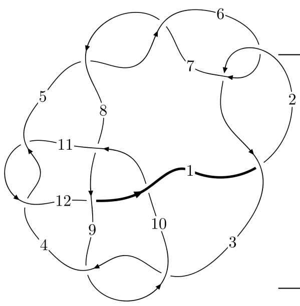
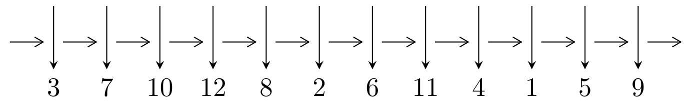
$12a_{0653}$ ($K12a_{0653}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 23u^{32} - 20u^{31} + \cdots + 2b + 192,\ -83u^{32} + 367u^{31} + \cdots + 2a + 53,\ u^{33} - 6u^{32} + \cdots + 2u + 4\rangle$$

$$\begin{aligned} I_2^u = \langle & 3369103813u^{13}a^3 + 32822425576u^{13}a^2 + \cdots + 472218636585a + 522982296989, \\ & u^{13}a^3 + 8u^{13}a^2 + \cdots + 22a + 15, \\ & u^{14} + u^{13} - u^{12} - 2u^{11} + 4u^{10} + 5u^9 - 3u^8 - 6u^7 + 4u^6 + 6u^5 - 2u^4 - 2u^3 + 2u^2 + u - 1\rangle \end{aligned}$$

$$\begin{aligned} I_3^u = \langle & u^{16} + u^{15} + \cdots + b - 1, \\ & u^{16} + u^{15} - u^{14} - 3u^{13} + 4u^{12} + 7u^{11} - 2u^{10} - 12u^9 + 2u^8 + 12u^7 + 4u^6 - 10u^5 - 4u^4 + 3u^3 + 6u^2 + a - 1, \\ & u^{17} + u^{16} - 2u^{15} - 3u^{14} + 6u^{13} + 8u^{12} - 8u^{11} - 14u^{10} + 10u^9 + 18u^8 - 7u^7 - 17u^6 + 4u^5 + 11u^4 - 4u^2 + 1\rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 106 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. $I_1^u = \langle 23u^{32} - 20u^{31} + \cdots + 2b + 192,\ -83u^{32} + 367u^{31} + \cdots + 2a + 53,\ u^{33} - 6u^{32} + \cdots + 2u + 4\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{83}{2}u^{32} - \frac{367}{2}u^{31} + \cdots + 65u - \frac{53}{2} \\ -\frac{23}{2}u^{32} + 10u^{31} + \cdots - \frac{375}{2}u - 96 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{45}{4}u^{32} + 49u^{31} + \cdots - \frac{115}{4}u + 4 \\ \frac{5}{2}u^{32} - 32u^{30} + \cdots + \frac{113}{2}u + 29 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 3u^{32} - \frac{19}{2}u^{31} + \cdots + \frac{61}{2}u + \frac{19}{2} \\ \frac{7}{2}u^{32} - 20u^{31} + \cdots - \frac{59}{2}u - 20 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{5}{4}u^{32} - 3u^{31} + \cdots + \frac{11}{4}u + 2 \\ \frac{3}{2}u^{32} - 12u^{31} + \cdots - \frac{29}{2}u - 11 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{9}{2}u^{32} - \frac{43}{2}u^{31} + \cdots + 3u - \frac{13}{2} \\ -\frac{19}{2}u^{32} + 48u^{31} + \cdots + \frac{47}{2}u + 26 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -25u^{32} + 137u^{31} - 250u^{30} - 48u^{29} + 729u^{28} - 349u^{27} - 1766u^{26} + 2220u^{25} + 1732u^{24} - 3935u^{23} - 1941u^{22} + 6635u^{21} + 458u^{20} - 6613u^{19} - 1876u^{18} + 8144u^{17} + 1987u^{16} - 6981u^{15} - 4913u^{14} + 8258u^{13} + 3726u^{12} - 5186u^{11} - 4612u^{10} + 3551u^9 + 3476u^8 - 959u^7 - 3182u^6 + 648u^5 + 1495u^4 - 98u^3 - 504u^2 + 14u + 46$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7	$u^{33} + 8u^{32} + \cdots + 220u + 16$
c_2, c_6	$u^{33} - 6u^{32} + \cdots + 2u + 4$
c_3, c_4, c_9 c_{11}	$u^{33} + 15u^{31} + \cdots + u + 1$
