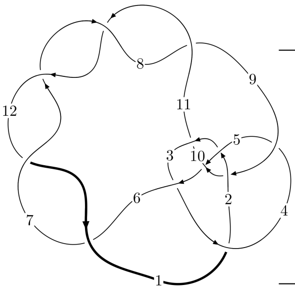
$12a_{0808}$ ($K12a_{0808}$)



A knot diagram[1]

Linearized knot diagam

$$\rightarrow \underset{4}{\downarrow} \rightarrow \underset{5}{\uparrow} \rightarrow \underset{6}{\downarrow} \rightarrow \underset{9}{\uparrow} \rightarrow \underset{10}{\downarrow} \rightarrow \underset{1}{\uparrow} \rightarrow \underset{12}{\uparrow} \rightarrow \underset{11}{\uparrow} \rightarrow \underset{2}{\downarrow} \rightarrow \underset{3}{\uparrow} \rightarrow \underset{8}{\uparrow} \rightarrow \underset{7}{\uparrow} \rightarrow$$

Solving Sequence

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

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

$$\begin{aligned}
I^u_1 &= \langle -4708u^{36} + 22559u^{35} + \cdots + 12181b + 159188, \\
&\quad 184180u^{36} - 854911u^{35} + \cdots + 133991a - 2353969,\ u^{37} - 5u^{36} + \cdots - 93u + 11\rangle \\
I^u_2 &= \langle 11u^{22}a + 26u^{22} + \cdots + 4a + 1,\ u^{22} + 4u^{21} + \cdots + a - 4,\ u^{23} + 3u^{22} + \cdots - 6u^2 + 1\rangle \\
I^u_3 &= \langle u^{10} + 3u^9 + 10u^8 + 20u^7 + 33u^6 + 43u^5 + 42u^4 + 32u^3 + 17u^2 + b + 6u + 1, \\
&\quad - u^{13} - 2u^{12} - 12u^{11} - 19u^{10} - 53u^9 - 65u^8 - 106u^7 - 95u^6 - 93u^5 - 52u^4 - 27u^3 - 3u^2 + a + 3, \\
&\quad u^{14} + 2u^{13} + \cdots + 3u + 1\rangle
\end{aligned}$$

$$I^v_1 = \langle a,\ b - 1,\ v - 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 98 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. $\boldsymbol{I_1^u = \langle -4708u^{36} + 22559u^{35} + \cdots + 12181b + 159188,\ 1.84 \times 10^5 u^{36} - 8.55 \times 10^5 u^{35} + \cdots + 1.34 \times 10^5 a - 2.35 \times 10^6,\ u^{37} - 5u^{36} + \cdots - 93u + 11 \rangle}$

