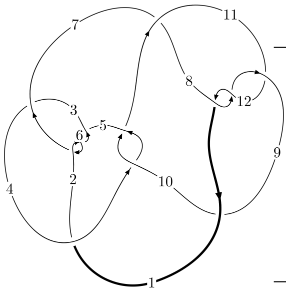
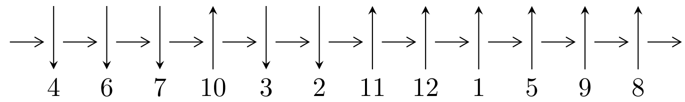
$12a_{0882}$ $(K12a_{0882})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 4u^{74} - 16u^{73} + \cdots + 4b - 5,\ -u^{74} + 8u^{73} + \cdots + 4a + 13,\ u^{75} - 4u^{74} + \cdots - 6u + 1\rangle$$
$$I_2^u = \langle u^2a + b + a,\ u^2a + a^2 + u^2 + a + u + 1,\ u^3 + u^2 + 2u + 1\rangle$$
$$I_3^u = \langle -u^3 + b - u,\ a + u,\ u^7 + 3u^5 + 2u^3 - u - 1\rangle$$
$$I_4^u = \langle u^2 + b + u + 1,\ a + u,\ u^3 + u^2 + 2u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 91 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. $I^u_1 = \langle 4u^{74}-16u^{73}+\cdots+4b-5,\ -u^{74}+8u^{73}+\cdots+4a+13,\ u^{75}-4u^{74}+\cdots-6u+1\rangle$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{1}{4}u^{74} - 2u^{73} + \cdots + \frac{65}{4}u - \frac{13}{4} \\ -u^{74} + 4u^{73} + \cdots - 4u + \frac{5}{4} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{4}u^{74} - \frac{3}{4}u^{73} + \cdots + 7u + \frac{3}{4} \\ -\frac{1}{4}u^{74} + u^{73} + \cdots - \frac{9}{4}u + \frac{1}{2} \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} \frac{15}{4}u^{74} - 10u^{73} + \cdots + \frac{23}{4}u - \frac{3}{4} \\ 2u^{74} - u^{73} + \cdots - 8u + \frac{7}{4} \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{13}{4}u^{74} - \frac{55}{4}u^{73} + \cdots + \frac{53}{2}u - \frac{17}{4} \\ u^{74} - \frac{15}{4}u^{73} + \cdots - \frac{11}{4}u + \frac{5}{4} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{74} + \frac{19}{4}u^{73} + \cdots - \frac{7}{4}u + \frac{3}{4} \\ -\frac{3}{4}u^{74} + 3u^{73} + \cdots + \frac{9}{4}u - \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{9}{2}u^{74} + \frac{19}{2}u^{73} + \cdots - \frac{39}{2}u - \frac{9}{4}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{75} - 14u^{74} + \cdots + 204u + 801$
c_2, c_5, c_6	$u^{75} - 4u^{74} + \cdots + 10u - 1$
c_3	$u^{75} + 4u^{74} + \cdots + 2274u - 153$
c_4, c_{10}	$u^{75} + 6u^{74} + \cdots - 3072u - 512$
c_7, c_9	$u^{75} - 4u^{74} + \cdots - 750u - 153$
c_8, c_{11}, c_{12}	$u^{75} + 4u^{74} + \cdots - 6u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{75} + 42y^{74} + \cdots + 136940526y - 641601$
c_2, c_5, c_6	$y^{75} + 70y^{74} + \cdots + 34y - 1$
c_3	$y^{75} + 14y^{74} + \cdots + 593622y - 23409$
c_4, c_{10}	$y^{75} - 42y^{74} + \cdots + 3276800y - 262144$
c_7, c_9	$y^{75} - 58y^{74} + \cdots - 431082y - 23409$
