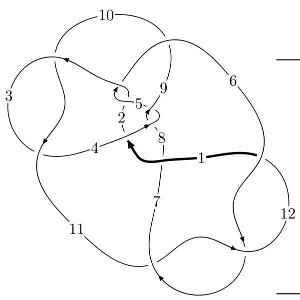
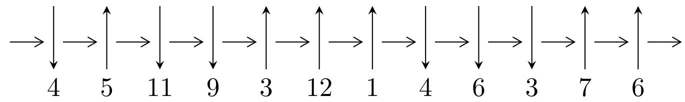
$12n_{0824}$ ($K12n_{0824}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle u^{19} - 4u^{18} + \cdots + 2b - 16,\ u^{19} - 3u^{18} + \cdots + 2a + 7,\ u^{20} - 4u^{19} + \cdots - 10u + 4\rangle \\
I_2^u &= \langle u^{11} + 2u^{10} + 5u^9 + 7u^8 + 7u^7 + 7u^6 + u^5 - 2u^4 - 3u^3 - 4u^2 + b + 1, \\
&\quad - 2u^{11} - 3u^{10} - 11u^9 - 13u^8 - 21u^7 - 20u^6 - 14u^5 - 8u^4 + 2u^3 + 6u^2 + a + 4u + 3, \\
&\quad u^{12} + u^{11} + 6u^{10} + 5u^9 + 13u^8 + 9u^7 + 10u^6 + 5u^5 - 2u^4 - 3u^3 - 4u^2 - 3u + 1\rangle \\
I_3^u &= \langle -309u^5a^3 + 1269u^5a^2 + \cdots + 3300a - 2645,\ -u^5a^2 + 5u^5a + \cdots + 20a - 22, \\
&\quad u^6 + u^5 + 3u^4 + 2u^3 + 2u^2 + u - 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 56 representations.

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[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.

$$I_1^u = \langle u^{19} - 4u^{18} + \cdots + 2b - 16,\ u^{19} - 3u^{18} + \cdots + 2a + 7,\ u^{20} - 4u^{19} + \cdots - 10u + 4 \rangle$$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{1}{2}u^{19} + \frac{3}{2}u^{18} + \cdots + \frac{9}{2}u - \frac{7}{2} \\ -\frac{1}{2}u^{19} + 2u^{18} + \cdots - \frac{17}{2}u + 8 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^4 - u^2 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{4}u^{19} - \frac{1}{2}u^{18} + \cdots - \frac{9}{4}u + 3 \\ \frac{1}{2}u^{19} - 2u^{18} + \cdots + \frac{11}{2}u - 5 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{4}u^{19} + \frac{1}{2}u^{18} + \cdots - \frac{7}{4}u + 3 \\ -\frac{1}{2}u^{19} + 2u^{18} + \cdots - \frac{3}{2}u - 1 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -\frac{1}{2}u^{19} + \frac{3}{2}u^{18} + \cdots + \frac{11}{2}u - \frac{11}{2} \\ -\frac{1}{2}u^{19} + 2u^{18} + \cdots - \frac{19}{2}u + 10 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{3}{4}u^{19} + \frac{5}{2}u^{18} + \cdots - \frac{21}{4}u + 3 \\ \frac{1}{2}u^{19} - 2u^{18} + \cdots + \frac{7}{2}u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{4}u^{19} + \frac{1}{2}u^{18} + \cdots - 2u^2 + \frac{1}{4}u \\ \frac{1}{2}u^{19} - u^{18} + \cdots + \frac{3}{2}u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -7u^{19} + 18u^{18} - 80u^{17} + 154u^{16} - 358u^{15} + 536u^{14} - 813u^{13} + 973u^{12} - 1035u^{11} + 1062u^{10} - 910u^9 + 941u^8 - 875u^7 + 831u^6 - 754u^5 + 461u^4 - 286u^3 + 94u^2 - 10u + 26$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} - 3u^{19} + \cdots + u + 1$
c_2, c_5	$u^{20} + 10u^{19} + \cdots + 96u + 64$
c_3, c_4, c_8 c_{10}	$u^{20} - u^{19} + \cdots + u + 1$
c_6, c_{11}, c_{12}	$u^{20} + 4u^{19} + \cdots + 10u + 4$
c_7	$u^{20} - 4u^{19} + \cdots - 702u + 180$
c_9	$u^{20} + u^{19} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20} + 37y^{19} + \cdots + 39y + 1$
