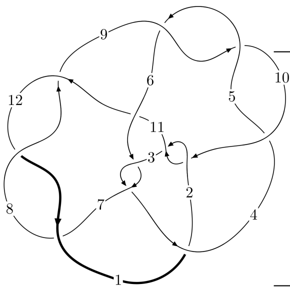
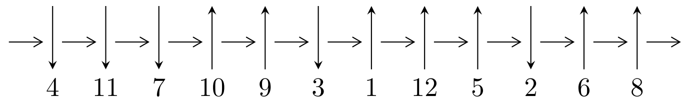
$12a_{1205}$ $(K12a_{1205})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 73u^{10} - 18u^9 + 462u^8 - 140u^7 + 1023u^6 - 266u^5 + 780u^4 + 66u^3 + 131u^2 + 119b + 230u + 144, \\
& -209u^{10} + 120u^9 + \cdots + 119a - 365,\ u^{11} + 6u^9 + 12u^7 + 2u^6 + 8u^5 + 7u^4 + 3u^3 + 5u^2 + 4u + 1\rangle \\
I_2^u = \langle & 1.25318 \times 10^{92}u^{59} + 2.44302 \times 10^{92}u^{58} + \cdots + 8.16358 \times 10^{92}b - 9.04940 \times 10^{93}, \\
& -3.40806 \times 10^{92}u^{59} - 3.96269 \times 10^{92}u^{58} + \cdots + 4.08179 \times 10^{93}a + 7.98134 \times 10^{94}, \\
& u^{60} + 2u^{59} + \cdots - 252u + 36\rangle \\
I_3^u = \langle & -au + b - u + 1,\ 3a^2 - 2au - 2a + u - 2,\ u^2 - u + 1\rangle \\
I_4^u = \langle & -au + b + 2a + 1,\ 6a^2 + 3au + 6a + u + 1,\ u^2 + 2\rangle \\
I_5^u = \langle & 3b + 5u + 4,\ 3a + u - 1,\ u^2 + u + 1\rangle
\end{aligned}$$

