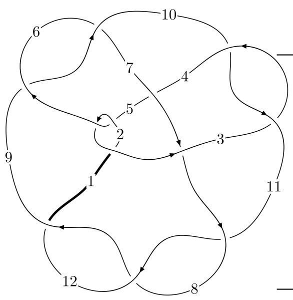
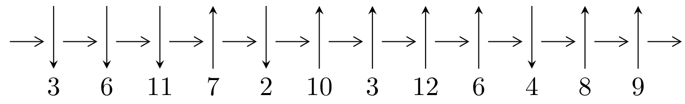
$12n_{0412}$ ($K12n_{0412}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -1.84897 \times 10^{24} u^{44} - 2.54096 \times 10^{24} u^{43} + \cdots + 3.58820 \times 10^{24} b + 5.26379 \times 10^{24}, \\
& 1.76545 \times 10^{23} u^{44} + 3.27410 \times 10^{23} u^{43} + \cdots + 4.32313 \times 10^{22} a + 2.31306 \times 10^{23},\ u^{45} + 2u^{44} + \cdots + 8u - 1 \\
I_2^u = \langle & -u^{12} + u^{11} - 6u^{10} + 5u^9 - 12u^8 + 9u^7 - 6u^6 + 6u^5 + 6u^4 + 3u^2 + b - u - 1, \\
& 2u^{12} - u^{11} + 11u^{10} - 4u^9 + 20u^8 - 6u^7 + 7u^6 - 6u^5 - 14u^4 - 7u^3 - 10u^2 + a - 4u - 2, \\
& u^{13} - u^{12} + 7u^{11} - 6u^{10} + 18u^9 - 14u^8 + 18u^7 - 15u^6 - 6u^4 - 9u^3 + u^2 - 2u + 1\rangle \\
I_3^u = \langle & -u^2 + b,\ a - 1,\ u^4 - u^3 + 2u^2 - 2u + 1\rangle \\
I_4^u = \langle & b - 1,\ a - 1,\ u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 63 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.

