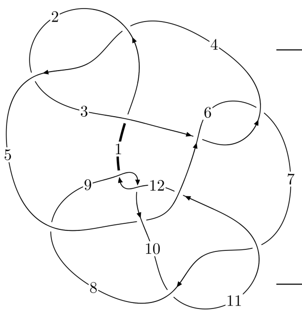
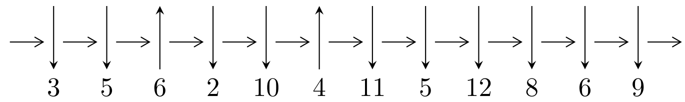
$12n_{0102}$ $(K12n_{0102})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I^u_1 = \langle & 8320485u^{18} + 10563177u^{17} + \cdots + 384762888b - 13934311, \\
& 577476311u^{18} + 1351379411u^{17} + \cdots + 615620608a - 4237296637,\ u^{19} + 2u^{18} + \cdots - 7u + 1\rangle \\
I^u_2 = \langle & 6839a^5u + 100530a^4u + \cdots - 679911a + 101996, \\
& a^6 + 5a^5u - 6a^5 - 20a^4u + 2a^4 + 16a^3u + 22a^3 + 6a^2u - 29a^2 - 8au + 7a + u,\ u^2 + 1\rangle \\
I^u_3 = \langle & b,\ 5u^2 + 4a + 3u + 11,\ u^3 + 2u - 1\rangle \\
I^u_4 = \langle & -4214u^9 - 17396u^8 + \cdots + 334809b - 381952, \\
& -40716u^9 + 776951u^8 + \cdots + 5691753a - 2589163, \\
& u^{10} - u^8 + 15u^6 - u^5 + 57u^4 + 7u^3 + 56u^2 + 12u + 17\rangle \\
I^u_5 = \langle & b,\ u^3 + a + u,\ u^4 + u^3 + 2u^2 + 2u + 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 48 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. $\boldsymbol{I_1^u = \langle 8.32\times10^{6}u^{18} + 1.06\times10^{7}u^{17} + \cdots + 3.85\times10^{7}b - 1.39\times10^{7},\ 5.77\times10^{8}u^{18} + 1.35\times10^{9}u^{17} + \cdots + 6.16\times10^{8}a - 4.24\times10^{9},\ u^{19} + 2u^{18} + \cdots - 7u + 1\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix}-0.938039u^{18} - 2.19515u^{17} + \cdots - 14.3029u + 6.88297\\-0.216250u^{18} - 0.274537u^{17} + \cdots - 5.00433u + 0.362153\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}0.628575u^{18} + 1.63591u^{17} + \cdots - 1.38123u - 0.584679\\-0.299899u^{18} - 0.718244u^{17} + \cdots + 0.505642u - 0.218705\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0.00390625u^{18} + 0.00390625u^{17} + \cdots + 1.96875u - 0.996094\\0.00781250u^{18} + 0.00781250u^{17} + \cdots + 1.93750u + 0.00781250\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-0.437270u^{18} - 1.23881u^{17} + \cdots - 4.63744u + 5.33139\\0.000159761u^{18} + 0.202746u^{17} + \cdots - 8.42258u + 0.956342\end{pmatrix}$$

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

$$a_5 = \begin{pmatrix}0.602641u^{18} + 1.62088u^{17} + \cdots - 3.67950u - 0.116155\\-0.324143u^{18} - 0.736442u^{17} + \cdots - 1.50878u + 0.212974\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-1.35943u^{18} - 3.14988u^{17} + \cdots - 11.6390u + 6.93843\\0.201483u^{18} + 0.509159u^{17} + \cdots - 3.35421u + 0.130337\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.00781250u^{18} - 0.00781250u^{17} + \cdots - 1.93750u + 0.992188\\-0.0156250u^{18} - 0.0156250u^{17} + \cdots - 1.87500u - 0.0156250\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.00390625u^{18} + 0.00390625u^{17} + \cdots + 1.96875u + 0.00390625\\0.00781250u^{18} + 0.00781250u^{17} + \cdots + 0.937500u + 0.00781250\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{9530088851}{2462482432}u^{18} - \frac{22393935231}{2462482432}u^{17} + \cdots - \frac{7325733887}{615620608}u + \frac{3696058001}{2462482432}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{19} + 18u^{18} + \cdots + 45729u + 256$