$$I_1^v = \langle a,\ 3b - v,\ v^2 + 3v + 3\rangle$$

* 6 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 83 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. $\boldsymbol{I_1^u = \langle 73u^{10} - 18u^9 + \cdots + 119b + 144,\ -209u^{10} + 120u^9 + \cdots + 119a - 365,\ u^{11} + 6u^9 + \cdots + 4u + 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1.75630u^{10} - 1.00840u^9 + \cdots + 7.21849u + 3.06723 \\ -0.613445u^{10} + 0.151261u^9 + \cdots - 1.93277u - 1.21008 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.815126u^{10} - 0.420168u^9 + \cdots + 3.92437u + 1.36134 \\ -0.815126u^{10} + 0.420168u^9 + \cdots - 3.92437u - 2.36134 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{8}{7}u^{10} - \frac{6}{7}u^9 + \cdots + \frac{37}{7}u + \frac{13}{7} \\ \frac{9}{7}u^{10} - \frac{5}{7}u^9 + \cdots + \frac{39}{7}u + \frac{19}{7} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1 \\ -0.815126u^{10} + 0.420168u^9 + \cdots - 3.92437u - 2.36134 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 - 1 \\ -1.04202u^{10} + 0.722689u^9 + \cdots - 4.78992u - 2.78151 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ 0.420168u^{10} - 0.226891u^9 + \cdots + 1.89916u + 0.815126 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 - 2u \\ \frac{8}{7}u^{10} - \frac{6}{7}u^9 + \cdots + \frac{23}{7}u + \frac{13}{7} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{372}{119}u^{10} - \frac{20}{119}u^9 + \frac{300}{17}u^8 + \frac{8}{17}u^7 + \frac{3596}{119}u^6 + \frac{192}{17}u^5 + \frac{1184}{119}u^4 + \frac{3088}{119}u^3 + \frac{172}{119}u^2 + \frac{520}{119}u + \frac{1350}{119}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$17(17u^{11} - 173u^{10} + \cdots + 236u - 40)$
c_2, c_3, c_6 c_{10}	$u^{11} + 2u^{10} - 2u^9 - 6u^8 + 4u^6 + 2u^5 + 5u^4 + 7u^3 + 3u^2 + 1$
c_4, c_5, c_7 c_8, c_9, c_{12}	$u^{11} + 6u^9 + 12u^7 - 2u^6 + 8u^5 - 7u^4 + 3u^3 - 5u^2 + 4u - 1$
c_{11}	$17(17u^{11} - 173u^{10} + \cdots + 1920u - 256)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$289(289y^{11} - 4463y^{10} + \cdots - 8944y - 1600)$
c_2, c_3, c_6 c_{10}	$y^{11} - 8y^{10} + \cdots - 6y - 1$
c_4, c_5, c_7 c_8, c_9, c_{12}	$y^{11} + 12y^{10} + \cdots + 6y - 1$
c_{11}	$289(289y^{11} + 875y^{10} + \cdots + 311296y - 65536)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.680975 + 0.675052I$ $a = 0.702616 - 0.178305I$ $b = 0.09896 + 1.78843I$	$-7.07216 + 7.70619I$	$-4.42118 - 7.71824I$
$u = 0.680975 - 0.675052I$ $a = 0.702616 + 0.178305I$ $b = 0.09896 - 1.78843I$	$-7.07216 - 7.70619I$	$-4.42118 + 7.71824I$
$u = 0.161381 + 1.138270I$ $a = 0.151626 - 0.748852I$ $b = -0.166833 - 0.455380I$	$-4.56283 + 4.40440I$	$-3.38740 - 7.31700I$
$u = 0.161381 - 1.138270I$ $a = 0.151626 + 0.748852I$ $b = -0.166833 + 0.455380I$	$-4.56283 - 4.40440I$	$-3.38740 + 7.31700I$
$u = -0.441939 + 0.225736I$ $a = -0.875079 + 0.513848I$ $b = -0.189711 + 0.169501I$	$0.884913 - 0.517986I$	$8.70917 + 3.40201I$
$u = -0.441939 - 0.225736I$ $a = -0.875079 - 0.513848I$ $b = -0.189711 - 0.169501I$	$0.884913 + 0.517986I$	$8.70917 - 3.40201I$
$u = -0.490964$ $a = 1.13114$ $b = -1.04783$	-4.15298	7.21490
$u = 0.14545 + 1.56334I$ $a = -0.406442 - 0.035002I$ $b = 1.119140 + 0.082033I$	$-11.62950 + 4.58145I$	$-3.17899 - 3.55621I$
$u = 0.14545 - 1.56334I$ $a = -0.406442 + 0.035002I$ $b = 1.119140 - 0.082033I$	$-11.62950 - 4.58145I$	$-3.17899 + 3.55621I$
$u = -0.30038 + 1.63421I$ $a = -0.72653 - 2.10196I$ $b = -0.74940 + 3.07893I$	$17.0539 - 15.5687I$	$-8.09374 + 6.58975I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.30038 - 1.63421I$ $a = -0.72653 + 2.10196I$ $b = -0.74940 - 3.07893I$	$17.0539 + 15.5687I$	$-8.09374 - 6.58975I$

II. $\boldsymbol{I_2^u = \langle 1.25 \times 10^{92}u^{59} + 2.44 \times 10^{92}u^{58} + \cdots + 8.16 \times 10^{92}b - 9.05 \times 10^{93},\ -3.41 \times 10^{92}u^{59} - 3.96 \times 10^{92}u^{58} + \cdots + 4.08 \times 10^{93}a + 7.98 \times 10^{94},\ u^{60} + 2u^{59} + \cdots - 252u + 36\rangle}$

