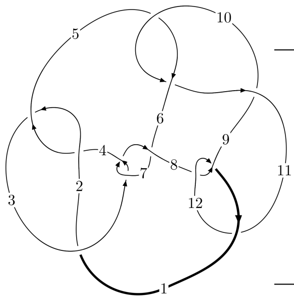
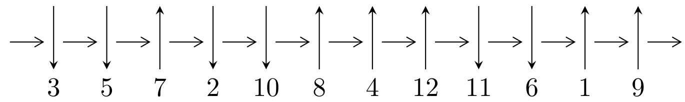
$12a_{0058}$ $(K12a_{0058})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I^u_1 = \langle & 9.29564 \times 10^{38} u^{113} - 6.51435 \times 10^{39} u^{112} + \cdots + 2.60710 \times 10^{37} b - 7.95403 \times 10^{38}, \\ & - 7.77552 \times 10^{38} u^{113} + 6.00866 \times 10^{39} u^{112} + \cdots + 2.60710 \times 10^{37} a + 1.51982 \times 10^{39}, \\ & u^{114} - 8u^{113} + \cdots - 8u + 1 \rangle \\ I^u_2 = \langle & -a^5 + a^4 - 2a^2 + b + a + 1,\ a^6 - a^5 + 2a^3 - a^2 - a + 1,\ u + 1 \rangle \\ I^u_3 = \langle & b,\ u^3 - u^2 + a + 1,\ u^6 - u^5 - u^4 + 2u^3 - u + 1 \rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 126 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. $I^u_1 = \langle 9.30 \times 10^{38} u^{113} - 6.51 \times 10^{39} u^{112} + \cdots + 2.61 \times 10^{37} b - 7.95 \times 10^{38},\ -7.78 \times 10^{38} u^{113} + 6.01 \times 10^{39} u^{112} + \cdots + 2.61 \times 10^{37} a + 1.52 \times 10^{39},\ u^{114} - 8u^{113} + \cdots - 8u + 1 \rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 29.8244u^{113} - 230.473u^{112} + \cdots + 370.662u - 58.2952 \\ -35.6550u^{113} + 249.869u^{112} + \cdots - 225.591u + 30.5091 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 13.8635u^{113} - 108.058u^{112} + \cdots + 140.743u - 18.9405 \\ 19.6275u^{113} - 116.224u^{112} + \cdots - 51.7393u + 12.4153 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.00677419u^{113} - 12.2366u^{112} + \cdots + 63.7165u - 10.4574 \\ 13.4820u^{113} - 101.626u^{112} + \cdots + 177.807u - 30.9627 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1.32665u^{113} + 18.2745u^{112} + \cdots - 88.4400u + 16.7723 \\ 16.0974u^{113} - 99.1423u^{112} + \cdots - 25.0868u + 8.27723 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -5.76401u^{113} + 8.16502u^{112} + \cdots + 192.482u - 31.3558 \\ 19.6275u^{113} - 116.224u^{112} + \cdots - 51.7393u + 12.4153 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 9.56619u^{113} - 88.7065u^{112} + \cdots + 213.455u - 33.7200 \\ 25.0853u^{113} - 158.460u^{112} + \cdots + 15.0149u + 1.68646 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -164.292u^{113} + 1202.16u^{112} + \cdots - 1572.01u + 235.414$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{114} + 60u^{113} + \cdots + 8u + 1$
c_2, c_4	$u^{114} - 8u^{113} + \cdots - 8u + 1$
c_3, c_7	$u^{114} - 2u^{113} + \cdots + 128u + 64$
c_5, c_{10}	$u^{114} + 2u^{113} + \cdots - 128u + 64$
c_6	$u^{114} - 42u^{113} + \cdots - 90112u + 4096$
c_8, c_{12}	$u^{114} + 8u^{113} + \cdots + 8u + 1$
c_9	$u^{114} + 42u^{113} + \cdots + 90112u + 4096$