(i) Arc colorings

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

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

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

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

$$a_4 = \begin{pmatrix} -1.37457u^{36} + 6.38036u^{35} + \cdots - 159.292u + 17.5681 \\ 0.386504u^{36} - 1.85198u^{35} + \cdots + 99.2238u - 13.0685 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -3.17294u^{36} + 14.8917u^{35} + \cdots - 300.428u + 33.3318 \\ 0.892455u^{36} - 4.15631u^{35} + \cdots + 240.876u - 30.6508 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.695562u^{36} + 3.44817u^{35} + \cdots - 15.1053u - 3.85542 \\ 0.492488u^{36} - 2.10557u^{35} + \cdots + 110.267u - 15.1203 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -0.800315u^{36} + 3.60432u^{35} + \cdots - 74.9791u + 8.59307 \\ 0.134143u^{36} - 0.748543u^{35} + \cdots + 43.9825u - 4.57902 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.44794u^{36} - 6.84097u^{35} + \cdots + 204.364u - 29.2190 \\ 0.0802890u^{36} - 0.953534u^{35} + \cdots + 17.4424u + 1.26911 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{56806}{12181}u^{36} - \frac{266817}{12181}u^{35} + \cdots + \frac{12593355}{12181}u - \frac{1834736}{12181}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{37} + 4u^{36} + \cdots + 24u - 1$
c_2	$u^{37} + 22u^{36} + \cdots - 87u - 11$
c_4, c_{10}	$u^{37} + 2u^{35} + \cdots - 31u^2 - 3$
c_5, c_9	$u^{37} - u^{36} + \cdots + 3u - 1$
c_6, c_7, c_8 c_{11}, c_{12}	$u^{37} + 5u^{36} + \cdots - 93u - 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{37} - 32y^{36} + \cdots + 114y - 1$
c_2	$y^{37} + 46y^{35} + \cdots + 419y - 121$
c_4, c_{10}	$y^{37} + 4y^{36} + \cdots - 186y - 9$
c_5, c_9	$y^{37} - 15y^{36} + \cdots + 39y - 1$
c_6, c_7, c_8 c_{11}, c_{12}	$y^{37} + 51y^{36} + \cdots + 245y - 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.024756 + 1.003880I$ $a = 1.175790 - 0.520011I$ $b = 0.66374 - 1.62745I$	$-5.00500 - 0.12327I$	$-5.98815 + 0.I$
$u = -0.024756 - 1.003880I$ $a = 1.175790 + 0.520011I$ $b = 0.66374 + 1.62745I$	$-5.00500 + 0.12327I$	$-5.98815 + 0.I$
$u = 0.289437 + 0.983506I$ $a = 0.571567 - 0.060773I$ $b = 0.93730 - 1.28805I$	$-5.74342 + 2.02777I$	$-6.65386 - 1.42849I$
$u = 0.289437 - 0.983506I$ $a = 0.571567 + 0.060773I$ $b = 0.93730 + 1.28805I$	$-5.74342 - 2.02777I$	$-6.65386 + 1.42849I$
$u = 0.255241 + 1.040160I$ $a = 0.614543 - 0.711849I$ $b = 0.02855 - 2.23185I$	$-6.18042 + 5.52248I$	$-8.08952 - 8.67422I$
$u = 0.255241 - 1.040160I$ $a = 0.614543 + 0.711849I$ $b = 0.02855 + 2.23185I$	$-6.18042 - 5.52248I$	$-8.08952 + 8.67422I$
$u = -0.174584 + 0.835928I$ $a = -0.438786 + 0.614183I$ $b = 0.159818 + 0.734522I$	$-1.41316 - 2.04594I$	$1.13419 + 3.99911I$
$u = -0.174584 - 0.835928I$ $a = -0.438786 - 0.614183I$ $b = 0.159818 - 0.734522I$	$-1.41316 + 2.04594I$	$1.13419 - 3.99911I$
$u = 0.373017 + 1.086120I$ $a = -0.263327 + 0.662536I$ $b = 0.03559 + 2.06531I$	$-5.4061 + 14.0876I$	0