c_8, c_{10}	$u^{33} + 3u^{32} + \cdots + u + 1$
c_{12}	$u^{33} + 32u^{32} + \cdots + 286720u + 16384$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7	$y^{33} + 36y^{32} + \cdots + 6256y - 256$
c_2, c_6	$y^{33} - 8y^{32} + \cdots + 220y - 16$
c_3, c_4, c_9 c_{11}	$y^{33} + 30y^{32} + \cdots + 5y - 1$
c_8, c_{10}	$y^{33} + 17y^{32} + \cdots + 63y - 1$
c_{12}	$y^{33} + 2y^{32} + \cdots + 4630511616y - 268435456$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.838398 + 0.613102I$ $a = -0.366122 + 0.442209I$ $b = 0.003736 - 0.378058I$	$1.70782 - 2.40859I$	$-4.73211 + 2.63884I$
$u = 0.838398 - 0.613102I$ $a = -0.366122 - 0.442209I$ $b = 0.003736 + 0.378058I$	$1.70782 + 2.40859I$	$-4.73211 - 2.63884I$
$u = -0.415165 + 0.823365I$ $a = -0.272267 + 0.601963I$ $b = 0.931790 + 0.355896I$	$9.11306 - 7.42411I$	$-3.38968 + 4.20871I$
$u = -0.415165 - 0.823365I$ $a = -0.272267 - 0.601963I$ $b = 0.931790 - 0.355896I$	$9.11306 + 7.42411I$	$-3.38968 - 4.20871I$
$u = -0.814655 + 0.420904I$ $a = -0.014524 + 0.720997I$ $b = 0.779019 + 0.954203I$	$-1.41171 + 3.25911I$	$-15.5699 - 6.2232I$
$u = -0.814655 - 0.420904I$ $a = -0.014524 - 0.720997I$ $b = 0.779019 - 0.954203I$	$-1.41171 - 3.25911I$	$-15.5699 + 6.2232I$
$u = -0.277153 + 0.867734I$ $a = 0.509978 - 0.137733I$ $b = -0.389242 - 0.632865I$	$8.34160 + 3.38775I$	$-0.87656 - 3.53440I$
$u = -0.277153 - 0.867734I$ $a = 0.509978 + 0.137733I$ $b = -0.389242 + 0.632865I$	$8.34160 - 3.38775I$	$-0.87656 + 3.53440I$
$u = 1.100190 + 0.089830I$ $a = -0.481622 - 0.649769I$ $b = 0.0208635 - 0.1183110I$	$3.28828 - 5.97548I$	$-8.94862 + 7.09482I$
$u = 1.100190 - 0.089830I$ $a = -0.481622 + 0.649769I$ $b = 0.0208635 + 0.1183110I$	$3.28828 + 5.97548I$	$-8.94862 - 7.09482I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.863288 + 0.745766I$ $a = -0.337012 + 0.105923I$ $b = -0.139284 + 0.796748I$	$1.75606 + 2.81515I$	$-5.07945 - 3.99725I$
$u = -0.863288 - 0.745766I$ $a = -0.337012 - 0.105923I$ $b = -0.139284 - 0.796748I$	$1.75606 - 2.81515I$	$-5.07945 + 3.99725I$
$u = -1.021670 + 0.530532I$ $a = -0.224206 - 0.440345I$ $b = -1.110970 - 0.423583I$	$7.0965 + 12.3235I$	$-7.48212 - 9.31831I$
$u = -1.021670 - 0.530532I$ $a = -0.224206 + 0.440345I$ $b = -1.110970 + 0.423583I$	$7.0965 - 12.3235I$	$-7.48212 + 9.31831I$
$u = -1.125530 + 0.460328I$ $a = 0.246731 + 0.066023I$ $b = 0.636793 - 0.225287I$	$5.49810 + 1.42945I$	$-1.94384 - 1.59393I$
$u = -1.125530 - 0.460328I$ $a = 0.246731 - 0.066023I$ $b = 0.636793 + 0.225287I$	$5.49810 - 1.42945I$	$-1.94384 + 1.59393I$
$u = 0.755893 + 0.131338I$ $a = 1.56947 - 0.67478I$ $b = -0.271312 + 0.241644I$	$-2.89891 - 0.34125I$	$-18.0890 + 12.2689I$