$$\boldsymbol{I_1^u = \langle -1.85\times 10^{24}u^{44} - 2.54\times 10^{24}u^{43} + \cdots + 3.59\times 10^{24}b + 5.26\times 10^{24},\ 1.77\times 10^{23}u^{44} + 3.27\times 10^{23}u^{43} + \cdots + 4.32\times 10^{22}a + 2.31\times 10^{23},\ u^{45} + 2u^{44} + \cdots + 8u - 1\rangle}$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -4.08374u^{44} - 7.57346u^{43} + \cdots - 218.809u - 5.35044 \\ 0.515292u^{44} + 0.708144u^{43} + \cdots + 6.15932u - 1.46697 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2.87916u^{44} + 5.44800u^{43} + \cdots + 83.3782u - 24.3626 \\ -1.12930u^{44} - 2.18153u^{43} + \cdots - 42.3482u + 3.36146 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.74987u^{44} + 3.26646u^{43} + \cdots + 41.0300u - 21.0011 \\ -1.12930u^{44} - 2.18153u^{43} + \cdots - 42.3482u + 3.36146 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2.61866u^{44} + 4.36589u^{43} + \cdots + 46.2417u - 15.9362 \\ -2.70869u^{44} - 4.60335u^{43} + \cdots - 87.4930u + 7.47428 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -3.56455u^{44} - 6.80670u^{43} + \cdots - 206.802u - 6.30618 \\ 1.00518u^{44} + 1.76026u^{43} + \cdots + 20.8578u - 2.69432 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.55937u^{44} - 5.04644u^{43} + \cdots - 185.944u - 9.00050 \\ 1.00518u^{44} + 1.76026u^{43} + \cdots + 20.8578u - 2.69432 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.96341u^{44} - 3.93259u^{43} + \cdots - 196.681u - 18.9609 \\ -1.50697u^{44} - 2.36388u^{43} + \cdots - 62.6688u + 4.32930 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 4.25404u^{44} + 7.98425u^{43} + \cdots + 282.601u + 14.5444 \\ -0.0622841u^{44} - 1.08570u^{43} + \cdots + 10.5596u + 0.527328 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{20998050926369734752976211}{3588196003166548679987327}u^{44} + \frac{37483540873690423560378912}{3588196003166548679987327}u^{43} + \cdots + \frac{1213475306781566067904042936}{3588196003166548679987327}u - \frac{19958410998607784963592834}{3588196003166548679987327}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{45} + 48u^{44} + \cdots + 584u + 1$
c_2, c_5	$u^{45} + 4u^{44} + \cdots - 42u + 1$
c_3, c_{10}	$u^{45} + 2u^{44} + \cdots + 8u - 1$
c_4	$u^{45} + 9u^{44} + \cdots + 1549u + 311$
c_6, c_9	$u^{45} - 4u^{44} + \cdots - 15u - 1$
c_7	$u^{45} + 3u^{44} + \cdots - 8958u + 563$
c_8, c_{11}, c_{12}	$u^{45} + 4u^{44} + \cdots + 58u + 28$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{45} - 96y^{44} + \cdots + 113992y - 1$
c_2, c_5	$y^{45} - 48y^{44} + \cdots + 584y - 1$
c_3, c_{10}	$y^{45} + 42y^{44} + \cdots + 252y - 1$