c_2, c_4	$u^{19} - 4u^{18} + \cdots + 225u - 16$
c_3, c_6	$u^{19} + 3u^{18} + \cdots + 688u + 128$
c_5	$u^{19} - 6u^{18} + \cdots + 12u - 4$
c_7, c_9, c_{10} c_{12}	$u^{19} - 2u^{18} + \cdots - 7u - 1$
c_8, c_{11}	$u^{19} - 29u^{17} + \cdots - 320u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{19} - 46y^{18} + \cdots + 1968323393y - 65536$
c_2, c_4	$y^{19} - 18y^{18} + \cdots + 45729y - 256$
c_3, c_6	$y^{19} + 9y^{18} + \cdots + 214272y - 16384$
c_5	$y^{19} - 2y^{18} + \cdots + 152y - 16$
c_7, c_9, c_{10} c_{12}	$y^{19} + 2y^{18} + \cdots - y - 1$
c_8, c_{11}	$y^{19} - 58y^{18} + \cdots + 106496y - 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.065994 + 0.703453I$ $a = 1.146140 - 0.182747I$ $b = -1.168000 + 0.494902I$	$2.15420 - 5.93819I$	$-10.00409 + 7.04982I$
$u = 0.065994 - 0.703453I$ $a = 1.146140 + 0.182747I$ $b = -1.168000 - 0.494902I$	$2.15420 + 5.93819I$	$-10.00409 - 7.04982I$
$u = 1.308400 + 0.398474I$ $a = 0.207847 + 1.170010I$ $b = 0.312558 + 1.138020I$	$-3.47657 - 1.31737I$	$-6.24812 - 2.66398I$
$u = 1.308400 - 0.398474I$ $a = 0.207847 - 1.170010I$ $b = 0.312558 - 1.138020I$	$-3.47657 + 1.31737I$	$-6.24812 + 2.66398I$
$u = -0.072468 + 0.615756I$ $a = -1.048370 + 0.662466I$ $b = 1.211950 - 0.244182I$	$3.66948 - 0.63571I$	$-5.45626 - 0.87908I$
$u = -0.072468 - 0.615756I$ $a = -1.048370 - 0.662466I$ $b = 1.211950 + 0.244182I$	$3.66948 + 0.63571I$	$-5.45626 + 0.87908I$
$u = 0.531110$ $a = 0.510168$ $b = -0.274813$	-0.869373	-11.1210
$u = -0.27618 + 1.56855I$ $a = 0.0759776 + 0.1041410I$ $b = 0.191656 - 0.770544I$	$7.41380 + 4.96650I$	$-10.42447 + 0.17242I$
$u = -0.27618 - 1.56855I$ $a = 0.0759776 - 0.1041410I$ $b = 0.191656 + 0.770544I$	$7.41380 - 4.96650I$	$-10.42447 - 0.17242I$
$u = 0.087202 + 0.342519I$ $a = 1.53123 + 0.07499I$ $b = -0.140322 - 0.778902I$	$-0.99829 - 1.27054I$	$-8.20061 + 4.97839I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.087202 - 0.342519I$ $a = 1.53123 - 0.07499I$ $b = -0.140322 + 0.778902I$	$-0.99829 + 1.27054I$	$-8.20061 - 4.97839I$
$u = -1.54056 + 0.78681I$ $a = -0.421033 + 1.025860I$ $b = 0.73485 + 2.99107I$	$-5.13904 + 5.65628I$	$-9.07225 - 4.94267I$
$u = -1.54056 - 0.78681I$ $a = -0.421033 - 1.025860I$ $b = 0.73485 - 2.99107I$	$-5.13904 - 5.65628I$	$-9.07225 + 4.94267I$
$u = 0.234786$ $a = 6.08809$ $b = -0.438368$	-2.17097	4.15310
$u = -1.03991 + 1.54219I$ $a = 0.810661 - 0.834761I$ $b = -1.49692 - 1.76255I$	$-12.3003 + 14.4824I$	$-6.92108 - 6.18391I$
$u = -1.03991 - 1.54219I$ $a = 0.810661 + 0.834761I$ $b = -1.49692 + 1.76255I$	$-12.3003 - 14.4824I$	$-6.92108 + 6.18391I$