c_{11}	$u^{114} - 60u^{113} + \cdots - 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{114} - 4y^{113} + \cdots + 48y + 1$
c_2, c_4, c_8 c_{12}	$y^{114} - 60y^{113} + \cdots - 8y + 1$
c_3, c_5, c_7 c_{10}	$y^{114} - 42y^{113} + \cdots - 90112y + 4096$
c_6, c_9	$y^{114} + 50y^{113} + \cdots + 293601280y + 16777216$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.723700 + 0.681601I$ $a = -0.935060 + 0.862964I$ $b = -0.772810 + 0.697186I$	$-3.83704 - 0.08668I$	0
$u = 0.723700 - 0.681601I$ $a = -0.935060 - 0.862964I$ $b = -0.772810 - 0.697186I$	$-3.83704 + 0.08668I$	0
$u = -0.967248 + 0.093961I$ $a = -0.96783 + 3.05389I$ $b = 0.226395 + 0.373089I$	$-\ 0.435079I$	0
$u = -0.967248 - 0.093961I$ $a = -0.96783 - 3.05389I$ $b = 0.226395 - 0.373089I$	$0.435079I$	0
$u = 0.772974 + 0.688687I$ $a = -0.21472 + 2.21715I$ $b = 0.794096 + 0.777168I$	$-7.43467 + 1.22279I$	0
$u = 0.772974 - 0.688687I$ $a = -0.21472 - 2.21715I$ $b = 0.794096 - 0.777168I$	$-7.43467 - 1.22279I$	0
$u = -0.866381 + 0.399593I$ $a = 1.06508 - 0.95635I$ $b = 0.719217 + 0.040027I$	$1.63180 - 1.59965I$	0
$u = -0.866381 - 0.399593I$ $a = 1.06508 + 0.95635I$ $b = 0.719217 - 0.040027I$	$1.63180 + 1.59965I$	0
$u = 0.730439 + 0.751713I$ $a = 1.24130 - 0.87403I$ $b = 0.935189 - 0.716306I$	$-6.98083 - 4.42168I$	0
$u = 0.730439 - 0.751713I$ $a = 1.24130 + 0.87403I$ $b = 0.935189 + 0.716306I$	$-6.98083 + 4.42168I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.802021 + 0.683914I$ $a = 0.92321 - 1.20148I$ $b = 0.750774 - 0.844212I$	$-7.35083 + 3.98370I$	0
$u = 0.802021 - 0.683914I$ $a = 0.92321 + 1.20148I$ $b = 0.750774 + 0.844212I$	$-7.35083 - 3.98370I$	0
$u = 0.840115 + 0.666403I$ $a = 0.03898 - 1.90015I$ $b = -0.887151 - 0.687186I$	$-3.50334 + 5.22185I$	0
$u = 0.840115 - 0.666403I$ $a = 0.03898 + 1.90015I$ $b = -0.887151 + 0.687186I$	$-3.50334 - 5.22185I$	0
$u = 0.249242 + 0.890697I$ $a = 0.43449 - 1.60639I$ $b = 1.097690 - 0.748696I$	$-2.84667 - 12.56330I$	0
$u = 0.249242 - 0.890697I$ $a = 0.43449 + 1.60639I$ $b = 1.097690 + 0.748696I$	$-2.84667 + 12.56330I$	0
$u = 0.367954 + 0.843012I$ $a = 0.920709 + 0.994829I$ $b = 0.827172 + 0.610541I$	$-4.89808 + 1.22960I$	0
$u = 0.367954 - 0.843012I$ $a = 0.920709 - 0.994829I$ $b = 0.827172 - 0.610541I$	$-4.89808 - 1.22960I$	0
$u = 0.235886 + 0.861061I$ $a = -0.25004 + 1.40871I$ $b = -1.071350 + 0.632728I$	$-7.33738I$	0
$u = 0.235886 - 0.861061I$ $a = -0.25004 - 1.40871I$ $b = -1.071350 - 0.632728I$	$7.33738I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.992093 + 0.503554I$ $a = -1.56593 + 0.29438I$ $b = -0.878195 - 0.570695I$	$-0.31630 + 1.75012I$	0
$u = -0.992093 - 0.503554I$ $a = -1.56593 - 0.29438I$ $b = -0.878195 + 0.570695I$	$-0.31630 - 1.75012I$	0
