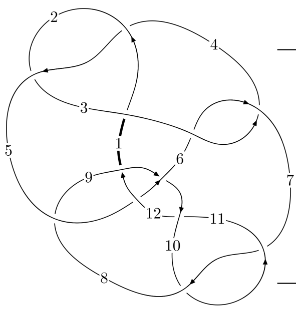
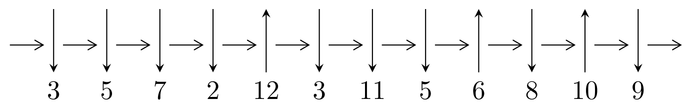
$12n_{0098}$ ($K12n_{0098}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 4.18552 \times 10^{72} u^{61} + 3.25275 \times 10^{72} u^{60} + \cdots + 1.83626 \times 10^{74} b - 1.12303 \times 10^{74}, \\
&\quad -1.03434 \times 10^{74} u^{61} - 5.26235 \times 10^{74} u^{60} + \cdots + 1.83626 \times 10^{74} a + 1.05888 \times 10^{76}, \\
&\quad u^{62} + 5u^{61} + \cdots - 113u + 1 \rangle \\
I_2^u &= \langle b,\ -u^3 + a + 2,\ u^4 + u^2 - u + 1 \rangle \\
I_3^u &= \langle -120a^2u + 44a^2 - 865au + 691b + 202a + 177u - 134,\ a^3 - a^2u + 8a^2 - 4au + a - 5u - 7,\ u^2 - u + 1 \rangle \\
I_4^u &= \langle b,\ -u^3 - u^2 + a - 2u - 1,\ u^6 + u^5 + 2u^4 + 2u^3 + 2u^2 + 2u + 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 78 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. $I_1^u = \langle 4.19 \times 10^{72}u^{61} + 3.25 \times 10^{72}u^{60} + \cdots + 1.84 \times 10^{74}b - 1.12 \times 10^{74},\ -1.03 \times 10^{74}u^{61} - 5.26 \times 10^{74}u^{60} + \cdots + 1.84 \times 10^{74}a + 1.06 \times 10^{76},\ u^{62} + 5u^{61} + \cdots - 113u + 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.563286u^{61} + 2.86580u^{60} + \cdots - 4.40887u - 57.6652 \\ -0.0227937u^{61} - 0.0177140u^{60} + \cdots - 3.56182u + 0.611587 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.398010u^{61} - 2.06178u^{60} + \cdots + 15.0559u + 34.3666 \\ 0.108322u^{61} + 0.265127u^{60} + \cdots + 7.66296u - 0.403405 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.364245u^{61} - 1.69585u^{60} + \cdots - 5.63070u + 34.5483 \\ -0.0484629u^{61} - 0.227602u^{60} + \cdots + 6.86074u - 0.394692 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.351605u^{61} + 1.74250u^{60} + \cdots - 1.36842u - 32.2841 \\ 0.0484629u^{61} + 0.227602u^{60} + \cdots - 6.86074u + 0.394692 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.586080u^{61} - 2.88351u^{60} + \cdots + 0.847056u + 58.2767 \\ 0.0227937u^{61} + 0.0177140u^{60} + \cdots + 3.56182u - 0.611587 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.0628689u^{61} - 0.211226u^{60} + \cdots + 1.30026u - 10.6392 \\ -0.121039u^{61} - 0.637166u^{60} + \cdots + 18.6696u - 0.0518508 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0216935u^{61} - 0.0922332u^{60} + \cdots + 16.0468u - 1.14018 \\ 0.115443u^{61} + 0.357638u^{60} + \cdots + 2.47253u - 0.00153419 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.152156u^{61} + 1.18827u^{60} + \cdots + 7.99782u - 8.81670$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{62} + 71u^{61} + \cdots + 267u + 1$
c_2, c_4	$u^{62} - 13u^{61} + \cdots + 15u - 1$