$u = -1.86882$ $a = -0.500182$ $b = -3.63345$	-8.22250	-12.0580
$u = 1.01897 + 1.61412I$ $a = -0.726491 - 0.564033I$ $b = 1.02754 - 1.79037I$	$-12.01080 - 6.53502I$	$-7.12923 + 2.43738I$
$u = 1.01897 - 1.61412I$ $a = -0.726491 + 0.564033I$ $b = 1.02754 + 1.79037I$	$-12.01080 + 6.53502I$	$-7.12923 - 2.43738I$

II. $\boldsymbol{I_2^u = \langle 6839a^5u + 1.01\times 10^5a^4u + \cdots - 6.80\times 10^5a + 1.02\times 10^5,\ 5a^5u - 20a^4u + \cdots - 29a^2 + 7a,\ u^2+1\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} a \\ -0.163327a^5u - 2.40083a^4u + \cdots + 16.2375a - 2.43584 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 0.0197263a^5u - 0.856399a^4u + \cdots + 3.63150a + 0.836673 \\ -0.0806247a^5u + 0.463927a^4u + \cdots - 1.15007a + 0.616698 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.476488a^5u - 1.95505a^4u + \cdots - 5.95668a + 1.47857 \\ -1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0829652a^5u + 3.40057a^4u + \cdots - 16.6394a + 2.51647 \\ -0.546629a^5u + 2.89361a^4u + \cdots + 3.20882a - 2.34698 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 0.100351a^5u - 1.32033a^4u + \cdots + 4.78158a + 0.219975 \\ -0.0806247a^5u + 0.463927a^4u + \cdots - 1.15007a + 0.616698 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.121486a^5u + 0.333532a^4u + \cdots - 4.75610a + 1.54498 \\ -0.186540a^5u + 2.61663a^4u + \cdots - 7.68727a + 0.569914 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.113677a^5u - 2.86738a^4u + \cdots + 7.36799a + 0.753708 \\ -u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{6556}{41873}a^5u - \frac{362488}{41873}a^4u + \cdots + \frac{1586112}{41873}a - \frac{146544}{41873}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)^2$
c_2, c_6	$(u^6 + u^5 - u^4 - 2u^3 + u + 1)^2$
c_3, c_4	$(u^6 - u^5 - u^4 + 2u^3 - u + 1)^2$
c_5	$u^{12} - u^{10} + 5u^8 + 6u^4 - 3u^2 + 1$
c_7, c_9, c_{10} c_{12}	$(u^2 + 1)^6$
c_8	$u^{12} - 2u^{11} + \cdots - 192u + 64$
c_{11}	$u^{12} + 2u^{11} + \cdots + 192u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)^2$
c_2, c_3, c_4 c_6	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)^2$
c_5	$(y^6 - y^5 + 5y^4 + 6y^2 - 3y + 1)^2$
c_7, c_9, c_{10} c_{12}	$(y + 1)^{12}$
c_8, c_{11}	$y^{12} - 12y^{10} + 736y^8 - 3584y^6 + 9472y^4 - 9216y^2 + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 1.217590 + 0.251449I$ $b = -1.073950 - 0.558752I$	$3.28987 + 5.69302I$	$-2.00000 - 5.51057I$
$u = 1.000000I$ $a = -1.010760 - 0.965580I$ $b = 1.002190 + 0.295542I$	$5.18047 + 0.92430I$	$1.71672 - 0.79423I$
$u = 1.000000I$ $a = 0.318306 - 0.177934I$ $b = 1.002190 - 0.295542I$	$5.18047 - 0.92430I$	$1.71672 + 0.79423I$
$u = 1.000000I$ $a = 0.100084 - 0.103550I$ $b = -1.073950 + 0.558752I$	$3.28987 - 5.69302I$	$-2.00000 + 5.51057I$
$u = 1.000000I$ $a = 2.39185 - 1.23447I$ $b = -0.428243 + 0.664531I$	$1.39926 + 0.92430I$	$-5.71672 - 0.79423I$
