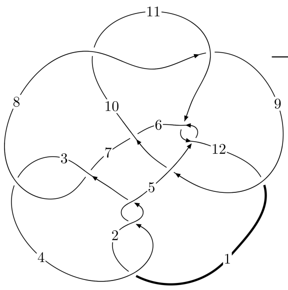
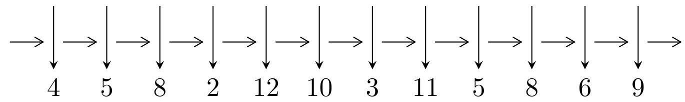
$12n_{0691}$ $(K12n_{0691})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I^u_1 = \langle &16394625770u^{16} + 7361888468u^{15} + \cdots + 1764711855595b + 67083506624,\\
&-638545424984u^{16} + 494483967338u^{15} + \cdots + 176471185595a + 990730965236,\\
&u^{17} - u^{16} + \cdots - u + 1\rangle\\
I^u_2 = \langle &u^7 - 2u^5 + 3u^3 + b - 2u - 1,\ -2u^7 - 2u^6 + 3u^5 + 4u^4 - 4u^3 - 4u^2 + a + 3u + 4,\\
&u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1\rangle\\
I^u_3 = \langle &2.09794 \times 10^{14}u^{15} - 1.54864 \times 10^{15}u^{14} + \cdots + 1.00649 \times 10^{18}b - 1.27599 \times 10^{18},\\
&3.01917 \times 10^{14}u^{15} - 2.04767 \times 10^{15}u^{14} + \cdots + 2.01298 \times 10^{18}a - 2.50594 \times 10^{18},\\
&u^{16} - u^{15} + \cdots + 640u + 256\rangle
\end{aligned}$$

$$\begin{aligned}
I^v_1 = \langle &a,\ 669v^7 + 1791v^6 + 1344v^5 - 4076v^4 - 11099v^3 + 10779v^2 + 887b + 981v - 54,\\
&v^8 + 2v^7 - 8v^5 - 13v^4 + 28v^3 - 7v^2 - 3v + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 49 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.

$$\boldsymbol{I_1^u = \langle 1.64\times10^{10}u^{16}+7.36\times10^{9}u^{15}+\cdots+1.76\times10^{11}b+6.71\times10^{10},\ -6.39\times10^{11}u^{16}+4.94\times10^{11}u^{15}+\cdots+1.76\times10^{11}a+9.91\times10^{11},\ u^{17}-u^{16}+\cdots-u+1\rangle}$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 3.61841u^{16}-2.80207u^{15}+\cdots-2.45782u-5.61412 \\ -0.0929026u^{16}-0.0417172u^{15}+\cdots-1.35646u-0.380139 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3.73975u^{16}-3.05444u^{15}+\cdots-3.90343u-6.05033 \\ 0.0499193u^{16}-0.188766u^{15}+\cdots-1.60883u-0.249100 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 3.51660u^{16}-1.48871u^{15}+\cdots+10.1705u-1.96079 \\ -0.183505u^{16}-0.0479152u^{15}+\cdots-0.736610u-1.19077 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 4.59450u^{16}-5.53078u^{15}+\cdots-7.72513u-11.9429 \\ -0.302029u^{16}-0.353052u^{15}+\cdots-4.64374u+0.978839 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.436207u^{16}-0.314873u^{15}+\cdots-2.65787u-1.88181 \\ -0.318145u^{16}+0.389552u^{15}+\cdots+0.690292u-0.0974507 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.249100u^{16}+0.199181u^{15}+\cdots+1.65271u+1.85793 \\ -0.0482596u^{16}-0.0849909u^{15}+\cdots+1.20435u+0.0738023 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.118062u^{16}-0.0746790u^{15}+\cdots+1.96758u+1.97926 \\ -0.175071u^{16}+0.0850715u^{15}+\cdots+0.615613u+0.0952905 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 3.49708u^{16}-2.54969u^{15}+\cdots-1.01221u-5.17792 \\ -0.164310u^{16}+0.0417260u^{15}+\cdots-0.940864u-0.698283 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= \frac{2048919230872}{176471185595}u^{16} - \frac{1391303845096}{176471185595}u^{15} + \cdots - \frac{3163149744064}{176471185595}u - \frac{6932356318654}{176471185595}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4 c_8, c_{10}	$u^{17} - 7u^{16} + \cdots - 5u - 1$
