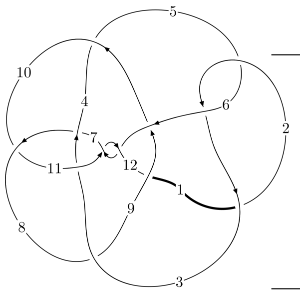
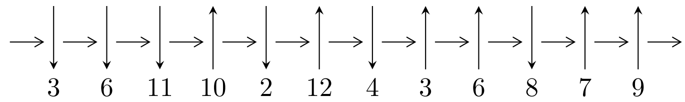
$12n_{0449}$ ($K12n_{0449}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u = \langle & -4292389719u^{17} + 51152895286u^{16} + \cdots + 4997872592b - 142666014976, \\
& 635549962u^{17} - 7071211853u^{16} + \cdots + 4997872592a + 18555030320, \\
& u^{18} - 14u^{17} + \cdots - 32u - 64\rangle \\
I_2^u = \langle & 2861u^{12} + 19240u^{11} + \cdots + 3447b - 26153,\ -10868u^{12} - 66331u^{11} + \cdots + 17235a + 57767, \\
& u^{13} + 7u^{12} + 18u^{11} + 18u^{10} - 5u^9 - 30u^8 - 29u^7 - 5u^6 + 22u^5 + 26u^4 - u^3 - 25u^2 - 19u - 5\rangle \\
I_3^u = \langle & -48036a^5u^2 - 192549a^4u^2 + \cdots - 3719319a - 1942337,\ a^5u^2 - 3a^4u^2 + \cdots + 13a + 8,\ u^3 + 2u^2 + 1\rangle \\
I_4^u = \langle & b^2 + ba + a^2,\ a^3 + a^2 - 1,\ u - 1\rangle
\end{aligned}
$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 55 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.