$u = 0.262214 + 0.844204I$ $a = 0.60579 + 1.47194I$ $b = 0.637492 + 0.960815I$	$-4.30895 - 6.29751I$	0
$u = 0.262214 - 0.844204I$ $a = 0.60579 - 1.47194I$ $b = 0.637492 - 0.960815I$	$-4.30895 + 6.29751I$	0
$u = 0.493882 + 0.731210I$ $a = -0.770646 - 0.071170I$ $b = -0.635005 + 0.056742I$	$-2.73938 - 1.31927I$	0
$u = 0.493882 - 0.731210I$ $a = -0.770646 + 0.071170I$ $b = -0.635005 - 0.056742I$	$-2.73938 + 1.31927I$	0
$u = 0.859146 + 0.715227I$ $a = 0.21037 + 2.02103I$ $b = 0.985504 + 0.741469I$	$-6.60278 + 9.89815I$	0
$u = 0.859146 - 0.715227I$ $a = 0.21037 - 2.02103I$ $b = 0.985504 - 0.741469I$	$-6.60278 - 9.89815I$	0
$u = 0.279400 + 0.824018I$ $a = -0.20354 - 1.64945I$ $b = 0.871980 - 0.608933I$	$-4.75639 - 3.57361I$	0
$u = 0.279400 - 0.824018I$ $a = -0.20354 + 1.64945I$ $b = 0.871980 + 0.608933I$	$-4.75639 + 3.57361I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.083270 + 0.372897I$ $a = 0.530579 + 0.134326I$ $b = -1.157820 + 0.644547I$	$2.62178 - 4.12294I$	0
$u = 1.083270 - 0.372897I$ $a = 0.530579 - 0.134326I$ $b = -1.157820 - 0.644547I$	$2.62178 + 4.12294I$	0
$u = -1.077570 + 0.400780I$ $a = 1.070290 + 0.186942I$ $b = 0.316024 + 0.715565I$	$2.29165 - 1.37776I$	0
$u = -1.077570 - 0.400780I$ $a = 1.070290 - 0.186942I$ $b = 0.316024 - 0.715565I$	$2.29165 + 1.37776I$	0
$u = 1.077400 + 0.437537I$ $a = 0.566780 - 0.717840I$ $b = -0.436454 - 0.980206I$	$0.31630 + 1.75012I$	0
$u = 1.077400 - 0.437537I$ $a = 0.566780 + 0.717840I$ $b = -0.436454 + 0.980206I$	$0.31630 - 1.75012I$	0
$u = 0.803613 + 0.228737I$ $a = 1.047630 - 0.693013I$ $b = -1.123060 - 0.498549I$	$1.13197 + 6.36472I$	0
$u = 0.803613 - 0.228737I$ $a = 1.047630 + 0.693013I$ $b = -1.123060 + 0.498549I$	$1.13197 - 6.36472I$	0
$u = -1.074570 + 0.459541I$ $a = 1.51045 + 2.47993I$ $b = -0.828823 + 0.560918I$	$-0.48420 - 2.77068I$	0
$u = -1.074570 - 0.459541I$ $a = 1.51045 - 2.47993I$ $b = -0.828823 - 0.560918I$	$-0.48420 + 2.77068I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.102360 + 0.407324I$ $a = -0.726243 + 0.007110I$ $b = 1.153230 - 0.476793I$	$4.89808 + 1.22960I$	0
$u = 1.102360 - 0.407324I$ $a = -0.726243 - 0.007110I$ $b = 1.153230 + 0.476793I$	$4.89808 - 1.22960I$	0
$u = 1.078660 + 0.469830I$ $a = 1.371390 + 0.222317I$ $b = -0.870912 + 0.324334I$	$-0.56892 + 4.18783I$	0
$u = 1.078660 - 0.469830I$ $a = 1.371390 - 0.222317I$ $b = -0.870912 - 0.324334I$	$-0.56892 - 4.18783I$	0
$u = -1.136940 + 0.308088I$ $a = 0.773292 + 0.500000I$ $b = -0.173577 + 0.728658I$	$2.51437 - 0.99262I$	0
$u = -1.136940 - 0.308088I$ $a = 0.773292 - 0.500000I$ $b = -0.173577 - 0.728658I$	$2.51437 + 0.99262I$	0