c_4	$y^{45} + 9y^{44} + \cdots - 3165011y - 96721$
c_6, c_9	$y^{45} - 12y^{44} + \cdots + 105y - 1$
c_7	$y^{45} - y^{44} + \cdots + 19794202y - 316969$
c_8, c_{11}, c_{12}	$y^{45} - 36y^{44} + \cdots - 1060y - 784$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.969825$ $a = 0.229176$ $b = 0.627201$	2.96038	-2.69630
$u = -0.927844 + 0.271505I$ $a = -1.041520 - 0.768905I$ $b = -1.52557 + 0.45145I$	$-4.45709 + 9.42399I$	$1.94019 - 6.31293I$
$u = -0.927844 - 0.271505I$ $a = -1.041520 + 0.768905I$ $b = -1.52557 - 0.45145I$	$-4.45709 - 9.42399I$	$1.94019 + 6.31293I$
$u = 0.845626 + 0.121557I$ $a = -1.42589 + 0.88397I$ $b = -1.59489 - 0.20003I$	$-8.64870 - 3.87589I$	$-1.85841 + 2.88964I$
$u = 0.845626 - 0.121557I$ $a = -1.42589 - 0.88397I$ $b = -1.59489 + 0.20003I$	$-8.64870 + 3.87589I$	$-1.85841 - 2.88964I$
$u = -0.164418 + 1.159280I$ $a = 0.703495 - 0.012931I$ $b = -0.763782 - 0.015983I$	$1.53495 + 1.91036I$	0
$u = -0.164418 - 1.159280I$ $a = 0.703495 + 0.012931I$ $b = -0.763782 + 0.015983I$	$1.53495 - 1.91036I$	0
$u = -0.669119 + 1.011720I$ $a = -0.065566 + 0.383511I$ $b = 1.37234 + 0.41380I$	$-2.27065 - 3.93661I$	0
$u = -0.669119 - 1.011720I$ $a = -0.065566 - 0.383511I$ $b = 1.37234 - 0.41380I$	$-2.27065 + 3.93661I$	0
$u = 0.433424 + 1.140140I$ $a = 0.033142 - 0.457634I$ $b = 1.53847 - 0.16157I$	$-5.53838 - 0.69987I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.433424 - 1.140140I$ $a = 0.033142 + 0.457634I$ $b = 1.53847 + 0.16157I$	$-5.53838 + 0.69987I$	0
$u = 0.664310 + 0.362711I$ $a = 0.328543 - 0.232382I$ $b = 0.261717 + 1.042650I$	$1.25167 - 3.95167I$	$3.83579 + 7.35409I$
$u = 0.664310 - 0.362711I$ $a = 0.328543 + 0.232382I$ $b = 0.261717 - 1.042650I$	$1.25167 + 3.95167I$	$3.83579 - 7.35409I$
$u = 0.186812 + 1.238700I$ $a = -0.67404 + 1.33349I$ $b = -0.0820505 - 0.0136120I$	$4.44974 - 2.14104I$	0
$u = 0.186812 - 1.238700I$ $a = -0.67404 - 1.33349I$ $b = -0.0820505 + 0.0136120I$	$4.44974 + 2.14104I$	0
$u = -0.277987 + 1.263490I$ $a = -0.29175 + 2.28733I$ $b = 1.44630 + 0.06917I$	$-0.68250 + 1.70775I$	0
$u = -0.277987 - 1.263490I$ $a = -0.29175 - 2.28733I$ $b = 1.44630 - 0.06917I$	$-0.68250 - 1.70775I$	0
$u = -0.042319 + 1.295400I$ $a = 1.92633 - 1.12849I$ $b = -1.43287 + 0.42714I$	$1.71514 + 2.64308I$	0
$u = -0.042319 - 1.295400I$ $a = 1.92633 + 1.12849I$ $b = -1.43287 - 0.42714I$	$1.71514 - 2.64308I$	0
$u = -0.698216 + 0.025057I$ $a = -2.07891 + 1.01497I$ $b = -1.51929 + 0.08671I$	$-4.51834 + 1.81580I$	$-0.317984 - 1.183332I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.698216 - 0.025057I$ $a = -2.07891 - 1.01497I$ $b = -1.51929 - 0.08671I$	$-4.51834 - 1.81580I$	$-0.317984 + 1.183332I$