c_8, c_{11}, c_{12}	$y^{75} + 62y^{74} + \cdots - 14y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.129331 + 1.117110I$ $a = 0.29237 - 1.85419I$ $b = 0.11903 - 1.46059I$	$1.67101 - 2.28476I$	0
$u = -0.129331 - 1.117110I$ $a = 0.29237 + 1.85419I$ $b = 0.11903 + 1.46059I$	$1.67101 + 2.28476I$	0
$u = 0.864283 + 0.073603I$ $a = -0.630215 - 0.318792I$ $b = -0.46463 - 1.50057I$	$14.07080 + 0.97614I$	$11.89444 - 0.69772I$
$u = 0.864283 - 0.073603I$ $a = -0.630215 + 0.318792I$ $b = -0.46463 + 1.50057I$	$14.07080 - 0.97614I$	$11.89444 + 0.69772I$
$u = 0.851962 + 0.130511I$ $a = 0.189706 + 0.407751I$ $b = -0.20536 + 2.41576I$	$12.0915 + 11.1738I$	$9.92293 - 6.69276I$
$u = 0.851962 - 0.130511I$ $a = 0.189706 - 0.407751I$ $b = -0.20536 - 2.41576I$	$12.0915 - 11.1738I$	$9.92293 + 6.69276I$
$u = 0.838542 + 0.118303I$ $a = -0.263667 - 0.275157I$ $b = 0.30731 - 2.10324I$	$6.28260 + 7.50607I$	$6.31085 - 6.58507I$
$u = 0.838542 - 0.118303I$ $a = -0.263667 + 0.275157I$ $b = 0.30731 + 2.10324I$	$6.28260 - 7.50607I$	$6.31085 + 6.58507I$
$u = 0.834761 + 0.091281I$ $a = 0.443254 + 0.200964I$ $b = -0.17545 + 1.64029I$	$7.24740 + 3.22206I$	$8.45543 - 0.86065I$
$u = 0.834761 - 0.091281I$ $a = 0.443254 - 0.200964I$ $b = -0.17545 - 1.64029I$	$7.24740 - 3.22206I$	$8.45543 + 0.86065I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.806243+0.042985I$ $a=0.254905+0.770452I$ $b=0.64512+2.35548I$	$8.28866-4.61277I$	$9.57496+3.37665I$
$u=-0.806243-0.042985I$ $a=0.254905-0.770452I$ $b=0.64512-2.35548I$	$8.28866+4.61277I$	$9.57496-3.37665I$
$u=0.417667+1.122760I$ $a=2.24416-1.33147I$ $b=0.82696-1.40165I$	$9.05288-6.61172I$	0
$u=0.417667-1.122760I$ $a=2.24416+1.33147I$ $b=0.82696+1.40165I$	$9.05288+6.61172I$	0
$u=0.394262+1.136570I$ $a=-1.88247+1.23446I$ $b=-0.590542+1.186780I$	$3.16758-3.06037I$	0
$u=0.394262-1.136570I$ $a=-1.88247-1.23446I$ $b=-0.590542-1.186780I$	$3.16758+3.06037I$	0
$u=-0.767081+0.032918I$ $a=-0.147823-0.586406I$ $b=-0.41161-1.84908I$	$2.54564-1.71234I$	$5.68970+3.98160I$
$u=-0.767081-0.032918I$ $a=-0.147823+0.586406I$ $b=-0.41161+1.84908I$	$2.54564+1.71234I$	$5.68970-3.98160I$
$u=0.387354+1.172960I$ $a=1.54778-0.81015I$ $b=0.496497-0.735271I$	$3.93329+1.17961I$	0
$u=0.387354-1.172960I$ $a=1.54778+0.81015I$ $b=0.496497+0.735271I$	$3.93329-1.17961I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.761899 + 0.044601I$ $a = 0.670042 - 0.120108I$ $b = -1.140900 + 0.673722I$	$5.34357 + 3.86193I$	$9.73760 - 4.61433I$
$u = 0.761899 - 0.044601I$ $a = 0.670042 + 0.120108I$ $b = -1.140900 - 0.673722I$	$5.34357 - 3.86193I$	$9.73760 + 4.61433I$