c_3, c_6	$u^{62} + 3u^{61} + \cdots - 8192u - 1024$
c_5	$u^{62} + 4u^{61} + \cdots - 10u^2 + 1$
c_7, c_{10}	$u^{62} - 5u^{61} + \cdots + 113u + 1$
c_8	$u^{62} + 4u^{61} + \cdots - 3025807u + 537503$
c_9	$u^{62} + 44u^{60} + \cdots + 9664u + 824$
c_{11}	$u^{62} - 21u^{61} + \cdots + 12769u + 1$
c_{12}	$u^{62} - 6u^{61} + \cdots - 1248u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{62} - 147y^{61} + \cdots - 20183y + 1$
c_2, c_4	$y^{62} - 71y^{61} + \cdots - 267y + 1$
c_3, c_6	$y^{62} - 57y^{61} + \cdots + 9961472y + 1048576$
c_5	$y^{62} - 4y^{61} + \cdots - 20y + 1$
c_7, c_{10}	$y^{62} + 21y^{61} + \cdots - 12769y + 1$
c_8	$y^{62} + 16y^{61} + \cdots - 11200434939731y + 288909475009$
c_9	$y^{62} + 88y^{61} + \cdots + 13013520y + 678976$
c_{11}	$y^{62} + 45y^{61} + \cdots - 163345321y + 1$
c_{12}	$y^{62} - 30y^{61} + \cdots - 185344y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.197990 + 0.977965I$ $a = -0.817839 - 0.403463I$ $b = -0.181458 + 0.756746I$	$3.58947 - 0.62301I$	$3.36345 + 2.22600I$
$u = -0.197990 - 0.977965I$ $a = -0.817839 + 0.403463I$ $b = -0.181458 - 0.756746I$	$3.58947 + 0.62301I$	$3.36345 - 2.22600I$
$u = 0.504265 + 0.860405I$ $a = 8.46750 - 1.97416I$ $b = 0.596380 - 0.013951I$	$-1.08843 - 2.05155I$	$143.754 + 62.581I$
$u = 0.504265 - 0.860405I$ $a = 8.46750 + 1.97416I$ $b = 0.596380 + 0.013951I$	$-1.08843 + 2.05155I$	$143.754 - 62.581I$
$u = 0.315979 + 0.963839I$ $a = 1.63289 + 2.55056I$ $b = 0.261416 - 0.638531I$	$-0.90689 - 2.60619I$	$-4.21909 + 1.98730I$
$u = 0.315979 - 0.963839I$ $a = 1.63289 - 2.55056I$ $b = 0.261416 + 0.638531I$	$-0.90689 + 2.60619I$	$-4.21909 - 1.98730I$
$u = -0.399423 + 0.961282I$ $a = -0.895928 + 0.237941I$ $b = 0.251217 + 1.010200I$	$3.47148 - 0.76506I$	$5.05392 + 1.67806I$
$u = -0.399423 - 0.961282I$ $a = -0.895928 - 0.237941I$ $b = 0.251217 - 1.010200I$	$3.47148 + 0.76506I$	$5.05392 - 1.67806I$
$u = 0.725465 + 0.771295I$ $a = -1.45382 + 1.64302I$ $b = -0.430975 - 0.493018I$	$-2.91907 - 1.90864I$	$-12.3927 + 9.8412I$
$u = 0.725465 - 0.771295I$ $a = -1.45382 - 1.64302I$ $b = -0.430975 + 0.493018I$	$-2.91907 + 1.90864I$	$-12.3927 - 9.8412I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.136821 + 1.054380I$ $a = 1.362710 + 0.360651I$ $b = -1.45675 - 0.24203I$	$-6.85055 - 2.44704I$	$-9.28052 + 0.I$
$u = 0.136821 - 1.054380I$ $a = 1.362710 - 0.360651I$ $b = -1.45675 + 0.24203I$	$-6.85055 + 2.44704I$	$-9.28052 + 0.I$
$u = -0.517898 + 0.767660I$ $a = 1.41294 - 0.15513I$ $b = 0.36454 - 1.41210I$	$2.81830 + 4.57708I$	$-11.91750 + 5.21602I$
$u = -0.517898 - 0.767660I$ $a = 1.41294 + 0.15513I$ $b = 0.36454 + 1.41210I$	$2.81830 - 4.57708I$	$-11.91750 - 5.21602I$
$u = 0.665583 + 0.887668I$ $a = -2.37729 + 1.89006I$ $b = -1.71321 - 0.09060I$	$-9.63287 - 2.57588I$	0