$u = 0.373017 - 1.086120I$ $a = -0.263327 - 0.662536I$ $b = 0.03559 - 2.06531I$	$-5.4061 - 14.0876I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.601924 + 0.470380I$ $a = 0.819217 - 0.043610I$ $b = -0.639760 + 0.296764I$	$-1.57344 - 6.55157I$	$0.66439 + 4.08814I$
$u = 0.601924 - 0.470380I$ $a = 0.819217 + 0.043610I$ $b = -0.639760 - 0.296764I$	$-1.57344 + 6.55157I$	$0.66439 - 4.08814I$
$u = 0.258979 + 1.229600I$ $a = -0.583862 + 0.387661I$ $b = -0.797830 + 1.118640I$	$-7.04198 - 3.53330I$	0
$u = 0.258979 - 1.229600I$ $a = -0.583862 - 0.387661I$ $b = -0.797830 - 1.118640I$	$-7.04198 + 3.53330I$	0
$u = 0.644949 + 0.303940I$ $a = 0.889386 - 0.999870I$ $b = -0.211320 + 0.616406I$	$-1.07949 + 10.62970I$	$2.38501 - 8.97197I$
$u = 0.644949 - 0.303940I$ $a = 0.889386 + 0.999870I$ $b = -0.211320 - 0.616406I$	$-1.07949 - 10.62970I$	$2.38501 + 8.97197I$
$u = -0.494000 + 0.492655I$ $a = -0.382762 + 0.046228I$ $b = -0.189464 + 0.141918I$	$0.72150 - 1.71038I$	$5.72840 - 0.24301I$
$u = -0.494000 - 0.492655I$ $a = -0.382762 - 0.046228I$ $b = -0.189464 - 0.141918I$	$0.72150 + 1.71038I$	$5.72840 + 0.24301I$
$u = 0.450704 + 0.280399I$ $a = -0.64300 + 1.61268I$ $b = 0.407710 - 0.737598I$	$-2.07909 + 3.10269I$	$-2.55857 - 8.69904I$
$u = 0.450704 - 0.280399I$ $a = -0.64300 - 1.61268I$ $b = 0.407710 + 0.737598I$	$-2.07909 - 3.10269I$	$-2.55857 + 8.69904I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.13418+1.50316I$ $a=-0.336179+0.293626I$ $b=-0.297595+0.492362I$	$-5.92171-3.96285I$	0
$u=-0.13418-1.50316I$ $a=-0.336179-0.293626I$ $b=-0.297595-0.492362I$	$-5.92171+3.96285I$	0
$u=\ \ 0.397512+0.237116I$ $a=-1.54677+0.52584I$ $b=\ \ 0.690346-0.066411I$	$-2.09954-0.39329I$	$-2.47917-0.74863I$
$u=\ \ 0.397512-0.237116I$ $a=-1.54677-0.52584I$ $b=\ \ 0.690346+0.066411I$	$-2.09954+0.39329I$	$-2.47917+0.74863I$
$u=-0.409769$ $a=-0.906661$ $b=-0.331981$	1.05211	10.2210
$u=-0.03012+1.68814I$ $a=\ \ 0.548995+1.286040I$ $b=\ \ 1.05584+1.49435I$	$-10.41680-2.72771I$	0
$u=-0.03012-1.68814I$ $a=\ \ 0.548995-1.286040I$ $b=\ \ 1.05584-1.49435I$	$-10.41680+2.72771I$	0
$u=\ \ 0.08129+1.71808I$ $a=\ \ 1.09520-1.84279I$ $b=\ \ 1.02527-2.70249I$	$-15.3380+3.5515I$	0
$u=\ \ 0.08129-1.71808I$ $a=\ \ 1.09520+1.84279I$ $b=\ \ 1.02527+2.70249I$	$-15.3380-3.5515I$	0
$u=-0.00798+1.73092I$ $a=\ \ 0.42758-2.20249I$ $b=-0.00155-2.93076I$	$-14.8725-0.2681I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.00798 - 1.73092I$ $a = 0.42758 + 2.20249I$ $b = -0.00155 + 2.93076I$	$-14.8725 + 0.2681I$	0
$u = 0.06596 + 1.73206I$ $a = 0.16269 - 2.93754I$ $b = -0.46415 - 3.90524I$	$-16.0814 + 6.8392I$	0
$u = 0.06596 - 1.73206I$ $a = 0.16269 + 2.93754I$ $b = -0.46415 + 3.90524I$	$-16.0814 - 6.8392I$	0
$u = 0.10020 + 1.74554I$ $a = -0.25064 + 2.67618I$ $b = 0.24045 + 3.60770I$	$-15.4757 + 16.0719I$	0
$u = 0.10020 - 1.74554I$ $a = -0.25064 - 2.67618I$ $b = 0.24045 - 3.60770I$	$-15.4757 - 16.0719I$	0
$u = 0.05130 + 1.77583I$ $a = -0.63357 + 1.60178I$ $b = -0.47695 + 2.21578I$	$-17.9370 - 2.2818I$	0
$u = 0.05130 - 1.77583I$ $a = -0.63357 - 1.60178I$ $b = -0.47695 - 2.21578I$	$-17.9370 + 2.2818I$	0