$u = 0.755893 - 0.131338I$ $a = 1.56947 + 0.67478I$ $b = -0.271312 - 0.241644I$	$-2.89891 + 0.34125I$	$-18.0890 - 12.2689I$
$u = 0.902285 + 0.867527I$ $a = 1.60945 + 1.85954I$ $b = -2.65111 - 0.44007I$	$6.37334 - 0.89739I$	$-9.49648 - 0.54814I$
$u = 0.902285 - 0.867527I$ $a = 1.60945 - 1.85954I$ $b = -2.65111 + 0.44007I$	$6.37334 + 0.89739I$	$-9.49648 + 0.54814I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.929251 + 0.857665I$ $a = -2.32439 - 1.06449I$ $b = 2.64641 - 0.85846I$	$6.28919 - 5.49945I$	$-9.75207 + 5.34386I$
$u = 0.929251 - 0.857665I$ $a = -2.32439 + 1.06449I$ $b = 2.64641 + 0.85846I$	$6.28919 + 5.49945I$	$-9.75207 - 5.34386I$
$u = 0.863589 + 0.938538I$ $a = -1.84094 - 1.56412I$ $b = 2.90596 + 0.30561I$	$17.0337 + 9.7572I$	$-4.21655 - 3.66521I$
$u = 0.863589 - 0.938538I$ $a = -1.84094 + 1.56412I$ $b = 2.90596 - 0.30561I$	$17.0337 - 9.7572I$	$-4.21655 + 3.66521I$
$u = 0.844668 + 0.965107I$ $a = 1.26522 + 0.67302I$ $b = -1.79222 + 0.12655I$	$15.6006 + 0.0709I$	$-2.15054 + 0.I$
$u = 0.844668 - 0.965107I$ $a = 1.26522 - 0.67302I$ $b = -1.79222 - 0.12655I$	$15.6006 - 0.0709I$	$-2.15054 + 0.I$
$u = 0.995894 + 0.870348I$ $a = 2.13894 + 1.52075I$ $b = -2.94172 + 0.68814I$	$16.6040 - 16.4117I$	$-4.91951 + 8.23114I$
$u = 0.995894 - 0.870348I$ $a = 2.13894 - 1.52075I$ $b = -2.94172 - 0.68814I$	$16.6040 + 16.4117I$	$-4.91951 - 8.23114I$
$u = 1.021940 + 0.872778I$ $a = -1.10966 - 1.08266I$ $b = 1.80678 - 0.21056I$	$15.0264 - 6.8123I$	$-3.11021 + 4.75240I$
$u = 1.021940 - 0.872778I$ $a = -1.10966 + 1.08266I$ $b = 1.80678 + 0.21056I$	$15.0264 + 6.8123I$	$-3.11021 - 4.75240I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.528955+0.335215I$ $a=-0.495909-0.541436I$ $b=-0.718846-0.034946I$	$-0.532718-0.018077I$	$-12.61831+0.50033I$
$u=-0.528955-0.335215I$ $a=-0.495909+0.541436I$ $b=-0.718846+0.034946I$	$-0.532718+0.018077I$	$-12.61831-0.50033I$
$u=-0.411375$ $a=-0.746268$ $b=-0.433287$	-0.639498	-15.2500

II. $\boldsymbol{I_2^u = \langle 3.37 \times 10^9 a^3 u^{13} + 3.28 \times 10^{10} a^2 u^{13} + \cdots + 4.72 \times 10^{11} a + 5.23 \times 10^{11},\ u^{13} a^3 + 8u^{13} a^2 + \cdots + 22a + 15,\ u^{14} + u^{13} + \cdots + u - 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -0.0785503a^3u^{13} - 0.765251a^2u^{13} + \cdots - 11.0097a - 12.1933 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.671081a^3u^{13} + 0.917830a^2u^{13} + \cdots + 9.54350a + 12.9228 \\ 0.0443959a^3u^{13} - 0.271283a^2u^{13} + \cdots - 2.30457a - 2.87768 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.522672a^3u^{13} + 0.630403a^2u^{13} + \cdots + 8.14923a + 7.66742 \\ -0.200386a^3u^{13} - 1.14041a^2u^{13} + \cdots - 11.4361a - 13.0321 