$\boldsymbol{I_1^u = \langle -4.29\times 10^{9}u^{17} + 5.12\times 10^{10}u^{16} + \cdots + 5.00\times 10^{9}b - 1.43\times 10^{11},\ 6.36\times 10^{8}u^{17} - 7.07\times 10^{9}u^{16} + \cdots + 5.00\times 10^{9}a + 1.86\times 10^{10},\ u^{18} - 14u^{17} + \cdots - 32u - 64\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.127164u^{17} + 1.41484u^{16} + \cdots + 2.40021u - 3.71259 \\ 0.858843u^{17} - 10.2349u^{16} + \cdots + 31.2801u + 28.5453 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.0537381u^{17} + 0.686664u^{16} + \cdots - 3.43651u - 1.95932 \\ 0.0261593u^{17} - 0.244759u^{16} + \cdots + 4.59772u + 1.60130 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.127164u^{17} + 1.41484u^{16} + \cdots + 2.40021u - 3.71259 \\ -0.0465960u^{17} + 0.240296u^{16} + \cdots + 11.4471u + 5.15636 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.0805681u^{17} + 1.17455u^{16} + \cdots - 9.04691u - 8.86894 \\ -0.0465960u^{17} + 0.240296u^{16} + \cdots + 11.4471u + 5.15636 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.161781u^{17} - 1.96128u^{16} + \cdots + 9.04249u + 3.48865 \\ 0.189746u^{17} - 2.43818u^{16} + \cdots + 14.8327u + 10.0529 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.119990u^{17} - 1.53654u^{16} + \cdots + 8.62391u + 4.68769 \\ 0.458477u^{17} - 5.52095u^{16} + \cdots + 15.8725u + 14.8725 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.0119305u^{17} - 0.112150u^{16} + \cdots - 0.757572u + 2.47991 \\ 0.0656686u^{17} - 0.798814u^{16} + \cdots + 3.67894u + 3.43924 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{336395251}{1249468148}u^{17} - \frac{1919281435}{624734074}u^{16} + \cdots - \frac{4336282305}{312367037}u + \frac{1452677222}{312367037}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} + 44u^{17} + \cdots + 58880u + 4096$
c_2, c_5	$u^{18} + 14u^{17} + \cdots + 32u - 64$
c_3, c_7	$u^{18} + u^{17} + \cdots + u + 1$
c_4, c_8	$u^{18} + 15u^{16} + \cdots - 2u - 1$
c_6, c_{11}	$u^{18} - 8u^{17} + \cdots + 66u^2 - 4$
c_9, c_{12}	$u^{18} + u^{17} + \cdots - 29u - 1$
c_{10}	$u^{18} - 17u^{17} + \cdots - 112u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} - 180y^{17} + \cdots - 1103757312y + 16777216$
c_2, c_5	$y^{18} - 44y^{17} + \cdots - 58880y + 4096$
c_3, c_7	$y^{18} - 9y^{17} + \cdots + 3y + 1$
c_4, c_8	$y^{18} + 30y^{17} + \cdots - 20y + 1$
c_6, c_{11}	$y^{18} + 12y^{17} + \cdots - 528y + 16$
c_9, c_{12}	$y^{18} + 43y^{17} + \cdots - 425y + 1$
c_{10}	$y^{18} - 11y^{17} + \cdots - 1312y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.899219$ $a = -0.0543767$ $b = 0.529143$	-1.46517	-7.81630
$u = 1.054770 + 0.455060I$ $a = -0.286687 + 0.255744I$ $b = 0.697632 + 0.987067I$	$-2.44657 - 1.20776I$	$-2.90617 + 2.14647I$
$u = 1.054770 - 0.455060I$ $a = -0.286687 - 0.255744I$ $b = 0.697632 - 0.987067I$	$-2.44657 + 1.20776I$	$-2.90617 - 2.14647I$
$u = 1.182210 + 0.365563I$ $a = -0.196661 - 0.172033I$ $b = -0.688510 + 0.458421I$	$-4.86247 - 0.74221I$	$-4.48012 - 1.53917I$
$u = 1.182210 - 0.365563I$ $a = -0.196661 + 0.172033I$ $b = -0.688510 - 0.458421I$	$-4.86247 + 0.74221I$	$-4.48012 + 1.53917I$
$u = 0.011252 + 0.650614I$ $a = 0.249333 + 0.938849I$ $b = 0.628633 + 0.554074I$	$-1.41190 - 2.84945I$	$2.25914 + 3.12009I$
$u = 0.011252 - 0.650614I$ $a = 0.249333 - 0.938849I$ $b = 0.628633 - 0.554074I$	$-1.41190 + 2.84945I$	$2.25914 - 3.12009I$
$u = -1.56372$ $a = -1.20023$ $b = 2.20274$	-1.13784	-8.76730
$u = -1.57964 + 0.17770I$ $a = 1.028070 + 0.171267I$ $b = -1.99303 + 0.23309I$	$-5.95294 + 6.24667I$	$-5.65069 - 4.46750I$
$u = -1.57964 - 0.17770I$ $a = 1.028070 - 0.171267I$ $b = -1.99303 - 0.23309I$	$-5.95294 - 6.24667I$	$-5.65069 + 4.46750I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.337307 + 0.100488I$ $a = -1.45027 - 1.37394I$ $b = -0.205154 - 0.227150I$	$1.118560 + 0.696320I$	$7.37877 - 3.46588I$
$u = -0.337307 - 0.100488I$ $a = -1.45027 + 1.37394I$ $b = -0.205154 + 0.227150I$	$1.118560 - 0.696320I$	$7.37877 + 3.46588I$
$u = 2.31673 + 0.16616I$ $a = 0.176104 - 1.366420I$ $b = -1.81352 + 4.75613I$	$17.0902 - 12.5383I$	$-5.56236 + 5.19794I$
$u = 2.31673 - 0.16616I$ $a = 0.176104 + 1.366420I$ $b = -1.81352 - 4.75613I$	$17.0902 + 12.5383I$	$-5.56236 - 5.19794I$
$u = 2.30666 + 0.43513I$ $a = 0.124162 - 1.296380I$ $b = -3.32718 + 4.18498I$	$18.8942 + 0.4671I$	$-7.70038 + 0.38231I$
$u = 2.30666 - 0.43513I$ $a = 0.124162 + 1.296380I$ $b = -3.32718 - 4.18498I$	$18.8942 - 0.4671I$	$-7.70038 - 0.38231I$
$u = 2.37757 + 0.25374I$ $a = -0.141746 + 1.335690I$ $b = 2.33519 - 5.00160I$	$-17.0153 - 6.5912I$	$-3.54637 + 4.05505I$
$u = 2.37757 - 0.25374I$ $a = -0.141746 - 1.335690I$ $b = 2.33519 + 5.00160I$	$-17.0153 + 6.5912I$	$-3.54637 - 4.05505I$

II. $\boldsymbol{I^u_2 = \langle 2861u^{12} + 19240u^{11} + \cdots + 3447b - 26153,\ -10868u^{12} - 66331u^{11} + \cdots + 17235a + 57767,\ u^{13} + 7u^{12} + \cdots - 19u - 5\rangle}$