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle 11u^{22}a+26u^{22}+\cdots+4a+1,\ u^{22}+4u^{21}+\cdots+a-4,\ u^{23}+3u^{22}+\cdots-6u^2+1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -0.118280au^{22} - 0.279570u^{22} + \cdots - 0.0430108a - 0.0107527 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.268817au^{22} + 0.182796u^{22} + \cdots + 0.720430a - 0.569892 \\ 0.0107527au^{22} - 0.247312u^{22} + \cdots + 0.731183a + 0.182796 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0430108au^{22} + 0.0107527u^{22} + \cdots + 0.924731a + 0.731183 \\ -u^{21} - 4u^{20} + \cdots + au + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2+1 \\ -u^4-2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.0430108au^{22} + 0.0107527u^{22} + \cdots + 0.924731a + 0.731183 \\ -0.311828au^{22} + 0.172043u^{22} + \cdots - 0.204301a - 0.301075 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.204301au^{22} + 0.301075u^{22} + \cdots + 0.892473a - 0.526882 \\ 0.0107527au^{22} - 0.247312u^{22} + \cdots - 0.268817a + 0.182796 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{22} + 4u^{21} + 56u^{20} + 44u^{19} + 304u^{18} + 152u^{17} + 744u^{16} - 20u^{15} + 440u^{14} - 1456u^{13} - 1824u^{12} - 4084u^{11} - 4572u^{10} - 5296u^9 - 4580u^8 - 3604u^7 - 2220u^6 - 1204u^5 - 428u^4 - 112u^3 + 12u^2 + 24u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{46} - u^{45} + \cdots - 152u - 399$
c_2	$(u^{23} - 11u^{22} + \cdots + 6u^2 - 1)^2$
c_4, c_{10}	$u^{46} - u^{45} + \cdots + 12u + 3$
c_5, c_9	$u^{46} - u^{45} + \cdots - 2u - 3$
c_6, c_7, c_8 c_{11}, c_{12}	$(u^{23} - 3u^{22} + \cdots + 6u^2 - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{46} + 3y^{45} + \cdots - 2710768y + 159201$
c_2	$(y^{23} - y^{22} + \cdots + 12y - 1)^2$
c_4, c_{10}	$y^{46} + 7y^{45} + \cdots - 120y + 9$
c_5, c_9	$y^{46} + 11y^{45} + \cdots - 268y + 9$
c_6, c_7, c_8 c_{11}, c_{12}	$(y^{23} + 31y^{22} + \cdots + 12y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.122130 + 0.956594I$ $a = 0.765870 - 0.027652I$ $b = -1.268860 - 0.013685I$	$-1.83677 + 5.25378I$	$-0.17726 - 9.24428I$
$u = 0.122130 + 0.956594I$ $a = -0.36753 - 1.77726I$ $b = -0.81010 - 2.41860I$	$-1.83677 + 5.25378I$	$-0.17726 - 9.24428I$
$u = 0.122130 - 0.956594I$ $a = 0.765870 + 0.027652I$ $b = -1.268860 + 0.013685I$	$-1.83677 - 5.25378I$	$-0.17726 + 9.24428I$
$u = 0.122130 - 0.956594I$ $a = -0.36753 + 1.77726I$ $b = -0.81010 + 2.41860I$	$-1.83677 - 5.25378I$	$-0.17726 + 9.24428I$