$u = -0.502648 + 0.555980I$ $a = 1.35292 - 0.76273I$ $b = 0.424196 + 0.870841I$	$6.99841 - 6.56505I$	$7.94758 + 6.80228I$
$u = -0.502648 - 0.555980I$ $a = 1.35292 + 0.76273I$ $b = 0.424196 - 0.870841I$	$6.99841 + 6.56505I$	$7.94758 - 6.80228I$
$u = 0.417996 + 1.195510I$ $a = -1.81445 + 0.17291I$ $b = -0.943590 + 0.346371I$	$10.62020 + 3.61647I$	0
$u = 0.417996 - 1.195510I$ $a = -1.81445 - 0.17291I$ $b = -0.943590 - 0.346371I$	$10.62020 - 3.61647I$	0
$u = -0.586451 + 0.420780I$ $a = -0.745096 - 0.020246I$ $b = 0.568271 - 1.084970I$	$7.43119 + 2.66733I$	$9.42694 + 0.01688I$
$u = -0.586451 - 0.420780I$ $a = -0.745096 + 0.020246I$ $b = 0.568271 + 1.084970I$	$7.43119 - 2.66733I$	$9.42694 - 0.01688I$
$u = -0.352653 + 1.230150I$ $a = -2.08694 - 2.25380I$ $b = -1.15302 - 2.28427I$	$4.63286 + 0.43633I$	0
$u = -0.352653 - 1.230150I$ $a = -2.08694 + 2.25380I$ $b = -1.15302 + 2.28427I$	$4.63286 - 0.43633I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.316269 + 1.249700I$ $a = 1.82642 + 1.56645I$ $b = 1.16268 + 1.70863I$	$-1.20445 - 2.19229I$	0
$u = -0.316269 - 1.249700I$ $a = 1.82642 - 1.56645I$ $b = 1.16268 - 1.70863I$	$-1.20445 + 2.19229I$	0
$u = 0.053632 + 1.289800I$ $a = -1.55559 + 0.97168I$ $b = -0.72624 + 1.73649I$	$-0.99866 + 4.23513I$	0
$u = 0.053632 - 1.289800I$ $a = -1.55559 - 0.97168I$ $b = -0.72624 - 1.73649I$	$-0.99866 - 4.23513I$	0
$u = 0.016620 + 1.304390I$ $a = 1.194330 - 0.735726I$ $b = 0.69581 - 1.49341I$	$-5.82265 + 0.81095I$	0
$u = 0.016620 - 1.304390I$ $a = 1.194330 + 0.735726I$ $b = 0.69581 + 1.49341I$	$-5.82265 - 0.81095I$	0
$u = -0.667774 + 0.163365I$ $a = 0.235125 + 0.105097I$ $b = 1.132700 + 0.443466I$	$4.25302 - 0.78723I$	$8.08019 + 0.69488I$
$u = -0.667774 - 0.163365I$ $a = 0.235125 - 0.105097I$ $b = 1.132700 - 0.443466I$	$4.25302 + 0.78723I$	$8.08019 - 0.69488I$
$u = 0.321229 + 1.276340I$ $a = 0.975526 + 0.758046I$ $b = 1.38917 - 0.31193I$	$-2.32532 + 3.88876I$	0
$u = 0.321229 - 1.276340I$ $a = 0.975526 - 0.758046I$ $b = 1.38917 + 0.31193I$	$-2.32532 - 3.88876I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.099287+1.314930I$ $a=-0.318472+0.820675I$ $b=-0.439087+1.148180I$	$-3.46404-2.05434I$	0
$u=-0.099287-1.314930I$ $a=-0.318472-0.820675I$ $b=-0.439087-1.148180I$	$-3.46404+2.05434I$	0
$u=-0.450416+0.509884I$ $a=-0.960127+0.859309I$ $b=-0.166013-0.591858I$	$1.28106-3.47044I$	$3.88375+7.68592I$
$u=-0.450416-0.509884I$ $a=-0.960127-0.859309I$ $b=-0.166013+0.591858I$	$1.28106+3.47044I$	$3.88375-7.68592I$