$u = 0.665583 - 0.887668I$ $a = -2.37729 - 1.89006I$ $b = -1.71321 + 0.09060I$	$-9.63287 + 2.57588I$	0
$u = 0.526282 + 0.983879I$ $a = -0.264138 - 0.339596I$ $b = 0.036445 + 0.286407I$	$0.16449 - 2.80931I$	0
$u = 0.526282 - 0.983879I$ $a = -0.264138 + 0.339596I$ $b = 0.036445 - 0.286407I$	$0.16449 + 2.80931I$	0
$u = -0.864169 + 0.712568I$ $a = -1.19224 - 0.87800I$ $b = -1.86795 - 0.77559I$	$-13.75470 - 2.34725I$	0
$u = -0.864169 - 0.712568I$ $a = -1.19224 + 0.87800I$ $b = -1.86795 + 0.77559I$	$-13.75470 + 2.34725I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.490146 + 0.722105I$ $a = -0.672429 + 0.917928I$ $b = 0.441436 - 0.137299I$	$-0.75966 - 1.41499I$	$-4.04897 + 4.67258I$
$u = 0.490146 - 0.722105I$ $a = -0.672429 - 0.917928I$ $b = 0.441436 + 0.137299I$	$-0.75966 + 1.41499I$	$-4.04897 - 4.67258I$
$u = -0.899492 + 0.692074I$ $a = -1.65853 - 0.70275I$ $b = -1.66067 - 0.07116I$	$-6.43547 - 4.60616I$	0
$u = -0.899492 - 0.692074I$ $a = -1.65853 + 0.70275I$ $b = -1.66067 + 0.07116I$	$-6.43547 + 4.60616I$	0
$u = -0.787434 + 0.853716I$ $a = 1.68063 + 1.07219I$ $b = 1.66617 - 0.48213I$	$-5.71401 + 2.41800I$	0
$u = -0.787434 - 0.853716I$ $a = 1.68063 - 1.07219I$ $b = 1.66617 + 0.48213I$	$-5.71401 - 2.41800I$	0
$u = -0.864706 + 0.785575I$ $a = 0.763723 - 0.520590I$ $b = -0.21711 - 1.75503I$	$-8.50399 - 1.01711I$	0
$u = -0.864706 - 0.785575I$ $a = 0.763723 + 0.520590I$ $b = -0.21711 + 1.75503I$	$-8.50399 + 1.01711I$	0
$u = 0.208762 + 1.162770I$ $a = -0.185951 + 0.070134I$ $b = -0.940797 - 0.197290I$	$1.17723 - 4.19224I$	0
$u = 0.208762 - 1.162770I$ $a = -0.185951 - 0.070134I$ $b = -0.940797 + 0.197290I$	$1.17723 + 4.19224I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.696927+0.413786I$ $a=-0.366466+0.375684I$ $b=0.021846+0.653169I$	$-0.54827-2.57263I$	$-2.89722+1.94542I$
$u=-0.696927-0.413786I$ $a=-0.366466-0.375684I$ $b=0.021846-0.653169I$	$-0.54827+2.57263I$	$-2.89722-1.94542I$
$u=-0.771631+0.911436I$ $a=1.32051+1.02522I$ $b=1.79646+0.19203I$	$-5.53536+3.45054I$	0
$u=-0.771631-0.911436I$ $a=1.32051-1.02522I$ $b=1.79646-0.19203I$	$-5.53536-3.45054I$	0
$u=-1.058050+0.587721I$ $a=1.303340+0.454049I$ $b=1.78791+0.73226I$	$-14.6014-9.8690I$	0
$u=-1.058050-0.587721I$ $a=1.303340-0.454049I$ $b=1.78791-0.73226I$	$-14.6014+9.8690I$	0
$u=0.755284+0.186760I$ $a=-1.27730-1.17981I$ $b=-0.681043+0.426546I$	$-3.40045-1.02073I$	$-17.4297+0.1751I$
$u=0.755284-0.186760I$ $a=-1.27730+1.17981I$ $b=-0.681043-0.426546I$	$-3.40045+1.02073I$	$-17.4297-0.1751I$
$u=0.742734+0.976694I$ $a=-1.43902+0.14537I$ $b=-0.817159+0.178444I$	$-2.25042-3.70807I$	0