$u = -0.191484 + 1.140050I$ $a = 1.05870 + 0.99434I$ $b = 0.89319 + 1.70209I$	$-6.33180 - 4.80882I$	$-8.17045 + 6.89379I$
$u = -0.191484 + 1.140050I$ $a = -0.050084 - 0.434449I$ $b = 0.49879 - 1.76452I$	$-6.33180 - 4.80882I$	$-8.17045 + 6.89379I$
$u = -0.191484 - 1.140050I$ $a = 1.05870 - 0.99434I$ $b = 0.89319 - 1.70209I$	$-6.33180 + 4.80882I$	$-8.17045 - 6.89379I$
$u = -0.191484 - 1.140050I$ $a = -0.050084 + 0.434449I$ $b = 0.49879 + 1.76452I$	$-6.33180 + 4.80882I$	$-8.17045 - 6.89379I$
$u = -0.372225 + 1.111890I$ $a = 0.060513 + 0.762765I$ $b = 0.01206 + 1.73332I$	$-3.82773 - 5.60663I$	$3.50764 + 12.63284I$
$u = -0.372225 + 1.111890I$ $a = -0.287984 - 0.223234I$ $b = 0.049443 - 1.117410I$	$-3.82773 - 5.60663I$	$3.50764 + 12.63284I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.372225-1.111890I$ $a=\ 0.060513-0.762765I$ $b=\ 0.01206-1.73332I$	$-3.82773+5.60663I$	$3.50764-12.63284I$
$u=-0.372225-1.111890I$ $a=-0.287984+0.223234I$ $b=\ 0.049443+1.117410I$	$-3.82773+5.60663I$	$3.50764-12.63284I$
$u=\ 0.044921+0.795699I$ $a=\ 0.155806+0.550016I$ $b=\ 0.92072+1.80326I$	$-0.70591-2.58349I$	$2.14863+0.79389I$
$u=\ 0.044921+0.795699I$ $a=-1.49082+0.70078I$ $b=-0.129486+0.339807I$	$-0.70591-2.58349I$	$2.14863+0.79389I$
$u=\ 0.044921-0.795699I$ $a=\ 0.155806-0.550016I$ $b=\ 0.92072-1.80326I$	$-0.70591+2.58349I$	$2.14863-0.79389I$
$u=\ 0.044921-0.795699I$ $a=-1.49082-0.70078I$ $b=-0.129486-0.339807I$	$-0.70591+2.58349I$	$2.14863-0.79389I$
$u=-0.652551+0.364111I$ $a=-0.777609-0.307375I$ $b=-0.030991+0.450120I$	$0.76689-2.11198I$	$16.3750+9.4338I$
$u=-0.652551+0.364111I$ $a=\ 0.143409+0.513462I$ $b=-0.289886-0.214796I$	$0.76689-2.11198I$	$16.3750+9.4338I$
$u=-0.652551-0.364111I$ $a=-0.777609+0.307375I$ $b=-0.030991-0.450120I$	$0.76689+2.11198I$	$16.3750-9.4338I$
$u=-0.652551-0.364111I$ $a=\ 0.143409-0.513462I$ $b=-0.289886+0.214796I$	$0.76689+2.11198I$	$16.3750-9.4338I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.349386 + 0.538209I$ $a = -0.42996 + 1.38774I$ $b = -0.220108 - 0.165488I$	$-1.10752 - 2.96048I$	$-0.41922 + 9.76981I$
$u = -0.349386 + 0.538209I$ $a = -0.255176 + 0.029202I$ $b = 0.477925 + 1.112960I$	$-1.10752 - 2.96048I$	$-0.41922 + 9.76981I$
$u = -0.349386 - 0.538209I$ $a = -0.42996 - 1.38774I$ $b = -0.220108 + 0.165488I$	$-1.10752 + 2.96048I$	$-0.41922 - 9.76981I$
$u = -0.349386 - 0.538209I$ $a = -0.255176 - 0.029202I$ $b = 0.477925 - 1.112960I$	$-1.10752 + 2.96048I$	$-0.41922 - 9.76981I$
$u = -0.540325$ $a = 0.161694$ $b = -0.714768$	0.662774	12.3650
$u = -0.540325$ $a = -1.84732$ $b = -0.0508933$	0.662774	12.3650