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.269227a^3u^{13} - 0.459045a^2u^{13} + \cdots - 8.30676a - 10.3719 \\ -0.0531131a^3u^{13} - 0.444978a^2u^{13} + \cdots - 4.30811a - 4.05445 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.118312a^3u^{13} - 0.241537a^2u^{13} + \cdots + 0.756822a - 0.808713 \\ -0.200386a^3u^{13} - 1.14041a^2u^{13} + \cdots - 11.4361a - 13.0321 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{83965078880}{42891044441}u^{13}a^3 + \frac{55301996548}{42891044441}u^{13}a^2 + \cdots + \frac{978297781868}{42891044441}a + \frac{571131040218}{42891044441}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7	$(u^{14} + 3u^{13} + \cdots + 5u + 1)^4$
c_2, c_6	$(u^{14} + u^{13} + \cdots + u - 1)^4$
c_3, c_4, c_9 c_{11}	$u^{56} + u^{55} + \cdots + 12u + 7$
c_8, c_{10}	$u^{56} - 17u^{55} + \cdots - 491562u + 37537$
c_{12}	$(u^2 - u + 1)^{28}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7	$(y^{14} + 17y^{13} + \cdots - y + 1)^4$
c_2, c_6	$(y^{14} - 3y^{13} + \cdots - 5y + 1)^4$
c_3, c_4, c_9 c_{11}	$y^{56} + 51y^{55} + \cdots - 4428y + 49$
c_8, c_{10}	$y^{56} + 27y^{55} + \cdots + 24860581508y + 1409026369$
c_{12}	$(y^2 + y + 1)^{28}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.919323+0.470231I$ $a = 0.794474-0.440671I$ $b = 0.940770-0.444497I$	$1.95519-6.91244I$	$-9.68599+9.90747I$
$u = 0.919323+0.470231I$ $a = -0.711262+0.512164I$ $b = -0.630226-0.503089I$	$1.95519-2.85267I$	$-9.68599+2.97927I$
$u = 0.919323+0.470231I$ $a = 0.322504+0.766589I$ $b = -1.39913+0.78875I$	$1.95519-6.91244I$	$-9.68599+9.90747I$
$u = 0.919323+0.470231I$ $a = -0.129480+0.292208I$ $b = 0.561275-0.065984I$	$1.95519-2.85267I$	$-9.68599+2.97927I$
$u = 0.919323-0.470231I$ $a = 0.794474+0.440671I$ $b = 0.940770+0.444497I$	$1.95519+6.91244I$	$-9.68599-9.90747I$
$u = 0.919323-0.470231I$ $a = -0.711262-0.512164I$ $b = -0.630226+0.503089I$	$1.95519+2.85267I$	$-9.68599-2.97927I$
$u = 0.919323-0.470231I$ $a = 0.322504-0.766589I$ $b = -1.39913-0.78875I$	$1.95519+6.91244I$	$-9.68599-9.90747I$
$u = 0.919323-0.470231I$ $a = -0.129480-0.292208I$ $b = 0.561275+0.065984I$	$1.95519+2.85267I$	$-9.68599-2.97927I$
$u = -0.924961$ $a = -0.857787+0.539464I$ $b = -0.200651-0.488104I$	$-0.62515+2.02988I$	$-14.7052-3.4641I$
$u = -0.924961$ $a = -0.857787-0.539464I$ $b = -0.200651+0.488104I$	$-0.62515-2.02988I$	$-14.7052+3.4641I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.924961$ $a = 0.576490 + 1.026690I$ $b = -0.300202 + 0.379400I$	$-0.62515 - 2.02988I$	$-14.7052 + 3.4641I$
$u = -0.924961$ $a = 0.576490 - 1.026690I$ $b = -0.300202 - 0.379400I$	$-0.62515 + 2.02988I$	$-14.7052 - 3.4641I$