$u = 0.285946 + 0.770073I$ $a = -0.362338 - 1.160650I$ $b = -0.457760 - 0.768380I$	$-1.75813 - 2.05566I$	0
$u = 0.285946 - 0.770073I$ $a = -0.362338 + 1.160650I$ $b = -0.457760 + 0.768380I$	$-1.75813 + 2.05566I$	0
$u = -1.180940 + 0.074914I$ $a = 0.688027 + 0.286846I$ $b = -0.756451 + 0.227484I$	$2.65024 - 0.27372I$	0
$u = -1.180940 - 0.074914I$ $a = 0.688027 - 0.286846I$ $b = -0.756451 - 0.227484I$	$2.65024 + 0.27372I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.093160 + 0.476720I$ $a = -1.45067 - 0.23492I$ $b = -0.596430 - 0.942263I$	$-5.38564I$	0
$u = -1.093160 - 0.476720I$ $a = -1.45067 + 0.23492I$ $b = -0.596430 + 0.942263I$	$5.38564I$	0
$u = 1.039270 + 0.592880I$ $a = -0.306327 - 0.686797I$ $b = -0.659067 - 0.153585I$	$-1.13197 + 6.36472I$	0
$u = 1.039270 - 0.592880I$ $a = -0.306327 + 0.686797I$ $b = -0.659067 + 0.153585I$	$-1.13197 - 6.36472I$	0
$u = 1.111060 + 0.488310I$ $a = -0.618644 + 0.545233I$ $b = 0.113358 + 0.922536I$	$1.63283 + 5.97986I$	0
$u = 1.111060 - 0.488310I$ $a = -0.618644 - 0.545233I$ $b = 0.113358 - 0.922536I$	$1.63283 - 5.97986I$	0
$u = 0.112316 + 0.777931I$ $a = -0.169940 + 0.169777I$ $b = -1.184200 + 0.189445I$	$3.50334 - 5.22185I$	0
$u = 0.112316 - 0.777931I$ $a = -0.169940 - 0.169777I$ $b = -1.184200 - 0.189445I$	$3.50334 + 5.22185I$	0
$u = -1.118210 + 0.487349I$ $a = -1.06729 - 2.29249I$ $b = 1.074660 - 0.591684I$	$4.30895 - 6.29751I$	0
$u = -1.118210 - 0.487349I$ $a = -1.06729 + 2.29249I$ $b = 1.074660 + 0.591684I$	$4.30895 + 6.29751I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.112460 + 0.513795I$ $a = \quad 0.93605 + 2.47485I$ $b = -1.102230 + 0.723986I$	$1.58968 - 11.50070I$	0
$u = -1.112460 - 0.513795I$ $a = \quad 0.93605 - 2.47485I$ $b = -1.102230 - 0.723986I$	$1.58968 + 11.50070I$	0
$u = -1.201280 + 0.247663I$ $a = -1.152390 + 0.563096I$ $b = \quad 0.767573 + 0.527208I$	$0.272373I$	0
$u = -1.201280 - 0.247663I$ $a = -1.152390 - 0.563096I$ $b = \quad 0.767573 - 0.527208I$	$-\,0.272373I$	0
$u = -0.542849 + 0.528773I$ $a = -1.57978 + 1.93900I$ $b = -0.962080 + 0.625550I$	$-1.63283 - 5.97986I$	$0. + 7.47175I$
$u = -0.542849 - 0.528773I$ $a = -1.57978 - 1.93900I$ $b = -0.962080 - 0.625550I$	$-1.63283 + 5.97986I$	$0. - 7.47175I$
$u = -1.183430 + 0.418904I$ $a = -0.99759 - 1.35347I$ $b = \quad 1.195410 - 0.132152I$	$7.35083 - 3.98370I$	0
$u = -1.183430 - 0.418904I$ $a = -0.99759 + 1.35347I$ $b = \quad 1.195410 + 0.132152I$	$7.35083 + 3.98370I$	0
$u = \quad 1.164170 + 0.471096I$ $a = -0.952649 + 0.792236I$ $b = \quad 1.256620 - 0.010633I$	$6.98083 + 4.42168I$	0
