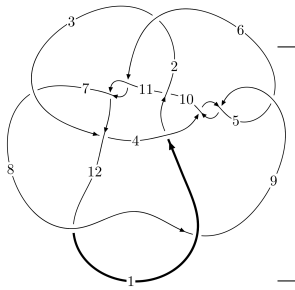
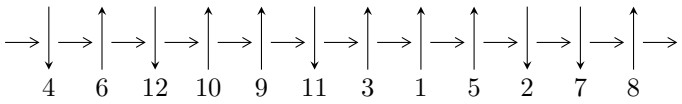
$12a_{1006}$ $(K12a_{1006})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -2.24498 \times 10^{1014} u^{129} - 1.33093 \times 10^{1013} u^{128} + \cdots + 9.28945 \times 10^{1015} b + 1.16318 \times 10^{1016}, \\ & - 1.06674 \times 10^{1015} u^{129} - 9.20458 \times 10^{1013} u^{128} + \cdots + 1.32706 \times 10^{1015} a + 4.44595 \times 10^{1016}, \\ & u^{130} - 2u^{128} + \cdots - 31u + 1 \rangle \\ I_2^u = \langle & 1.39792 \times 10^{34} u^{27} - 2.23429 \times 10^{34} u^{26} + \cdots + 6.97927 \times 10^{34} b - 1.16827 \times 10^{34}, \\ & - 5.21376 \times 10^{33} u^{27} + 5.87908 \times 10^{33} u^{26} + \cdots + 6.97927 \times 10^{34} a - 3.33304 \times 10^{34}, \ u^{28} - u^{27} + \cdots + 2u^2 - \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 158 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. $\boldsymbol{I_1^u = \langle -2.24 \times 10^{1014} u^{129} - 1.33 \times 10^{1013} u^{128} + \cdots + 9.29 \times 10^{1015} b + 1.16 \times 10^{1016},\ -1.07 \times 10^{1015} u^{129} - 9.20 \times 10^{1013} u^{128} + \cdots + 1.33 \times 10^{1015} a + 4.45 \times 10^{1016},\ u^{130} - 2u^{128} + \cdots - 31u + 1 \rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} 0.803832u^{129} + 0.0693605u^{128} + \cdots - 301.493u - 33.5022 \\ 0.0241670u^{129} + 0.00143273u^{128} + \cdots - 8.14510u - 1.25215 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.779665u^{129} + 0.0679277u^{128} + \cdots - 293.348u - 32.2500 \\ 0.0241670u^{129} + 0.00143273u^{128} + \cdots - 8.14510u - 1.25215 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.503106u^{129} + 0.135213u^{128} + \cdots - 166.105u - 36.6631 \\ 0.0850453u^{129} - 0.00933327u^{128} + \cdots - 18.2261u - 0.937790 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.790741u^{129} + 0.0694749u^{128} + \cdots - 300.167u - 33.5701 \\ 0.0222346u^{129} + 0.00215016u^{128} + \cdots - 8.18199u - 1.25060 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.10939u^{129} + 0.0985816u^{128} + \cdots - 368.491u - 49.7757 \\ 0.0499267u^{129} - 0.00557041u^{128} + \cdots - 7.45063u - 1.87644 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.996665u^{129} + 0.0764168u^{128} + \cdots - 351.098u - 49.0893 \\ 0.0588745u^{129} - 0.00862850u^{128} + \cdots - 9.17771u - 1.79165 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.65851u^{129} + 0.120942u^{128} + \cdots - 524.027u - 72.9335 \\ 0.0534113u^{129} + 0.00156281u^{128} + \cdots - 30.6408u - 2.23992 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.359127u^{129} + 