$u = 1.000000I$ $a = 2.98293 - 2.76991I$ $b = -0.428243 - 0.664531I$	$1.39926 - 0.92430I$	$-5.71672 + 0.79423I$
$u = -1.000000I$ $a = 1.217590 - 0.251449I$ $b = -1.073950 + 0.558752I$	$3.28987 - 5.69302I$	$-2.00000 + 5.51057I$
$u = -1.000000I$ $a = -1.010760 + 0.965580I$ $b = 1.002190 - 0.295542I$	$5.18047 - 0.92430I$	$1.71672 + 0.79423I$
$u = -1.000000I$ $a = 0.318306 + 0.177934I$ $b = 1.002190 + 0.295542I$	$5.18047 + 0.92430I$	$1.71672 - 0.79423I$
$u = -1.000000I$ $a = 0.100084 + 0.103550I$ $b = -1.073950 - 0.558752I$	$3.28987 + 5.69302I$	$-2.00000 - 5.51057I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad - 1.000000I$ $a = \quad 2.39185 + 1.23447I$ $b = -0.428243 - 0.664531I$	$1.39926 - 0.92430I$	$-5.71672 + 0.79423I$
$u = \quad - 1.000000I$ $a = \quad 2.98293 + 2.76991I$ $b = -0.428243 + 0.664531I$	$1.39926 + 0.92430I$	$-5.71672 - 0.79423I$

III. $I_3^u = \langle b,\ 5u^2 + 4a + 3u + 11,\ u^3 + 2u - 1\rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} -\frac{5}{4}u^2 - \frac{3}{4}u - \frac{11}{4} \\ 0 \end{pmatrix}$$

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

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

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

$$a_3 = \begin{pmatrix} -\frac{5}{4}u^2 - \frac{3}{4}u - \frac{11}{4} \\ 0 \end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix} -\frac{9}{4}u^2 + \frac{1}{4}u - \frac{15}{4} \\ u^2 - 2u + 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^2 + u \\ -u^2 - u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{197}{16}u^2 - \frac{175}{16}u - \frac{327}{16}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.22670 + 1.46771I$ $a = \ 0.048505 - 0.268962I$ $b = \ 0$	$7.79580 + 5.13794I$	$7.93256 - 7.85966I$
$u = -0.22670 - 1.46771I$ $a = \ 0.048505 + 0.268962I$ $b = \ 0$	$7.79580 - 5.13794I$	$7.93256 + 7.85966I$
$u = \ 0.453398$ $a = -3.34701$ $b = \ 0$	-2.43213	-27.9280

IV. $I^u_4 = \langle -4214u^9 - 17396u^8 + \cdots + 334809b - 381952,\ -4.07 \times 10^4 u^9 + 7.77 \times 10^5 u^8 + \cdots + 5.69 \times 10^6 a - 2.59 \times 10^6,\ u^{10} - u^8 + \cdots + 12u + 17\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.00715351u^9 - 0.136505u^8 + \cdots + 1.33232u + 0.454897 \\ 0.0125863u^9 + 0.0519580u^8 + \cdots + 1.85250u + 1.14081 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.183014u^9 + 0.127688u^8 + \cdots + 6.04964u + 1.97611 \\ -0.00301366u^9 - 0.0874290u^8 + \cdots - 0.484378u - 1.18772 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.0565798u^9 - 0.530953u^8 + \cdots - 5.14995u - 5.23480 \\ -0.0776054u^9 + 0.0934921u^8 + \cdots + 2.90428u + 1.74761 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.133636u^9 - 0.00226696u^8 + \cdots + 2.38641u + 1.94118 \\ -0.00869750u^9 + 0.0172516u^8 + \cdots + 0.862728u + 0.935922 