 + 0.668694I$ $b = -0.310427 + 0.445170I$	$-0.276323 + 1.063990I$	$-4.38658 - 6.25986I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.62627 + 1.34351I$ $a = 0.380614 + 1.171480I$ $b = 0.79343 + 2.85430I$	$19.3715 - 11.9727I$	$-10.19562 + 5.57211I$
$u = -0.62627 - 1.34351I$ $a = 0.380614 - 1.171480I$ $b = 0.79343 - 2.85430I$	$19.3715 + 11.9727I$	$-10.19562 - 5.57211I$

II.
$\boldsymbol{I_2^u = \langle -7.90 \times 10^7 u^{21} - 1.09 \times 10^8 u^{20} + \cdots + 2.72 \times 10^8 b + 7.56 \times 10^8,\ 2.08 \times 10^8 u^{21} + 6.43 \times 10^8 u^{20} + \cdots + 1.91 \times 10^9 a + 1.52 \times 10^8,\ u^{22} + 2u^{21} + \cdots + u + 7 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.108964u^{21} - 0.337116u^{20} + \cdots - 2.45446u - 0.0798996 \\ 0.289937u^{21} + 0.401239u^{20} + \cdots - 0.514832u - 2.77418 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0918453u^{21} + 0.174181u^{20} + \cdots + 0.699627u - 0.598884 \\ 0.113601u^{21} + 0.0746372u^{20} + \cdots + 2.03280u - 0.388234 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.108964u^{21} - 0.337116u^{20} + \cdots - 2.45446u - 0.0798996 \\ 0.308189u^{21} + 0.280109u^{20} + \cdots - 1.39677u - 3.60850 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.0436157u^{21} + 0.236816u^{20} + \cdots + 0.624511u + 1.17524 \\ 0.202828u^{21} + 0.763930u^{20} + \cdots + 1.77903u + 1.62345 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.0937967u^{21} + 0.208563u^{20} + \cdots - 0.352346u + 1.14461 \\ 0.592510u^{21} + 1.09915u^{20} + \cdots + 0.751139u - 3.19574 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.121487u^{21} + 0.427747u^{20} + \cdots + 2.44535u + 0.605555 \\ -0.158323u^{21} + 0.138552u^{20} + \cdots + 1.87374u + 4.80979 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{89419702}{136173869}u^{21} - \frac{42120566}{136173869}u^{20} + \cdots + \frac{1416145048}{136173869}u + \frac{452453139}{136173869}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{22} + 14u^{21} + \cdots + 307u + 49$
c_2, c_6, c_8 c_{12}	$u^{22} - 2u^{21} + \cdots - u + 7$
c_3, c_7	$u^{22} + 2u^{21} + \cdots - 145u + 35$
c_4	$(u^{11} - 6u^{10} + \cdots - 48u + 32)^2$
c_5, c_9, c_{10}	$(u^{11} + 2u^{10} - 7u^9 - 14u^8 + 17u^7 + 32u^6 - 20u^5 - 30u^4 + 9u^3 + 8u^2 - 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{22} - 10y^{21} + \cdots - 14085y + 2401$
c_2, c_6, c_8 c_{12}	$y^{22} + 14y^{21} + \cdots + 307y + 49$
c_3, c_7	$y^{22} - 34y^{21} + \cdots + 17965y + 1225$
c_4	$(y^{11} - 58y^{10} + \cdots + 12928y - 1024)^2$
c_5, c_9, c_{10}	$(y^{11} - 18y^{10} + \cdots + 32y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.315297 + 0.937809I$ $a = -0.373766 + 0.436547I$ $b = 0.57981 + 1.45156I$	$-0.82409 + 3.69934I$	$-10.27594 - 2.30433I$
$u = 0.315297 - 0.937809I$ $a = -0.373766 - 0.436547I$ $b = 0.57981 - 1.45156I$	$-0.82409 - 3.69934I$	$-10.27594 + 2.30433I$
$u = -0.621678 + 0.900743I$ $a = 0.433725 + 0.285994I$ $b = 0.477184 - 0.282729I$	$-0.82409 - 3.69934I$	$-10.27594 + 2.30433I$