0.0172995u^{128} + \cdots - 246.271u - 42.4467 \\ 0.0451233u^{129} - 0.0198763u^{128} + \cdots - 3.40264u - 1.63186 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.942279u^{129} - 0.0703869u^{128} + \cdots + 403.624u + 41.1454 \\ 0.0496351u^{129} - 0.0147851u^{128} + \cdots - 2.48796u + 2.00130 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.251625u^{129} + 0.0303260u^{128} + \cdots - 53.2435u - 5.10160$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{130} + 11u^{129} + \cdots + 1619394u - 1908844$
c_2	$u^{130} + 3u^{129} + \cdots + 2106443u + 199853$
c_3	$u^{130} - 3u^{128} + \cdots - 69u + 7$
c_4, c_5, c_9	$u^{130} - 3u^{129} + \cdots + 229u - 29$
c_6, c_{11}	$u^{130} - u^{129} + \cdots - 346u - 28$
c_7	$u^{130} - 2u^{128} + \cdots - 31u + 1$
c_8, c_{12}	$u^{130} + u^{129} + \cdots + 130501u - 12281$
c_{10}	$u^{130} + 7u^{129} + \cdots - 32698791u - 1935199$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{130} - 23y^{129} + \cdots - 118783470217580y + 3643685416336$
c_2	$y^{130} + 29y^{129} + \cdots + 1803493276335y + 39941221609$
c_3	$y^{130} - 6y^{129} + \cdots - 6679y + 49$
c_4, c_5, c_9	$y^{130} + 125y^{129} + \cdots - 59517y + 841$
c_6, c_{11}	$y^{130} - 97y^{129} + \cdots - 35996y + 784$
c_7	$y^{130} - 4y^{129} + \cdots - 1573y + 1$
c_8, c_{12}	$y^{130} - 89y^{129} + \cdots - 4730278955y + 150822961$
c_{10}	$y^{130} - 53y^{129} + \cdots - 307271885066539y + 3744995169601$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.568518 + 0.818526I$ $a = 1.30537 + 0.68838I$ $b = 1.47617 - 0.47349I$	$-12.09710 + 0.66028I$	0
$u = 0.568518 - 0.818526I$ $a = 1.30537 - 0.68838I$ $b = 1.47617 + 0.47349I$	$-12.09710 - 0.66028I$	0
$u = -0.637610 + 0.794466I$ $a = 0.464149 - 0.108175I$ $b = 0.210670 + 0.855261I$	$-5.66679 - 1.84230I$	0
$u = -0.637610 - 0.794466I$ $a = 0.464149 + 0.108175I$ $b = 0.210670 - 0.855261I$	$-5.66679 + 1.84230I$	0
$u = 1.04253$ $a = -1.13091$ $b = 1.02886$	2.21961	0
$u = 0.951082 + 0.430021I$ $a = -0.828807 + 0.377896I$ $b = -0.464152 - 0.648287I$	$1.30389 + 1.17953I$	0
$u = 0.951082 - 0.430021I$ $a = -0.828807 - 0.377896I$ $b = -0.464152 + 0.648287I$	$1.30389 - 1.17953I$	0
$u = -0.470392 + 0.933123I$ $a = 1.89360 - 0.36472I$ $b = 1.186250 + 0.305958I$	$-1.94110 - 4.24597I$	0
$u = -0.470392 - 0.933123I$ $a = 1.89360 + 0.36472I$ $b = 1.186250 - 0.305958I$	$-1.94110 + 4.24597I$	0
$u = 0.874780 + 0.584116I$ $a = -0.166962 - 0.175074I$ $b = -0.097138 + 1.104550I$	$2.68104 + 3.43893I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.874780 - 0.584116I$ $a = -0.166962 + 0.175074I$ $b = -0.097138 - 1.104550I$	$2.68104 - 3.43893I$	0