$u = \quad 1.164170 - 0.471096I$ $a = -0.952649 - 0.792236I$ $b = \quad 1.256620 + 0.010633I$	$6.98083 - 4.42168I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.231530+0.267297I$ $a=-0.652314-0.692358I$ $b=\ 0.566387-0.913964I$	$0.48420+2.77068I$	0
$u=-1.231530-0.267297I$ $a=-0.652314+0.692358I$ $b=\ 0.566387+0.913964I$	$0.48420-2.77068I$	0
$u=-1.208070+0.381842I$ $a=\ 0.934726+0.877986I$ $b=-1.191400-0.091961I$	$7.43467+1.22279I$	0
$u=-1.208070-0.381842I$ $a=\ 0.934726-0.877986I$ $b=-1.191400+0.091961I$	$7.43467-1.22279I$	0
$u=-1.259790+0.151116I$ $a=-0.453722-0.495795I$ $b=\ 0.930686-0.572922I$	$0.56892-4.18783I$	0
$u=-1.259790-0.151116I$ $a=-0.453722+0.495795I$ $b=\ 0.930686+0.572922I$	$0.56892+4.18783I$	0
$u=\ 1.146980+0.550556I$ $a=-0.862666+0.240336I$ $b=-0.415566+0.872115I$	$0.78347+7.01604I$	0
$u=\ 1.146980-0.550556I$ $a=-0.862666-0.240336I$ $b=-0.415566-0.872115I$	$0.78347-7.01604I$	0
$u=\ 0.708510+0.148960I$ $a=-1.35933+0.48672I$ $b=\ 1.111470+0.264109I$	$2.73938+1.31927I$	$-1.08879-3.18259I$
$u=\ 0.708510-0.148960I$ $a=-1.35933-0.48672I$ $b=\ 1.111470-0.264109I$	$2.73938-1.31927I$	$-1.08879+3.18259I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.179660 + 0.499614I$ $a = 0.98803 - 1.15818I$ $b = -1.258320 - 0.199748I$	$6.60278 + 9.89815I$	0
$u = 1.179660 - 0.499614I$ $a = 0.98803 + 1.15818I$ $b = -1.258320 + 0.199748I$	$6.60278 - 9.89815I$	0
$u = 1.130540 + 0.604539I$ $a = 0.949298 + 0.166912I$ $b = 0.771487 - 0.575515I$	$-2.62178 + 4.12294I$	0
$u = 1.130540 - 0.604539I$ $a = 0.949298 - 0.166912I$ $b = 0.771487 + 0.575515I$	$-2.62178 - 4.12294I$	0
$u = 0.043874 + 0.715470I$ $a = 0.118213 + 0.516293I$ $b = 1.163740 + 0.031232I$	$3.83704 - 0.08668I$	$3.19246 - 0.21288I$
$u = 0.043874 - 0.715470I$ $a = 0.118213 - 0.516293I$ $b = 1.163740 - 0.031232I$	$3.83704 + 0.08668I$	$3.19246 + 0.21288I$
$u = -1.252610 + 0.293273I$ $a = 0.694772 - 0.089576I$ $b = -1.066810 - 0.557995I$	$4.75639 + 3.57361I$	0
$u = -1.252610 - 0.293273I$ $a = 0.694772 + 0.089576I$ $b = -1.066810 + 0.557995I$	$4.75639 - 3.57361I$	0
$u = 1.161810 + 0.566216I$ $a = -1.36434 + 1.96940I$ $b = 0.923398 + 0.578213I$	$-2.13189 + 8.72336I$	0
$u = 1.161810 - 0.566216I$ $a = -1.36434 - 1.96940I$ $b = 0.923398 - 0.578213I$	$-2.13189 - 8.72336I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.594019+0.381064I$ $a=\ 1.28558-1.88876I$ $b=\ 0.773477-0.453418I$	$0.86516-1.74421I$	$1.98893+4.15175I$
$u=-0.594019-0.381064I$ $a=\ 1.28558+1.88876I$ $b=\ 0.773477+0.453418I$	$0.86516+1.74421I$	$1.98893-4.15175I$
$u=\ 1.173890+0.567584I$ $a=\ 1.066740-0.224177I$ $b=\ 0.626275-1.004470I$	$-1.58968+11.50070I$	0
$u=\ 1.173890-0.567584I$ $a=\ 1.066740+0.224177I$ $b=\ 0.626275+1.004470I$	$-1.58968-11.50070I$	0
$u=-1.279690+0.278425I$ $a=-0.474167+0.231706I$ $b=\ 1.098150+0.703496I$	$2.13189+8.72336I$	0
