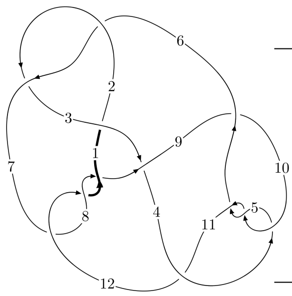
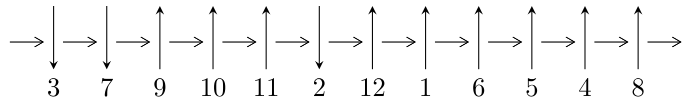
$12a_{0578}$ $(K12a_{0578})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{58} + 24u^{56} + \cdots + 4b - 4u,\ u^{56} - 23u^{54} + \cdots + 4a + 2,\ u^{61} - 2u^{60} + \cdots + 2u + 2\rangle$$
$$I_2^u = \langle 474u^7a^2 + 726u^7a + \cdots + 845a + 670,\ 2u^7a^2 + 4u^7a + \cdots + 4a + 2,\ u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1\rangle$$
$$I_3^u = \langle b - 1,\ 2u^3 - 3u^2 + 3a - 3u + 3,\ u^4 - 3u^2 + 3\rangle$$
$$I_4^u = \langle b + 1,\ -u^2 + a + u + 1,\ u^4 - u^2 - 1\rangle$$

$$I_1^v = \langle a,\ b - 1,\ v - 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 94 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. $I_1^u = \langle -u^{58}+24u^{56}+\cdots+4b-4u,\ u^{56}-23u^{54}+\cdots+4a+2,\ u^{61}-2u^{60}+\cdots+2u+2\rangle$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$

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

$$a_8 = \begin{pmatrix}-\frac{1}{4}u^{56}+\frac{23}{4}u^{54}+\cdots-\frac{3}{2}u-\frac{1}{2}\\\frac{1}{4}u^{58}-6u^{56}+\cdots+u^2+u\end{pmatrix}$$