$u = -0.945830 + 0.024389I$ $a = -1.180790 - 0.402427I$ $b = 0.278518 + 0.568230I$	$-3.21381 + 5.65085I$	0
$u = -0.945830 - 0.024389I$ $a = -1.180790 + 0.402427I$ $b = 0.278518 - 0.568230I$	$-3.21381 - 5.65085I$	0
$u = 0.450456 + 0.953997I$ $a = -2.39991 - 0.39655I$ $b = -1.209660 + 0.279992I$	$-8.38195 + 6.60170I$	0
$u = 0.450456 - 0.953997I$ $a = -2.39991 + 0.39655I$ $b = -1.209660 - 0.279992I$	$-8.38195 - 6.60170I$	0
$u = 0.569234 + 0.750774I$ $a = 1.238770 - 0.612083I$ $b = 0.276603 - 0.175451I$	$-6.85078 - 2.81764I$	0
$u = 0.569234 - 0.750774I$ $a = 1.238770 + 0.612083I$ $b = 0.276603 + 0.175451I$	$-6.85078 + 2.81764I$	0
$u = -0.798627 + 0.487456I$ $a = 0.40101 - 1.67975I$ $b = 0.989295 + 0.553100I$	$-0.04628 - 5.21430I$	0
$u = -0.798627 - 0.487456I$ $a = 0.40101 + 1.67975I$ $b = 0.989295 - 0.553100I$	$-0.04628 + 5.21430I$	0
$u = -0.851565 + 0.673850I$ $a = 0.558040 + 0.104305I$ $b = -0.088096 + 0.586995I$	$-4.99906 - 3.32889I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.851565-0.673850I$ $a=\ \ 0.558040-0.104305I$ $b=-0.088096-0.586995I$	$-4.99906+3.32889I$	0
$u=-0.756818+0.797639I$ $a=\ \ 0.792094-1.069500I$ $b=\ \ 1.195650+0.047584I$	$-5.08072-1.54588I$	0
$u=-0.756818-0.797639I$ $a=\ \ 0.792094+1.069500I$ $b=\ \ 1.195650-0.047584I$	$-5.08072+1.54588I$	0
$u=-0.202487+1.081850I$ $a=\ \ 1.226540+0.006342I$ $b=\ \ 1.006010+0.676072I$	$-5.23300-3.00524I$	0
$u=-0.202487-1.081850I$ $a=\ \ 1.226540-0.006342I$ $b=\ \ 1.006010-0.676072I$	$-5.23300+3.00524I$	0
$u=\ \ 0.067821+0.892695I$ $a=\ \ 0.863538+0.730379I$ $b=-0.217358+0.116213I$	$1.66983+3.99377I$	0
$u=\ \ 0.067821-0.892695I$ $a=\ \ 0.863538-0.730379I$ $b=-0.217358-0.116213I$	$1.66983-3.99377I$	0
$u=-0.996392+0.543578I$ $a=\ \ 0.529252+0.119952I$ $b=\ \ 0.267432-0.768275I$	$4.80286-2.81007I$	0
$u=-0.996392-0.543578I$ $a=\ \ 0.529252-0.119952I$ $b=\ \ 0.267432+0.768275I$	$4.80286+2.81007I$	0
$u=\ \ 0.360758+1.079490I$ $a=-1.278930-0.330588I$ $b=-0.997476+0.349523I$	$-1.40422+1.99566I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.360758 - 1.079490I$ $a = -1.278930 + 0.330588I$ $b = -0.997476 - 0.349523I$	$-1.40422 - 1.99566I$	0
$u = 0.827739 + 0.205538I$ $a = 0.99749 - 1.21579I$ $b = -0.588180 + 0.543593I$	$2.26163 - 0.80769I$	0
$u = 0.827739 - 0.205538I$ $a = 0.99749 + 1.21579I$ $b = -0.588180 - 0.543593I$	$2.26163 + 0.80769I$	0
$u = 0.411826 + 0.745086I$ $a = -1.32426 - 1.85371I$ $b = -1.286230 + 0.045954I$	$-11.67270 + 2.83151I$	0
$u = 0.411826 - 0.745086I$ $a = -1.32426 + 1.85371I$ $b = -1.286230 - 0.045954I$	$-11.67270 - 2.83151I$	0
$u = 0.992024 + 0.581122I$ $a = -0.527207 - 0.093630I$ $b = -0.243157 - 0.929089I$	$0.13818 + 4.79899I$	0
