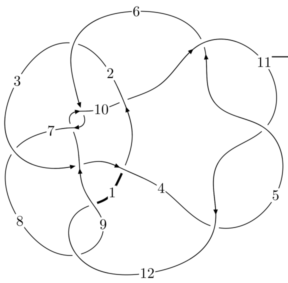
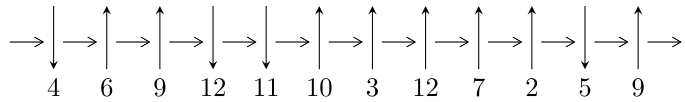
$12n_{0785}$ ($K12n_{0785}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u = \langle &-27u^{23} - 304u^{22} + \cdots + 32b - 800,\ -25u^{23} - 246u^{22} + \cdots + 64a + 5312,\\
&u^{24} + 12u^{23} + \cdots + 736u + 64\rangle\\
I_2^u = \langle &1.86388 \times 10^{20}a^{11}u^2 - 7.50093 \times 10^{19}a^{10}u^2 + \cdots + 1.24248 \times 10^{20}a + 1.90879 \times 10^{20},\\
&-a^{11}u^2 + 13a^{10}u^2 + \cdots + 2212a + 924,\ u^3 - u^2 + 2u - 1\rangle\\
I_3^u = \langle &u^{13} + u^{12} + 8u^{11} + 6u^{10} + 24u^9 + 14u^8 + 32u^7 + 17u^6 + 15u^5 + 12u^4 - u^3 + 4u^2 + b + 2u,\\
&u^{12} + u^{11} + 8u^{10} + 6u^9 + 24u^8 + 14u^7 + 32u^6 + 17u^5 + 15u^4 + 12u^3 - u^2 + a + 4u + 2,\\
&u^{15} + u^{14} + 10u^{13} + 8u^{12} + 40u^{11} + 26u^{10} + 80u^9 + 44u^8 + 78u^7 + 40u^6 + 25u^5 + 16u^4 - 5u^3 + 2u + 1\rangle
\end{aligned}
$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 75 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. $\boldsymbol{I_1^u = \langle -27u^{23} - 304u^{22} + \cdots + 32b - 800,\ -25u^{23} - 246u^{22} + \cdots + 64a + 5312,\ u^{24} + 12u^{23} + \cdots + 736u + 64\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} \frac{25}{64}u^{23} + \frac{123}{32}u^{22} + \cdots - \frac{2843}{4}u - 83 \\ \frac{27}{32}u^{23} + \frac{19}{2}u^{22} + \cdots + \frac{741}{2}u + 25 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^{23} - \frac{47}{4}u^{22} + \cdots - 1008u - \frac{191}{2} \\ -\frac{1}{4}u^{23} - \frac{7}{2}u^{22} + \cdots - \frac{1279}{2}u - 64 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.750000u^{23} - 8.25000u^{22} + \cdots - 368.500u - 31.5000 \\ -\frac{1}{4}u^{23} - \frac{7}{2}u^{22} + \cdots - \frac{1279}{2}u - 64 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{23} + \frac{47}{4}u^{22} + \cdots + 1008u + \frac{193}{2} \\ \frac{1}{4}u^{23} + \frac{7}{2}u^{22} + \cdots + \frac{1281}{2}u + 64 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{25}{64}u^{23} + \frac{123}{32}u^{22} + \cdots - \frac{2843}{4}u - 83 \\ \frac{47}{32}u^{23} + \frac{133}{8}u^{22} + \cdots + \frac{1933}{2}u + 79 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{1}{2}u^{23} - \frac{111}{16}u^{22} + \cdots - 1654u - 165 \\ \frac{15}{8}u^{23} + \frac{337}{16}u^{22} + \cdots + 868u + 64 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{7}{4}u^{23} - \frac{81}{4}u^{22} + \cdots - \frac{6717}{4}u - 160 \\ \frac{5}{4}u^{23} + 14u^{22} + \cdots + 601u + 48 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1}{2}u^{23} - \frac{23}{4}u^{22} + \cdots - 300u - 34$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 19u^{23} + \cdots - 1308u + 680$