$u=-1.279690-0.278425I$ $a=-0.474167-0.231706I$ $b=\ 1.098150-0.703496I$	$2.13189-8.72336I$	0
$u=-0.280100+0.626448I$ $a=-0.85214-2.21498I$ $b=-1.069570-0.680380I$	$-0.78347+7.01604I$	$-1.35162-4.29219I$
$u=-0.280100-0.626448I$ $a=-0.85214+2.21498I$ $b=-1.069570+0.680380I$	$-0.78347-7.01604I$	$-1.35162+4.29219I$
$u=\ 1.187900+0.563780I$ $a=\ 1.05519-1.90418I$ $b=-1.113560-0.642684I$	$2.84667+12.56330I$	0
$u=\ 1.187900-0.563780I$ $a=\ 1.05519+1.90418I$ $b=-1.113560+0.642684I$	$2.84667-12.56330I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.195030 + 0.577493I$ $a = -0.97359 + 2.03917I$ $b = 1.122560 + 0.759008I$	$17.9257I$	0
$u = 1.195030 - 0.577493I$ $a = -0.97359 - 2.03917I$ $b = 1.122560 - 0.759008I$	$-17.9257I$	0
$u = 0.541744 + 0.285983I$ $a = -0.328702 + 0.342755I$ $b = -0.260966 + 0.836171I$	$-1.63180 + 1.59965I$	$-5.07271 - 4.39349I$
$u = 0.541744 - 0.285983I$ $a = -0.328702 - 0.342755I$ $b = -0.260966 - 0.836171I$	$-1.63180 - 1.59965I$	$-5.07271 + 4.39349I$
$u = 0.200162 + 0.577888I$ $a = 0.501858 - 1.063660I$ $b = 0.020575 - 0.802253I$	$-0.86516 - 1.74421I$	$-1.98893 + 4.15175I$
$u = 0.200162 - 0.577888I$ $a = 0.501858 + 1.063660I$ $b = 0.020575 + 0.802253I$	$-0.86516 + 1.74421I$	$-1.98893 - 4.15175I$
$u = -0.194270 + 0.576839I$ $a = 0.44846 + 2.07334I$ $b = 1.015950 + 0.510772I$	$1.75813 + 2.05566I$	$2.13493 - 0.69938I$
$u = -0.194270 - 0.576839I$ $a = 0.44846 - 2.07334I$ $b = 1.015950 - 0.510772I$	$1.75813 - 2.05566I$	$2.13493 + 0.69938I$
$u = 0.363103 + 0.434065I$ $a = 2.22430 - 1.23554I$ $b = -0.689865 - 0.172565I$	$-2.65024 - 0.27372I$	$-1.41619 - 2.36703I$
$u = 0.363103 - 0.434065I$ $a = 2.22430 + 1.23554I$ $b = -0.689865 + 0.172565I$	$-2.65024 + 0.27372I$	$-1.41619 + 2.36703I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.395058 + 0.375841I$ $a = -0.58757 - 2.99479I$ $b = -0.658172 - 0.651342I$	$-2.51437 - 0.99262I$	$-4.03287 + 1.09288I$
$u = -0.395058 - 0.375841I$ $a = -0.58757 + 2.99479I$ $b = -0.658172 + 0.651342I$	$-2.51437 + 0.99262I$	$-4.03287 - 1.09288I$
$u = -0.265974 + 0.454743I$ $a = -1.50142 + 2.01612I$ $b = -0.568952 + 0.818115I$	$-2.29165 + 1.37776I$	$-3.68469 - 0.12674I$
$u = -0.265974 - 0.454743I$ $a = -1.50142 - 2.01612I$ $b = -0.568952 - 0.818115I$	$-2.29165 - 1.37776I$	$-3.68469 + 0.12674I$

II. $\boldsymbol{I_2^u = \langle -a^5 + a^4 - 2a^2 + b + a + 1,\ a^6 - a^5 + 2a^3 - a^2 - a + 1,\ u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3a^5 + a^3 + 6a^2 - 2a + 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.917982 + 0.270708I$ $b = 1.002190 + 0.295542I$	$3.53554 + 0.92430I$	$8.55174 - 0.47256I$