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

$$a_1 = \begin{pmatrix}-\frac{1}{4}u^{54}+\frac{23}{4}u^{52}+\cdots+\frac{5}{2}u+\frac{1}{2}\\-\frac{1}{4}u^{54}+\frac{11}{2}u^{52}+\cdots-4u^3+u\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-\frac{1}{2}u^{60}+u^{59}+\cdots-\frac{3}{2}u-\frac{1}{2}\\-u^{60}+u^{59}+\cdots+\frac{5}{2}u+1\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}-u^{12}+5u^{10}-9u^8+6u^6-u^2+1\\u^{14}-6u^{12}+13u^{10}-10u^8-2u^6+4u^4+u^2\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-\frac{1}{4}u^{57}+6u^{55}+\cdots+u+1\\-\frac{1}{4}u^{57}+\frac{23}{4}u^{55}+\cdots+\frac{1}{2}u^2+\frac{1}{2}u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{60}+50u^{58}+\cdots+20u+12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{61}+24u^{60}+\cdots+3579u+49$
c_2, c_6	$u^{61}-2u^{60}+\cdots+31u+7$
c_3	$u^{61}+2u^{60}+\cdots-9398u+5482$
c_4, c_5, c_{10}	$u^{61}-2u^{60}+\cdots+2u+2$
c_7, c_8, c_{12}	$u^{61}+2u^{60}+\cdots-69u+7$
c_9, c_{11}	$u^{61}+6u^{60}+\cdots+736u+128$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{61} + 36y^{60} + \cdots + 7535175y - 2401$
c_2, c_6	$y^{61} - 24y^{60} + \cdots + 3579y - 49$
c_3	$y^{61} - 10y^{60} + \cdots - 675769720y - 30052324$
c_4, c_5, c_{10}	$y^{61} - 50y^{60} + \cdots + 8y - 4$
c_7, c_8, c_{12}	$y^{61} - 64y^{60} + \cdots + 4075y - 49$
c_9, c_{11}	$y^{61} + 38y^{60} + \cdots + 115712y - 16384$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.045080 + 0.313421I$ $a = 1.89893 - 0.49988I$ $b = 1.88740 + 0.56009I$	$6.47668 + 1.81251I$	0
$u = -1.045080 - 0.313421I$ $a = 1.89893 + 0.49988I$ $b = 1.88740 - 0.56009I$	$6.47668 - 1.81251I$	0
$u = 1.082430 + 0.367312I$ $a = -1.87282 - 0.76181I$ $b = -2.11893 + 0.51520I$	$4.29961 - 7.38307I$	0
$u = 1.082430 - 0.367312I$ $a = -1.87282 + 0.76181I$ $b = -2.11893 - 0.51520I$	$4.29961 + 7.38307I$	0
$u = 0.026391 + 0.841561I$ $a = 0.017329 - 0.723163I$ $b = 0.0358248 + 0.1097390I$	$-2.59755 - 1.90534I$	$5.48183 + 3.73036I$
$u = 0.026391 - 0.841561I$ $a = 0.017329 + 0.723163I$ $b = 0.0358248 - 0.1097390I$	$-2.59755 + 1.90534I$	$5.48183 - 3.73036I$
$u = -1.116950 + 0.320702I$ $a = -0.591762 + 0.486353I$ $b = -0.901647 - 0.672603I$	$-1.11946 + 3.33466I$	0
$u = -1.116950 - 0.320702I$ $a = -0.591762 - 0.486353I$ $b = -0.901647 + 0.672603I$	$-1.11946 - 3.33466I$	0
$u = 0.148036 + 0.815189I$ $a = 3.32481 + 2.12115I$ $b = 2.47279 + 0.61911I$	$1.44711 + 11.68910I$	$5.41407 - 7.67902I$
$u = 0.148036 - 0.815189I$ $a = 3.32481 - 2.12115I$ $b = 2.47279 - 0.61911I$	$1.44711 - 11.68910I$	$5.41407 + 7.67902I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.159456+0.787209I$ $a=-3.07363+2.55815I$ $b=-2.30891+0.83730I$	$3.77656-5.89886I$	$8.15888+3.94613I$