c_2, c_{10}	$u^{24} - u^{23} + \cdots - 2u + 1$
c_3, c_8, c_{12}	$u^{24} - u^{23} + \cdots - u + 1$
c_4, c_5, c_{11}	$u^{24} + 12u^{23} + \cdots + 736u + 64$
c_6, c_9	$u^{24} + 11u^{23} + \cdots + 116u + 8$
c_7	$u^{24} + u^{23} + \cdots - 38u + 21$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} - 23y^{23} + \cdots - 29904y + 462400$
c_2, c_{10}	$y^{24} + y^{23} + \cdots + 16y + 1$
c_3, c_8, c_{12}	$y^{24} + 31y^{23} + \cdots + 23y + 1$
c_4, c_5, c_{11}	$y^{24} + 22y^{23} + \cdots + 11264y + 4096$
c_6, c_9	$y^{24} + 19y^{23} + \cdots - 464y + 64$
c_7	$y^{24} + 15y^{23} + \cdots + 3344y + 441$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.010640 + 0.471333I$ $a = 0.44326 - 1.53014I$ $b = -0.27323 - 1.75534I$	$-10.7115 + 10.0939I$	$-0.04933 - 6.43639I$
$u = -1.010640 - 0.471333I$ $a = 0.44326 + 1.53014I$ $b = -0.27323 + 1.75534I$	$-10.7115 - 10.0939I$	$-0.04933 + 6.43639I$
$u = -0.503255 + 0.574177I$ $a = 0.835381 + 0.150338I$ $b = 0.506730 - 0.403999I$	$-2.49625 + 3.04099I$	$1.32899 - 3.32840I$
$u = -0.503255 - 0.574177I$ $a = 0.835381 - 0.150338I$ $b = 0.506730 + 0.403999I$	$-2.49625 - 3.04099I$	$1.32899 + 3.32840I$
$u = -1.180380 + 0.399451I$ $a = -0.295273 + 1.321890I$ $b = 0.17950 + 1.67829I$	$-5.17987 + 4.24750I$	$3.02010 - 8.12803I$
$u = -1.180380 - 0.399451I$ $a = -0.295273 - 1.321890I$ $b = 0.17950 - 1.67829I$	$-5.17987 - 4.24750I$	$3.02010 + 8.12803I$
$u = -1.004630 + 0.835014I$ $a = 0.759653 - 1.021870I$ $b = -0.09010 - 1.66092I$	$-9.75365 - 3.54379I$	$-0.99118 + 4.27014I$
$u = -1.004630 - 0.835014I$ $a = 0.759653 + 1.021870I$ $b = -0.09010 + 1.66092I$	$-9.75365 + 3.54379I$	$-0.99118 - 4.27014I$
$u = -0.308009 + 0.555063I$ $a = -0.449528 + 0.382050I$ $b = 0.073603 + 0.367191I$	$0.196861 + 1.129420I$	$2.90140 - 6.41925I$
$u = -0.308009 - 0.555063I$ $a = -0.449528 - 0.382050I$ $b = 0.073603 - 0.367191I$	$0.196861 - 1.129420I$	$2.90140 + 6.41925I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.516904 + 0.317864I$ $a = -0.256314 - 1.078460I$ $b = -0.475294 - 0.475988I$	$-3.21746 + 0.49631I$	$0.08904 - 3.40641I$
$u = -0.516904 - 0.317864I$ $a = -0.256314 + 1.078460I$ $b = -0.475294 + 0.475988I$	$-3.21746 - 0.49631I$	$0.08904 + 3.40641I$
$u = 0.21488 + 1.45533I$ $a = -0.517010 + 0.329331I$ $b = 0.590380 + 0.681655I$	$1.83425 + 1.78702I$	$1.23481 - 2.86773I$
$u = 0.21488 - 1.45533I$ $a = -0.517010 - 0.329331I$ $b = 0.590380 - 0.681655I$	$1.83425 - 1.78702I$	$1.23481 + 2.86773I$
$u = -0.13976 + 1.54947I$ $a = -0.236789 - 0.330108I$ $b = -0.544586 + 0.320761I$	$4.59873 + 5.35349I$	$4.00000 + 0.I$