$u=0.742734-0.976694I$ $a=-1.43902-0.14537I$ $b=-0.817159-0.178444I$	$-2.25042+3.70807I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.567404+1.096720I$ $a=\ \ 0.444623+0.031736I$ $b=-0.044670-0.603802I$	$1.46847+7.47551I$	0
$u=-0.567404-1.096720I$ $a=\ \ 0.444623-0.031736I$ $b=-0.044670+0.603802I$	$1.46847-7.47551I$	0
$u=\ \ 0.134046+0.748921I$ $a=\ \ 0.876067+0.880958I$ $b=\ \ 0.832847+0.417130I$	$-0.271555-0.561550I$	$-5.56822+2.77116I$
$u=\ \ 0.134046-0.748921I$ $a=\ \ 0.876067-0.880958I$ $b=\ \ 0.832847-0.417130I$	$-0.271555+0.561550I$	$-5.56822-2.77116I$
$u=-0.788289+0.988568I$ $a=-1.070600+0.268073I$ $b=\ \ 0.07391+1.84459I$	$-7.87011+7.16358I$	0
$u=-0.788289-0.988568I$ $a=-1.070600-0.268073I$ $b=\ \ 0.07391-1.84459I$	$-7.87011-7.16358I$	0
$u=-0.755347+1.030700I$ $a=-1.53203-1.28053I$ $b=-1.67066+0.94430I$	$-12.7715+8.3839I$	0
$u=-0.755347-1.030700I$ $a=-1.53203+1.28053I$ $b=-1.67066-0.94430I$	$-12.7715-8.3839I$	0
$u=-0.762645+1.049950I$ $a=-1.42252-1.19441I$ $b=-1.71280+0.31828I$	$-5.32588+10.75820I$	0
$u=-0.762645-1.049950I$ $a=-1.42252+1.19441I$ $b=-1.71280-0.31828I$	$-5.32588-10.75820I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.264390 + 0.508789I$ $a = 1.216130 - 0.189520I$ $b = 1.84891 + 0.06365I$	$-13.40670 - 2.05335I$	0
$u = 1.264390 - 0.508789I$ $a = 1.216130 + 0.189520I$ $b = 1.84891 - 0.06365I$	$-13.40670 + 2.05335I$	0
$u = 0.614370$ $a = -0.586809$ $b = -1.79199$	-10.3258	-5.46580
$u = -0.770276 + 1.155790I$ $a = 1.38193 + 1.38913I$ $b = 1.69467 - 0.85916I$	$-12.7985 + 16.4675I$	0
$u = -0.770276 - 1.155790I$ $a = 1.38193 - 1.38913I$ $b = 1.69467 + 0.85916I$	$-12.7985 - 16.4675I$	0
$u = 0.353080 + 0.481050I$ $a = -1.065470 - 0.202264I$ $b = 0.445711 + 0.289474I$	$-0.76460 - 1.25688I$	$-5.53847 + 5.17379I$
$u = 0.353080 - 0.481050I$ $a = -1.065470 + 0.202264I$ $b = 0.445711 - 0.289474I$	$-0.76460 + 1.25688I$	$-5.53847 - 5.17379I$
$u = 0.17018 + 1.45712I$ $a = -0.282598 - 0.503076I$ $b = 1.60733 + 0.37972I$	$-6.11414 - 6.99153I$	0
$u = 0.17018 - 1.45712I$ $a = -0.282598 + 0.503076I$ $b = 1.60733 - 0.37972I$	$-6.11414 + 6.99153I$	0
$u = 0.89705 + 1.25294I$ $a = 0.769774 - 0.969200I$ $b = 1.77378 + 0.20130I$	$-11.14940 - 5.54057I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.89705 - 1.25294I$ $a = 0.769774 + 0.969200I$ $b = 1.77378 - 0.20130I$	$-11.14940 + 5.54057I$	0
$u = 0.00884552$ $a = -57.7304$ $b = 0.580536$	-1.10354	-8.74860

II. $I_2^u = \langle b,\ -u^3 + a + 2,\ u^4 + u^2 - u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^3 + 6u^2 - 2u - 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.547424 + 0.585652I$ $a = -2.39923 + 0.32564I$ $b = 0$	$-2.62503 - 1.39709I$	$-5.95551 + 2.35025I$
$u = 0.547424 - 0.585652I$ $a = -2.39923 - 0.32564I$ $b = 0$	$-2.62503 + 1.39709I$	$-5.95551 - 2.35025I$