$u=-0.159456-0.787209I$ $a=-3.07363-2.55815I$ $b=-2.30891-0.83730I$	$3.77656+5.89886I$	$8.15888-3.94613I$
$u=-0.128661+0.790668I$ $a=1.20590-0.92529I$ $b=1.199370-0.497535I$	$-4.10929-7.41360I$	$1.61547+7.26505I$
$u=-0.128661-0.790668I$ $a=1.20590+0.92529I$ $b=1.199370+0.497535I$	$-4.10929+7.41360I$	$1.61547-7.26505I$
$u=-0.050353+0.793051I$ $a=1.03212-1.57158I$ $b=0.890863-0.963022I$	$-6.44106-0.24388I$	$-3.18042+0.12157I$
$u=-0.050353-0.793051I$ $a=1.03212+1.57158I$ $b=0.890863+0.963022I$	$-6.44106+0.24388I$	$-3.18042-0.12157I$
$u=-0.687219+0.308158I$ $a=1.43674-0.19679I$ $b=1.78452+0.21827I$	$7.10517-1.78344I$	$12.35005+2.03995I$
$u=-0.687219-0.308158I$ $a=1.43674+0.19679I$ $b=1.78452-0.21827I$	$7.10517+1.78344I$	$12.35005-2.03995I$
$u=1.25692$ $a=-0.481060$ $b=0.855799$	2.32742	0
$u=-1.217190+0.340958I$ $a=-1.011960+0.019839I$ $b=-0.688579-1.089540I$	$-2.85750-3.85140I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.217190 - 0.340958I$ $a = -1.011960 - 0.019839I$ $b = -0.688579 + 1.089540I$	$-2.85750 + 3.85140I$	0
$u = 0.611451 + 0.390031I$ $a = -1.342980 - 0.209011I$ $b = -1.75805 + 0.23081I$	$5.48935 + 7.39656I$	$9.73203 - 7.29176I$
$u = 0.611451 - 0.390031I$ $a = -1.342980 + 0.209011I$ $b = -1.75805 - 0.23081I$	$5.48935 - 7.39656I$	$9.73203 + 7.29176I$
$u = -1.28941$ $a = 1.15132$ $b = -0.131178$	5.56027	0
$u = -0.235942 + 0.661253I$ $a = -1.48007 + 2.97320I$ $b = -1.39466 + 0.87587I$	$5.54702 - 1.76287I$	$9.26008 + 3.99131I$
$u = -0.235942 - 0.661253I$ $a = -1.48007 - 2.97320I$ $b = -1.39466 - 0.87587I$	$5.54702 + 1.76287I$	$9.26008 - 3.99131I$
$u = 1.238810 + 0.387315I$ $a = 0.113664 - 0.741618I$ $b = 0.115647 + 0.168942I$	$1.14891 + 6.31724I$	0
$u = 1.238810 - 0.387315I$ $a = 0.113664 + 0.741618I$ $b = 0.115647 - 0.168942I$	$1.14891 - 6.31724I$	0
$u = -1.280270 + 0.275839I$ $a = -0.249437 - 0.922926I$ $b = 0.613860 + 0.196052I$	$2.59552 - 4.85268I$	0
$u = -1.280270 - 0.275839I$ $a = -0.249437 + 0.922926I$ $b = 0.613860 - 0.196052I$	$2.59552 + 4.85268I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.302742 + 0.600452I$ $a = 0.95957 + 2.68395I$ $b = 1.173020 + 0.631568I$	$4.47511 - 3.82165I$	$8.02527 + 1.02116I$
$u = 0.302742 - 0.600452I$ $a = 0.95957 - 2.68395I$ $b = 1.173020 - 0.631568I$	$4.47511 + 3.82165I$	$8.02527 - 1.02116I$
$u = -1.284030 + 0.381487I$ $a = -0.134033 - 0.700730I$ $b = -0.157554 + 0.062498I$	$1.47922 - 2.48565I$	0
$u = -1.284030 - 0.381487I$ $a = -0.134033 + 0.700730I$ $b = -0.157554 - 0.062498I$	$1.47922 + 2.48565I$	0
$u = 1.299870 + 0.344849I$ $a = 0.463664 - 1.207460I$ $b = -1.040970 - 0.847148I$	$-2.22544 + 4.34429I$	0
$u = 1.299870 - 0.344849I$ $a = 0.463664 + 1.207460I$ $b = -1.040970 + 0.847148I$	$-2.22544 - 4.34429I$	0
$u = 1.318970 + 0.274899I$ $a = 0.178307 - 0.453100I$ $b = 0.367203 - 0.307219I$	$2.88323 + 1.86161I$	0