$u = -0.726911 + 0.518054I$ $a = -0.421333 - 0.953785I$ $b = 1.31925 + 0.70924I$	$6.28706 + 4.01626I$	$-2.65592 - 8.55046I$
$u = -0.726911 + 0.518054I$ $a = 1.68959 + 0.08836I$ $b = -1.29869 - 1.68726I$	$6.28706 - 0.04350I$	$-2.65592 - 1.62226I$
$u = -0.726911 + 0.518054I$ $a = -1.36173 - 1.57262I$ $b = -0.264552 - 0.194385I$	$6.28706 - 0.04350I$	$-2.65592 - 1.62226I$
$u = -0.726911 + 0.518054I$ $a = 1.54281 + 1.97985I$ $b = 1.09192 - 1.12223I$	$6.28706 + 4.01626I$	$-2.65592 - 8.55046I$
$u = -0.726911 - 0.518054I$ $a = -0.421333 + 0.953785I$ $b = 1.31925 - 0.70924I$	$6.28706 - 4.01626I$	$-2.65592 + 8.55046I$
$u = -0.726911 - 0.518054I$ $a = 1.68959 - 0.08836I$ $b = -1.29869 + 1.68726I$	$6.28706 + 0.04350I$	$-2.65592 + 1.62226I$
$u = -0.726911 - 0.518054I$ $a = -1.36173 + 1.57262I$ $b = -0.264552 + 0.194385I$	$6.28706 + 0.04350I$	$-2.65592 + 1.62226I$
$u = -0.726911 - 0.518054I$ $a = 1.54281 - 1.97985I$ $b = 1.09192 + 1.12223I$	$6.28706 - 4.01626I$	$-2.65592 + 8.55046I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.879333+0.897049I$ $a=-1.63730+0.51654I$ $b=2.04526+0.38724I$	$10.73580+0.51054I$	$-5.12222-2.81570I$
$u=-0.879333+0.897049I$ $a=1.89599-0.54443I$ $b=-1.89493-1.05104I$	$10.73580+0.51054I$	$-5.12222-2.81570I$
$u=-0.879333+0.897049I$ $a=-2.18425+1.78081I$ $b=2.87794-0.18250I$	$10.73580-3.54923I$	$-5.12222+4.11251I$
$u=-0.879333+0.897049I$ $a=2.03075-1.99090I$ $b=-3.52797+0.38422I$	$10.73580-3.54923I$	$-5.12222+4.11251I$
$u=-0.879333-0.897049I$ $a=-1.63730-0.51654I$ $b=2.04526-0.38724I$	$10.73580-0.51054I$	$-5.12222+2.81570I$
$u=-0.879333-0.897049I$ $a=1.89599+0.54443I$ $b=-1.89493+1.05104I$	$10.73580-0.51054I$	$-5.12222+2.81570I$
$u=-0.879333-0.897049I$ $a=-2.18425-1.78081I$ $b=2.87794+0.18250I$	$10.73580+3.54923I$	$-5.12222-4.11251I$
$u=-0.879333-0.897049I$ $a=2.03075+1.99090I$ $b=-3.52797-0.38422I$	$10.73580+3.54923I$	$-5.12222-4.11251I$
$u=0.405736+0.602281I$ $a=0.297803+0.937793I$ $b=-0.032334+0.421230I$	$3.52193-1.17765I$	$-5.59802+3.07698I$
$u=0.405736+0.602281I$ $a=-0.900179+0.198851I$ $b=0.525145-1.039200I$	$3.52193-1.17765I$	$-5.59802+3.07698I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.405736 + 0.602281I$ $a = -0.50022 - 1.47105I$ $b = 1.121790 + 0.002550I$	$3.52193 + 2.88212I$	$-5.59802 - 3.85123I$
$u = 0.405736 + 0.602281I$ $a = -0.182952 + 0.381057I$ $b = -0.833018 + 0.733223I$	$3.52193 + 2.88212I$	$-5.59802 - 3.85123I$
$u = 0.405736 - 0.602281I$ $a = 0.297803 - 0.937793I$ $b = -0.032334 - 0.421230I$	$3.52193 + 1.17765I$	$-5.59802 - 3.07698I$
$u = 0.405736 - 0.602281I$ $a = -0.900179 - 0.198851I$ $b = 0.525145 + 1.039200I$	$3.52193 + 1.17765I$	$-5.59802 - 3.07698I$
$u = 0.405736 - 0.602281I$ $a = -0.50022 + 1.47105I$ $b = 1.121790 - 0.002550I$	$3.52193 - 2.88212I$	$-5.59802 + 3.85123I$