$u=-0.332166+1.293110I$ $a=-2.54722-1.00893I$ $b=-1.85697-1.49469I$	$-1.59371-5.68239I$	0
$u=-0.332166-1.293110I$ $a=-2.54722+1.00893I$ $b=-1.85697+1.49469I$	$-1.59371+5.68239I$	0
$u=\quad 0.331305+1.302290I$ $a=-1.56104-0.14984I$ $b=-1.55504+0.97937I$	$1.12844+7.81474I$	0
$u=\quad 0.331305-1.302290I$ $a=-1.56104+0.14984I$ $b=-1.55504-0.97937I$	$1.12844-7.81474I$	0
$u=-0.355420+1.298670I$ $a=\quad 3.07198+1.18787I$ $b=\quad 2.20157+1.78185I$	$4.10044-8.79609I$	0
$u=-0.355420-1.298670I$ $a=\quad 3.07198-1.18787I$ $b=\quad 2.20157-1.78185I$	$4.10044+8.79609I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.036427+1.346260I$ $a=-0.607791+0.422715I$ $b=-0.629673+1.192930I$	$-3.35604-2.35859I$	0
$u=-0.036427-1.346260I$ $a=-0.607791-0.422715I$ $b=-0.629673-1.192930I$	$-3.35604+2.35859I$	0
$u=-0.204057+1.350880I$ $a=-0.508818+0.849448I$ $b=-0.815090+0.663922I$	$-3.59967-2.38098I$	0
$u=-0.204057-1.350880I$ $a=-0.508818-0.849448I$ $b=-0.815090-0.663922I$	$-3.59967+2.38098I$	0
$u=-0.269785+1.347060I$ $a=1.64477-0.56880I$ $b=1.62647+0.01247I$	$-0.50518-4.19710I$	0
$u=-0.269785-1.347060I$ $a=1.64477+0.56880I$ $b=1.62647-0.01247I$	$-0.50518+4.19710I$	0
$u=0.391046+1.322010I$ $a=1.06116-1.80811I$ $b=0.48619-2.18356I$	$9.70536+5.47983I$	0
$u=0.391046-1.322010I$ $a=1.06116+1.80811I$ $b=0.48619+2.18356I$	$9.70536-5.47983I$	0
$u=0.368532+1.330510I$ $a=-1.73222+1.34594I$ $b=-1.12286+2.08477I$	$2.78873+7.54981I$	0
$u=0.368532-1.330510I$ $a=-1.73222-1.34594I$ $b=-1.12286-2.08477I$	$2.78873-7.54981I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.368054 + 1.347150I$ $a = 2.22544 - 1.63294I$ $b = 1.36977 - 2.45177I$	$1.67578 + 11.84830I$	0
$u = 0.368054 - 1.347150I$ $a = 2.22544 + 1.63294I$ $b = 1.36977 + 2.45177I$	$1.67578 - 11.84830I$	0
$u = -0.103421 + 1.398990I$ $a = -0.156439 - 0.588353I$ $b = 0.497683 - 1.119190I$	$-4.75437 - 5.19853I$	0
$u = -0.103421 - 1.398990I$ $a = -0.156439 + 0.588353I$ $b = 0.497683 + 1.119190I$	$-4.75437 + 5.19853I$	0
$u = 0.373793 + 1.356110I$ $a = -2.39427 + 1.96966I$ $b = -1.37738 + 2.74063I$	$7.4137 + 15.5822I$	0
$u = 0.373793 - 1.356110I$ $a = -2.39427 - 1.96966I$ $b = -1.37738 - 2.74063I$	$7.4137 - 15.5822I$	0
$u = -0.11241 + 1.42300I$ $a = 0.455015 + 0.662998I$ $b = -0.434609 + 1.177910I$	$0.66003 - 8.48529I$	0
$u = -0.11241 - 1.42300I$ $a = 0.455015 - 0.662998I$ $b = -0.434609 - 1.177910I$	$0.66003 + 8.48529I$	0
$u = -0.484381$ $a = -0.253063$ $b = -0.395089$	0.828246	12.7290