$u = 1.318970 - 0.274899I$ $a = 0.178307 + 0.453100I$ $b = 0.367203 + 0.307219I$	$2.88323 - 1.86161I$	0
$u = -0.010977 + 0.647106I$ $a = -0.368429 - 0.667382I$ $b = -0.488496 + 0.022625I$	$-1.39623 + 1.46553I$	$4.80729 - 4.40781I$
$u = -0.010977 - 0.647106I$ $a = -0.368429 + 0.667382I$ $b = -0.488496 - 0.022625I$	$-1.39623 - 1.46553I$	$4.80729 + 4.40781I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.383270 + 0.045423I$ $a = -0.445627 - 0.436211I$ $b = 0.630719 - 0.251341I$	$5.65281 + 4.80409I$	0
$u = 1.383270 - 0.045423I$ $a = -0.445627 + 0.436211I$ $b = 0.630719 + 0.251341I$	$5.65281 - 4.80409I$	0
$u = -1.368750 + 0.233531I$ $a = 1.10473 + 1.86272I$ $b = -1.17608 + 1.32230I$	$9.69673 + 0.83184I$	0
$u = -1.368750 - 0.233531I$ $a = 1.10473 - 1.86272I$ $b = -1.17608 - 1.32230I$	$9.69673 - 0.83184I$	0
$u = 1.346800 + 0.339601I$ $a = 0.168072 - 1.073780I$ $b = -1.370380 - 0.345312I$	$0.53517 + 11.49560I$	0
$u = 1.346800 - 0.339601I$ $a = 0.168072 + 1.073780I$ $b = -1.370380 + 0.345312I$	$0.53517 - 11.49560I$	0
$u = 1.368020 + 0.269439I$ $a = -0.92620 + 2.29059I$ $b = 1.61066 + 1.41688I$	$10.58940 + 5.14714I$	0
$u = 1.368020 - 0.269439I$ $a = -0.92620 - 2.29059I$ $b = 1.61066 - 1.41688I$	$10.58940 - 5.14714I$	0
$u = -0.536071 + 0.277726I$ $a = 0.182357 - 0.605325I$ $b = -0.358021 + 0.249835I$	$-0.27372 - 3.92540I$	$6.34246 + 7.90863I$
$u = -0.536071 - 0.277726I$ $a = 0.182357 + 0.605325I$ $b = -0.358021 - 0.249835I$	$-0.27372 + 3.92540I$	$6.34246 - 7.90863I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.361620 + 0.334725I$ $a = 0.07582 + 2.89140I$ $b = 2.60850 + 0.92122I$	$8.57491 + 9.95414I$	0
$u = 1.361620 - 0.334725I$ $a = 0.07582 - 2.89140I$ $b = 2.60850 - 0.92122I$	$8.57491 - 9.95414I$	0
$u = -1.359900 + 0.350372I$ $a = -0.40622 + 2.83427I$ $b = -2.72449 + 0.62392I$	$6.2004 - 15.8925I$	0
$u = -1.359900 - 0.350372I$ $a = -0.40622 - 2.83427I$ $b = -2.72449 - 0.62392I$	$6.2004 + 15.8925I$	0
$u = 1.41422 + 0.03842I$ $a = 1.006490 - 0.306439I$ $b = -2.60422 + 0.34117I$	$13.60740 + 2.58481I$	0
$u = 1.41422 - 0.03842I$ $a = 1.006490 + 0.306439I$ $b = -2.60422 - 0.34117I$	$13.60740 - 2.58481I$	0
$u = -1.41341 + 0.06611I$ $a = -0.898179 - 0.480612I$ $b = 2.43333 + 0.51052I$	$11.8693 - 8.6563I$	0
$u = -1.41341 - 0.06611I$ $a = -0.898179 + 0.480612I$ $b = 2.43333 - 0.51052I$	$11.8693 + 8.6563I$	0
$u = -0.170322 + 0.434793I$ $a = -0.067068 - 0.388822I$ $b = -0.294850 + 0.289305I$	$-1.34960 + 1.22997I$	$1.31252 - 1.31517I$
$u = -0.170322 - 0.434793I$ $a = -0.067068 + 0.388822I$ $b = -0.294850 - 0.289305I$	$-1.34960 - 1.22997I$	$1.31252 + 1.31517I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.356420$ $a = -1.27045$ $b = 0.399618$	0.765127	14.4300