$u = -0.547424 + 1.120870I$ $a = -0.100768 - 0.400532I$ $b = 0$	$0.98010 + 7.64338I$	$-11.5445 - 9.2043I$
$u = -0.547424 - 1.120870I$ $a = -0.100768 + 0.400532I$ $b = 0$	$0.98010 - 7.64338I$	$-11.5445 + 9.2043I$

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle -120a^2u - 865au + \cdots + 202a - 134,\ a^3 - a^2u + 8a^2 - 4au + a - 5u - 7,\ u^2 - u + 1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} a \\ 0.173661a^2u + 1.25181au + \cdots - 0.292330a + 0.193922 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 0.0274964a^2u - 0.0101302au + \cdots + 0.437048a + 2.31404 \\ 0.0709117a^2u + 0.552822au + \cdots - 0.136035a + 1.86252 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -0.0434153a^2u - 0.562952au + \cdots + 0.573082a + 0.451520 \\ 0.0709117a^2u + 0.552822au + \cdots - 0.136035a + 1.86252 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0274964a^2u - 0.0101302au + \cdots + 0.437048a + 0.314038 \\ 0.0709117a^2u + 0.552822au + \cdots - 0.136035a + 1.86252 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.173661a^2u - 1.25181au + \cdots + 1.29233a - 0.193922 \\ 0.173661a^2u + 1.25181au + \cdots - 0.292330a + 0.193922 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.169320a^2u - 0.0955137au + \cdots - 0.164978a - 0.0390738 \\ 0 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1796}{691}a^2u - \frac{401}{691}a^2 - \frac{3157}{691}au - \frac{4762}{691}a + \frac{8799}{691}u - \frac{8547}{691}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$(y^3 + 3y^2 + 2y - 1)^2$
c_2, c_4	$(y^3 - y^2 + 2y - 1)^2$
c_5	$(y^3 - 5y^2 + 10y - 1)^2$
c_7, c_{10}, c_{11}	$(y^2 + y + 1)^3$
c_8, c_9	$y^6 + 10y^5 + 95y^4 + 48y^3 + 15y^2 + 5y + 1$
c_{12}	y^6

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -1.159960 - 0.102142I$ $b = -0.215080 - 1.307140I$	$3.02413 - 4.85801I$	$2.26089 + 13.10391I$
$u = 0.500000 + 0.866025I$ $a = 1.104070 + 0.474671I$ $b = -0.215080 + 1.307140I$	$3.02413 + 0.79824I$	$-13.76355 - 1.90324I$
$u = 0.500000 + 0.866025I$ $a = -7.44411 + 0.49350I$ $b = -0.569840$	$-1.11345 - 2.02988I$	$-55.9973 - 74.4205I$
$u = 0.500000 - 0.866025I$ $a = -1.159960 + 0.102142I$ $b = -0.215080 + 1.307140I$	$3.02413 + 4.85801I$	$2.26089 - 13.10391I$
$u = 0.500000 - 0.866025I$ $a = 1.104070 - 0.474671I$ $b = -0.215080 - 1.307140I$	$3.02413 - 0.79824I$	$-13.76355 + 1.90324I$
$u = 0.500000 - 0.866025I$ $a = -7.44411 - 0.49350I$ $b = -0.569840$	$-1.11345 + 2.02988I$	$-55.9973 + 74.4205I$

IV. $I_4^u = \langle b,\ -u^3 - u^2 + a - 2u - 1,\ u^6 + u^5 + 2u^4 + 2u^3 + 2u^2 + 2u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^5 + u^4 + 8u^3 + 2u^2 + 5u - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.498832 + 1.001300I$ $a = -0.13238 + 2.74513I$ $b = 0$	$-1.37919 - 2.82812I$	$-17.1597 + 2.2654I$