$u = 0.022131 + 1.309670I$ $a = -0.56784 - 1.95572I$ $b = 0.735072 + 0.094789I$	$11.93010 - 0.31866I$	0
$u = 0.022131 - 1.309670I$ $a = -0.56784 + 1.95572I$ $b = 0.735072 - 0.094789I$	$11.93010 + 0.31866I$	0
$u = -0.283028 + 1.297280I$ $a = 0.178492 + 0.638649I$ $b = 1.58589 - 0.07568I$	$-0.37999 + 5.35975I$	0
$u = -0.283028 - 1.297280I$ $a = 0.178492 - 0.638649I$ $b = 1.58589 + 0.07568I$	$-0.37999 - 5.35975I$	0
$u = -0.597996 + 0.198058I$ $a = 0.565513 + 0.398750I$ $b = 0.610778 - 0.503827I$	$-1.21115 + 0.91442I$	$-3.60220 - 2.86568I$
$u = -0.597996 - 0.198058I$ $a = 0.565513 - 0.398750I$ $b = 0.610778 + 0.503827I$	$-1.21115 - 0.91442I$	$-3.60220 + 2.86568I$
$u = 0.373344 + 1.342530I$ $a = 0.355758 - 0.038695I$ $b = -0.554848 + 0.011852I$	$7.39338 - 4.75135I$	0
$u = 0.373344 - 1.342530I$ $a = 0.355758 + 0.038695I$ $b = -0.554848 - 0.011852I$	$7.39338 + 4.75135I$	0
$u = 0.364735 + 1.347540I$ $a = -0.11146 - 1.99685I$ $b = 1.62752 + 0.23183I$	$-4.02855 - 8.22129I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.364735 - 1.347540I$ $a = -0.11146 + 1.99685I$ $b = 1.62752 - 0.23183I$	$-4.02855 + 8.22129I$	0
$u = -0.224203 + 1.388850I$ $a = -0.14008 - 1.68654I$ $b = -0.683694 + 1.023800I$	$3.89960 + 3.89681I$	0
$u = -0.224203 - 1.388850I$ $a = -0.14008 + 1.68654I$ $b = -0.683694 - 1.023800I$	$3.89960 - 3.89681I$	0
$u = -0.42343 + 1.35553I$ $a = -0.257759 - 1.007550I$ $b = -0.974975 + 0.080869I$	$6.02639 + 5.09405I$	0
$u = -0.42343 - 1.35553I$ $a = -0.257759 + 1.007550I$ $b = -0.974975 - 0.080869I$	$6.02639 - 5.09405I$	0
$u = 0.26016 + 1.44165I$ $a = -0.50945 + 1.62773I$ $b = -0.22976 - 1.42824I$	$7.03160 - 7.34948I$	0
$u = 0.26016 - 1.44165I$ $a = -0.50945 - 1.62773I$ $b = -0.22976 + 1.42824I$	$7.03160 + 7.34948I$	0
$u = -0.38297 + 1.43752I$ $a = -0.11849 + 1.78135I$ $b = 1.60904 - 0.50615I$	$0.9685 + 14.1285I$	0
$u = -0.38297 - 1.43752I$ $a = -0.11849 - 1.78135I$ $b = 1.60904 + 0.50615I$	$0.9685 - 14.1285I$	0
$u = 0.15138 + 1.55206I$ $a = 0.159781 + 1.093010I$ $b = -0.865603 - 0.853905I$	$8.49461 - 3.13739I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.15138 - 1.55206I$ $a = 0.159781 - 1.093010I$ $b = -0.865603 + 0.853905I$	$8.49461 + 3.13739I$	0
$u = 0.331161$ $a = 1.93794$ $b = -0.0592996$	0.981240	11.9230
$u = -0.294649 + 0.018682I$ $a = 1.26352 + 2.17214I$ $b = 1.52527 - 0.31408I$	$-2.46259 + 1.58513I$	$-5.29016 - 4.20356I$
$u = -0.294649 - 0.018682I$ $a = 1.26352 - 2.17214I$ $b = 1.52527 + 0.31408I$	$-2.46259 - 1.58513I$	$-5.29016 + 4.20356I$
$u = 0.0675368$ $a = -22.6308$ $b = -0.738031$	7.70079	22.1050