$u = -0.13976 - 1.54947I$ $a = -0.236789 + 0.330108I$ $b = -0.544586 - 0.320761I$	$4.59873 - 5.35349I$	$4.00000 + 0.I$
$u = -0.10640 + 1.57603I$ $a = 0.285679 + 0.026175I$ $b = 0.071649 - 0.447453I$	$7.58277 + 2.71010I$	$1.02540 - 3.86743I$
$u = -0.10640 - 1.57603I$ $a = 0.285679 - 0.026175I$ $b = 0.071649 + 0.447453I$	$7.58277 - 2.71010I$	$1.02540 + 3.86743I$
$u = -0.43383 + 1.51943I$ $a = 0.868418 - 0.623221I$ $b = -0.57020 - 1.58987I$	$0.89209 + 9.87509I$	$6.51442 - 6.39656I$
$u = -0.43383 - 1.51943I$ $a = 0.868418 + 0.623221I$ $b = -0.57020 + 1.58987I$	$0.89209 - 9.87509I$	$6.51442 + 6.39656I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.39076 + 1.53782I$ $a = -0.947929 + 0.618450I$ $b = 0.58065 + 1.69940I$	$-4.2980 + 15.1741I$	$4.00000 - 7.27803I$
$u = -0.39076 - 1.53782I$ $a = -0.947929 - 0.618450I$ $b = 0.58065 - 1.69940I$	$-4.2980 - 15.1741I$	$4.00000 + 7.27803I$
$u = -0.62030 + 1.53231I$ $a = -0.739547 + 0.593643I$ $b = 0.45090 + 1.50145I$	$-1.65465 + 3.46994I$	$7.08633 - 7.90223I$
$u = -0.62030 - 1.53231I$ $a = -0.739547 - 0.593643I$ $b = 0.45090 - 1.50145I$	$-1.65465 - 3.46994I$	$7.08633 + 7.90223I$

II. $\boldsymbol{I_2^u = \langle 1.86 \times 10^{20} a^{11} u^2 - 7.50 \times 10^{19} a^{10} u^2 + \cdots + 1.24 \times 10^{20} a + 1.91 \times 10^{20},\ -a^{11} u^2 + 13 a^{10} u^2 + \cdots + 2212 a + 924,\ u^3 - u^2 + 2u - 1 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} a \\ -3.24277a^{11}u^2 + 1.30501a^{10}u^2 + \cdots - 2.16165a - 3.32090 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} a^2u \\ -0.581414a^{11}u^2 + 3.43653a^{10}u^2 + \cdots - 7.52437a - 2.00296 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.581414a^{11}u^2 - 3.43653a^{10}u^2 + \cdots + 7.52437a + 2.00296 \\ -0.581414a^{11}u^2 + 3.43653a^{10}u^2 + \cdots - 7.52437a - 2.00296 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 3.13144a^{11}u^2 + 0.478770a^{10}u^2 + \cdots - 1.90212a + 2.66819 \\ -6.90860a^{11}u^2 + 7.51166a^{10}u^2 + \cdots - 16.6685a - 8.90871 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} a \\ -3.24277a^{11}u^2 + 1.30501a^{10}u^2 + \cdots - 2.16165a - 3.32090 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1.35924a^{11}u^2 - 0.912568a^{10}u^2 + \cdots + 2.14523a - 1.30624 \\ 0.862884a^{11}u^2 - 3.85601a^{10}u^2 + \cdots + 6.58457a + 2.47234 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} 1.44285a^{11}u^2 - 0.692279a^{10}u^2 + \cdots + 1.99663a + 1.48796 \\ 2.28994a^{11}u^2 + 0.187392a^{10}u^2 + \cdots - 0.897794a + 2.62937 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{739013742275411059680}{57478066342067795059}a^{11}u^2 + \frac{40574843941814876112}{57478066342067795059}a^{10}u^2 + \cdots + \frac{328493151198246771284}{57478066342067795059}a - \frac{454117950256466456506}{57478066342067795059}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6+5u^5+7u^4-2u^2+3u-1)^6$