$u = 0.992024 - 0.581122I$ $a = -0.527207 + 0.093630I$ $b = -0.243157 + 0.929089I$	$0.13818 - 4.79899I$	0
$u = 0.813245 + 0.825477I$ $a = -1.46553 + 0.09382I$ $b = -1.378720 + 0.191672I$	$-2.61977 + 3.30642I$	0
$u = 0.813245 - 0.825477I$ $a = -1.46553 - 0.09382I$ $b = -1.378720 - 0.191672I$	$-2.61977 - 3.30642I$	0
$u = -0.784196 + 0.868456I$ $a = -1.229760 + 0.495103I$ $b = -1.45433 - 0.47406I$	$-5.35695 - 4.09374I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.784196-0.868456I$ $a=-1.229760-0.495103I$ $b=-1.45433+0.47406I$	$-5.35695+4.09374I$	0
$u=-0.988827+0.641667I$ $a=\ \ 0.0996686-0.0541932I$ $b=\ \ 0.168601+1.111570I$	$4.12867-8.76175I$	0
$u=-0.988827-0.641667I$ $a=\ \ 0.0996686+0.0541932I$ $b=\ \ 0.168601-1.111570I$	$4.12867+8.76175I$	0
$u=\ \ 0.211629+0.783048I$ $a=-1.44980+0.01856I$ $b=-1.32973+0.56352I$	$-1.98456+2.68666I$	0
$u=\ \ 0.211629-0.783048I$ $a=-1.44980-0.01856I$ $b=-1.32973-0.56352I$	$-1.98456-2.68666I$	0
$u=-0.949576+0.735901I$ $a=-0.59807+1.50031I$ $b=-1.100920-0.089462I$	$-0.60698-4.59108I$	0
$u=-0.949576-0.735901I$ $a=-0.59807-1.50031I$ $b=-1.100920+0.089462I$	$-0.60698+4.59108I$	0
$u=\ \ 0.543250+1.084010I$ $a=\ \ 2.04031+1.44697I$ $b=\ \ 1.222590-0.032319I$	$-8.13441+6.95442I$	0
$u=\ \ 0.543250-1.084010I$ $a=\ \ 2.04031-1.44697I$ $b=\ \ 1.222590+0.032319I$	$-8.13441-6.95442I$	0
$u=-0.776691$ $a=\ \ 1.47696$ $b=\ \ 1.58587$	0.811342	10.5810

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.063893 + 0.753553I$ $a = 1.44833 + 0.06651I$ $b = 1.37010 + 0.77618I$	$-8.18877 - 4.30023I$	$-13.84345 + 0.I$
$u = 0.063893 - 0.753553I$ $a = 1.44833 - 0.06651I$ $b = 1.37010 - 0.77618I$	$-8.18877 + 4.30023I$	$-13.84345 + 0.I$
$u = 1.042030 + 0.709443I$ $a = -0.1004160 + 0.0355801I$ $b = -0.191526 + 1.110900I$	$-1.87169 + 13.08240I$	0
$u = 1.042030 - 0.709443I$ $a = -0.1004160 - 0.0355801I$ $b = -0.191526 - 1.110900I$	$-1.87169 - 13.08240I$	0
$u = 0.100950 + 1.292880I$ $a = -0.700789 + 0.448440I$ $b = 0.011735 + 0.195257I$	$-4.55877 - 7.16989I$	0
$u = 0.100950 - 1.292880I$ $a = -0.700789 - 0.448440I$ $b = 0.011735 - 0.195257I$	$-4.55877 + 7.16989I$	0
$u = 0.461286 + 0.496352I$ $a = -0.905894 - 0.505575I$ $b = 0.386005 + 0.621122I$	$1.59323 + 0.61502I$	$3.23997 + 0.71765I$
$u = 0.461286 - 0.496352I$ $a = -0.905894 + 0.505575I$ $b = 0.386005 - 0.621122I$	$1.59323 - 0.61502I$	$3.23997 - 0.71765I$
$u = 0.832812 + 1.049160I$ $a = 1.308550 + 0.391317I$ $b = 1.43005 - 0.49799I$	$-5.31453 + 8.79742I$	0
$u = 0.832812 - 1.049160I$ $a = 1.308550 - 0.391317I$ $b = 1.43005 + 0.49799I$	$-5.31453 - 8.79742I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.183160 + 0.633725I$ $a = -0.1075880 + 0.0836287I$ $b = 0.027792 - 0.654590I$	$5.04522 + 2.01937I$	0