c_2, c_5	$y^{20} - 18y^{19} + \cdots + 15360y + 4096$
c_3, c_4, c_8 c_{10}	$y^{20} + 5y^{19} + \cdots + 7y + 1$
c_6, c_{11}, c_{12}	$y^{20} + 16y^{19} + \cdots + 84y + 16$
c_7	$y^{20} - 16y^{19} + \cdots + 203796y + 32400$
c_9	$y^{20} + 45y^{19} + \cdots + 47y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.803867 + 0.553658I$ $a = -0.349654 - 0.706335I$ $b = 0.551090 - 0.058137I$	$4.62986 - 2.72937I$	$8.70348 + 10.27722I$
$u = -0.803867 - 0.553658I$ $a = -0.349654 + 0.706335I$ $b = 0.551090 + 0.058137I$	$4.62986 + 2.72937I$	$8.70348 - 10.27722I$
$u = 0.918506 + 0.116805I$ $a = -1.36529 + 0.79203I$ $b = 0.368555 + 0.693111I$	$12.0452 + 8.8841I$	$3.76642 - 4.75992I$
$u = 0.918506 - 0.116805I$ $a = -1.36529 - 0.79203I$ $b = 0.368555 - 0.693111I$	$12.0452 - 8.8841I$	$3.76642 + 4.75992I$
$u = 0.324780 + 1.157920I$ $a = -0.864339 + 0.054005I$ $b = 0.1230180 + 0.0513018I$	$0.778843 + 0.268408I$	$0.81841 + 2.57430I$
$u = 0.324780 - 1.157920I$ $a = -0.864339 - 0.054005I$ $b = 0.1230180 - 0.0513018I$	$0.778843 - 0.268408I$	$0.81841 - 2.57430I$
$u = 0.790212 + 0.106147I$ $a = 0.786114 - 0.120277I$ $b = -0.311017 - 0.987779I$	$3.96682 + 3.79390I$	$4.34323 - 7.18597I$
$u = 0.790212 - 0.106147I$ $a = 0.786114 + 0.120277I$ $b = -0.311017 + 0.987779I$	$3.96682 - 3.79390I$	$4.34323 + 7.18597I$
$u = 0.497474 + 1.173310I$ $a = 0.040811 + 0.371019I$ $b = 1.152440 - 0.664354I$	$8.80911 - 3.86307I$	$1.37632 + 1.51742I$
$u = 0.497474 - 1.173310I$ $a = 0.040811 - 0.371019I$ $b = 1.152440 + 0.664354I$	$8.80911 + 3.86307I$	$1.37632 - 1.51742I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.034804 + 1.372190I$ $a = -0.01189 + 1.58136I$ $b = 0.28579 - 2.05494I$	$-5.57112 - 1.57630I$	$-4.91455 + 4.16839I$
$u = -0.034804 - 1.372190I$ $a = -0.01189 - 1.58136I$ $b = 0.28579 + 2.05494I$	$-5.57112 + 1.57630I$	$-4.91455 - 4.16839I$
$u = 0.341712 + 1.335550I$ $a = 0.64325 - 1.79998I$ $b = -0.16720 + 2.35614I$	$-0.56408 + 7.88066I$	$-0.02470 - 9.49068I$
$u = 0.341712 - 1.335550I$ $a = 0.64325 + 1.79998I$ $b = -0.16720 - 2.35614I$	$-0.56408 - 7.88066I$	$-0.02470 + 9.49068I$
$u = 0.41375 + 1.36143I$ $a = -0.02752 + 2.02004I$ $b = -0.53548 - 3.06612I$	$7.4013 + 13.6532I$	$-0.15677 - 6.88804I$
$u = 0.41375 - 1.36143I$ $a = -0.02752 - 2.02004I$ $b = -0.53548 + 3.06612I$	$7.4013 - 13.6532I$	$-0.15677 + 6.88804I$
$u = -0.23877 + 1.45754I$ $a = 0.61208 - 1.29474I$ $b = -0.89507 + 1.82927I$	$-1.86609 - 6.35619I$	$-4.51758 + 8.10478I$
$u = -0.23877 - 1.45754I$ $a = 0.61208 + 1.29474I$ $b = -0.89507 - 1.82927I$	$-1.86609 + 6.35619I$	$-4.51758 - 8.10478I$
$u = -0.208998 + 0.404596I$ $a = -0.463566 + 0.573101I$ $b = -0.072115 + 0.396543I$	$-0.021058 - 0.934804I$	$-0.39426 + 7.39454I$
$u = -0.208998 - 0.404596I$ $a = -0.463566 - 0.573101I$ $b = -0.072115 - 0.396543I$	$-0.021058 + 0.934804I$	$-0.39426 - 7.39454I$

II.