c_3, c_7, c_9	$u^{17} - u^{16} + \cdots - u + 1$
c_5, c_{11}	$u^{17} - u^{16} + \cdots + 3u - 1$
c_6	$u^{17} + u^{16} + \cdots - 699u + 199$
c_{12}	$u^{17} + 3u^{16} + \cdots - 263u - 83$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_8, c_{10}	$y^{17} - 13y^{16} + \cdots + 21y - 1$
c_3, c_7, c_9	$y^{17} + 15y^{16} + \cdots + 13y - 1$
c_5, c_{11}	$y^{17} + 11y^{16} + \cdots + 25y - 1$
c_6	$y^{17} + 27y^{16} + \cdots + 947097y - 39601$
c_{12}	$y^{17} + 7y^{16} + \cdots + 91413y - 6889$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.764077+0.442209I$ $a=\ \ 0.346619+0.162821I$ $b=-0.958812+0.033588I$	$-4.55533+6.93072I$	$-21.1582-11.9778I$
$u=-0.764077-0.442209I$ $a=\ \ 0.346619-0.162821I$ $b=-0.958812-0.033588I$	$-4.55533-6.93072I$	$-21.1582+11.9778I$
$u=\ \ 0.791671$ $a=\ \ 0.322502$ $b=-1.02671$	-8.70952	-30.7710
$u=-0.753921+0.115715I$ $a=\ \ 1.18926-1.58502I$ $b=\ \ 1.125680-0.771688I$	$-0.77832-2.01331I$	$-15.1488+1.3786I$
$u=-0.753921-0.115715I$ $a=\ \ 1.18926+1.58502I$ $b=\ \ 1.125680+0.771688I$	$-0.77832+2.01331I$	$-15.1488-1.3786I$
$u=\ \ 0.502094+0.490826I$ $a=\ \ 1.152440+0.058194I$ $b=-0.008463+0.987921I$	$2.49540-2.02523I$	$-6.20824+3.33819I$
$u=\ \ 0.502094-0.490826I$ $a=\ \ 1.152440-0.058194I$ $b=-0.008463-0.987921I$	$2.49540+2.02523I$	$-6.20824-3.33819I$
$u=\ \ 0.291694+0.477697I$ $a=\ \ 7.34853+5.73057I$ $b=-1.56713+1.11619I$	$-2.45442+0.76114I$	$-1.7282+15.9915I$
$u=\ \ 0.291694-0.477697I$ $a=\ \ 7.34853-5.73057I$ $b=-1.56713-1.11619I$	$-2.45442-0.76114I$	$-1.7282-15.9915I$
$u=-0.439135$ $a=\ \ 0.949461$ $b=\ \ 0.384048$	-0.644803	-15.2830

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.432752$ $a = -6.06938$ $b = -0.248275$	-2.91990	-47.5300
$u = 0.78485 + 1.87131I$ $a = 0.345543 - 0.823882I$ $b = 0.13775 + 2.40985I$	$11.20130 - 3.50827I$	$-11.32341 + 1.79574I$
$u = 0.78485 - 1.87131I$ $a = 0.345543 + 0.823882I$ $b = 0.13775 - 2.40985I$	$11.20130 + 3.50827I$	$-11.32341 - 1.79574I$
$u = -0.93651 + 1.91501I$ $a = 0.272274 + 0.835217I$ $b = 0.86840 - 2.32205I$	$6.80306 + 8.74093I$	$-14.7558 - 4.0661I$
$u = -0.93651 - 1.91501I$ $a = 0.272274 - 0.835217I$ $b = 0.86840 + 2.32205I$	$6.80306 - 8.74093I$	$-14.7558 + 4.0661I$
$u = 0.98322 + 2.02620I$ $a = 0.244045 - 0.883210I$ $b = 1.34803 + 2.71046I$	$10.6972 - 14.1953I$	$-12.00000 + 6.60789I$
$u = 0.98322 - 2.02620I$ $a = 0.244045 + 0.883210I$ $b = 1.34803 - 2.71046I$	$10.6972 + 14.1953I$	$-12.00000 - 6.60789I$