(i) Arc colorings

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

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

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

$$a_2 = \begin{pmatrix} 0.0834942u^{59} + 0.0970821u^{58} + \cdots + 113.120u - 19.5535 \\ -0.153508u^{59} - 0.299258u^{58} + \cdots - 77.5361u + 11.0851 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} 0.200490u^{59} + 0.427440u^{58} + \cdots + 66.0395u - 10.3644 \\ -0.0334245u^{59} - 0.0366283u^{58} + \cdots - 43.3403u + 8.64055 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.114742u^{59} - 0.326177u^{58} + \cdots + 10.2529u - 5.95573 \\ -0.0790482u^{59} - 0.144541u^{58} + \cdots - 49.6201u + 7.70720 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.167066u^{59} + 0.390811u^{58} + \cdots + 22.6992u - 1.72388 \\ -0.0334245u^{59} - 0.0366283u^{58} + \cdots - 43.3403u + 8.64055 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0413371u^{59} + 0.0216303u^{58} + \cdots + 86.0346u - 13.9193 \\ -0.120341u^{59} - 0.219185u^{58} + \cdots - 70.0325u + 10.5469 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0796060u^{59} + 0.168470u^{58} + \cdots + 8.25556u + 4.31633 \\ -0.0126674u^{59} - 0.0693921u^{58} + \cdots + 26.9172u - 3.41367 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0484754u^{59} + 0.174481u^{58} + \cdots - 39.6371u + 10.1820 \\ -0.0492349u^{59} - 0.128310u^{58} + \cdots - 11.5918u + 1.43518 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.349952u^{59} + 0.763128u^{58} + \cdots + 53.7078u - 5.40438$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$9(3u^{30} + 14u^{29} + \cdots + 1087u - 223)^2$
c_2, c_3, c_6 c_{10}	$u^{60} + 4u^{59} + \cdots + 649u + 171$
c_4, c_5, c_7 c_8, c_9, c_{12}	$u^{60} - 2u^{59} + \cdots + 252u + 36$
c_{11}	$9(3u^{30} + 10u^{29} + \cdots + 1366u + 167)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$81(9y^{30} - 274y^{29} + \cdots - 2522245y + 49729)^2$
c_2, c_3, c_6 c_{10}	$y^{60} - 48y^{59} + \cdots - 61075y + 29241$
c_4, c_5, c_7 c_8, c_9, c_{12}	$y^{60} + 66y^{59} + \cdots + 27792y + 1296$
c_{11}	$81(9y^{30} + 218y^{29} + \cdots + 161758y + 27889)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.759750 + 0.662027I$ $a = -0.931053 + 0.172845I$ $b = -0.09008 + 1.98013I$	$-1.86631 - 2.71902I$	0
$u = -0.759750 - 0.662027I$ $a = -0.931053 - 0.172845I$ $b = -0.09008 - 1.98013I$	$-1.86631 + 2.71902I$	0
$u = -0.314512 + 0.960641I$ $a = -0.190977 + 0.499858I$ $b = 0.419438 + 0.858326I$	$-1.10026 - 2.27454I$	0
$u = -0.314512 - 0.960641I$ $a = -0.190977 - 0.499858I$ $b = 0.419438 - 0.858326I$	$-1.10026 + 2.27454I$	0
$u = -0.129337 + 0.950966I$ $a = -1.60981 - 1.06801I$ $b = 0.20747 + 1.44586I$	$-12.50500 - 0.66605I$	$-8.84093 + 0.I$
$u = -0.129337 - 0.950966I$ $a = -1.60981 + 1.06801I$ $b = 0.20747 - 1.44586I$	$-12.50500 + 0.66605I$	$-8.84093 + 0.I$
$u = -0.588192 + 0.683594I$ $a = 1.039310 - 0.418609I$ $b = -0.102741 - 0.312706I$	$-9.38994 - 6.05319I$	$-4.32641 + 5.70687I$
$u = -0.588192 - 0.683594I$ $a = 1.039310 + 0.418609I$ $b = -0.102741 + 0.312706I$	$-9.38994 + 6.05319I$	$-4.32641 - 5.70687I$
$u = 0.776674 + 0.411211I$ $a = 1.206490 + 0.140254I$ $b = 0.23920 + 1.51841I$	$-6.21939 - 2.80157I$	$-5.28737 + 3.00592I$
$u = 0.776674 - 0.411211I$ $a = 1.206490 - 0.140254I$ $b = 0.23920 - 1.51841I$	$-6.21939 + 2.80157I$	$-5.28737 - 3.00592I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.916850 + 0.719386I$ $a = \quad 0.816528 - 0.325861I$ $b = -0.10977 - 2.54265I$	$-14.6835 - 11.0154I$	0
$u = -0.916850 - 0.719386I$ $a = \quad 0.816528 + 0.325861I$ $b = -0.10977 + 2.54265I$	$-14.6835 + 11.0154I$	0
$u = \quad 0.576968 + 0.560729I$ $a = -0.802985 - 0.539725I$ $b = -0.221236 - 0.702999I$	$-4.48267 + 2.06711I$	$1.19955 - 3.78893I$
$u = \quad 0.576968 - 0.560729I$ $a = -0.802985 + 0.539725I$ $b = -0.221236 + 0.702999I$	$-4.48267 - 2.06711I$	$1.19955 + 3.78893I$
$u = -0.355589 + 0.707290I$ $a = -0.035366 + 0.978857I$ $b = \quad 0.126483 - 1.162340I$	$-6.21939 - 2.80157I$	$-5.28737 + 3.00592I$
$u = -0.355589 - 0.707290I$ $a = -0.035366 - 0.978857I$ $b = \quad 0.126483 + 1.162340I$	$-6.21939 + 2.80157I$	$-5.28737 - 3.00592I$
$u = -1.076620 + 0.557141I$ $a = \quad 1.321450 - 0.193835I$ $b = \quad 1.09050 - 2.33731I$	$-14.0759 + 4.5063I$	0
$u = -1.076620 - 0.557141I$ $a = \quad 1.321450 + 0.193835I$ $b = \quad 1.09050 + 2.33731I$	$-14.0759 - 4.5063I$	0
$u = -0.646640 + 0.296075I$ $a = \quad 0.016407 - 0.488252I$ $b = \quad 0.682960 - 1.103020I$	$-8.24661 + 1.82485I$	$-1.78640 - 0.62717I$