$u = 0.405736 - 0.602281I$ $a = -0.182952 - 0.381057I$ $b = -0.833018 - 0.733223I$	$3.52193 - 2.88212I$	$-5.59802 + 3.85123I$
$u = 0.924969 + 0.883501I$ $a = 2.14164 + 0.25075I$ $b = -2.30748 + 0.74757I$	$14.5860 - 1.2351I$	$-1.90686 - 0.97406I$
$u = 0.924969 + 0.883501I$ $a = -0.61571 - 2.27381I$ $b = 2.77866 + 1.93001I$	$14.5860 - 5.2949I$	$-1.90686 + 5.95414I$
$u = 0.924969 + 0.883501I$ $a = -1.17366 - 2.23783I$ $b = 2.13014 + 0.56110I$	$14.5860 - 5.2949I$	$-1.90686 + 5.95414I$
$u = 0.924969 + 0.883501I$ $a = 2.66023 + 0.45543I$ $b = -2.30429 + 2.25801I$	$14.5860 - 1.2351I$	$-1.90686 - 0.97406I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.924969 - 0.883501I$ $a = 2.14164 - 0.25075I$ $b = -2.30748 - 0.74757I$	$14.5860 + 1.2351I$	$-1.90686 + 0.97406I$
$u = 0.924969 - 0.883501I$ $a = -0.61571 + 2.27381I$ $b = 2.77866 - 1.93001I$	$14.5860 + 5.2949I$	$-1.90686 - 5.95414I$
$u = 0.924969 - 0.883501I$ $a = -1.17366 + 2.23783I$ $b = 2.13014 - 0.56110I$	$14.5860 + 5.2949I$	$-1.90686 - 5.95414I$
$u = 0.924969 - 0.883501I$ $a = 2.66023 - 0.45543I$ $b = -2.30429 - 2.25801I$	$14.5860 + 1.2351I$	$-1.90686 + 0.97406I$
$u = -0.961925 + 0.860252I$ $a = -0.91964 + 1.52544I$ $b = 2.11052 - 0.69676I$	$10.47250 + 5.98498I$	$-5.63204 - 1.91017I$
$u = -0.961925 + 0.860252I$ $a = 1.15135 - 1.57072I$ $b = -1.95858 + 0.06200I$	$10.47250 + 5.98498I$	$-5.63204 - 1.91017I$
$u = -0.961925 + 0.860252I$ $a = 2.43924 - 1.48967I$ $b = -2.95999 - 0.50087I$	$10.4725 + 10.0447I$	$-5.63204 - 8.83837I$
$u = -0.961925 + 0.860252I$ $a = -2.51589 + 1.71297I$ $b = 3.43373 + 0.94983I$	$10.4725 + 10.0447I$	$-5.63204 - 8.83837I$
$u = -0.961925 - 0.860252I$ $a = -0.91964 - 1.52544I$ $b = 2.11052 + 0.69676I$	$10.47250 - 5.98498I$	$-5.63204 + 1.91017I$
$u = -0.961925 - 0.860252I$ $a = 1.15135 + 1.57072I$ $b = -1.95858 - 0.06200I$	$10.47250 - 5.98498I$	$-5.63204 + 1.91017I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.961925 - 0.860252I$ $a = \quad 2.43924 + 1.48967I$ $b = -2.95999 + 0.50087I$	$10.4725 - 10.0447I$	$-5.63204 + 8.83837I$
$u = -0.961925 - 0.860252I$ $a = -2.51589 - 1.71297I$ $b = \quad 3.43373 - 0.94983I$	$10.4725 - 10.0447I$	$-5.63204 + 8.83837I$
$u = \quad 0.561243$ $a = -1.400310 + 0.114435I$ $b = -0.14296 - 1.77734I$	$4.20416 - 2.02988I$	$-12.09269 + 3.46410I$
$u = \quad 0.561243$ $a = -1.400310 - 0.114435I$ $b = -0.14296 + 1.77734I$	$4.20416 + 2.02988I$	$-12.09269 - 3.46410I$
$u = \quad 0.561243$ $a = -0.53119 + 3.23102I$ $b = \quad 0.618594 + 0.953525I$	$4.20416 - 2.02988I$	$-12.09269 + 3.46410I$
$u = \quad 0.561243$ $a = -0.53119 - 3.23102I$ $b = \quad 0.618594 - 0.953525I$	$4.20416 + 2.02988I$	$-12.09269 - 3.46410I$

III.