$u = -0.00286 + 1.69297I$ $a = -0.097069 + 0.365520I$ $b = 0.632924 + 0.248965I$	$-9.70029 - 2.55133I$	$2.45391 + 1.84917I$
$u = -0.00286 + 1.69297I$ $a = 0.82449 + 2.84829I$ $b = 1.16616 + 3.71038I$	$-9.70029 - 2.55133I$	$2.45391 + 1.84917I$
$u = -0.00286 - 1.69297I$ $a = -0.097069 - 0.365520I$ $b = 0.632924 - 0.248965I$	$-9.70029 + 2.55133I$	$2.45391 - 1.84917I$
$u = -0.00286 - 1.69297I$ $a = 0.82449 - 2.84829I$ $b = 1.16616 - 3.71038I$	$-9.70029 + 2.55133I$	$2.45391 - 1.84917I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.294369 + 0.074043I$ $a = -1.04036 + 1.99161I$ $b = -0.612571 - 1.075480I$	$1.32345 + 3.87153I$	$12.8892 - 8.7586I$
$u = 0.294369 + 0.074043I$ $a = 2.85549 + 3.36109I$ $b = 0.387083 - 0.453910I$	$1.32345 + 3.87153I$	$12.8892 - 8.7586I$
$u = 0.294369 - 0.074043I$ $a = -1.04036 - 1.99161I$ $b = -0.612571 + 1.075480I$	$1.32345 - 3.87153I$	$12.8892 + 8.7586I$
$u = 0.294369 - 0.074043I$ $a = 2.85549 - 3.36109I$ $b = 0.387083 + 0.453910I$	$1.32345 - 3.87153I$	$12.8892 + 8.7586I$
$u = 0.02789 + 1.71844I$ $a = -1.84808 + 0.03407I$ $b = -3.20107 + 0.16628I$	$-11.44590 + 5.82985I$	$-0.97520 - 7.07929I$
$u = 0.02789 + 1.71844I$ $a = -0.69611 - 3.19548I$ $b = -0.89452 - 3.65297I$	$-11.44590 + 5.82985I$	$-0.97520 - 7.07929I$
$u = 0.02789 - 1.71844I$ $a = -1.84808 - 0.03407I$ $b = -3.20107 - 0.16628I$	$-11.44590 - 5.82985I$	$-0.97520 + 7.07929I$
$u = 0.02789 - 1.71844I$ $a = -0.69611 + 3.19548I$ $b = -0.89452 + 3.65297I$	$-11.44590 - 5.82985I$	$-0.97520 + 7.07929I$
$u = -0.09919 + 1.75130I$ $a = -0.00783 - 1.65242I$ $b = 0.49848 - 2.29807I$	$-14.0207 - 7.5990I$	$-0.46890 + 9.57458I$
$u = -0.09919 + 1.75130I$ $a = 0.32195 + 2.39070I$ $b = 0.07837 + 3.13179I$	$-14.0207 - 7.5990I$	$-0.46890 + 9.57458I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.09919 - 1.75130I$ $a = -0.00783 + 1.65242I$ $b = 0.49848 + 2.29807I$	$-14.0207 + 7.5990I$	$-0.46890 - 9.57458I$
$u = -0.09919 - 1.75130I$ $a = 0.32195 - 2.39070I$ $b = 0.07837 - 3.13179I$	$-14.0207 + 7.5990I$	$-0.46890 - 9.57458I$
$u = -0.05145 + 1.75720I$ $a = 1.07306 + 1.90472I$ $b = 0.77795 + 2.38432I$	$-16.7750 - 5.8630I$	$-8.34566 + 4.67678I$
$u = -0.05145 + 1.75720I$ $a = 0.43211 - 2.58792I$ $b = 0.94732 - 3.61321I$	$-16.7750 - 5.8630I$	$-8.34566 + 4.67678I$
$u = -0.05145 - 1.75720I$ $a = 1.07306 - 1.90472I$ $b = 0.77795 - 2.38432I$	$-16.7750 + 5.8630I$	$-8.34566 - 4.67678I$
$u = -0.05145 - 1.75720I$ $a = 0.43211 + 2.58792I$ $b = 0.94732 + 3.61321I$	$-16.7750 + 5.8630I$	$-8.34566 - 4.67678I$