$u = -1.00000$ $a = -0.917982 - 0.270708I$ $b = 1.002190 - 0.295542I$	$3.53554 - 0.92430I$	$8.55174 + 0.47256I$
$u = -1.00000$ $a = 0.732786 + 0.381252I$ $b = -1.073950 + 0.558752I$	$1.64493 - 5.69302I$	$3.10838 + 3.92918I$
$u = -1.00000$ $a = 0.732786 - 0.381252I$ $b = -1.073950 - 0.558752I$	$1.64493 + 5.69302I$	$3.10838 - 3.92918I$
$u = -1.00000$ $a = 0.685196 + 1.063260I$ $b = -0.428243 + 0.664531I$	$-0.245672 + 0.924305I$	$-1.66012 - 2.42665I$
$u = -1.00000$ $a = 0.685196 - 1.063260I$ $b = -0.428243 - 0.664531I$	$-0.245672 - 0.924305I$	$-1.66012 + 2.42665I$

III. $\boldsymbol{I_3^u = \langle b,\ u^3 - u^2 + a + 1,\ u^6 - u^5 - u^4 + 2u^3 - u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.002190 + 0.295542I$ $a = 0.66103 - 1.45708I$ $b = 0$	$0.245672 - 0.924305I$	$1.66012 + 2.42665I$
$u = -1.002190 - 0.295542I$ $a = 0.66103 + 1.45708I$ $b = 0$	$0.245672 + 0.924305I$	$1.66012 - 2.42665I$
$u = 0.428243 + 0.664531I$ $a = -0.769407 + 0.497010I$ $b = 0$	$-3.53554 - 0.92430I$	$-8.55174 + 0.47256I$
$u = 0.428243 - 0.664531I$ $a = -0.769407 - 0.497010I$ $b = 0$	$-3.53554 + 0.92430I$	$-8.55174 - 0.47256I$
$u = 1.073950 + 0.558752I$ $a = -0.391622 - 0.558752I$ $b = 0$	$-1.64493 + 5.69302I$	$-3.10838 - 3.92918I$
$u = 1.073950 - 0.558752I$ $a = -0.391622 + 0.558752I$ $b = 0$	$-1.64493 - 5.69302I$	$-3.10838 + 3.92918I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^6(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^{114}+60u^{113}+\cdots+8u+1)$
c_2	$((u-1)^6)(u^6+u^5+\cdots+u+1)(u^{114}-8u^{113}+\cdots-8u+1)$
c_3	$u^6(u^6-u^5+\cdots-u+1)(u^{114}-2u^{113}+\cdots+128u+64)$
c_4	$((u+1)^6)(u^6-u^5+\cdots-u+1)(u^{114}-8u^{113}+\cdots-8u+1)$
c_5	$u^6(u^6+u^5+\cdots+u+1)(u^{114}+2u^{113}+\cdots-128u+64)$
c_6	$u^6(u^6+3u^5+5u^4+4u^3+2u^2+u+1)$ $\cdot(u^{114}-42u^{113}+\cdots-90112u+4096)$
c_7	$u^6(u^6+u^5+\cdots+u+1)(u^{114}-2u^{113}+\cdots+128u+64)$
c_8	$((u+1)^6)(u^6-u^5+\cdots-u+1)(u^{114}+8u^{113}+\cdots+8u+1)$
c_9	$u^6(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^{114}+42u^{113}+\cdots+90112u+4096)$
c_{10}	$u^6(u^6-u^5+\cdots-u+1)(u^{114}+2u^{113}+\cdots-128u+64)$
c_{11}	$(u+1)^6(u^6+3u^5+5u^4+4u^3+2u^2+u+1)$ $\cdot(u^{114}-60u^{113}+\cdots-8u+1)$
c_{12}	$((u-1)^6)(u^6+u^5+\cdots+u+1)(u^{114}+8u^{113}+\cdots+8u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$((y-1)^6)(y^6+y^5+\cdots+3y+1)(y^{114}-4y^{113}+\cdots+48y+1)$
c_2, c_4, c_8 c_{12}	$(y-1)^6(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot(y^{114}-60y^{113}+\cdots-8y+1)$
c_3, c_5, c_7 c_{10}	$y^6(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot(y^{114}-42y^{113}+\cdots-90112y+4096)$
c_6, c_9	$y^6(y^6+y^5+5y^4+6y^2+3y+1)$ $\cdot(y^{114}+50y^{113}+\cdots+293601280y+16777216)$