c_2, c_{10}	$u^{36}-5u^{35}+\cdots+8u-1$
c_3, c_8, c_{12}	$u^{36}-u^{35}+\cdots-7944u+1231$
c_4, c_5, c_{11}	$(u^3-u^2+2u-1)^{12}$
c_6, c_9	$(u^6-u^5+3u^4-2u^3+2u^2-u-1)^6$
c_7	$u^{36}+u^{35}+\cdots+4818u-3979$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6 - 11y^5 + 45y^4 - 60y^3 - 10y^2 - 5y + 1)^6$
c_2, c_{10}	$y^{36} - 5y^{35} + \cdots + 2420y^2 + 1$
c_3, c_8, c_{12}	$y^{36} + 35y^{35} + \cdots - 8165144y + 1515361$
c_4, c_5, c_{11}	$(y^3 + 3y^2 + 2y - 1)^{12}$
c_6, c_9	$(y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1)^6$
c_7	$y^{36} + 23y^{35} + \cdots - 900566708y + 15832441$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = 0.292445 - 0.976914I$ $b = -0.010553 - 0.974222I$	$5.74941 - 2.82812I$	$7.77925 + 2.97945I$
$u = 0.215080 + 1.307140I$ $a = 0.879256 + 0.628433I$ $b = -0.20795 + 1.64474I$	$-1.17182 - 2.82812I$	$8.92653 + 2.97945I$
$u = 0.215080 + 1.307140I$ $a = -0.835208 - 0.315914I$ $b = 0.22908 - 2.03181I$	$-4.87092 - 0.85571I$	$0.085479 - 0.705331I$
$u = 0.215080 + 1.307140I$ $a = -0.818019 - 0.239393I$ $b = 1.59293 - 0.13103I$	$1.78490 - 7.42025I$	$4.09089 + 6.18427I$
$u = 0.215080 + 1.307140I$ $a = 1.103510 + 0.320281I$ $b = -1.04255 + 1.64876I$	$-4.87092 - 4.80053I$	$0.08548 + 6.66423I$
$u = 0.215080 + 1.307140I$ $a = -0.097635 + 1.202570I$ $b = -0.136981 + 1.120760I$	$1.78490 - 7.42025I$	$4.09089 + 6.18427I$
$u = 0.215080 + 1.307140I$ $a = -1.199620 - 0.356474I$ $b = 0.63234 - 1.28448I$	$-1.17182 - 2.82812I$	$8.92653 + 2.97945I$
$u = 0.215080 + 1.307140I$ $a = -0.505561 + 0.535105I$ $b = 0.404790 + 0.730191I$	$1.78490 + 1.76400I$	$4.09089 - 0.22537I$
$u = 0.215080 + 1.307140I$ $a = 0.726954 + 0.111541I$ $b = -1.339860 - 0.172152I$	$5.74941 - 2.82812I$	$7.77925 + 2.97945I$
$u = 0.215080 + 1.307140I$ $a = -0.593503 + 0.212019I$ $b = 0.808193 + 0.545750I$	$1.78490 + 1.76400I$	$4.09089 - 0.22537I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -1.10032 - 0.97863I$ $b = 0.18131 - 1.51133I$	$-4.87092 - 4.80053I$	$0.08548 + 6.66423I$
$u = 0.215080 + 1.307140I$ $a = 1.48534 + 0.41966I$ $b = -0.233308 + 1.159680I$	$-4.87092 - 0.85571I$	$0.085479 - 0.705331I$
$u = 0.215080 - 1.307140I$ $a = 0.292445 + 0.976914I$ $b = -0.010553 + 0.974222I$	$5.74941 + 2.82812I$	$7.77925 - 2.97945I$