(i) Arc colorings

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

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

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

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

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

$$a_{10} = \begin{pmatrix} 0.630577u^{12} + 3.84862u^{11} + \cdots - 10.2507u - 3.35173 \\ -0.829997u^{12} - 5.58167u^{11} + \cdots + 17.5666u + 7.58718 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.00765883u^{12} - 0.137163u^{11} + \cdots + 1.89643u - 0.681288 \\ 0.0478677u^{12} + 0.190601u^{11} + \cdots - 1.76936u - 0.908616 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.630577u^{12} + 3.84862u^{11} + \cdots - 10.2507u - 3.35173 \\ -0.321439u^{12} - 2.49405u^{11} + \cdots + 9.97650u + 4.76008 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.952016u^{12} + 6.34267u^{11} + \cdots - 20.2272u - 8.11181 \\ -0.321439u^{12} - 2.49405u^{11} + \cdots + 9.97650u + 4.76008 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.265390u^{12} + 1.06603u^{11} + \cdots + 2.70496u + 4.37534 \\ -1.05628u^{12} - 6.69481u^{11} + \cdots + 18.3551u + 5.76124 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.526429u^{12} - 2.96321u^{11} + \cdots + 4.12620u - 0.318132 \\ -0.0272701u^{12} + 0.319698u^{11} + \cdots - 4.18190u - 1.79954 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0912097u^{12} + 0.512272u^{11} + \cdots - 0.0696258u + 1.71958 \\ 0.0835509u^{12} + 0.375109u^{11} + \cdots + 0.826806u + 0.0382942 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{9460}{3447}u^{12} + \frac{61031}{3447}u^{11} + \cdots - \frac{23618}{383}u - \frac{94159}{3447}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} - 13u^{12} + \cdots + 111u - 25$
c_2	$u^{13} + 7u^{12} + \cdots - 19u - 5$
c_3, c_7	$u^{13} - u^{12} + \cdots + 2u + 1$
c_4, c_8	$u^{13} + 9u^{11} + \cdots + u + 1$
c_5	$u^{13} - 7u^{12} + \cdots - 19u + 5$
c_6	$u^{13} - 3u^{12} + \cdots - 10u + 4$
c_9, c_{12}	$u^{13} - u^{12} + \cdots + 2u - 1$
c_{10}	$u^{13} + 8u^{12} + \cdots - 99u - 27$
c_{11}	$u^{13} + 3u^{12} + \cdots - 10u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 45y^{12} + \cdots - 4029y - 625$
c_2, c_5	$y^{13} - 13y^{12} + \cdots + 111y - 25$
c_3, c_7	$y^{13} - 5y^{12} + \cdots + 16y - 1$
c_4, c_8	$y^{13} + 18y^{12} + \cdots - 9y - 1$
c_6, c_{11}	$y^{13} + 9y^{12} + \cdots - 20y - 16$
c_9, c_{12}	$y^{13} + 15y^{12} + \cdots + 8y^2 - 1$
c_{10}	$y^{13} - 8y^{12} + \cdots + 3807y - 729$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.856243 + 0.439666I$ $a = 0.053687 + 1.058490I$ $b = 0.666388 - 0.086808I$	$-5.33979 - 2.00841I$	$-6.30003 + 4.09243I$
$u = 0.856243 - 0.439666I$ $a = 0.053687 - 1.058490I$ $b = 0.666388 + 0.086808I$	$-5.33979 + 2.00841I$	$-6.30003 - 4.09243I$
$u = -0.056167 + 1.060590I$ $a = -0.794885 - 0.705726I$ $b = -0.85889 - 1.67983I$	$-3.27208 - 3.50308I$	$-5.03802 + 3.23691I$
$u = -0.056167 - 1.060590I$ $a = -0.794885 + 0.705726I$ $b = -0.85889 + 1.67983I$	$-3.27208 + 3.50308I$	$-5.03802 - 3.23691I$
$u = 1.10413$ $a = 0.938401$ $b = -0.651589$	-0.224822	1.29960
$u = -1.074570 + 0.503982I$ $a = -0.476495 - 0.014009I$ $b = -0.14184 - 1.44672I$	$-5.72718 + 8.88579I$	$-3.64178 - 7.62615I$
$u = -1.074570 - 0.503982I$ $a = -0.476495 + 0.014009I$ $b = -0.14184 + 1.44672I$	$-5.72718 - 8.88579I$	$-3.64178 + 7.62615I$
$u = -1.033670 + 0.730191I$ $a = 0.539770 + 0.500315I$ $b = -1.15414 + 1.81649I$	$-3.61034 + 0.42465I$	$-7.93042 + 0.83468I$
$u = -1.033670 - 0.730191I$ $a = 0.539770 - 0.500315I$ $b = -1.15414 - 1.81649I$	$-3.61034 - 0.42465I$	$-7.93042 - 0.83468I$
$u = -0.537801 + 0.322672I$ $a = 0.581072 - 0.696232I$ $b = 0.576934 + 1.237160I$	$-1.38260 + 4.11097I$	$-0.96481 - 7.32347I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.537801 - 0.322672I$ $a = 0.581072 + 0.696232I$ $b = 0.576934 - 1.237160I$	$-1.38260 - 4.11097I$	$-0.96481 + 7.32347I$
$u = -2.20610 + 0.12523I$ $a = 0.027651 - 1.287690I$ $b = 0.73733 + 3.92048I$	$-18.3891 - 1.5099I$	$-4.27475 + 0.24744I$
$u = -2.20610 - 0.12523I$ $a = 0.027651 + 1.287690I$ $b = 0.73733 - 3.92048I$	$-18.3891 + 1.5099I$	$-4.27475 - 0.24744I$