$$\boldsymbol{I_3^u = \langle u^{16} + u^{15} + \cdots + b - 1,\ u^{16} + u^{15} + \cdots + a - 1,\ u^{17} + u^{16} + \cdots - 4u^2 + 1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{16} - u^{15} + \cdots - 6u^2 + 1 \\ -u^{16} - u^{15} + \cdots + 2u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{16} + 3u^{14} - 9u^{12} + 16u^{10} - 24u^8 + 25u^6 - 21u^4 + 10u^2 - 3 \\ u^{16} - 3u^{14} + \cdots - 3u^2 - 3u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{14} + 2u^{12} + \cdots - u + 1 \\ -u^{16} - u^{15} + \cdots + 2u + 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{16} - 2u^{14} + \cdots + 3u + 2 \\ u^{15} + u^{14} + \cdots + u - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{16} - u^{15} + \cdots - u + 1 \\ -u^{15} + 3u^{13} + \cdots + 2u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^{16} + 2u^{15} + 5u^{14} - u^{13} - 13u^{12} + 4u^{11} + 27u^{10} + 4u^9 - 37u^8 - 9u^7 + 40u^6 + 18u^5 - 26u^4 - 11u^3 + 14u^2 + 6u - 8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{17} - 5u^{16} + \cdots + 8u - 1$
c_2	$u^{17} - u^{16} + \cdots + 4u^2 - 1$
c_3, c_{11}	$u^{17} + 10u^{15} + \cdots + 7u - 1$
c_4, c_9	$u^{17} + 10u^{15} + \cdots + 7u + 1$
c_6	$u^{17} + u^{16} + \cdots - 4u^2 + 1$
c_7	$u^{17} + 5u^{16} + \cdots + 8u + 1$
c_8, c_{10}	$u^{17} + 3u^{16} + \cdots - 3u - 1$
c_{12}	$u^{17} - 3u^{16} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7	$y^{17} + 19y^{16} + \cdots - 12y - 1$
c_2, c_6	$y^{17} - 5y^{16} + \cdots + 8y - 1$
c_3, c_4, c_9 c_{11}	$y^{17} + 20y^{16} + \cdots + 17y - 1$
c_8, c_{10}	$y^{17} + 3y^{16} + \cdots - y - 1$
c_{12}	$y^{17} + y^{16} + \cdots - 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.945890 + 0.312417I$ $a = -0.537448 - 0.047998I$ $b = -0.893405 - 0.569214I$	$3.35506 - 4.10794I$	$-7.75651 + 5.82237I$
$u = 0.945890 - 0.312417I$ $a = -0.537448 + 0.047998I$ $b = -0.893405 + 0.569214I$	$3.35506 + 4.10794I$	$-7.75651 - 5.82237I$
$u = -0.972331 + 0.493803I$ $a = 0.890091 + 0.294111I$ $b = -0.103792 - 0.494835I$	$4.39652 + 1.28712I$	$-9.11584 - 1.90968I$
$u = -0.972331 - 0.493803I$ $a = 0.890091 - 0.294111I$ $b = -0.103792 + 0.494835I$	$4.39652 - 1.28712I$	$-9.11584 + 1.90968I$
$u = 0.848338 + 0.687599I$ $a = 0.265141 + 0.123673I$ $b = 0.061069 + 0.627082I$	$0.88266 - 2.63503I$	$-15.8429 + 3.4776I$
$u = 0.848338 - 0.687599I$ $a = 0.265141 - 0.123673I$ $b = 0.061069 - 0.627082I$	$0.88266 + 2.63503I$	$-15.8429 - 3.4776I$
$u = -0.593107 + 0.526314I$ $a = 0.73924 + 1.66755I$ $b = -0.219744 - 0.936804I$	$5.62828 + 2.80024I$	$-5.18862 - 3.17649I$
$u = -0.593107 - 0.526314I$ $a = 0.73924 - 1.66755I$ $b = -0.219744 + 0.936804I$	$5.62828 - 2.80024I$	$-5.18862 + 3.17649I$