$u = 0.215080 - 1.307140I$ $a = 0.879256 - 0.628433I$ $b = -0.20795 - 1.64474I$	$-1.17182 + 2.82812I$	$8.92653 - 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.835208 + 0.315914I$ $b = 0.22908 + 2.03181I$	$-4.87092 + 0.85571I$	$0.085479 + 0.705331I$
$u = 0.215080 - 1.307140I$ $a = -0.818019 + 0.239393I$ $b = 1.59293 + 0.13103I$	$1.78490 + 7.42025I$	$4.09089 - 6.18427I$
$u = 0.215080 - 1.307140I$ $a = 1.103510 - 0.320281I$ $b = -1.04255 - 1.64876I$	$-4.87092 + 4.80053I$	$0.08548 - 6.66423I$
$u = 0.215080 - 1.307140I$ $a = -0.097635 - 1.202570I$ $b = -0.136981 - 1.120760I$	$1.78490 + 7.42025I$	$4.09089 - 6.18427I$
$u = 0.215080 - 1.307140I$ $a = -1.199620 + 0.356474I$ $b = 0.63234 + 1.28448I$	$-1.17182 + 2.82812I$	$8.92653 - 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.505561 - 0.535105I$ $b = 0.404790 - 0.730191I$	$1.78490 - 1.76400I$	$4.09089 + 0.22537I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.215080 - 1.307140I$ $a = 0.726954 - 0.111541I$ $b = -1.339860 + 0.172152I$	$5.74941 + 2.82812I$	$7.77925 - 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.593503 - 0.212019I$ $b = 0.808193 - 0.545750I$	$1.78490 - 1.76400I$	$4.09089 + 0.22537I$
$u = 0.215080 - 1.307140I$ $a = -1.10032 + 0.97863I$ $b = 0.18131 + 1.51133I$	$-4.87092 + 4.80053I$	$0.08548 - 6.66423I$
$u = 0.215080 - 1.307140I$ $a = 1.48534 - 0.41966I$ $b = -0.233308 - 1.159680I$	$-4.87092 + 0.85571I$	$0.085479 + 0.705331I$
$u = 0.569840$ $a = 0.037672 + 0.791957I$ $b = -1.126600 + 0.574406I$	$-2.35268 - 4.59213I$	$-2.43837 + 3.20482I$
$u = 0.569840$ $a = 0.037672 - 0.791957I$ $b = -1.126600 - 0.574406I$	$-2.35268 + 4.59213I$	$-2.43837 - 3.20482I$
$u = 0.569840$ $a = -0.371632$ $b = 0.950019$	1.61183	1.25000
$u = 0.569840$ $a = -1.66717$ $b = 0.211771$	1.61183	1.25000
$u = 0.569840$ $a = 1.97705 + 1.00801I$ $b = -0.021467 + 0.451289I$	$-2.35268 + 4.59213I$	$-2.43837 - 3.20482I$
$u = 0.569840$ $a = 1.97705 - 1.00801I$ $b = -0.021467 - 0.451289I$	$-2.35268 - 4.59213I$	$-2.43837 + 3.20482I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.569840$ $a = 0.01895 + 2.50724I$ $b = 0.38309 + 1.86300I$	$-9.00850 + 1.97241I$	$-6.44379 - 3.68478I$
$u = 0.569840$ $a = 0.01895 - 2.50724I$ $b = 0.38309 - 1.86300I$	$-9.00850 - 1.97241I$	$-6.44379 + 3.68478I$
$u = 0.569840$ $a = 0.32036 + 2.66289I$ $b = -0.18256 + 1.51742I$	-5.30941	$2.39727 + 0.I$
$u = 0.569840$ $a = 0.32036 - 2.66289I$ $b = -0.18256 - 1.51742I$	-5.30941	$2.39727 + 0.I$
$u = 0.569840$ $a = -0.67227 + 3.26933I$ $b = -0.01080 + 1.42872I$	$-9.00850 - 1.97241I$	$-6.44379 + 3.68478I$
$u = 0.569840$ $a = -0.67227 - 3.26933I$ $b = -0.01080 - 1.42872I$	$-9.00850 + 1.97241I$	$-6.44379 - 3.68478I$

III.