III. $\boldsymbol{I_3^u = \langle -4.80\times 10^4 a^5u^2 - 1.93\times 10^5 a^4u^2 + \cdots - 3.72\times 10^6 a - 1.94\times 10^6,\ a^5u^2 - 3a^4u^2 + \cdots + 13a + 8,\ u^3 + 2u^2 + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u\\2u^2+u+1\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}a\\0.0107216a^5u^2 + 0.0429770a^4u^2 + \cdots + 0.830153a + 0.433530\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.0276588a^5u^2 + 0.0409242a^4u^2 + \cdots - 0.707287a + 0.0149656\\0.0276588a^5u^2 - 0.0409242a^4u^2 + \cdots + 0.707287a + 0.985034\end{pmatrix}$$
$$a_9 = \begin{pmatrix}a\\0.0107216a^5u^2 + 0.0429770a^4u^2 + \cdots + 0.830153a + 0.433530\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.0107216a^5u^2 - 0.0429770a^4u^2 + \cdots + 0.169847a - 0.433530\\0.0107216a^5u^2 + 0.0429770a^4u^2 + \cdots + 0.830153a + 0.433530\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.114428a^5u^2 + 0.0317676a^4u^2 + \cdots - 0.244681a + 1.20229\\0.125150a^5u^2 + 0.0112093a^4u^2 + \cdots + 1.07483a - 0.768759\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.0212085a^5u^2 + 0.145939a^4u^2 + \cdots - 1.19184a + 0.989840\\0.379146a^5u^2 + 0.374514a^4u^2 + \cdots + 0.519904a + 0.992191\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.135637a^5u^2 + 0.177707a^4u^2 + \cdots - 1.43652a + 2.19213\\-0.164698a^5u^2 + 0.0554376a^4u^2 + \cdots + 0.353544a - 1.34279\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{877944}{2240141}a^5u^2 - \frac{2031720}{2240141}a^4u^2 + \cdots + \frac{2110148}{2240141}a - \frac{15981979}{2240141}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^3 + 4u^2 - 4u + 1)^6$
c_2, c_5	$(u^3 - 2u^2 - 1)^6$
c_3, c_7	$u^{18} + 2u^{17} + \cdots - 129u^2 + 27$
c_4, c_8	$u^{18} + 20u^{16} + \cdots + 180u + 11$
c_6, c_{11}	$(u^3 + u^2 + 2u + 1)^6$
c_9, c_{12}	$u^{18} - 3u^{17} + \cdots + 4276u + 383$
c_{10}	$(u^3 + u^2 - u - 2)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^3 - 24y^2 + 8y - 1)^6$
c_2, c_5	$(y^3 - 4y^2 - 4y - 1)^6$
c_3, c_7	$y^{18} - 4y^{17} + \cdots - 6966y + 729$
c_4, c_8	$y^{18} + 40y^{17} + \cdots - 15834y + 121$
c_6, c_{11}	$(y^3 + 3y^2 + 2y - 1)^6$
c_9, c_{12}	$y^{18} + 49y^{17} + \cdots - 7285948y + 146689$
c_{10}	$(y^3 - 3y^2 + 5y - 4)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.102785 + 0.665457I$ $a = -0.271547 + 1.307830I$ $b = -0.22345 + 1.73716I$	$-1.13951 - 2.56897I$	$-0.10440 + 2.13317I$
$u = 0.102785 + 0.665457I$ $a = -1.48693 - 0.70223I$ $b = -0.624969 - 0.126877I$	$-1.13951 - 2.56897I$	$-0.10440 + 2.13317I$
$u = 0.102785 + 0.665457I$ $a = 1.56533 + 0.54666I$ $b = -0.121877 + 0.223759I$	$-5.27710 - 5.39709I$	$-6.63367 + 5.11262I$
$u = 0.102785 + 0.665457I$ $a = -0.029119 + 0.292106I$ $b = 0.310540 - 1.045640I$	$-5.27710 + 0.25915I$	$-6.63367 - 0.84628I$
$u = 0.102785 + 0.665457I$ $a = 2.67067 + 0.73911I$ $b = 2.26454 + 0.01108I$	$-5.27710 + 0.25915I$	$-6.63367 - 0.84628I$
$u = 0.102785 + 0.665457I$ $a = -0.11892 - 2.98573I$ $b = -0.48087 - 2.93264I$	$-5.27710 - 5.39709I$	$-6.63367 + 5.11262I$
$u = 0.102785 - 0.665457I$ $a = -0.271547 - 1.307830I$ $b = -0.22345 - 1.73716I$	$-1.13951 + 2.56897I$	$-0.10440 - 2.13317I$
$u = 0.102785 - 0.665457I$ $a = -1.48693 + 0.70223I$ $b = -0.624969 + 0.126877I$	$-1.13951 + 2.56897I$	$-0.10440 - 2.13317I$
$u = 0.102785 - 0.665457I$ $a = 1.56533 - 0.54666I$ $b = -0.121877 - 0.223759I$	$-5.27710 + 5.39709I$	$-6.63367 - 5.11262I$
$u = 0.102785 - 0.665457I$ $a = -0.029119 - 0.292106I$ $b = 0.310540 + 1.045640I$	$-5.27710 - 0.25915I$	$-6.63367 + 0.84628I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.102785 - 0.665457I$ $a = 2.67067 - 0.73911I$ $b = 2.26454 - 0.01108I$	$-5.27710 - 0.25915I$	$-6.63367 + 0.84628I$
$u = 0.102785 - 0.665457I$ $a = -0.11892 + 2.98573I$ $b = -0.48087 + 2.93264I$	$-5.27710 + 5.39709I$	$-6.63367 - 5.11262I$
$u = -2.20557$ $a = -0.132067 + 1.061970I$ $b = 0.73082 - 2.94300I$	$19.5761 + 2.8281I$	$-8.26193 - 2.97945I$
$u = -2.20557$ $a = -0.132067 - 1.061970I$ $b = 0.73082 + 2.94300I$	$19.5761 - 2.8281I$	$-8.26193 + 2.97945I$
$u = -2.20557$ $a = 0.248720 + 1.254260I$ $b = -1.03878 - 3.80675I$	-15.7648	$-1.73266 + 0.I$
$u = -2.20557$ $a = 0.248720 - 1.254260I$ $b = -1.03878 + 3.80675I$	-15.7648	$-1.73266 + 0.I$
$u = -2.20557$ $a = -0.44614 + 1.55281I$ $b = 1.68404 - 4.99299I$	$19.5761 - 2.8281I$	$-8.26193 + 2.97945I$
$u = -2.20557$ $a = -0.44614 - 1.55281I$ $b = 1.68404 + 4.99299I$	$19.5761 + 2.8281I$	$-8.26193 - 2.97945I$