$$\boldsymbol{I^u_2 = \langle u^{11}+2u^{10}+\cdots+b+1,\ -2u^{11}-3u^{10}+\cdots+a+3,\ u^{12}+u^{11}+\cdots-3u+1\rangle}$$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}2u^{11}+3u^{10}+\cdots-4u-3\\-u^{11}-2u^{10}-5u^9-7u^8-7u^7-7u^6-u^5+2u^4+3u^3+4u^2-1\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-u^4-u^2+1\\-u^6-2u^4-u^2\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-u^9-4u^7-u^6-6u^5-4u^4-2u^3-3u^2+u+3\\-u^8-u^7-3u^6-2u^5-u^4-u^3+3u^2+u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-u^{11}-u^{10}-4u^9-4u^8-4u^7-4u^6+3u^5+3u^4+4u^3+5u^2-u-3\\u^{11}+u^{10}+5u^9+5u^8+9u^7+8u^6+5u^5+2u^4-u^3-5u^2-u\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}2u^{11}+2u^{10}+\cdots-3u-3\\-u^{11}-u^{10}-4u^9-3u^8-4u^7-2u^6+2u^5+3u^4+3u^3+3u^2-u-1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^9-u^8-5u^7-4u^6-8u^5-5u^4-2u^3+u^2+4u+4\\-u^{11}-2u^{10}-6u^9-9u^8-12u^7-13u^6-7u^5-2u^4+4u^3+6u^2+3u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-u^{10}-2u^9-6u^8-9u^7-12u^6-13u^5-8u^4-2u^3+3u^2+7u+4\\-u^{11}-u^{10}-5u^9-4u^8-8u^7-6u^6-2u^5-2u^4+4u^3+2u^2+1\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= 8u^{11}+7u^{10}+39u^9+28u^8+67u^7+41u^6+35u^5+17u^4-12u^3-11u^2-9u-9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{12} - 5y^{11} + \cdots - 5y + 1$
c_2, c_5	$y^{12} - 15y^{11} + \cdots - 79y + 9$
c_3, c_4, c_8 c_{10}	$y^{12} - 9y^{11} + \cdots + 3y + 1$
c_6, c_{11}, c_{12}	$y^{12} + 11y^{11} + \cdots - 17y + 1$
c_7	$y^{12} - 9y^{11} + \cdots - 19y + 1$
c_9	$y^{12} + 3y^{11} + \cdots - 9y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.779914 + 0.263433I$ $a = -0.739356 - 0.514285I$ $b = 0.685921 - 0.270227I$	$4.49844 - 1.95126I$	$6.47342 + 1.58269I$
$u = -0.779914 - 0.263433I$ $a = -0.739356 + 0.514285I$ $b = 0.685921 + 0.270227I$	$4.49844 + 1.95126I$	$6.47342 - 1.58269I$
$u = -0.207510 + 1.165490I$ $a = 1.28081 - 1.18072I$ $b = -0.553497 + 1.171330I$	$2.05176 - 1.39702I$	$4.75145 + 0.05437I$
$u = -0.207510 - 1.165490I$ $a = 1.28081 + 1.18072I$ $b = -0.553497 - 1.171330I$	$2.05176 + 1.39702I$	$4.75145 - 0.05437I$
$u = 0.725402$ $a = 2.12667$ $b = -0.0816291$	-1.30199	3.72770
$u = 0.074423 + 1.296140I$ $a = -1.09122 + 1.86397I$ $b = 0.98699 - 2.82215I$	$-7.89835 + 1.11402I$	$-9.81262 + 0.65462I$
$u = 0.074423 - 1.296140I$ $a = -1.09122 - 1.86397I$ $b = 0.98699 + 2.82215I$	$-7.89835 - 1.11402I$	$-9.81262 - 0.65462I$