II. $I_2^u = \langle u^7 - 2u^5 + 3u^3 + b - 2u - 1,\ -2u^7 - 2u^6 + \cdots + a + 4,\ u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2u^7 + 2u^6 - 3u^5 - 4u^4 + 4u^3 + 4u^2 - 3u - 4 \\ -u^7 + 2u^5 - 3u^3 + 2u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2u^7 + 2u^6 - 3u^5 - 4u^4 + 4u^3 + 4u^2 - 3u - 5 \\ -u^7 + 2u^5 - 3u^3 - u^2 + 2u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2u^7 + 2u^6 - 4u^5 - 4u^4 + 5u^3 + 4u^2 - 4u - 1 \\ -u^7 + u^5 - u^3 + 2u^2 - 1 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^6 - u^4 + 2u^2 - 1 \\ -u^7 - u^6 + 2u^5 + u^4 - 2u^3 - 2u^2 + 2u + 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 2u^7 + 2u^6 - 3u^5 - 4u^4 + 4u^3 + 4u^2 - 3u - 4 \\ -u^7 + 2u^5 - 3u^3 + 2u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^7 - 4u^6 + 2u^5 + 5u^4 - 3u^3 - 5u^2 + 5u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1$
c_3	$u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1$
c_4	$u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1$
c_5	$u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1$
c_6	$u^8 - 2u^7 - u^6 + 5u^5 + 4u^4 - 17u^3 + 17u^2 - 7u + 1$
c_7	$u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1$
c_8	$(u-1)^8$
c_9	u^8
c_{10}	$(u+1)^8$
c_{11}	$u^8 - 3u^7 + 7u^6 - 10u^5 + 11u^4 - 10u^3 + 6u^2 - 4u + 1$
c_{12}	$u^8 + 3u^7 + 6u^6 + 7u^5 + 13u^4 + 11u^3 + 4u^2 + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_3, c_7	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_5, c_{11}	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_6	$y^8 - 6y^7 + 29y^6 - 67y^5 + 126y^4 - 85y^3 + 59y^2 - 15y + 1$
c_8, c_{10}	$(y-1)^8$
c_9	y^8
c_{12}	$y^8 + 3y^7 + 20y^6 + 49y^5 + 47y^4 - 47y^3 - 24y^2 - y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.570868 + 0.730671I$ $a = 1.72219 - 2.56817I$ $b = -1.50065 - 0.90255I$	$-2.68559 - 1.13123I$	$-18.1377 + 5.3065I$
$u = -0.570868 - 0.730671I$ $a = 1.72219 + 2.56817I$ $b = -1.50065 + 0.90255I$	$-2.68559 + 1.13123I$	$-18.1377 - 5.3065I$
$u = 0.855237 + 0.665892I$ $a = -0.658590 - 0.551963I$ $b = 1.43900 - 0.90910I$	$0.51448 - 2.57849I$	$-10.11893 + 3.45077I$
$u = 0.855237 - 0.665892I$ $a = -0.658590 + 0.551963I$ $b = 1.43900 + 0.90910I$	$0.51448 + 2.57849I$	$-10.11893 - 3.45077I$
$u = 1.09818$ $a = -0.421763$ $b = 0.491355$	-8.14766	-12.9880
$u = -1.031810 + 0.655470I$ $a = -0.420504 - 0.057447I$ $b = 0.655281 + 0.532312I$	$-4.02461 + 6.44354I$	$-10.82984 - 2.68172I$
$u = -1.031810 - 0.655470I$ $a = -0.420504 + 0.057447I$ $b = 0.655281 - 0.532312I$	$-4.02461 - 6.44354I$	$-10.82984 + 2.68172I$
$u = -0.603304$ $a = -1.86442$ $b = 0.321397$	-2.48997	-13.8390

III. $I_3^u =$