II.

$$I_2^u = \langle -u^{12}+u^{11}+\cdots+b-1,\ 2u^{12}-u^{11}+\cdots+a-2,\ u^{13}-u^{12}+\cdots-2u+1\rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -2u^{12}+u^{11}+\cdots+4u+2 \\ u^{12}-u^{11}+6u^{10}-5u^9+12u^8-9u^7+6u^6-6u^5-6u^4-3u^2+u+1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2u^{12}+2u^{11}+\cdots-6u-1 \\ u^{12}-u^{11}+5u^{10}-4u^9+7u^8-5u^7-u^6-u^5-5u^4+u^3+2u^2-1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^{12}+u^{11}+\cdots-6u-2 \\ u^{12}-u^{11}+5u^{10}-4u^9+7u^8-5u^7-u^6-u^5-5u^4+u^3+2u^2-1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 3u^{12}-2u^{11}+\cdots-u+3 \\ -3u^{12}+3u^{11}+\cdots+8u^2-3u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2u^{12}+2u^{11}+\cdots+3u+2 \\ u^{12}-2u^{11}+\cdots-4u^2+2u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{12}-5u^{10}-u^9-8u^8-3u^7-u^6+8u^4+7u^3+6u^2+5u+2 \\ u^{12}-2u^{11}+\cdots-4u^2+2u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{12}-2u^{11}+\cdots-u-5 \\ u^{12}-u^{11}+\cdots+2u-1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -2u^{12}+2u^{11}+\cdots+2u+4 \\ u^{12}-2u^{11}+\cdots+4u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 4u^{12}-7u^{11}+29u^{10}-36u^9+73u^8-64u^7+69u^6-36u^5-4u^4+5u^3-37u^2-5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13}-13u^{12}+\cdots+10u-1$
c_2	$u^{13}+3u^{12}+\cdots+5u^2-1$
c_3	$u^{13}-u^{12}+\cdots-2u+1$
c_4	$u^{13}-4u^{11}+\cdots+9u+1$
c_5	$u^{13}-3u^{12}+\cdots-5u^2+1$
c_6	$u^{13}-3u^{12}+5u^{10}-u^8-5u^7-2u^6+6u^5-u^3-u^2-u+1$
c_7	$u^{13}-7u^{11}+\cdots+2u+1$
c_8	$u^{13}-8u^{11}+\cdots+6u^2-1$
c_9	$u^{13}+3u^{12}-5u^{10}+u^8-5u^7+2u^6+6u^5-u^3+u^2-u-1$
c_{10}	$u^{13}+u^{12}+\cdots-2u-1$
c_{11}, c_{12}	$u^{13}-8u^{11}+\cdots-6u^2+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 21y^{12} + \cdots + 18y - 1$
c_2, c_5	$y^{13} - 13y^{12} + \cdots + 10y - 1$
c_3, c_{10}	$y^{13} + 13y^{12} + \cdots + 2y - 1$
c_4	$y^{13} - 8y^{12} + \cdots + 31y - 1$
c_6, c_9	$y^{13} - 9y^{12} + \cdots + 3y - 1$
c_7	$y^{13} - 14y^{12} + \cdots + 44y - 1$
c_8, c_{11}, c_{12}	$y^{13} - 16y^{12} + \cdots + 12y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.07246$ $a = 0.492294$ $b = 0.465079$	3.43265	15.5060
$u = -0.034598 + 1.249270I$ $a = 1.56218 - 1.13850I$ $b = -1.74571 + 0.26973I$	$0.86628 + 1.87846I$	$2.04855 - 1.94061I$
$u = -0.034598 - 1.249270I$ $a = 1.56218 + 1.13850I$ $b = -1.74571 - 0.26973I$	$0.86628 - 1.87846I$	$2.04855 + 1.94061I$
$u = -0.686240$ $a = 1.32157$ $b = 0.679844$	0.244931	-2.02350
$u = 0.131294 + 1.356980I$ $a = 0.02881 + 1.98048I$ $b = -1.022270 - 0.441982I$	$11.95140 - 1.70968I$	$8.67976 + 4.17356I$
$u = 0.131294 - 1.356980I$ $a = 0.02881 - 1.98048I$ $b = -1.022270 + 0.441982I$	$11.95140 + 1.70968I$	$8.67976 - 4.17356I$
$u = -0.250597 + 1.356050I$ $a = -0.34025 - 1.50111I$ $b = -0.729247 + 0.638631I$	$4.69917 + 3.36697I$	$7.60609 - 2.02916I$
$u = -0.250597 - 1.356050I$ $a = -0.34025 + 1.50111I$ $b = -0.729247 - 0.638631I$	$4.69917 - 3.36697I$	$7.60609 + 2.02916I$
$u = -0.103530 + 0.564621I$ $a = 0.205252 + 1.185250I$ $b = 1.40513 + 0.23742I$	$-1.72775 - 1.40884I$	$6.28546 + 0.80673I$
$u = -0.103530 - 0.564621I$ $a = 0.205252 - 1.185250I$ $b = 1.40513 - 0.23742I$	$-1.72775 + 1.40884I$	$6.28546 - 0.80673I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.39553 + 1.43394I$ $a = -0.341272 + 0.786047I$ $b = -0.429218 - 0.541128I$	$8.26062 - 5.29255I$	$11.21555 + 5.90616I$
$u = 0.39553 - 1.43394I$ $a = -0.341272 - 0.786047I$ $b = -0.429218 + 0.541128I$	$8.26062 + 5.29255I$	$11.21555 - 5.90616I$
$u = 0.337585$ $a = 4.95670$ $b = 0.897695$	7.44054	-9.15310