$u = 0.298860 + 1.278450I$ $a = 0.58549 - 1.60488I$ $b = -0.90103 + 2.69883I$	$-5.28054 + 3.69650I$	$-1.82268 - 3.88848I$
$u = 0.298860 - 1.278450I$ $a = 0.58549 + 1.60488I$ $b = -0.90103 - 2.69883I$	$-5.28054 - 3.69650I$	$-1.82268 + 3.88848I$
$u = -0.36930 + 1.39020I$ $a = 0.050962 - 1.233380I$ $b = -0.31739 + 1.65322I$	$-0.69950 - 6.22445I$	$1.48925 + 7.33691I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.36930 - 1.39020I$ $a = \quad 0.050962 + 1.233380I$ $b = -0.31739 - 1.65322I$	$-0.69950 + 6.22445I$	$1.48925 - 7.33691I$
$u = \quad 0.241471$ $a = -4.30005$ $b = -0.720367$	-3.78082	-11.8850

III. $\boldsymbol{I^u_3 = \langle -309u^5a^3 + 1269u^5a^2 + \cdots + 3300a - 2645,\ -u^5a^2 + 5u^5a + \cdots + 20a - 22,\ u^6 + u^5 + 3u^4 + 2u^3 + 2u^2 + u - 1\rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} a \\ 0.121797a^3u^5 - 0.500197a^2u^5 + \cdots - 1.30075a + 1.04257 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^5 + u^4 + 2u^3 + u^2 + u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.164762a^3u^5 + 0.0555775a^2u^5 + \cdots - 1.46788a + 3.80922 \\ -0.338195a^3u^5 + 0.146630a^2u^5 + \cdots + 1.05952a - 0.137170 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0429641a^3u^5 + 0.555775a^2u^5 + \cdots - 0.167127a + 1.76665 \\ 0.272369a^3u^5 - 0.547103a^2u^5 + \cdots + 0.214032a - 0.430430 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 0.610564a^3u^5 - 0.693733a^2u^5 + \cdots + 0.154513a - 0.293260 \\ -0.488766a^3u^5 + 0.193536a^2u^5 + \cdots - 0.455262a + 1.33583 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.00827749a^3u^5 + 0.296807a^2u^5 + \cdots - 0.118644a + 1.19196 \\ 0.144265a^3u^5 - 0.368940a^2u^5 + \cdots - 1.35081a + 1.45842 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.140323a^3u^5 - 0.357115a^2u^5 + \cdots - 0.864013a + 2.53212 \\ -0.00827749a^3u^5 + 0.296807a^2u^5 + \cdots - 0.118644a + 1.19196 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^4 + 4u^3 + 8u^2 + 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 5u^{23} + \cdots + 3370u - 89$
c_2, c_5	$(u^2 - u - 1)^{12}$
c_3, c_4, c_8 c_{10}	$u^{24} - u^{23} + \cdots - 64u - 31$
c_6, c_{11}, c_{12}	$(u^6 - u^5 + 3u^4 - 2u^3 + 2u^2 - u - 1)^4$
c_7	$(u^6 + u^5 - 3u^4 - 2u^3 + 2u^2 - u - 1)^4$
c_9	$u^{24} + u^{23} + \cdots + 244u - 509$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} + 7y^{23} + \cdots - 10179964y + 7921$
c_2, c_5	$(y^2 - 3y + 1)^{12}$
c_3, c_4, c_8 c_{10}	$y^{24} - 5y^{23} + \cdots + 120y + 961$