$\langle 2.10\times10^{14}u^{15}-1.55\times10^{15}u^{14}+\cdots+1.01\times10^{18}b-1.28\times10^{18},\ 3.02\times10^{14}u^{15}-2.05\times10^{15}u^{14}+\cdots+2.01\times10^{18}a-2.51\times10^{18},\ u^{16}-u^{15}+\cdots+640u+256\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.000149985u^{15}+0.00101723u^{14}+\cdots+0.522231u+1.24489\\-0.000208441u^{15}+0.00153866u^{14}+\cdots+0.527819u+1.26776\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.000149985u^{15}-0.00101723u^{14}+\cdots-0.522231u-0.244888\\-0.000391498u^{15}+0.00253027u^{14}+\cdots+1.56110u+1.71179\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.0000210778u^{15}-0.00137312u^{14}+\cdots-1.23583u-0.524902\\0.000823010u^{15}-0.00190398u^{14}+\cdots-1.08393u-1.43592\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.000987334u^{15}+0.000332252u^{14}+\cdots-1.64360u-0.285638\\-0.00263050u^{15}+0.00407270u^{14}+\cdots-2.52850u+0.754844\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.000548337u^{15}-0.000148181u^{14}+\cdots-1.41913u-0.208839\\0.00209134u^{15}-0.00192142u^{14}+\cdots+1.92702u+0.216705\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.000318911u^{15}+0.000923900u^{14}+\cdots+0.0782544u+0.170443\\0.0000474371u^{15}+0.00190210u^{14}+\cdots+1.03533u-0.116481\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.00154300u^{15}+0.00206961u^{14}+\cdots-0.507891u-0.00786525\\0.00175647u^{15}+0.00275194u^{14}+\cdots+1.98501u+0.0818943\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.000675440u^{15}+0.000547485u^{14}+\cdots-1.09374u+0.615472\\0.00211859u^{15}-0.000320222u^{14}+\cdots+3.48674u+2.29159\end{pmatrix}$$

(ii) Obstruction class $=-1$

(iii) Cusp Shapes $=$
$\frac{4129940980039711}{1006491371550221696}u^{15}-\frac{3800282985571637}{1006491371550221696}u^{14}+\cdots+\frac{453043593399533900}{7863213840236107}u-\frac{735413524873663340}{7863213840236107}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4 c_8, c_{10}	$u^{16} - 3u^{15} + \cdots - 8u + 1$
c_3, c_7, c_9	$u^{16} - u^{15} + \cdots + 640u + 256$
c_5, c_{11}	$(u^8 - u^7 + 3u^6 - 2u^5 + 3u^4 - 2u^3 - 1)^2$
c_6	$u^{16} + 3u^{15} + \cdots + 2169u + 361$
c_{12}	$u^{16} - 4u^{15} + \cdots - 189u + 297$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_8, c_{10}	$y^{16} + 9y^{15} + \cdots + 4y + 1$
c_3, c_7, c_9	$y^{16} + 33y^{15} + \cdots + 606208y + 65536$
c_5, c_{11}	$(y^8 + 5y^7 + 11y^6 + 10y^5 - y^4 - 10y^3 - 6y^2 + 1)^2$
c_6	$y^{16} + 31y^{15} + \cdots - 741503y + 130321$
c_{12}	$y^{16} + 32y^{15} + \cdots + 78327y + 88209$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.928106+0.575657I$ $a=\ \ 0.600905+0.372711I$ $b=\ \ 0.918546+0.300867I$	-0.290648	$-13.26997+0.I$
$u=-0.928106-0.575657I$ $a=\ \ 0.600905-0.372711I$ $b=\ \ 0.918546-0.300867I$	-0.290648	$-13.26997+0.I$
$u=-0.684023+0.882805I$ $a=\ \ 0.433643-0.063937I$ $b=-0.344993-0.631679I$	$-1.15366-1.27532I$	$-10.53127+1.72199I$
$u=-0.684023-0.882805I$ $a=\ \ 0.433643+0.063937I$ $b=-0.344993+0.631679I$	$-1.15366+1.27532I$	$-10.53127-1.72199I$
$u=\ \ 0.577755+0.986475I$ $a=\ \ 0.638361-0.648733I$ $b=\ \ 0.608076-0.155053I$	$2.70026+3.63283I$	$-9.34305-4.59352I$
$u=\ \ 0.577755-0.986475I$ $a=\ \ 0.638361+0.648733I$ $b=\ \ 0.608076+0.155053I$	$2.70026-3.63283I$	$-9.34305+4.59352I$