$\boldsymbol{I_3^u = \langle u^{13} + u^{12} + \cdots + b + 2u,\ u^{12} + u^{11} + \cdots + a + 2,\ u^{15} + u^{14} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -u^{12} - u^{11} + \cdots - 4u - 2 \\ -u^{13} - u^{12} + \cdots - 4u^2 - 2u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{13} + u^{12} + \cdots - 2u - 1 \\ u^{14} + u^{13} + \cdots + 8u^3 - 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{14} - 8u^{12} + \cdots - 2u - 1 \\ u^{14} + u^{13} + \cdots + 8u^3 - 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{13} + u^{12} + \cdots + 8u^2 - 2u \\ u^{14} + u^{13} + \cdots - 2u^2 - u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{12} - u^{11} + \cdots - 4u - 2 \\ -u^{14} - 2u^{13} + \cdots - 6u^2 - 2u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{14} - 10u^{12} + \cdots + 4u - 1 \\ -u^{10} - u^9 - 6u^8 - 4u^7 - 12u^6 - 5u^5 - 7u^4 - u^3 + 4u^2 + 2u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{12} + 8u^{10} + 26u^8 + u^7 + 40u^6 + 6u^5 + 24u^4 + 12u^3 - u^2 + 6u \\ u^{11} + u^{10} + 7u^9 + 5u^8 + 18u^7 + 10u^6 + 20u^5 + 10u^4 + 7u^3 + 4u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^{14} - 4u^{13} - 18u^{12} - 27u^{11} - 62u^{10} - 71u^9 - 103u^8 - 86u^7 - 78u^6 - 42u^5 - 9u^4 - 10u^3 + 17u^2 - 12u + 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} - 12u^{14} + \cdots + 106u - 7$
c_2, c_{10}	$u^{15} - u^{14} + \cdots - 3u + 1$
c_3, c_8	$u^{15} + u^{14} + \cdots - 5u^2 + 1$
c_4, c_5	$u^{15} + u^{14} + \cdots + 2u + 1$
c_6	$u^{15} + 4u^{14} + \cdots + 16u + 5$
c_7	$u^{15} - u^{14} + \cdots + 19u - 13$
c_9	$u^{15} - 4u^{14} + \cdots + 16u - 5$
c_{11}	$u^{15} - u^{14} + \cdots + 2u - 1$
c_{12}	$u^{15} - u^{14} + \cdots + 5u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} - 12y^{14} + \cdots + 5160y - 49$
c_2, c_{10}	$y^{15} - 3y^{14} + \cdots + 13y - 1$
c_3, c_8, c_{12}	$y^{15} + 11y^{14} + \cdots + 10y - 1$
c_4, c_5, c_{11}	$y^{15} + 19y^{14} + \cdots + 4y - 1$
c_6, c_9	$y^{15} + 14y^{14} + \cdots - 84y - 25$
c_7	$y^{15} + 11y^{14} + \cdots + 517y - 169$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.323844 + 1.269380I$ $a = 1.029620 + 0.553032I$ $b = -0.36857 + 1.48607I$	$-2.53804 - 2.24615I$	$2.16387 + 0.54553I$
$u = 0.323844 - 1.269380I$ $a = 1.029620 - 0.553032I$ $b = -0.36857 - 1.48607I$	$-2.53804 + 2.24615I$	$2.16387 - 0.54553I$
$u = 0.144598 + 1.313360I$ $a = -1.174410 - 0.519311I$ $b = 0.51223 - 1.61751I$	$-4.36159 - 3.39759I$	$2.91969 + 0.94976I$
$u = 0.144598 - 1.313360I$ $a = -1.174410 + 0.519311I$ $b = 0.51223 + 1.61751I$	$-4.36159 + 3.39759I$	$2.91969 - 0.94976I$
$u = -0.648777$ $a = 1.14669$ $b = -0.743944$	2.16310	19.7840
$u = -0.09083 + 1.51451I$ $a = -0.115298 + 0.423871I$ $b = -0.631485 - 0.213121I$	$4.83768 + 6.28589I$	$6.55684 - 7.16786I$
$u = -0.09083 - 1.51451I$ $a = -0.115298 - 0.423871I$ $b = -0.631485 + 0.213121I$	$4.83768 - 6.28589I$	$6.55684 + 7.16786I$