$u = -0.646640 - 0.296075I$ $a = \quad 0.016407 + 0.488252I$ $b = \quad 0.682960 + 1.103020I$	$-8.24661 - 1.82485I$	$-1.78640 + 0.62717I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.278410 + 1.260600I$ $a = -0.247426 - 0.743643I$ $b = 1.277450 - 0.383957I$	-4.84465	0
$u = 0.278410 - 1.260600I$ $a = -0.247426 + 0.743643I$ $b = 1.277450 + 0.383957I$	-4.84465	0
$u = 1.092800 + 0.750740I$ $a = -1.124120 - 0.436933I$ $b = -0.32876 - 3.19706I$	$-8.92368 + 3.64409I$	0
$u = 1.092800 - 0.750740I$ $a = -1.124120 + 0.436933I$ $b = -0.32876 + 3.19706I$	$-8.92368 - 3.64409I$	0
$u = 0.06050 + 1.41516I$ $a = 1.40096 + 0.56694I$ $b = -1.56146 - 0.59391I$	$-7.20542 + 0.22364I$	0
$u = 0.06050 - 1.41516I$ $a = 1.40096 - 0.56694I$ $b = -1.56146 + 0.59391I$	$-7.20542 - 0.22364I$	0
$u = -0.06398 + 1.43597I$ $a = -0.171576 - 0.010774I$ $b = 0.742412 - 0.071303I$	$-4.48267 - 2.06711I$	0
$u = -0.06398 - 1.43597I$ $a = -0.171576 + 0.010774I$ $b = 0.742412 + 0.071303I$	$-4.48267 + 2.06711I$	0
$u = 0.225772 + 0.478556I$ $a = 2.00278 + 0.98084I$ $b = -0.296782 + 0.092033I$	$-1.86631 + 2.71902I$	$-6.02392 - 8.48187I$
$u = 0.225772 - 0.478556I$ $a = 2.00278 - 0.98084I$ $b = -0.296782 - 0.092033I$	$-1.86631 - 2.71902I$	$-6.02392 + 8.48187I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.05387 + 1.52215I$ $a = 2.31103 + 0.70700I$ $b = -3.18172 - 0.73741I$	-13.6864	0
$u = -0.05387 - 1.52215I$ $a = 2.31103 - 0.70700I$ $b = -3.18172 + 0.73741I$	-13.6864	0
$u = 0.05204 + 1.52292I$ $a = 0.65459 - 2.51222I$ $b = -0.60287 + 2.55575I$	$-8.24661 + 1.82485I$	0
$u = 0.05204 - 1.52292I$ $a = 0.65459 + 2.51222I$ $b = -0.60287 - 2.55575I$	$-8.24661 - 1.82485I$	0
$u = 0.18810 + 1.51588I$ $a = -0.87884 + 2.25051I$ $b = -0.27333 - 2.47353I$	$-12.50500 + 0.66605I$	0
$u = 0.18810 - 1.51588I$ $a = -0.87884 - 2.25051I$ $b = -0.27333 + 2.47353I$	$-12.50500 - 0.66605I$	0
$u = 0.244643 + 0.402854I$ $a = -0.334643 + 1.093090I$ $b = 0.256864 - 1.075110I$	$-1.70488 + 0.85900I$	$-3.09812 + 2.75630I$
$u = 0.244643 - 0.402854I$ $a = -0.334643 - 1.093090I$ $b = 0.256864 + 1.075110I$	$-1.70488 - 0.85900I$	$-3.09812 - 2.75630I$
$u = 0.05319 + 1.56037I$ $a = -0.242202 - 0.185041I$ $b = -0.623485 + 0.111421I$	$-8.92368 + 3.64409I$	0
$u = 0.05319 - 1.56037I$ $a = -0.242202 + 0.185041I$ $b = -0.623485 - 0.111421I$	$-8.92368 - 3.64409I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.045280 + 0.430914I$ $a = 2.09252 - 1.08737I$ $b = 1.15217 + 1.56271I$	$-7.20542 + 0.22364I$	$-9.04537 + 1.25928I$
$u = 0.045280 - 0.430914I$ $a = 2.09252 + 1.08737I$ $b = 1.15217 - 1.56271I$	$-7.20542 - 0.22364I$	$-9.04537 - 1.25928I$
$u = 0.264001 + 0.331764I$ $a = -0.075640 + 0.209812I$ $b = 0.785454 + 0.369858I$	$-1.70488 - 0.85900I$	$-3.09812 - 2.75630I$
$u = 0.264001 - 0.331764I$ $a = -0.075640 - 0.209812I$ $b = 0.785454 - 0.369858I$	$-1.70488 + 0.85900I$	$-3.09812 + 2.75630I$
$u = 0.415346 + 0.011561I$ $a = -1.51548 + 1.51134I$ $b = -0.315561 + 0.009208I$	$-1.10026 + 2.27454I$	$6.39783 - 4.86989I$
$u = 0.415346 - 0.011561I$ $a = -1.51548 - 1.51134I$ $b = -0.315561 - 0.009208I$	$-1.10026 - 2.27454I$	$6.39783 + 4.86989I$
$u = -0.19401 + 1.58701I$ $a = 0.49148 + 2.16389I$ $b = 0.52046 - 2.62595I$	$-9.38994 - 6.05319I$	0
$u = -0.19401 - 1.58701I$ $a = 0.49148 - 2.16389I$ $b = 0.52046 + 2.62595I$	$-9.38994 + 6.05319I$	0
$u = -0.10187 + 1.60028I$ $a = -0.36353 - 1.96711I$ $b = 0.25135 + 2.10282I$	$-14.0759 - 4.5063I$	0
$u = -0.10187 - 1.60028I$ $a = -0.36353 + 1.96711I$ $b = 0.25135 - 2.10282I$	$-14.0759 + 4.5063I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.17637 + 1.60289I$ $a = 0.015923 + 0.384340I$ $b = -0.632206 - 0.409488I$	$-17.1000 - 8.9031I$	0
$u = -0.17637 - 1.60289I$ $a = 0.015923 - 0.384340I$ $b = -0.632206 + 0.409488I$	$-17.1000 + 8.9031I$	0
$u = 0.20940 + 1.60061I$ $a = -0.54658 + 2.10296I$ $b = -0.36822 - 2.53572I$	$-14.6835 + 11.0154I$	0
$u = 0.20940 - 1.60061I$ $a = -0.54658 - 2.10296I$ $b = -0.36822 + 2.53572I$	$-14.6835 - 11.0154I$	0
$u = -0.02241 + 1.64609I$ $a = -0.32821 + 1.68373I$ $b = 1.15247 - 1.88578I$	$18.0731 - 1.1594I$	0
$u = -0.02241 - 1.64609I$ $a = -0.32821 - 1.68373I$ $b = 1.15247 + 1.88578I$	$18.0731 + 1.1594I$	0
$u = 0.31119 + 1.69477I$ $a = 0.41080 - 2.03463I$ $b = 1.37332 + 3.18776I$	$-17.1000 + 8.9031I$	0
$u = 0.31119 - 1.69477I$ $a = 0.41080 + 2.03463I$ $b = 1.37332 - 3.18776I$	$-17.1000 - 8.9031I$	0
$u = -0.39432 + 1.69567I$ $a = -0.21517 - 1.69581I$ $b = -2.06977 + 2.35462I$	$18.0731 - 1.1594I$	0
$u = -0.39432 - 1.69567I$ $a = -0.21517 + 1.69581I$ $b = -2.06977 - 2.35462I$	$18.0731 + 1.1594I$	0