III.

$$\boldsymbol{I_3^u = \langle u^{10}+3u^9+\cdots+b+1,\ -u^{13}-2u^{12}+\cdots+a+3,\ u^{14}+2u^{13}+\cdots+3u+1\rangle}$$

(i) Arc colorings

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

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

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

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

$$a_4 = \begin{pmatrix} u^{13}+2u^{12}+\cdots+3u^2-3 \\ -u^{10}-3u^9+\cdots-6u-1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{13}-2u^{12}+\cdots-13u-2 \\ u^{11}+2u^{10}+\cdots+2u+1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} u^{13}+2u^{12}+\cdots-5u-4 \\ -u^{11}-3u^{10}+\cdots-6u-1 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} u^{13}+2u^{12}+\cdots-4u-3 \\ -u^{11}-3u^{10}+\cdots-7u-1 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= u^{12}-u^{11}+9u^{10}+u^9+41u^8+44u^7+112u^6+135u^5+154u^4+129u^3+75u^2+32u+6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{14} - 5u^{13} + \cdots - 6u + 1$
c_2	$u^{14} + 9u^{13} + \cdots + 9u + 1$
c_4, c_{10}	$u^{14} + u^{13} + \cdots + 3u^2 + 1$
c_5, c_9	$u^{14} + 3u^{12} + \cdots - u + 1$
c_6, c_7, c_8	$u^{14} + 2u^{13} + \cdots + 3u + 1$
c_{11}, c_{12}	$u^{14} - 2u^{13} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{14} + 5y^{13} + \cdots + 6y + 1$
c_2	$y^{14} + y^{13} + \cdots - 3y + 1$
c_4, c_{10}	$y^{14} + 5y^{13} + \cdots + 6y + 1$
c_5, c_9	$y^{14} + 6y^{13} + \cdots + 5y + 1$
c_6, c_7, c_8 c_{11}, c_{12}	$y^{14} + 20y^{13} + \cdots + 27y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.018194 + 0.849931I$ $a = 0.603835 + 1.159030I$ $b = -0.78541 + 1.37748I$	$-1.25778 + 3.72574I$	$-0.64115 - 6.57494I$
$u = 0.018194 - 0.849931I$ $a = 0.603835 - 1.159030I$ $b = -0.78541 - 1.37748I$	$-1.25778 - 3.72574I$	$-0.64115 + 6.57494I$
$u = -0.250655 + 1.124850I$ $a = -0.322735 - 0.654478I$ $b = 0.10209 - 1.57296I$	$-4.80751 - 4.95467I$	$-2.28737 + 6.46163I$
$u = -0.250655 - 1.124850I$ $a = -0.322735 + 0.654478I$ $b = 0.10209 + 1.57296I$	$-4.80751 + 4.95467I$	$-2.28737 - 6.46163I$
$u = -0.623943 + 0.429456I$ $a = 0.426245 + 0.345340I$ $b = -0.178249 - 0.359896I$	$0.26055 - 2.09268I$	$-4.56828 + 7.08050I$
$u = -0.623943 - 0.429456I$ $a = 0.426245 - 0.345340I$ $b = -0.178249 + 0.359896I$	$0.26055 + 2.09268I$	$-4.56828 - 7.08050I$
$u = -0.06757 + 1.51095I$ $a = 0.245172 - 0.589528I$ $b = 0.557839 - 0.723961I$	$-5.53297 - 4.18476I$	$6.81071 + 6.85703I$
$u = -0.06757 - 1.51095I$ $a = 0.245172 + 0.589528I$ $b = 0.557839 + 0.723961I$	$-5.53297 + 4.18476I$	$6.81071 - 6.85703I$
$u = 0.00788 + 1.69196I$ $a = -1.05669 + 1.77912I$ $b = -1.84143 + 2.01119I$	$-10.36330 + 3.84481I$	$-1.07477 - 7.29533I$
$u = 0.00788 - 1.69196I$ $a = -1.05669 - 1.77912I$ $b = -1.84143 - 2.01119I$	$-10.36330 - 3.84481I$	$-1.07477 + 7.29533I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.018196+0.300578I$ $a=-2.84368-0.47970I$ $b=\ \ 0.198823-0.929952I$	$0.58641-3.67714I$	$0.36024+5.91846I$
$u=-0.018196-0.300578I$ $a=-2.84368+0.47970I$ $b=\ \ 0.198823+0.929952I$	$0.58641+3.67714I$	$0.36024-5.91846I$
$u=-0.06571+1.74745I$ $a=-0.05215-2.29837I$ $b=\ \ 0.44633-3.02735I$	$-15.0739-6.2927I$	$-2.09938+4.32499I$
$u=-0.06571-1.74745I$ $a=-0.05215+2.29837I$ $b=\ \ 0.44633+3.02735I$	$-15.0739+6.2927I$	$-2.09938-4.32499I$