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

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^3 + u^2 - 2u + 2 \\ -u^3 + 2u^2 - 2u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^3 + 3u^2 - 2u + 2 \\ u^3 - 2u^2 + 3u - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

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

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

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^4 - 13y^3 + 78y^2 - 4y + 1$
c_2, c_4, c_5	$y^4 - 5y^3 + 6y^2 + 4y + 1$
c_3, c_6, c_9 c_{10}	$y^4 + 3y^3 + 2y^2 + 1$
c_8, c_{11}, c_{12}	$(y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621744 + 0.440597I$ $a = 1.00000$ $b = 0.192440 + 0.547877I$	1.64493	6.00000
$u = 0.621744 - 0.440597I$ $a = 1.00000$ $b = 0.192440 - 0.547877I$	1.64493	6.00000
$u = -0.121744 + 1.306620I$ $a = 1.00000$ $b = -1.69244 - 0.31815I$	1.64493	6.00000
$u = -0.121744 - 1.306620I$ $a = 1.00000$ $b = -1.69244 + 0.31815I$	1.64493	6.00000

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

(i) Arc colorings

$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

$a_4 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

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

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

$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

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

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

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

$a_{12} = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 1.00000$ $b = 1.00000$	1.64493	6.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u+1)(u^4+5u^3+\cdots-4u+1)(u^{13}-13u^{12}+\cdots+10u-1)$ $\cdot(u^{45}+48u^{44}+\cdots+584u+1)$
c_2	$(u+1)(u^4-3u^3+2u^2+1)(u^{13}+3u^{12}+\cdots+5u^2-1)$ $\cdot(u^{45}+4u^{44}+\cdots-42u+1)$
c_3	$(u+1)(u^4-u^3+2u^2-2u+1)(u^{13}-u^{12}+\cdots-2u+1)$ $\cdot(u^{45}+2u^{44}+\cdots+8u-1)$
c_4	$(u-1)(u^4+3u^3+2u^2+1)(u^{13}-4u^{11}+\cdots+9u+1)$ $\cdot(u^{45}+9u^{44}+\cdots+1549u+311)$
c_5	$(u+1)(u^4-3u^3+2u^2+1)(u^{13}-3u^{12}+\cdots-5u^2+1)$ $\cdot(u^{45}+4u^{44}+\cdots-42u+1)$
c_6	$(u+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{13}-3u^{12}+5u^{10}-u^8-5u^7-2u^6+6u^5-u^3-u^2-u+1)$ $\cdot(u^{45}-4u^{44}+\cdots-15u-1)$
c_7	$(u-1)(u^4-5u^3+\cdots+4u+1)(u^{13}-7u^{11}+\cdots+2u+1)$ $\cdot(u^{45}+3u^{44}+\cdots-8958u+563)$
c_8	$((u-1)^5)(u^{13}-8u^{11}+\cdots+6u^2-1)(u^{45}+4u^{44}+\cdots+58u+28)$
c_9	$(u+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{13}+3u^{12}-5u^{10}+u^8-5u^7+2u^6+6u^5-u^3+u^2-u-1)$ $\cdot(u^{45}-4u^{44}+\cdots-15u-1)$
c_{10}	$(u+1)(u^4-u^3+2u^2-2u+1)(u^{13}+u^{12}+\cdots-2u-1)$ $\cdot(u^{45}+2u^{44}+\cdots+8u-1)$
c_{11}, c_{12}	$((u-1)^5)(u^{13}-8u^{11}+\cdots-6u^2+1)(u^{45}+4u^{44}+\cdots+58u+28)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)(y^4-13y^3+\cdots-4y+1)(y^{13}-21y^{12}+\cdots+18y-1)$ $\cdot(y^{45}-96y^{44}+\cdots+113992y-1)$
c_2, c_5	$(y-1)(y^4-5y^3+\cdots+4y+1)(y^{13}-13y^{12}+\cdots+10y-1)$ $\cdot(y^{45}-48y^{44}+\cdots+584y-1)$
c_3, c_{10}	$(y-1)(y^4+3y^3+2y^2+1)(y^{13}+13y^{12}+\cdots+2y-1)$ $\cdot(y^{45}+42y^{44}+\cdots+252y-1)$
c_4	$(y-1)(y^4-5y^3+\cdots+4y+1)(y^{13}-8y^{12}+\cdots+31y-1)$ $\cdot(y^{45}+9y^{44}+\cdots-3165011y-96721)$
c_6, c_9	$(y-1)(y^4+3y^3+2y^2+1)(y^{13}-9y^{12}+\cdots+3y-1)$ $\cdot(y^{45}-12y^{44}+\cdots+105y-1)$
c_7	$(y-1)(y^4-13y^3+\cdots-4y+1)(y^{13}-14y^{12}+\cdots+44y-1)$ $\cdot(y^{45}-y^{44}+\cdots+19794202y-316969)$
c_8, c_{11}, c_{12}	$((y-1)^5)(y^{13}-16y^{12}+\cdots+12y-1)$ $\cdot(y^{45}-36y^{44}+\cdots-1060y-784)$