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u - 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$9(9y^4 - 30y^3 + 31y^2 - 2y + 1)$
c_2, c_{10}	$(y-1)^4$
c_3, c_4, c_5 c_6, c_9	$(y^2 + y + 1)^2$
c_7, c_8, c_{12}	$(y+2)^4$
c_{11}	$9(9y^4 + 24y^3 + 22y^2 - 8y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.500000 + 0.866025I$ $a = \ \ 1.316500 + 0.288675I$ $b = -0.09175 + 2.15048I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = \ \ 0.500000 + 0.866025I$ $a = -0.316497 + 0.288675I$ $b = -0.908248 + 0.736269I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = \ \ 0.500000 - 0.866025I$ $a = \ \ 1.316500 - 0.288675I$ $b = -0.09175 - 2.15048I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$
$u = \ \ 0.500000 - 0.866025I$ $a = -0.316497 - 0.288675I$ $b = -0.908248 - 0.736269I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4au - 8a - 4u - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$9(9y^4 - 30y^3 + 31y^2 - 2y + 1)$
c_2, c_7, c_8 c_{10}, c_{12}	$(y^2 + y + 1)^2$
c_3, c_6	$(y - 1)^4$
c_4, c_5, c_9	$(y + 2)^4$
c_{11}	$9(9y^4 + 24y^3 + 22y^2 - 8y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = -0.704124 - 0.642229I$ $b = 1.316500 + 0.288675I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 1.414210I$ $a = -0.295876 - 0.064878I$ $b = -0.316497 - 0.288675I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = -1.414210I$ $a = -0.704124 + 0.642229I$ $b = 1.316500 - 0.288675I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = -1.414210I$ $a = -0.295876 + 0.064878I$ $b = -0.316497 + 0.288675I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$