$u = 0.498832 - 1.001300I$ $a = -0.13238 - 2.74513I$ $b = 0$	$-1.37919 + 2.82812I$	$-17.1597 - 2.2654I$
$u = -0.284920 + 1.115140I$ $a = 0.307599 + 0.479689I$ $b = 0$	2.75839	$-4.40089 - 2.50363I$
$u = -0.284920 - 1.115140I$ $a = 0.307599 - 0.479689I$ $b = 0$	2.75839	$-4.40089 + 2.50363I$
$u = -0.713912 + 0.305839I$ $a = -0.175218 + 0.614017I$ $b = 0$	$-1.37919 - 2.82812I$	$-11.93937 + 4.05868I$
$u = -0.713912 - 0.305839I$ $a = -0.175218 - 0.614017I$ $b = 0$	$-1.37919 + 2.82812I$	$-11.93937 - 4.05868I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{10})(u^3-u^2+2u-1)^2(u^{62}+71u^{61}+\cdots+267u+1)$
c_2	$((u-1)^{10})(u^3+u^2-1)^2(u^{62}-13u^{61}+\cdots+15u-1)$
c_3	$u^{10}(u^3-u^2+2u-1)^2(u^{62}+3u^{61}+\cdots-8192u-1024)$
c_4	$((u+1)^{10})(u^3-u^2+1)^2(u^{62}-13u^{61}+\cdots+15u-1)$
c_5	$((u^3-3u^2+2u+1)^2)(u^4+2u^3+3u^2+u+1)(u^6+3u^5+\cdots+2u^3+1)$ $\cdot(u^{62}+4u^{61}+\cdots-10u^2+1)$
c_6	$u^{10}(u^3+u^2+2u+1)^2(u^{62}+3u^{61}+\cdots-8192u-1024)$
c_7	$(u^2-u+1)^3(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{62}-5u^{61}+\cdots+113u+1)$
c_8	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^6+2u^5+7u^4-8u^3+7u^2-3u+1)$ $\cdot(u^{62}+4u^{61}+\cdots-3025807u+537503)$
c_9	$(u^3-u^2+1)^2(u^4+3u^3+4u^2+3u+2)$ $\cdot(u^6+2u^5+\cdots-3u+1)(u^{62}+44u^{60}+\cdots+9664u+824)$
c_{10}	$(u^2+u+1)^3(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{62}-5u^{61}+\cdots+113u+1)$
c_{11}	$(u^2-u+1)^3(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{62}-21u^{61}+\cdots+12769u+1)$
c_{12}	$u^6(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{62}-6u^{61}+\cdots-1248u+64)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^3+3y^2+2y-1)^2(y^{62}-147y^{61}+\cdots-20183y+1)$
c_2, c_4	$((y-1)^{10})(y^3-y^2+2y-1)^2(y^{62}-71y^{61}+\cdots-267y+1)$
c_3, c_6	$y^{10}(y^3+3y^2+2y-1)^2(y^{62}-57y^{61}+\cdots+9961472y+1048576)$
c_5	$(y^3-5y^2+10y-1)^2(y^4+2y^3+7y^2+5y+1)$ $\cdot(y^6-y^5+4y^4-2y^3+8y^2+1)(y^{62}-4y^{61}+\cdots-20y+1)$
c_7, c_{10}	$(y^2+y+1)^3(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{62}+21y^{61}+\cdots-12769y+1)$
c_8	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^6+10y^5+95y^4+48y^3+15y^2+5y+1)$ $\cdot(y^{62}+16y^{61}+\cdots-11200434939731y+288909475009)$
c_9	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^6+10y^5+95y^4+48y^3+15y^2+5y+1)$ $\cdot(y^{62}+88y^{61}+\cdots+13013520y+678976)$
c_{11}	$((y^2+y+1)^3)(y^4+2y^3+\cdots+5y+1)(y^6-y^5+\cdots+8y^2+1)$ $\cdot(y^{62}+45y^{61}+\cdots-163345321y+1)$
c_{12}	$y^6(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{62}-30y^{61}+\cdots-185344y+4096)$