$u = -0.040668 + 0.478942I$ $a = 0.06428 - 2.03562I$ $b = -0.380831 - 0.239183I$	$2.10140 - 1.97255I$	$1.62971 + 4.07824I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.040668-0.478942I$ $a=\ \ 0.06428+2.03562I$ $b=-0.380831+0.239183I$	$2.10140+1.97255I$	$1.62971-4.07824I$
$u=\ \ 0.268652+0.175360I$ $a=-0.22486-2.74712I$ $b=-0.722155+0.751154I$	$3.41208+3.23701I$	$-0.51319-4.60923I$
$u=\ \ 0.268652-0.175360I$ $a=-0.22486+2.74712I$ $b=-0.722155-0.751154I$	$3.41208-3.23701I$	$-0.51319+4.60923I$
$u=\ \ 0.113105+0.236302I$ $a=\ \ 0.51485+2.54920I$ $b=\ \ 0.559155-0.256506I$	$-1.187190+0.455593I$	$-6.24430-1.84121I$
$u=\ \ 0.113105-0.236302I$ $a=\ \ 0.51485-2.54920I$ $b=\ \ 0.559155+0.256506I$	$-1.187190-0.455593I$	$-6.24430+1.84121I$

II. $\boldsymbol{I_2^u = \langle u^2a + b + a,\ u^2a + a^2 + u^2 + a + u + 1,\ u^3 + u^2 + 2u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^2a + 5u^2 - a + 5u + 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = -0.662359 + 0.562280I$ $b = -0.754878$	$-4.13758 - 2.82812I$	$-4.97655 + 4.84887I$
$u = -0.215080 + 1.307140I$ $a = \quad 1.32472$ $b = \quad 0.877439 + 0.744862I$	$- 5.65624I$	$3.89456 + 5.95889I$
$u = -0.215080 - 1.307140I$ $a = -0.662359 - 0.562280I$ $b = -0.754878$	$-4.13758 + 2.82812I$	$-4.97655 - 4.84887I$
$u = -0.215080 - 1.307140I$ $a = \quad 1.32472$ $b = \quad 0.877439 - 0.744862I$	$5.65624I$	$3.89456 - 5.95889I$
$u = -0.569840$ $a = -0.662359 + 0.562280I$ $b = \quad 0.877439 - 0.744862I$	$4.13758 + 2.82812I$	$8.08199 - 1.11003I$
$u = -0.569840$ $a = -0.662359 - 0.562280I$ $b = \quad 0.877439 + 0.744862I$	$4.13758 - 2.82812I$	$8.08199 + 1.11003I$

III. $I_3^u = \langle -u^3 + b - u,\ a + u,\ u^7 + 3u^5 + 2u^3 - u - 1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^5 - 2u^3 + u \\ 2u + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^4 - u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 + u^2 - u - 1 \\ u^4 + u^3 + 2u^2 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^5 + 2u^3 - u - 1 \\ u^5 + 3u^3 + u^2 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^6 + u^4 - 2u^2 + 1 \\ u^6 + 2u^4 - u^2 - u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^7 - 2y^6 + y^5 + 6y^4 - 2y^3 - 24y^2 - 27y - 9$
c_2, c_5, c_6 c_8, c_{11}, c_{12}	$y^7 + 6y^6 + 13y^5 + 10y^4 - 2y^3 - 4y^2 + y - 1$
c_3, c_7, c_9	$y^7 - 2y^6 + 5y^5 - 14y^4 + 18y^3 - 8y^2 + y - 4$
c_4, c_{10}	$(y-1)^7$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.757137$ $a = -0.757137$ $b = 1.19117$	1.64493	6.00000
$u = 0.311114 + 1.246820I$ $a = -0.311114 - 1.246820I$ $b = -1.109710 - 0.329390I$	1.64493	6.00000