II. $\boldsymbol{I_2^u = \langle 474u^7a^2 + 726u^7a + \cdots + 845a + 670,\ 2u^7a^2 + 4u^7a + \cdots + 4a + 2,\ u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} a \\ -1.15892a^2u^7 - 1.77506au^7 + \cdots - 2.06601a - 1.63814 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -1.15892a^2u^7 - 1.77506au^7 + \cdots - 3.06601a - 1.63814 \\ -0.205379a^2u^7 - 1.12469au^7 + \cdots - 1.66993a - 1.80929 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.256724a^2u^7 + 0.405868au^7 + \cdots + 3.33741a + 1.26161 \\ -1.08802a^2u^7 - 2.76773au^7 + \cdots - 0.144254a - 1.06112 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -u^3 + 2u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.513447a^2u^7 - 1.81174au^7 + \cdots - 2.67482a - 2.52323 \\ -0.398533a^2u^7 - 0.420538au^7 + \cdots - 2.18093a - 2.41565 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^6 - 12u^4 + 4u^3 + 8u^2 - 8u + 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24}+16u^{23}+\cdots+4u+1$
c_2, c_6, c_7 c_8, c_{12}	$u^{24}-8u^{22}+\cdots+2u-1$
c_3	$(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)^3$
c_4, c_5, c_{10}	$(u^8+u^7-3u^6-2u^5+3u^4+2u-1)^3$
c_9, c_{11}	$(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} - 16y^{23} + \cdots + 12y + 1$
c_2, c_6, c_7 c_8, c_{12}	$y^{24} - 16y^{23} + \cdots - 4y + 1$
c_3	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)^3$
c_4, c_5, c_{10}	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)^3$
c_9, c_{11}	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.180120 + 0.268597I$ $a = 0.076281 - 0.895533I$ $b = -0.077043 + 0.520180I$	$1.04066 + 1.13123I$	$7.41522 - 0.51079I$
$u = 1.180120 + 0.268597I$ $a = 0.459141 + 0.156574I$ $b = 0.701428 - 0.662460I$	$1.04066 + 1.13123I$	$7.41522 - 0.51079I$
$u = 1.180120 + 0.268597I$ $a = -2.78777 - 0.16222I$ $b = -1.76612 + 1.60362I$	$1.04066 + 1.13123I$	$7.41522 - 0.51079I$
$u = 1.180120 - 0.268597I$ $a = 0.076281 + 0.895533I$ $b = -0.077043 - 0.520180I$	$1.04066 - 1.13123I$	$7.41522 + 0.51079I$
$u = 1.180120 - 0.268597I$ $a = 0.459141 - 0.156574I$ $b = 0.701428 + 0.662460I$	$1.04066 - 1.13123I$	$7.41522 + 0.51079I$
$u = 1.180120 - 0.268597I$ $a = -2.78777 + 0.16222I$ $b = -1.76612 - 1.60362I$	$1.04066 - 1.13123I$	$7.41522 + 0.51079I$
$u = 0.108090 + 0.747508I$ $a = 0.113638 - 0.691981I$ $b = 0.212333 + 0.099676I$	$-2.15941 + 2.57849I$	$4.27708 - 3.56796I$
$u = 0.108090 + 0.747508I$ $a = -0.963002 - 0.938902I$ $b = -0.991467 - 0.421518I$	$-2.15941 + 2.57849I$	$4.27708 - 3.56796I$
$u = 0.108090 + 0.747508I$ $a = 3.56457 + 3.92845I$ $b = 2.48961 + 1.65363I$	$-2.15941 + 2.57849I$	$4.27708 - 3.56796I$
$u = 0.108090 - 0.747508I$ $a = 0.113638 + 0.691981I$ $b = 0.212333 - 0.099676I$	$-2.15941 - 2.57849I$	$4.27708 + 3.56796I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.108090 - 0.747508I$ $a = -0.963002 + 0.938902I$ $b = -0.991467 + 0.421518I$	$-2.15941 - 2.57849I$	$4.27708 + 3.56796I$
$u = 0.108090 - 0.747508I$ $a = 3.56457 - 3.92845I$ $b = 2.48961 - 1.65363I$	$-2.15941 - 2.57849I$	$4.27708 + 3.56796I$
$u = -1.37100$ $a = 0.636845 + 0.458999I$ $b = -0.572115 + 0.288256I$	6.50273	13.8640
$u = -1.37100$ $a = 0.636845 - 0.458999I$ $b = -0.572115 - 0.288256I$	6.50273	13.8640
$u = -1.37100$ $a = -1.57420$ $b = 3.34059$	6.50273	13.8640
$u = -1.334530 + 0.318930I$ $a = -0.244708 - 1.025470I$ $b = 1.179160 - 0.265563I$	$2.37968 - 6.44354I$	$9.42845 + 5.29417I$
$u = -1.334530 + 0.318930I$ $a = -0.156204 - 0.575525I$ $b = -0.287346 - 0.164227I$	$2.37968 - 6.44354I$	$9.42845 + 5.29417I$
$u = -1.334530 + 0.318930I$ $a = 0.46011 + 3.64228I$ $b = -2.95543 + 1.74073I$	$2.37968 - 6.44354I$	$9.42845 + 5.29417I$
$u = -1.334530 - 0.318930I$ $a = -0.244708 + 1.025470I$ $b = 1.179160 + 0.265563I$	$2.37968 + 6.44354I$	$9.42845 - 5.29417I$
$u = -1.334530 - 0.318930I$ $a = -0.156204 + 0.575525I$ $b = -0.287346 + 0.164227I$	$2.37968 + 6.44354I$	$9.42845 - 5.29417I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.334530 - 0.318930I$ $a = 0.46011 - 3.64228I$ $b = -2.95543 - 1.74073I$	$2.37968 + 6.44354I$	$9.42845 - 5.29417I$
$u = 0.463640$ $a = -0.636726 + 0.745558I$ $b = 0.458330 - 0.091081I$	0.845036	11.8940
$u = 0.463640$ $a = -0.636726 - 0.745558I$ $b = 0.458330 + 0.091081I$	0.845036	11.8940
$u = 0.463640$ $a = -1.47016$ $b = -2.12327$	0.845036	11.8940