$u = -0.621678 - 0.900743I$ $a = 0.433725 - 0.285994I$ $b = 0.477184 + 0.282729I$	$-0.82409 + 3.69934I$	$-10.27594 - 2.30433I$
$u = -1.140860 + 0.146410I$ $a = -1.58475 - 0.10382I$ $b = 0.383248 + 0.166816I$	$-16.3894 + 5.6976I$	$-8.38395 - 2.57135I$
$u = -1.140860 - 0.146410I$ $a = -1.58475 + 0.10382I$ $b = 0.383248 - 0.166816I$	$-16.3894 - 5.6976I$	$-8.38395 + 2.57135I$
$u = -0.528041 + 0.663736I$ $a = 0.036886 - 0.596779I$ $b = -0.411020 - 0.383825I$	$-0.153907 - 1.029650I$	$-5.69847 + 5.62903I$
$u = -0.528041 - 0.663736I$ $a = 0.036886 + 0.596779I$ $b = -0.411020 + 0.383825I$	$-0.153907 + 1.029650I$	$-5.69847 - 5.62903I$
$u = 0.797910 + 0.128505I$ $a = -1.42715 + 0.64453I$ $b = -0.302057 + 0.565900I$	$-5.23581 + 3.47501I$	$-8.51244 - 3.77183I$
$u = 0.797910 - 0.128505I$ $a = -1.42715 - 0.64453I$ $b = -0.302057 - 0.565900I$	$-5.23581 - 3.47501I$	$-8.51244 + 3.77183I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.026101 + 1.195750I$ $a = -0.193214 - 1.265770I$ $b = 0.79244 - 2.46937I$	$-7.69899 - 1.57384I$	$-11.44703 + 1.61053I$
$u = 0.026101 - 1.195750I$ $a = -0.193214 + 1.265770I$ $b = 0.79244 + 2.46937I$	$-7.69899 + 1.57384I$	$-11.44703 - 1.61053I$
$u = 0.306447 + 1.162800I$ $a = 0.007196 + 1.052430I$ $b = -0.56018 + 1.99198I$	$-5.23581 + 3.47501I$	$-8.51244 - 3.77183I$
$u = 0.306447 - 1.162800I$ $a = 0.007196 - 1.052430I$ $b = -0.56018 - 1.99198I$	$-5.23581 - 3.47501I$	$-8.51244 + 3.77183I$
$u = 0.174005 + 0.725075I$ $a = 0.560735 - 0.384864I$ $b = -0.654598 - 0.645346I$	$-0.153907 - 1.029650I$	$-5.69847 + 5.62903I$
$u = 0.174005 - 0.725075I$ $a = 0.560735 + 0.384864I$ $b = -0.654598 + 0.645346I$	$-0.153907 + 1.029650I$	$-5.69847 - 5.62903I$
$u = 0.648660 + 1.107420I$ $a = 0.771605 - 0.910213I$ $b = 0.461513 - 1.169360I$	$-7.69899 + 1.57384I$	$-11.44703 - 1.61053I$
$u = 0.648660 - 1.107420I$ $a = 0.771605 + 0.910213I$ $b = 0.461513 + 1.169360I$	$-7.69899 - 1.57384I$	$-11.44703 + 1.61053I$
$u = -0.53111 + 1.36431I$ $a = -0.379457 - 1.188610I$ $b = -0.55682 - 2.99037I$	$-16.3894 - 5.6976I$	$-8.38395 + 2.57135I$
$u = -0.53111 - 1.36431I$ $a = -0.379457 + 1.188610I$ $b = -0.55682 + 2.99037I$	$-16.3894 + 5.6976I$	$-8.38395 - 2.57135I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.44674 + 1.47157I$ $a = \quad 0.362471 + 1.193990I$ $b = \quad 0.29049 + 2.82389I$	17.8360	$-11.36432 + 0.I$
$u = -0.44674 - 1.47157I$ $a = \quad 0.362471 - 1.193990I$ $b = \quad 0.29049 - 2.82389I$	17.8360	$-11.36432 + 0.I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = 0.707110 - 1.224740I$ $b = 1.207110 - 0.358719I$	$-4.93480 + 4.05977I$	$-8.00000 - 6.92820I$
$u = 0.500000 + 0.866025I$ $a = -0.707110 + 1.224740I$ $b = -0.20711 + 2.09077I$	$-4.93480 + 4.05977I$	$-8.00000 - 6.92820I$
$u = 0.500000 - 0.866025I$ $a = 0.707110 + 1.224740I$ $b = 1.207110 + 0.358719I$	$-4.93480 - 4.05977I$	$-8.00000 + 6.92820I$
$u = 0.500000 - 0.866025I$ $a = -0.707110 - 1.224740I$ $b = -0.20711 - 2.09077I$	$-4.93480 - 4.05977I$	$-8.00000 + 6.92820I$