$u = 0.311114 - 1.246820I$ $a = -0.311114 + 1.246820I$ $b = -1.109710 + 0.329390I$	1.64493	6.00000
$u = -0.501027 + 0.385135I$ $a = 0.501027 - 0.385135I$ $b = -0.403848 + 0.618048I$	1.64493	6.00000
$u = -0.501027 - 0.385135I$ $a = 0.501027 + 0.385135I$ $b = -0.403848 - 0.618048I$	1.64493	6.00000
$u = -0.18866 + 1.40255I$ $a = 0.18866 - 1.40255I$ $b = 0.91797 - 1.20672I$	1.64493	6.00000
$u = -0.18866 - 1.40255I$ $a = 0.18866 + 1.40255I$ $b = 0.91797 + 1.20672I$	1.64493	6.00000

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

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 2u + 1 \\ 2u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ -u^2 - u - 1 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -u \\ -u^2 - u - 1 \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.215080+1.307140I$ $a=\ \ 0.215080-1.307140I$ $b=\ \ 0.877439-0.744862I$	0	0
$u=-0.215080-1.307140I$ $a=\ \ 0.215080+1.307140I$ $b=\ \ 0.877439+0.744862I$	0	0
$u=-0.569840$ $a=\ \ 0.569840$ $b=-0.754878$	0	0

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^3+u^2-1)^3(u^7-2u^6+u^5+2u^4-4u^3+6u^2-3u+3)$ $\cdot(u^{75}-14u^{74}+\cdots+204u+801)$
c_2	$((u^3-u^2+2u-1)^3)(u^7+3u^5+2u^3-u+1)(u^{75}-4u^{74}+\cdots+10u-1)$
c_3	$(u^3+u^2-1)^3(u^7-u^5-2u^4+2u^3+2u^2-3u+2)$ $\cdot(u^{75}+4u^{74}+\cdots+2274u-153)$
c_4, c_{10}	$u^9(u-1)^7(u^{75}+6u^{74}+\cdots-3072u-512)$
c_5, c_6	$((u^3+u^2+2u+1)^3)(u^7+3u^5+2u^3-u+1)(u^{75}-4u^{74}+\cdots+10u-1)$
c_7, c_9	$(u^3-u^2+1)^3(u^7-u^5-2u^4+2u^3+2u^2-3u+2)$ $\cdot(u^{75}-4u^{74}+\cdots-750u-153)$
c_8	$((u^3+u^2+2u+1)^3)(u^7+3u^5+2u^3-u+1)(u^{75}+4u^{74}+\cdots-6u-1)$
c_{11}, c_{12}	$((u^3-u^2+2u-1)^3)(u^7+3u^5+2u^3-u+1)(u^{75}+4u^{74}+\cdots-6u-1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^3 - y^2 + 2y - 1)^3(y^7 - 2y^6 + y^5 + 6y^4 - 2y^3 - 24y^2 - 27y - 9)$ $\cdot (y^{75} + 42y^{74} + \cdots + 136940526y - 641601)$
c_2, c_5, c_6	$(y^3 + 3y^2 + 2y - 1)^3(y^7 + 6y^6 + 13y^5 + 10y^4 - 2y^3 - 4y^2 + y - 1)$ $\cdot (y^{75} + 70y^{74} + \cdots + 34y - 1)$
c_3	$(y^3 - y^2 + 2y - 1)^3(y^7 - 2y^6 + 5y^5 - 14y^4 + 18y^3 - 8y^2 + y - 4)$ $\cdot (y^{75} + 14y^{74} + \cdots + 593622y - 23409)$
c_4, c_{10}	$y^9(y-1)^7(y^{75} - 42y^{74} + \cdots + 3276800y - 262144)$
c_7, c_9	$(y^3 - y^2 + 2y - 1)^3(y^7 - 2y^6 + 5y^5 - 14y^4 + 18y^3 - 8y^2 + y - 4)$ $\cdot (y^{75} - 58y^{74} + \cdots - 431082y - 23409)$
c_8, c_{11}, c_{12}	$(y^3 + 3y^2 + 2y - 1)^3(y^7 + 6y^6 + 13y^5 + 10y^4 - 2y^3 - 4y^2 + y - 1)$ $\cdot (y^{75} + 62y^{74} + \cdots - 14y - 1)$