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

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$

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

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

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

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

$$a_7 = \begin{pmatrix} \frac{1}{3}u^3+u^2-u-1 \\ u^3-u+1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3+2u \\ -u^3+u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2+1 \\ u^2-3 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2+12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.271230 + 0.340625I$ $a = 0.696660 + 0.132080I$ $b = 1.00000$	$4.05977I$	$6.00000 - 3.46410I$
$u = 1.271230 - 0.340625I$ $a = 0.696660 - 0.132080I$ $b = 1.00000$	$-4.05977I$	$6.00000 + 3.46410I$
$u = -1.271230 + 0.340625I$ $a = 0.30334 - 1.59997I$ $b = 1.00000$	$-4.05977I$	$6.00000 + 3.46410I$
$u = -1.271230 - 0.340625I$ $a = 0.30334 + 1.59997I$ $b = 1.00000$	$4.05977I$	$6.00000 - 3.46410I$

IV. $I_4^u = \langle b+1,\ -u^2+a+u+1,\ u^4-u^2-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.786151I$ $a = -1.61803 - 0.78615I$ $b = -1.00000$	-3.94784	1.52790
$u = -0.786151I$ $a = -1.61803 + 0.78615I$ $b = -1.00000$	-3.94784	1.52790
$u = 1.27202$ $a = -0.653986$ $b = -1.00000$	3.94784	10.4720
$u = -1.27202$ $a = 1.89005$ $b = -1.00000$	3.94784	10.4720

V. $\boldsymbol{I_1^v = \langle a,\ b-1,\ v-1\rangle}$

(i) Arc colorings

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

$a_{10} = \begin{pmatrix}1\\0\end{pmatrix}$

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

$a_{11} = \begin{pmatrix}1\\0\end{pmatrix}$

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

$a_8 = \begin{pmatrix}0\\1\end{pmatrix}$

$a_{12} = \begin{pmatrix}1\\0\end{pmatrix}$

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

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

$a_9 = \begin{pmatrix}1\\0\end{pmatrix}$

$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$

$a_2 = \begin{pmatrix}2\\-1\end{pmatrix}$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_7, c_8, c_{12}	$y - 1$
c_3, c_4, c_5 c_9, c_{10}, c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=$	1.00000		
$a=$	0	0	0
$b=$	1.00000		

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{24}+16u^{23}+\cdots+4u+1)(u^{61}+24u^{60}+\cdots+3579u+49)$
c_2	$((u-1)^5)(u+1)^4(u^{24}-8u^{22}+\cdots+2u-1)$ $\cdot(u^{61}-2u^{60}+\cdots+31u+7)$
c_3	$u(u^4+u^2-1)(u^4+3u^2+3)(u^8-u^7+\cdots+2u-1)^3$ $\cdot(u^{61}+2u^{60}+\cdots-9398u+5482)$
c_4, c_5, c_{10}	$u(u^4-3u^2+3)(u^4-u^2-1)(u^8+u^7-3u^6-2u^5+3u^4+2u-1)^3$ $\cdot(u^{61}-2u^{60}+\cdots+2u+2)$
c_6	$((u-1)^4)(u+1)^5(u^{24}-8u^{22}+\cdots+2u-1)$ $\cdot(u^{61}-2u^{60}+\cdots+31u+7)$
c_7, c_8	$((u-1)^4)(u+1)^5(u^{24}-8u^{22}+\cdots+2u-1)$ $\cdot(u^{61}+2u^{60}+\cdots-69u+7)$
c_9, c_{11}	$u(u^4+u^2-1)(u^4+3u^2+3)$ $\cdot(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)^3$ $\cdot(u^{61}+6u^{60}+\cdots+736u+128)$
c_{12}	$((u-1)^5)(u+1)^4(u^{24}-8u^{22}+\cdots+2u-1)$ $\cdot(u^{61}+2u^{60}+\cdots-69u+7)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{24}-16y^{23}+\cdots+12y+1)$ $\cdot(y^{61}+36y^{60}+\cdots+7535175y-2401)$
c_2, c_6	$((y-1)^9)(y^{24}-16y^{23}+\cdots-4y+1)(y^{61}-24y^{60}+\cdots+3579y-49)$
c_3	$y(y^2+y-1)^2(y^2+3y+3)^2$ $\cdot(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)^3$ $\cdot(y^{61}-10y^{60}+\cdots-675769720y-30052324)$
c_4, c_5, c_{10}	$y(y^2-3y+3)^2(y^2-y-1)^2$ $\cdot(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)^3$ $\cdot(y^{61}-50y^{60}+\cdots+8y-4)$
c_7, c_8, c_{12}	$((y-1)^9)(y^{24}-16y^{23}+\cdots-4y+1)(y^{61}-64y^{60}+\cdots+4075y-49)$
c_9, c_{11}	$y(y^2+y-1)^2(y^2+3y+3)^2$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^3$ $\cdot(y^{61}+38y^{60}+\cdots+115712y-16384)$