$u = -0.869075 + 0.884383I$ $a = -2.41044 + 0.63240I$ $b = 2.57239 + 1.00697I$	$11.29440 - 1.32784I$	$-3.25448 + 1.21806I$
$u = -0.869075 - 0.884383I$ $a = -2.41044 - 0.63240I$ $b = 2.57239 - 1.00697I$	$11.29440 + 1.32784I$	$-3.25448 - 1.21806I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.962617 + 0.846172I$ $a = \quad 1.27291 - 2.08611I$ $b = -2.59045 + 0.57217I$	$10.99840 + 7.74112I$	$-3.89446 - 6.31317I$
$u = -0.962617 - 0.846172I$ $a = \quad 1.27291 + 2.08611I$ $b = -2.59045 - 0.57217I$	$10.99840 - 7.74112I$	$-3.89446 + 6.31317I$
$u = \quad 0.928421 + 0.893331I$ $a = -0.256712 - 0.033992I$ $b = -0.167997 - 0.688887I$	$14.1463 - 3.2953I$	$-3.29658 + 2.36229I$
$u = \quad 0.928421 - 0.893331I$ $a = -0.256712 + 0.033992I$ $b = -0.167997 + 0.688887I$	$14.1463 + 3.2953I$	$-3.29658 - 2.36229I$
$u = -0.709513$ $a = -1.69728$ $b = \quad 0.349817$	-2.66316	-7.14040
$u = \quad 0.529238 + 0.315991I$ $a = -0.61414 - 1.69532I$ $b = \quad 0.66702 - 1.60227I$	$4.91285 + 1.45910I$	$-3.08044 + 2.03398I$
$u = \quad 0.529238 - 0.315991I$ $a = -0.61414 + 1.69532I$ $b = \quad 0.66702 + 1.60227I$	$4.91285 - 1.45910I$	$-3.08044 - 2.03398I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$((u^{14}+3u^{13}+\cdots+5u+1)^4)(u^{17}-5u^{16}+\cdots+8u-1)$ $\cdot(u^{33}+8u^{32}+\cdots+220u+16)$
c_2	$((u^{14}+u^{13}+\cdots+u-1)^4)(u^{17}-u^{16}+\cdots+4u^2-1)$ $\cdot(u^{33}-6u^{32}+\cdots+2u+4)$
c_3, c_{11}	$(u^{17}+10u^{15}+\cdots+7u-1)(u^{33}+15u^{31}+\cdots+u+1)$ $\cdot(u^{56}+u^{55}+\cdots+12u+7)$
c_4, c_9	$(u^{17}+10u^{15}+\cdots+7u+1)(u^{33}+15u^{31}+\cdots+u+1)$ $\cdot(u^{56}+u^{55}+\cdots+12u+7)$
c_6	$((u^{14}+u^{13}+\cdots+u-1)^4)(u^{17}+u^{16}+\cdots-4u^2+1)$ $\cdot(u^{33}-6u^{32}+\cdots+2u+4)$
c_7	$((u^{14}+3u^{13}+\cdots+5u+1)^4)(u^{17}+5u^{16}+\cdots+8u+1)$ $\cdot(u^{33}+8u^{32}+\cdots+220u+16)$
c_8, c_{10}	$(u^{17}+3u^{16}+\cdots-3u-1)(u^{33}+3u^{32}+\cdots+u+1)$ $\cdot(u^{56}-17u^{55}+\cdots-491562u+37537)$
c_{12}	$((u^2-u+1)^{28})(u^{17}-3u^{16}+\cdots-3u+1)$ $\cdot(u^{33}+32u^{32}+\cdots+286720u+16384)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7	$((y^{14}+17y^{13}+\cdots-y+1)^4)(y^{17}+19y^{16}+\cdots-12y-1)$ $\cdot(y^{33}+36y^{32}+\cdots+6256y-256)$
c_2, c_6	$((y^{14}-3y^{13}+\cdots-5y+1)^4)(y^{17}-5y^{16}+\cdots+8y-1)$ $\cdot(y^{33}-8y^{32}+\cdots+220y-16)$
c_3, c_4, c_9 c_{11}	$(y^{17}+20y^{16}+\cdots+17y-1)(y^{33}+30y^{32}+\cdots+5y-1)$ $\cdot(y^{56}+51y^{55}+\cdots-4428y+49)$
c_8, c_{10}	$(y^{17}+3y^{16}+\cdots-y-1)(y^{33}+17y^{32}+\cdots+63y-1)$ $\cdot(y^{56}+27y^{55}+\cdots+24860581508y+1409026369)$
c_{12}	$((y^2+y+1)^{28})(y^{17}+y^{16}+\cdots-3y-1)$ $\cdot(y^{33}+2y^{32}+\cdots+4630511616y-268435456)$