$u = 0.403094 + 0.263692I$ $a = -1.89519 - 2.58749I$ $b = -0.08164 - 1.54275I$	$-8.01131 + 1.56669I$	$2.47871 - 0.14188I$
$u = 0.403094 - 0.263692I$ $a = -1.89519 + 2.58749I$ $b = -0.08164 + 1.54275I$	$-8.01131 - 1.56669I$	$2.47871 + 0.14188I$
$u = -0.13670 + 1.53364I$ $a = -0.169899 - 0.313484I$ $b = 0.503998 - 0.217711I$	$8.19478 + 2.55021I$	$14.3952 - 0.7069I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.13670 - 1.53364I$ $a = -0.169899 + 0.313484I$ $b = 0.503998 + 0.217711I$	$8.19478 - 2.55021I$	$14.3952 + 0.7069I$
$u = -0.50718 + 1.50516I$ $a = 0.561674 + 0.312900I$ $b = -0.755832 + 0.686711I$	$2.15433 - 1.91136I$	$25.0958 + 12.5131I$
$u = -0.50718 - 1.50516I$ $a = 0.561674 - 0.312900I$ $b = -0.755832 - 0.686711I$	$2.15433 + 1.91136I$	$25.0958 - 12.5131I$
$u = -0.312435 + 0.251857I$ $a = -0.80984 - 1.74801I$ $b = 0.693274 + 0.342176I$	$-1.35739 + 4.89958I$	$6.99805 - 6.23368I$
$u = -0.312435 - 0.251857I$ $a = -0.80984 + 1.74801I$ $b = 0.693274 - 0.342176I$	$-1.35739 - 4.89958I$	$6.99805 + 6.23368I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^6+5u^5+7u^4-2u^2+3u-1)^6)(u^{15}-12u^{14}+\cdots+106u-7)$ $\cdot(u^{24}-19u^{23}+\cdots-1308u+680)$
c_2, c_{10}	$(u^{15}-u^{14}+\cdots-3u+1)(u^{24}-u^{23}+\cdots-2u+1)$ $\cdot(u^{36}-5u^{35}+\cdots+8u-1)$
c_3, c_8	$(u^{15}+u^{14}+\cdots-5u^2+1)(u^{24}-u^{23}+\cdots-u+1)$ $\cdot(u^{36}-u^{35}+\cdots-7944u+1231)$
c_4, c_5	$((u^3-u^2+2u-1)^{12})(u^{15}+u^{14}+\cdots+2u+1)$ $\cdot(u^{24}+12u^{23}+\cdots+736u+64)$
c_6	$((u^6-u^5+3u^4-2u^3+2u^2-u-1)^6)(u^{15}+4u^{14}+\cdots+16u+5)$ $\cdot(u^{24}+11u^{23}+\cdots+116u+8)$
c_7	$(u^{15}-u^{14}+\cdots+19u-13)(u^{24}+u^{23}+\cdots-38u+21)$ $\cdot(u^{36}+u^{35}+\cdots+4818u-3979)$
c_9	$((u^6-u^5+3u^4-2u^3+2u^2-u-1)^6)(u^{15}-4u^{14}+\cdots+16u-5)$ $\cdot(u^{24}+11u^{23}+\cdots+116u+8)$
c_{11}	$((u^3-u^2+2u-1)^{12})(u^{15}-u^{14}+\cdots+2u-1)$ $\cdot(u^{24}+12u^{23}+\cdots+736u+64)$
c_{12}	$(u^{15}-u^{14}+\cdots+5u^2-1)(u^{24}-u^{23}+\cdots-u+1)$ $\cdot(u^{36}-u^{35}+\cdots-7944u+1231)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^6 - 11y^5 + 45y^4 - 60y^3 - 10y^2 - 5y + 1)^6$ $\cdot (y^{15} - 12y^{14} + \cdots + 5160y - 49)$ $\cdot (y^{24} - 23y^{23} + \cdots - 29904y + 462400)$
c_2, c_{10}	$(y^{15} - 3y^{14} + \cdots + 13y - 1)(y^{24} + y^{23} + \cdots + 16y + 1)$ $\cdot (y^{36} - 5y^{35} + \cdots + 2420y^2 + 1)$
c_3, c_8, c_{12}	$(y^{15} + 11y^{14} + \cdots + 10y - 1)(y^{24} + 31y^{23} + \cdots + 23y + 1)$ $\cdot (y^{36} + 35y^{35} + \cdots - 8165144y + 1515361)$
c_4, c_5, c_{11}	$((y^3 + 3y^2 + 2y - 1)^{12})(y^{15} + 19y^{14} + \cdots + 4y - 1)$ $\cdot (y^{24} + 22y^{23} + \cdots + 11264y + 4096)$
c_6, c_9	$((y^6 + 5y^5 + \cdots - 5y + 1)^6)(y^{15} + 14y^{14} + \cdots - 84y - 25)$ $\cdot (y^{24} + 19y^{23} + \cdots - 464y + 64)$
c_7	$(y^{15} + 11y^{14} + \cdots + 517y - 169)(y^{24} + 15y^{23} + \cdots + 3344y + 441)$ $\cdot (y^{36} + 23y^{35} + \cdots - 900566708y + 15832441)$