$u=-0.153757+0.400659I$ $a=\ \ 1.128490+0.166387I$ $b=\ \ 1.123000+0.170958I$	$-1.15366-1.27532I$	$-10.53127+1.72199I$
$u=-0.153757-0.400659I$ $a=\ \ 1.128490-0.166387I$ $b=\ \ 1.123000-0.170958I$	$-1.15366+1.27532I$	$-10.53127-1.72199I$
$u=\ \ 1.61868+0.98339I$ $a=\ \ 0.385316-0.391577I$ $b=\ \ 1.65420-0.20376I$	$2.70026-3.63283I$	$-9.34305+4.59352I$
$u=\ \ 1.61868-0.98339I$ $a=\ \ 0.385316+0.391577I$ $b=\ \ 1.65420+0.20376I$	$2.70026+3.63283I$	$-9.34305-4.59352I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.05666 + 2.24811I$ $a = 0.010165 + 0.766423I$ $b = -1.22626 - 2.33561I$	$12.42750 - 4.93524I$	$-10.31351 + 3.19667I$
$u = 0.05666 - 2.24811I$ $a = 0.010165 - 0.766423I$ $b = -1.22626 + 2.33561I$	$12.42750 + 4.93524I$	$-10.31351 - 3.19667I$
$u = 0.14941 + 2.37106I$ $a = 0.044468 - 0.705707I$ $b = -0.66007 + 2.57178I$	8.53095	$-13.35437 + 0.I$
$u = 0.14941 - 2.37106I$ $a = 0.044468 + 0.705707I$ $b = -0.66007 - 2.57178I$	8.53095	$-13.35437 + 0.I$
$u = -0.13661 + 2.63887I$ $a = 0.008651 + 0.652267I$ $b = -0.57250 - 3.23168I$	$12.42750 + 4.93524I$	$-10.31351 - 3.19667I$
$u = -0.13661 - 2.63887I$ $a = 0.008651 - 0.652267I$ $b = -0.57250 + 3.23168I$	$12.42750 - 4.93524I$	$-10.31351 + 3.19667I$

IV. $I_1^v =$
$\langle a,\ 669v^7+1791v^6+\cdots+887b-54,\ v^8+2v^7-8v^5-13v^4+28v^3-7v^2-3v+1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ -0.754228v^7 - 2.01917v^6 + \cdots - 1.10598v + 0.0608794 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.754228v^7 + 2.01917v^6 + \cdots + 1.10598v - 0.0608794 \\ -0.754228v^7 - 2.01917v^6 + \cdots - 1.10598v + 0.0608794 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -1.32244v^7 - 3.19504v^6 + \cdots - 1.54904v + 1.44307 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.872604v^7 - 1.55581v^6 + \cdots - 0.0732807v + 3.76550 \\ 3.44419v^7 + 7.94701v^6 + \cdots + 1.00113v - 9.59639 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.510710v^7 - 1.51522v^6 + \cdots - 3.20180v + 0.754228 \\ -v^7 - 2v^6 + 8v^4 + 13v^3 - 28v^2 + 7v + 3 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.510710v^7 + 1.51522v^6 + \cdots + 4.20180v - 0.754228 \\ v^7 + 2v^6 - 8v^4 - 13v^3 + 28v^2 - 7v - 3 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.510710v^7 + 1.51522v^6 + \cdots + 3.20180v - 0.754228 \\ v^7 + 2v^6 - 8v^4 - 13v^3 + 28v^2 - 7v - 3 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.32244v^7 - 3.19504v^6 + \cdots - 1.54904v + 2.44307 \\ 1.32244v^7 + 3.19504v^6 + \cdots + 1.54904v - 1.44307 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{2247}{887}v^7 + \frac{4687}{887}v^6 - \frac{426}{887}v^5 - \frac{21184}{887}v^4 - \frac{35807}{887}v^3 + \frac{61378}{887}v^2 + \frac{5411}{887}v - \frac{17810}{887}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_7	y^8