V. $I_5^u = \langle 3b+5u+4,\ 3a+u-1,\ u^2+u+1\rangle$

(i) Arc colorings

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

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

$a_5 = \begin{pmatrix} 1 \\ -u-1 \end{pmatrix}$

$a_2 = \begin{pmatrix} -\frac{1}{3}u+\frac{1}{3} \\ -\frac{5}{3}u-\frac{4}{3} \end{pmatrix}$

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

$a_{11} = \begin{pmatrix} \frac{2}{3}u+\frac{1}{3} \\ -\frac{2}{3}u-\frac{1}{3} \end{pmatrix}$

$a_3 = \begin{pmatrix} -u \\ -u-1 \end{pmatrix}$

$a_{12} = \begin{pmatrix} 0 \\ -\frac{2}{3}u-\frac{1}{3} \end{pmatrix}$

$a_4 = \begin{pmatrix} -u \\ -u-2 \end{pmatrix}$

$a_1 = \begin{pmatrix} 0 \\ -\frac{2}{3}u-\frac{1}{3} \end{pmatrix}$

$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{4}{3}u - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$9(9y^2 - 3y + 1)$
c_2, c_{10}	$(y-1)^2$
c_3, c_4, c_5 c_6, c_9	$y^2 + y + 1$
c_7, c_8, c_{12}	y^2
c_{11}	$9(3y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = \quad 0.500000 - 0.288675I$ $b = -0.50000 - 1.44338I$	$-1.64493 - 2.02988I$	$-5.33333 - 1.15470I$
$u = -0.500000 - 0.866025I$ $a = \quad 0.500000 + 0.288675I$ $b = -0.50000 + 1.44338I$	$-1.64493 + 2.02988I$	$-5.33333 + 1.15470I$