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

(i) Arc colorings

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

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

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

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

$$a_{10} = \begin{pmatrix} a \\ b \end{pmatrix}$$

$$a_4 = \begin{pmatrix} ba + 1 \\ -ba - a^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ b + a \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -b \\ b + a \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} a \\ b \end{pmatrix}$$

$$a_7 = \begin{pmatrix} a^2 + a - 1 \\ -a^2 b + b + a \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a^2 \\ ba + a^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a - 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.877439 + 0.744862I$ $b = 1.083790 + 0.387453I$	$-4.66906 - 2.82812I$	$-6.50976 + 2.97945I$
$u = 1.00000$ $a = -0.877439 + 0.744862I$ $b = -0.206350 - 1.132320I$	$-4.66906 - 2.82812I$	$-6.50976 + 2.97945I$
$u = 1.00000$ $a = -0.877439 - 0.744862I$ $b = 1.083790 - 0.387453I$	$-4.66906 + 2.82812I$	$-6.50976 - 2.97945I$
$u = 1.00000$ $a = -0.877439 - 0.744862I$ $b = -0.206350 + 1.132320I$	$-4.66906 + 2.82812I$	$-6.50976 - 2.97945I$
$u = 1.00000$ $a = 0.754878$ $b = -0.377439 + 0.653743I$	-0.531480	0.0195110
$u = 1.00000$ $a = 0.754878$ $b = -0.377439 - 0.653743I$	-0.531480	0.0195110