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

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

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

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

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

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

$$a_{10} = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

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

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

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

$$a_9 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0$ $b = 0.500000 - 0.866025I$	$-4.05977I$	$0. + 6.92820I$
$u = -0.500000 - 0.866025I$ $a = 0$ $b = 0.500000 + 0.866025I$	$4.05977I$	$0. - 6.92820I$

V. $\boldsymbol{I_5^u = \langle b - a + 1,\ a^2 + 2u,\ u^2 - u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.500000 + 0.866025I$ $a = \quad 0.707110 - 1.224740I$ $b = -0.292893 - 1.224750I$	-4.93480	-8.00000
$u = \quad 0.500000 + 0.866025I$ $a = -0.707110 + 1.224740I$ $b = -1.70711 + 1.22474I$	-4.93480	-8.00000
$u = \quad 0.500000 - 0.866025I$ $a = \quad 0.707110 + 1.224740I$ $b = -0.292893 + 1.224750I$	-4.93480	-8.00000
$u = \quad 0.500000 - 0.866025I$ $a = -0.707110 - 1.224740I$ $b = -1.70711 - 1.22474I$	-4.93480	-8.00000

VI. $I_6^u = \langle b+1,\ a,\ u^2+u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = \quad 0$ $b = -1.00000$	0	-6.00000
$u = -0.500000 - 0.866025I$ $a = \quad 0$ $b = -1.00000$	0	-6.00000

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$((u^2-u+1)^6)(u^{12}+9u^{11}+\cdots+6u+1)$ $\cdot(u^{22}+14u^{21}+\cdots+307u+49)$
c_2, c_8	$(u^2-u+1)^4(u^2+u+1)^2$ $\cdot(u^{12}-u^{11}+5u^{10}-4u^9+10u^8-7u^7+7u^6-6u^5-2u^4-3u^3-3u^2-1)$ $\cdot(u^{22}-2u^{21}+\cdots-u+7)$
c_3, c_7	$((u^2-u+1)^2)(u^2+u+1)^4(u^{12}+u^{11}+\cdots-u-2)$ $\cdot(u^{22}+2u^{21}+\cdots-145u+35)$
c_4	$u^4(u^2-2)^4(u^{11}-6u^{10}+\cdots-48u+32)^2$ $\cdot(u^{12}+15u^{11}+\cdots+596u+32)$
c_5, c_9, c_{10}	$u^4(u^2-2)^4$ $\cdot(u^{11}+2u^{10}-7u^9-14u^8+17u^7+32u^6-20u^5-30u^4+9u^3+8u^2-2)^2$ $\cdot(u^{12}-5u^{11}+\cdots-4u-4)$
c_6, c_{12}	$(u^2-u+1)^2(u^2+u+1)^4$ $\cdot(u^{12}-u^{11}+5u^{10}-4u^9+10u^8-7u^7+7u^6-6u^5-2u^4-3u^3-3u^2-1)$ $\cdot(u^{22}-2u^{21}+\cdots-u+7)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$((y^2+y+1)^6)(y^{12}-7y^{11}+\cdots-10y+1)$ $\cdot(y^{22}-10y^{21}+\cdots-14085y+2401)$
c_2, c_6, c_8 c_{12}	$((y^2+y+1)^6)(y^{12}+9y^{11}+\cdots+6y+1)$ $\cdot(y^{22}+14y^{21}+\cdots+307y+49)$
c_3, c_7	$((y^2+y+1)^6)(y^{12}-23y^{11}+\cdots+51y+4)$ $\cdot(y^{22}-34y^{21}+\cdots+17965y+1225)$
c_4	$y^4(y-2)^8(y^{11}-58y^{10}+\cdots+12928y-1024)^2$ $\cdot(y^{12}-35y^{11}+\cdots-202128y+1024)$
c_5, c_9, c_{10}	$y^4(y-2)^8(y^{11}-18y^{10}+\cdots+32y-4)^2$ $\cdot(y^{12}-15y^{11}+\cdots+16y+16)$