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.284349u^9 + 0.119606u^8 + \cdots + 7.81263u + 1.90279 \\ 0.00568384u^9 - 0.104681u^8 + \cdots - 0.347105u - 1.12365 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0989925u^9 - 0.173287u^8 + \cdots - 1.41442u - 0.0443807 \\ 0.0247395u^9 + 0.0992805u^8 + \cdots + 2.43717u + 1.73927 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.0853740u^9 - 0.0724174u^8 + \cdots + 0.169028u + 1.39848 \\ 0.0912341u^9 + 0.0937609u^8 + \cdots + 2.48940u + 1.62958 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.459120u^9 + 0.0493266u^8 + \cdots + 1.16340u + 1.54656 \\ 0.137523u^9 + 0.0788688u^8 + \cdots + 3.87382u - 0.231311 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{271}{111603}u^9 + \frac{61396}{111603}u^8 - \frac{14536}{111603}u^7 - \frac{39718}{37201}u^6 + \frac{31511}{111603}u^5 + \frac{350336}{37201}u^4 - \frac{88809}{37201}u^3 + \frac{2474827}{111603}u^2 - \frac{22387}{37201}u + \frac{443273}{111603}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^5+11u^4+37u^3+30u^2-12u+1)^2$
c_2, c_4	$(u^5-3u^4-u^3+6u^2+1)^2$
c_3, c_6	$(u^5+u^4+8u^3+u^2-4u+4)^2$
c_5	$(u^5+2u^4+2u^3+u+1)^2$
c_7, c_9, c_{10} c_{12}	$u^{10}-u^8+15u^6+u^5+57u^4-7u^3+56u^2-12u+17$
c_8, c_{11}	$u^{10}-7u^8+\cdots-8036u+5191$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^5 - 47y^4 + 685y^3 - 1810y^2 + 84y - 1)^2$
c_2, c_4	$(y^5 - 11y^4 + 37y^3 - 30y^2 - 12y - 1)^2$
c_3, c_6	$(y^5 + 15y^4 + 54y^3 - 73y^2 + 8y - 16)^2$
c_5	$(y^5 + 6y^3 + y - 1)^2$
c_7, c_9, c_{10} c_{12}	$y^{10} - 2y^9 + \cdots + 1760y + 289$
c_8, c_{11}	$y^{10} - 14y^9 + \cdots - 17796004y + 26946481$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.223424 + 1.072270I$ $a = 2.57903 + 2.09848I$ $b = -1.04912$	0.737094	$-8.34961 + 0.I$
$u = 0.223424 - 1.072270I$ $a = 2.57903 - 2.09848I$ $b = -1.04912$	0.737094	$-8.34961 + 0.I$
$u = -0.005641 + 1.186120I$ $a = 0.249711 + 0.592601I$ $b = 0.465884 - 0.485496I$	$3.34738 - 1.37362I$	$-3.54626 + 4.59823I$
$u = -0.005641 - 1.186120I$ $a = 0.249711 - 0.592601I$ $b = 0.465884 + 0.485496I$	$3.34738 + 1.37362I$	$-3.54626 - 4.59823I$
$u = -0.232935 + 0.614344I$ $a = 1.68101 + 1.49249I$ $b = 0.465884 + 0.485496I$	$3.34738 + 1.37362I$	$-3.54626 - 4.59823I$
$u = -0.232935 - 0.614344I$ $a = 1.68101 - 1.49249I$ $b = 0.465884 - 0.485496I$	$3.34738 - 1.37362I$	$-3.54626 + 4.59823I$
$u = 1.84404 + 1.19233I$ $a = 0.416371 + 0.684418I$ $b = -0.44133 + 2.86818I$	$-14.4080 - 4.0569I$	$-8.27894 + 1.95729I$
$u = 1.84404 - 1.19233I$ $a = 0.416371 - 0.684418I$ $b = -0.44133 - 2.86818I$	$-14.4080 + 4.0569I$	$-8.27894 - 1.95729I$
$u = -1.82889 + 1.22222I$ $a = -0.484947 + 0.533445I$ $b = -0.44133 + 2.86818I$	$-14.4080 - 4.0569I$	$-8.27894 + 1.95729I$