c_5, c_{11}	$y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1$
c_6, c_8, c_{10}	$y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1$
c_9, c_{12}	$y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 1.230330 + 0.083902I$ $a = 0$ $b = 0.108090 - 0.747508I$	$0.51448 + 2.57849I$	$-10.11893 - 3.45077I$
$v = 1.230330 - 0.083902I$ $a = 0$ $b = 0.108090 + 0.747508I$	$0.51448 - 2.57849I$	$-10.11893 + 3.45077I$
$v = 0.370895 + 0.073482I$ $a = 0$ $b = -1.334530 - 0.318930I$	$-4.02461 - 6.44354I$	$-10.82984 + 2.68172I$
$v = 0.370895 - 0.073482I$ $a = 0$ $b = -1.334530 + 0.318930I$	$-4.02461 + 6.44354I$	$-10.82984 - 2.68172I$
$v = -0.337834$ $a = 0$ $b = -1.37100$	-8.14766	-12.9880
$v = -1.21928 + 2.03110I$ $a = 0$ $b = 1.180120 - 0.268597I$	$-2.68559 + 1.13123I$	$-18.1377 - 5.3065I$
$v = -1.21928 - 2.03110I$ $a = 0$ $b = 1.180120 + 0.268597I$	$-2.68559 - 1.13123I$	$-18.1377 + 5.3065I$
$v = -2.42604$ $a = 0$ $b = 0.463640$	-2.48997	-13.8390

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_8	$((u-1)^8)(u^8+u^7+\cdots+2u-1)(u^{16}-3u^{15}+\cdots-8u+1)$ $\cdot(u^{17}-7u^{16}+\cdots-5u-1)$
c_3	$u^8(u^8-u^7+\cdots+2u-1)(u^{16}-u^{15}+\cdots+640u+256)$ $\cdot(u^{17}-u^{16}+\cdots-u+1)$
c_4, c_{10}	$((u+1)^8)(u^8-u^7+\cdots-2u-1)(u^{16}-3u^{15}+\cdots-8u+1)$ $\cdot(u^{17}-7u^{16}+\cdots-5u-1)$
c_5, c_{11}	$(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^8-u^7+3u^6-2u^5+3u^4-2u^3-1)^2$ $\cdot(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)$ $\cdot(u^{17}-u^{16}+\cdots+3u-1)$
c_6	$(u^8-2u^7-u^6+5u^5+4u^4-17u^3+17u^2-7u+1)$ $\cdot(u^8+u^7-3u^6-2u^5+3u^4+2u-1)(u^{16}+3u^{15}+\cdots+2169u+361)$ $\cdot(u^{17}+u^{16}+\cdots-699u+199)$
c_7, c_9	$u^8(u^8+u^7+\cdots-2u-1)(u^{16}-u^{15}+\cdots+640u+256)$ $\cdot(u^{17}-u^{16}+\cdots-u+1)$
c_{12}	$(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot(u^8+3u^7+6u^6+7u^5+13u^4+11u^3+4u^2+3u+1)$ $\cdot(u^{16}-4u^{15}+\cdots-189u+297)(u^{17}+3u^{16}+\cdots-263u-83)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_8, c_{10}	$(y-1)^8(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot\,(y^{16}+9y^{15}+\cdots+4y+1)(y^{17}-13y^{16}+\cdots+21y-1)$
c_3, c_7, c_9	$y^8(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot\,(y^{16}+33y^{15}+\cdots+606208y+65536)(y^{17}+15y^{16}+\cdots+13y-1)$
c_5, c_{11}	$(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^2$ $\cdot\,(y^8+5y^7+11y^6+10y^5-y^4-10y^3-6y^2+1)^2$ $\cdot\,(y^{17}+11y^{16}+\cdots+25y-1)$
c_6	$(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot\,(y^8-6y^7+29y^6-67y^5+126y^4-85y^3+59y^2-15y+1)$ $\cdot\,(y^{16}+31y^{15}+\cdots-741503y+130321)$ $\cdot\,(y^{17}+27y^{16}+\cdots+947097y-39601)$
c_{12}	$(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot\,(y^8+3y^7+20y^6+49y^5+47y^4-47y^3-24y^2-y+1)$ $\cdot\,(y^{16}+32y^{15}+\cdots+78327y+88209)$ $\cdot\,(y^{17}+7y^{16}+\cdots+91413y-6889)$