c_6, c_{11}, c_{12}	$(y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1)^4$
c_7	$(y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1)^4$
c_9	$y^{24} + 19y^{23} + \cdots - 1812532y + 259081$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.873214$ $a = -0.659674 + 0.470538I$ $b = 0.115030 + 0.358787I$	3.71224	4.26950
$u = -0.873214$ $a = -0.659674 - 0.470538I$ $b = 0.115030 - 0.358787I$	3.71224	4.26950
$u = -0.873214$ $a = 1.72705 + 0.77873I$ $b = -0.301154 + 0.593781I$	11.6079	4.26950
$u = -0.873214$ $a = 1.72705 - 0.77873I$ $b = -0.301154 - 0.593781I$	11.6079	4.26950
$u = 0.138835 + 1.234450I$ $a = -0.715076 - 0.696779I$ $b = -0.303312 + 0.803256I$	$0.98760 + 1.97241I$	$-3.42428 - 3.68478I$
$u = 0.138835 + 1.234450I$ $a = 1.46538 - 0.91785I$ $b = -1.27213 + 1.88327I$	$-6.90809 + 1.97241I$	$-3.42428 - 3.68478I$
$u = 0.138835 + 1.234450I$ $a = -0.40722 + 2.05651I$ $b = 0.52582 - 3.23377I$	$-6.90809 + 1.97241I$	$-3.42428 - 3.68478I$
$u = 0.138835 + 1.234450I$ $a = -2.05522 - 2.28427I$ $b = 2.25718 + 2.73240I$	$0.98760 + 1.97241I$	$-3.42428 - 3.68478I$
$u = 0.138835 - 1.234450I$ $a = -0.715076 + 0.696779I$ $b = -0.303312 - 0.803256I$	$0.98760 - 1.97241I$	$-3.42428 + 3.68478I$
$u = 0.138835 - 1.234450I$ $a = 1.46538 + 0.91785I$ $b = -1.27213 - 1.88327I$	$-6.90809 - 1.97241I$	$-3.42428 + 3.68478I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.138835 - 1.234450I$ $a = -0.40722 - 2.05651I$ $b = 0.52582 + 3.23377I$	$-6.90809 - 1.97241I$	$-3.42428 + 3.68478I$
$u = 0.138835 - 1.234450I$ $a = -2.05522 + 2.28427I$ $b = 2.25718 - 2.73240I$	$0.98760 - 1.97241I$	$-3.42428 + 3.68478I$
$u = -0.408802 + 1.276380I$ $a = -0.236388 - 0.995320I$ $b = -0.07505 + 1.70186I$	$-0.25226 - 4.59213I$	$0.58114 + 3.20482I$
$u = -0.408802 + 1.276380I$ $a = 0.271082 + 0.518597I$ $b = -1.47317 - 1.04109I$	$7.64342 - 4.59213I$	$0.58114 + 3.20482I$
$u = -0.408802 + 1.276380I$ $a = 0.0568064 + 0.0049770I$ $b = 0.540176 - 0.066558I$	$-0.25226 - 4.59213I$	$0.58114 + 3.20482I$
$u = -0.408802 + 1.276380I$ $a = 0.19907 + 2.07416I$ $b = 0.25546 - 3.24019I$	$7.64342 - 4.59213I$	$0.58114 + 3.20482I$
$u = -0.408802 - 1.276380I$ $a = -0.236388 + 0.995320I$ $b = -0.07505 - 1.70186I$	$-0.25226 + 4.59213I$	$0.58114 - 3.20482I$
$u = -0.408802 - 1.276380I$ $a = 0.271082 - 0.518597I$ $b = -1.47317 + 1.04109I$	$7.64342 + 4.59213I$	$0.58114 - 3.20482I$
$u = -0.408802 - 1.276380I$ $a = 0.0568064 - 0.0049770I$ $b = 0.540176 + 0.066558I$	$-0.25226 + 4.59213I$	$0.58114 - 3.20482I$