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

(i) Arc colorings

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

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

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

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

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

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

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

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

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

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

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_9, c_{10}	$y-1$
c_2, c_6, c_7 c_8, c_{11}, c_{12}	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	−1.64493	−6.00000
$b =$	1.00000		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$(u+1)(u^{14}-5u^{13}+\cdots-6u+1)(u^{37}+4u^{36}+\cdots+24u-1)$ $\cdot(u^{46}-u^{45}+\cdots-152u-399)$
c_2	$u(u^{14}+9u^{13}+\cdots+9u+1)(u^{23}-11u^{22}+\cdots+6u^2-1)^2$ $\cdot(u^{37}+22u^{36}+\cdots-87u-11)$
c_4, c_{10}	$(u+1)(u^{14}+u^{13}+\cdots+3u^2+1)(u^{37}+2u^{35}+\cdots-31u^2-3)$ $\cdot(u^{46}-u^{45}+\cdots+12u+3)$
c_5, c_9	$(u+1)(u^{14}+3u^{12}+\cdots-u+1)(u^{37}-u^{36}+\cdots+3u-1)$ $\cdot(u^{46}-u^{45}+\cdots-2u-3)$
c_6, c_7, c_8	$u(u^{14}+2u^{13}+\cdots+3u+1)(u^{23}-3u^{22}+\cdots+6u^2-1)^2$ $\cdot(u^{37}+5u^{36}+\cdots-93u-11)$
c_{11}, c_{12}	$u(u^{14}-2u^{13}+\cdots-3u+1)(u^{23}-3u^{22}+\cdots+6u^2-1)^2$ $\cdot(u^{37}+5u^{36}+\cdots-93u-11)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$(y-1)(y^{14}+5y^{13}+\cdots+6y+1)(y^{37}-32y^{36}+\cdots+114y-1)$ $\cdot(y^{46}+3y^{45}+\cdots-2710768y+159201)$
c_2	$y(y^{14}+y^{13}+\cdots-3y+1)(y^{23}-y^{22}+\cdots+12y-1)^2$ $\cdot(y^{37}+46y^{35}+\cdots+419y-121)$
c_4, c_{10}	$(y-1)(y^{14}+5y^{13}+\cdots+6y+1)(y^{37}+4y^{36}+\cdots-186y-9)$ $\cdot(y^{46}+7y^{45}+\cdots-120y+9)$
c_5, c_9	$(y-1)(y^{14}+6y^{13}+\cdots+5y+1)(y^{37}-15y^{36}+\cdots+39y-1)$ $\cdot(y^{46}+11y^{45}+\cdots-268y+9)$
c_6, c_7, c_8 c_{11}, c_{12}	$y(y^{14}+20y^{13}+\cdots+27y+1)(y^{23}+31y^{22}+\cdots+12y-1)^2$ $\cdot(y^{37}+51y^{36}+\cdots+245y-121)$