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^3+4u^2-4u+1)^6(u^{13}-13u^{12}+\cdots+111u-25)$ $\cdot(u^{18}+44u^{17}+\cdots+58880u+4096)$
c_2	$((u-1)^6)(u^3-2u^2-1)^6(u^{13}+7u^{12}+\cdots-19u-5)$ $\cdot(u^{18}+14u^{17}+\cdots+32u-64)$
c_3, c_7	$(u^6-u^5+u^4-2u^3+u^2+1)(u^{13}-u^{12}+\cdots+2u+1)$ $\cdot(u^{18}+u^{17}+\cdots+u+1)(u^{18}+2u^{17}+\cdots-129u^2+27)$
c_4, c_8	$(u^6-u^5+u^4-2u^3+u^2+1)(u^{13}+9u^{11}+\cdots+u+1)$ $\cdot(u^{18}+15u^{16}+\cdots-2u-1)(u^{18}+20u^{16}+\cdots+180u+11)$
c_5	$((u+1)^6)(u^3-2u^2-1)^6(u^{13}-7u^{12}+\cdots-19u+5)$ $\cdot(u^{18}+14u^{17}+\cdots+32u-64)$
c_6	$((u^3+u^2+2u+1)^8)(u^{13}-3u^{12}+\cdots-10u+4)$ $\cdot(u^{18}-8u^{17}+\cdots+66u^2-4)$
c_9, c_{12}	$((u^3+u^2-1)^2)(u^{13}-u^{12}+\cdots+2u-1)$ $\cdot(u^{18}-3u^{17}+\cdots+4276u+383)(u^{18}+u^{17}+\cdots-29u-1)$
c_{10}	$u^6(u^3+u^2-u-2)^6(u^{13}+8u^{12}+\cdots-99u-27)$ $\cdot(u^{18}-17u^{17}+\cdots-112u+8)$
c_{11}	$((u^3-u^2+2u-1)^2)(u^3+u^2+2u+1)^6(u^{13}+3u^{12}+\cdots-10u-4)$ $\cdot(u^{18}-8u^{17}+\cdots+66u^2-4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^3-24y^2+8y-1)^6(y^{13}-45y^{12}+\cdots-4029y-625)$ $\cdot(y^{18}-180y^{17}+\cdots-1103757312y+16777216)$
c_2, c_5	$((y-1)^6)(y^3-4y^2-4y-1)^6(y^{13}-13y^{12}+\cdots+111y-25)$ $\cdot(y^{18}-44y^{17}+\cdots-58880y+4096)$
c_3, c_7	$(y^6+y^5-y^4+3y^2+2y+1)(y^{13}-5y^{12}+\cdots+16y-1)$ $\cdot(y^{18}-9y^{17}+\cdots+3y+1)(y^{18}-4y^{17}+\cdots-6966y+729)$
c_4, c_8	$(y^6+y^5-y^4+3y^2+2y+1)(y^{13}+18y^{12}+\cdots-9y-1)$ $\cdot(y^{18}+30y^{17}+\cdots-20y+1)(y^{18}+40y^{17}+\cdots-15834y+121)$
c_6, c_{11}	$((y^3+3y^2+2y-1)^8)(y^{13}+9y^{12}+\cdots-20y-16)$ $\cdot(y^{18}+12y^{17}+\cdots-528y+16)$
c_9, c_{12}	$((y^3-y^2+2y-1)^2)(y^{13}+15y^{12}+\cdots+8y^2-1)$ $\cdot(y^{18}+43y^{17}+\cdots-425y+1)$ $\cdot(y^{18}+49y^{17}+\cdots-7285948y+146689)$
c_{10}	$y^6(y^3-3y^2+5y-4)^6(y^{13}-8y^{12}+\cdots+3807y-729)$ $\cdot(y^{18}-11y^{17}+\cdots-1312y+64)$