$u = -0.408802 - 1.276380I$ $a = 0.19907 - 2.07416I$ $b = 0.25546 + 3.24019I$	$7.64342 + 4.59213I$	$0.58114 - 3.20482I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.413150$ $a = 1.61499$ $b = 0.893703$	-3.20899	5.41680
$u = 0.413150$ $a = 2.19113 + 1.72840I$ $b = -1.244020 + 0.295025I$	4.68669	5.41680
$u = 0.413150$ $a = 2.19113 - 1.72840I$ $b = -1.244020 - 0.295025I$	4.68669	5.41680
$u = 0.413150$ $a = -3.28887$ $b = 0.0566461$	-3.20899	5.41680

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{12}+3u^{11}+\cdots-3u-1)(u^{20}-3u^{19}+\cdots+u+1)$ $\cdot(u^{24}-5u^{23}+\cdots+3370u-89)$
c_2	$((u^2-u-1)^{12})(u^{12}+3u^{11}+\cdots-7u+3)(u^{20}+10u^{19}+\cdots+96u+64)$
c_3, c_8	$(u^{12}+u^{11}-4u^{10}-4u^9+3u^8+4u^7+4u^6+u^5-3u^4-2u^3-2u^2-u-1)$ $\cdot(u^{20}-u^{19}+\cdots+u+1)(u^{24}-u^{23}+\cdots-64u-31)$
c_4, c_{10}	$(u^{12}-u^{11}-4u^{10}+4u^9+3u^8-4u^7+4u^6-u^5-3u^4+2u^3-2u^2+u-1)$ $\cdot(u^{20}-u^{19}+\cdots+u+1)(u^{24}-u^{23}+\cdots-64u-31)$
c_5	$((u^2-u-1)^{12})(u^{12}-3u^{11}+\cdots+7u+3)(u^{20}+10u^{19}+\cdots+96u+64)$
c_6	$((u^6-u^5+3u^4-2u^3+2u^2-u-1)^4)(u^{12}+u^{11}+\cdots-3u+1)$ $\cdot(u^{20}+4u^{19}+\cdots+10u+4)$
c_7	$((u^6+u^5-3u^4-2u^3+2u^2-u-1)^4)(u^{12}-u^{11}+\cdots-5u+1)$ $\cdot(u^{20}-4u^{19}+\cdots-702u+180)$
c_9	$(u^{12}+u^{11}+2u^{10}+2u^9+3u^8-u^7-4u^6-4u^5-3u^4+4u^3+4u^2-u-1)$ $\cdot(u^{20}+u^{19}+\cdots+u+1)(u^{24}+u^{23}+\cdots+244u-509)$
c_{11}, c_{12}	$((u^6-u^5+3u^4-2u^3+2u^2-u-1)^4)(u^{12}-u^{11}+\cdots+3u+1)$ $\cdot(u^{20}+4u^{19}+\cdots+10u+4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{12} - 5y^{11} + \cdots - 5y + 1)(y^{20} + 37y^{19} + \cdots + 39y + 1)$ $\cdot (y^{24} + 7y^{23} + \cdots - 10179964y + 7921)$
c_2, c_5	$((y^2 - 3y + 1)^{12})(y^{12} - 15y^{11} + \cdots - 79y + 9)$ $\cdot (y^{20} - 18y^{19} + \cdots + 15360y + 4096)$
c_3, c_4, c_8 c_{10}	$(y^{12} - 9y^{11} + \cdots + 3y + 1)(y^{20} + 5y^{19} + \cdots + 7y + 1)$ $\cdot (y^{24} - 5y^{23} + \cdots + 120y + 961)$
c_6, c_{11}, c_{12}	$((y^6 + 5y^5 + \cdots - 5y + 1)^4)(y^{12} + 11y^{11} + \cdots - 17y + 1)$ $\cdot (y^{20} + 16y^{19} + \cdots + 84y + 16)$
c_7	$((y^6 - 7y^5 + \cdots - 5y + 1)^4)(y^{12} - 9y^{11} + \cdots - 19y + 1)$ $\cdot (y^{20} - 16y^{19} + \cdots + 203796y + 32400)$
c_9	$(y^{12} + 3y^{11} + \cdots - 9y + 1)(y^{20} + 45y^{19} + \cdots + 47y + 1)$ $\cdot (y^{24} + 19y^{23} + \cdots - 1812532y + 259081)$