$u = -1.82889 - 1.22222I$ $a = -0.484947 - 0.533445I$ $b = -0.44133 - 2.86818I$	$-14.4080 + 4.0569I$	$-8.27894 - 1.95729I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^3 - 4u - 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.621744 + 0.440597I$ $a = 0.500000 - 0.866025I$ $b = 0$	$1.64493 + 2.02988I$	$-7.00000 - 3.46410I$
$u = -0.621744 - 0.440597I$ $a = 0.500000 + 0.866025I$ $b = 0$	$1.64493 - 2.02988I$	$-7.00000 + 3.46410I$
$u = 0.121744 + 1.306620I$ $a = 0.500000 + 0.866025I$ $b = 0$	$1.64493 - 2.02988I$	$-7.00000 + 3.46410I$
$u = 0.121744 - 1.306620I$ $a = 0.500000 - 0.866025I$ $b = 0$	$1.64493 + 2.02988I$	$-7.00000 - 3.46410I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^7(u^5+11u^4+37u^3+30u^2-12u+1)^2$ $\cdot(u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2$ $\cdot(u^{19}+18u^{18}+\cdots+45729u+256)$
c_2	$(u-1)^7(u^5-3u^4-u^3+6u^2+1)^2(u^6+u^5-u^4-2u^3+u+1)^2$ $\cdot(u^{19}-4u^{18}+\cdots+225u-16)$
c_3	$u^7(u^5+u^4+8u^3+u^2-4u+4)^2(u^6-u^5-u^4+2u^3-u+1)^2$ $\cdot(u^{19}+3u^{18}+\cdots+688u+128)$
c_4	$(u+1)^7(u^5-3u^4-u^3+6u^2+1)^2(u^6-u^5-u^4+2u^3-u+1)^2$ $\cdot(u^{19}-4u^{18}+\cdots+225u-16)$
c_5	$(u^2+u+1)^2(u^3-3u^2+5u-2)(u^5+2u^4+2u^3+u+1)^2$ $\cdot(u^{12}-u^{10}+5u^8+6u^4-3u^2+1)(u^{19}-6u^{18}+\cdots+12u-4)$
c_6	$u^7(u^5+u^4+8u^3+u^2-4u+4)^2(u^6+u^5-u^4-2u^3+u+1)^2$ $\cdot(u^{19}+3u^{18}+\cdots+688u+128)$
c_7, c_9	$(u^2+1)^6(u^3+2u-1)(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{10}-u^8+15u^6+u^5+57u^4-7u^3+56u^2-12u+17)$ $\cdot(u^{19}-2u^{18}+\cdots-7u-1)$
c_8	$(u^3+2u+1)(u^4-u^3+2u^2-2u+1)(u^{10}-7u^8+\cdots-8036u+5191)$ $\cdot(u^{12}-2u^{11}+\cdots-192u+64)(u^{19}-29u^{17}+\cdots-320u+64)$
c_{10}, c_{12}	$(u^2+1)^6(u^3+2u+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{10}-u^8+15u^6+u^5+57u^4-7u^3+56u^2-12u+17)$ $\cdot(u^{19}-2u^{18}+\cdots-7u-1)$
c_{11}	$(u^3+2u+1)(u^4-u^3+2u^2-2u+1)(u^{10}-7u^8+\cdots-8036u+5191)$ $\cdot(u^{12}+2u^{11}+\cdots+192u+64)(u^{19}-29u^{17}+\cdots-320u+64)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^7(y^5-47y^4+685y^3-1810y^2+84y-1)^2$ $\cdot(y^6+y^5+5y^4+6y^2+3y+1)^2$ $\cdot(y^{19}-46y^{18}+\cdots+1968323393y-65536)$
c_2, c_4	$(y-1)^7(y^5-11y^4+37y^3-30y^2-12y-1)^2$ $\cdot(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot(y^{19}-18y^{18}+\cdots+45729y-256)$
c_3, c_6	$y^7(y^5+15y^4+54y^3-73y^2+8y-16)^2$ $\cdot(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot(y^{19}+9y^{18}+\cdots+214272y-16384)$
c_5	$(y^2+y+1)^2(y^3+y^2+13y-4)(y^5+6y^3+y-1)^2$ $\cdot((y^6-y^5+5y^4+6y^2-3y+1)^2)(y^{19}-2y^{18}+\cdots+152y-16)$
c_7, c_9, c_{10} c_{12}	$(y+1)^{12}(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{10}-2y^9+\cdots+1760y+289)(y^{19}+2y^{18}+\cdots-y-1)$
c_8, c_{11}	$(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{10}-14y^9+\cdots-17796004y+26946481)$ $\cdot(y^{12}-12y^{10}+736y^8-3584y^6+9472y^4-9216y^2+4096)$ $\cdot(y^{19}-58y^{18}+\cdots+106496y-4096)$