VI. $I_1^v = \langle a,\ 3b - v,\ v^2 + 3v + 3\rangle$

(i) Arc colorings

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

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

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

$$a_2 = \begin{pmatrix} 0 \\ \frac{1}{3}v \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} v \\ \frac{2}{3}v + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -2v - 3 \\ -1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{5}{3}v + 1 \\ \frac{2}{3}v + 1 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} \frac{1}{3}v \\ \frac{1}{3}v \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{5}{3}v + 3 \\ -\frac{1}{3}v \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2v + 4 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{4}{3}v - \frac{10}{3}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$9(9y^2 - 3y + 1)$
c_2, c_7, c_8 c_{10}, c_{12}	$y^2 + y + 1$
c_3, c_6	$(y-1)^2$
c_4, c_5, c_9	y^2
c_{11}	$9(3y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.50000 + 0.86603I$ $a = 0$ $b = -0.500000 + 0.288675I$	$-1.64493 + 2.02988I$	$-5.33333 + 1.15470I$
$v = -1.50000 - 0.86603I$ $a = 0$ $b = -0.500000 - 0.288675I$	$-1.64493 - 2.02988I$	$-5.33333 - 1.15470I$

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$12393(3u^2-3u+1)^2(3u^4-6u^3+u^2+2u+1)^2$ $\cdot(17u^{11}-173u^{10}+\cdots+236u-40)$ $\cdot(3u^{30}+14u^{29}+\cdots+1087u-223)^2$
c_2, c_6	$(u-1)^4(u+1)^2(u^2+u+1)^3$ $\cdot(u^{11}+2u^{10}-2u^9-6u^8+4u^6+2u^5+5u^4+7u^3+3u^2+1)$ $\cdot(u^{60}+4u^{59}+\cdots+649u+171)$
c_3, c_{10}	$(u-1)^2(u+1)^4(u^2-u+1)^3$ $\cdot(u^{11}+2u^{10}-2u^9-6u^8+4u^6+2u^5+5u^4+7u^3+3u^2+1)$ $\cdot(u^{60}+4u^{59}+\cdots+649u+171)$
c_4, c_5, c_7 c_8	$u^2(u^2+2)^2(u^2-u+1)^2(u^2+u+1)$ $\cdot(u^{11}+6u^9+12u^7-2u^6+8u^5-7u^4+3u^3-5u^2+4u-1)$ $\cdot(u^{60}-2u^{59}+\cdots+252u+36)$
c_9, c_{12}	$u^2(u^2+2)^2(u^2-u+1)(u^2+u+1)^2$ $\cdot(u^{11}+6u^9+12u^7-2u^6+8u^5-7u^4+3u^3-5u^2+4u-1)$ $\cdot(u^{60}-2u^{59}+\cdots+252u+36)$
c_{11}	$12393(3u^2+1)^2(3u^4+4u^2+4u+1)^2$ $\cdot(17u^{11}-173u^{10}+\cdots+1920u-256)$ $\cdot(3u^{30}+10u^{29}+\cdots+1366u+167)^2$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$153586449(9y^2-3y+1)^2(9y^4-30y^3+31y^2-2y+1)^2$ $\cdot(289y^{11}-4463y^{10}+\cdots-8944y-1600)$ $\cdot(9y^{30}-274y^{29}+\cdots-2522245y+49729)^2$
c_2, c_3, c_6 c_{10}	$((y-1)^6)(y^2+y+1)^3(y^{11}-8y^{10}+\cdots-6y-1)$ $\cdot(y^{60}-48y^{59}+\cdots-61075y+29241)$
c_4, c_5, c_7 c_8, c_9, c_{12}	$y^2(y+2)^4(y^2+y+1)^3(y^{11}+12y^{10}+\cdots+6y-1)$ $\cdot(y^{60}+66y^{59}+\cdots+27792y+1296)$
c_{11}	$153586449(3y+1)^4(9y^4+24y^3+22y^2-8y+1)^2$ $\cdot(289y^{11}+875y^{10}+\cdots+311296y-65536)$ $\cdot(9y^{30}+218y^{29}+\cdots+161758y+27889)^2$