$u = 1.183160 - 0.633725I$ $a = -0.1075880 - 0.0836287I$ $b = 0.027792 + 0.654590I$	$5.04522 - 2.01937I$	0
$u = 0.607463 + 0.245216I$ $a = -0.337863 - 0.096883I$ $b = 0.230514 + 0.593673I$	$1.045300 + 0.722902I$	$7.28787 - 2.21685I$
$u = 0.607463 - 0.245216I$ $a = -0.337863 + 0.096883I$ $b = 0.230514 - 0.593673I$	$1.045300 - 0.722902I$	$7.28787 + 2.21685I$
$u = 0.886717 + 1.019400I$ $a = -1.41413 - 0.85934I$ $b = -1.338820 + 0.426017I$	$-10.31820 + 6.44691I$	0
$u = 0.886717 - 1.019400I$ $a = -1.41413 + 0.85934I$ $b = -1.338820 - 0.426017I$	$-10.31820 - 6.44691I$	0
$u = -1.292280 + 0.415632I$ $a = 0.141753 - 0.071946I$ $b = -0.077916 - 0.749294I$	$0.772853 + 0.161579I$	0
$u = -1.292280 - 0.415632I$ $a = 0.141753 + 0.071946I$ $b = -0.077916 + 0.749294I$	$0.772853 - 0.161579I$	0
$u = -0.783163 + 1.109200I$ $a = -1.086870 + 0.388891I$ $b = -1.226260 + 0.124123I$	$-3.06879 + 1.51869I$	0
$u = -0.783163 - 1.109200I$ $a = -1.086870 - 0.388891I$ $b = -1.226260 - 0.124123I$	$-3.06879 - 1.51869I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.387153 + 0.503535I$ $a = -0.067295 - 0.366604I$ $b = 0.141722 - 1.343650I$	$-6.80625 + 6.00852I$	$-6.5984 - 12.6049I$
$u = 0.387153 - 0.503535I$ $a = -0.067295 + 0.366604I$ $b = 0.141722 + 1.343650I$	$-6.80625 - 6.00852I$	$-6.5984 + 12.6049I$
$u = -0.771931 + 1.160580I$ $a = -1.38549 + 0.35998I$ $b = -1.43485 - 0.52823I$	$-11.7969 - 12.2543I$	0
$u = -0.771931 - 1.160580I$ $a = -1.38549 - 0.35998I$ $b = -1.43485 + 0.52823I$	$-11.7969 + 12.2543I$	0
$u = -0.185381 + 0.575056I$ $a = -0.95437 - 1.07132I$ $b = -0.151887 + 0.044542I$	$-1.33016 + 0.97965I$	$-5.31368 - 0.58456I$
$u = -0.185381 - 0.575056I$ $a = -0.95437 + 1.07132I$ $b = -0.151887 - 0.044542I$	$-1.33016 - 0.97965I$	$-5.31368 + 0.58456I$
$u = -0.495512 + 0.249127I$ $a = 0.005156 - 0.155426I$ $b = -0.376065 - 1.159250I$	$-0.00070 - 2.98592I$	$5.8038 + 13.7955I$
$u = -0.495512 - 0.249127I$ $a = 0.005156 + 0.155426I$ $b = -0.376065 + 1.159250I$	$-0.00070 + 2.98592I$	$5.8038 - 13.7955I$
$u = 0.412006 + 0.348495I$ $a = -2.81811 + 0.17207I$ $b = -1.004020 + 0.268799I$	$-2.21129 + 3.77738I$	$0.40260 - 4.14688I$
$u = 0.412006 - 0.348495I$ $a = -2.81811 - 0.17207I$ $b = -1.004020 - 0.268799I$	$-2.21129 - 3.77738I$	$0.40260 + 4.14688I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.519885+0.092491I$ $a=-0.208154+0.540120I$ $b=-1.097060-0.772163I$	$-0.60445-3.18290I$	$7.51976-6.77683I$
$u=-0.519885-0.092491I$ $a=-0.208154-0.540120I$ $b=-1.097060+0.772163I$	$-0.60445+3.18290I$	$7.51976+6.77683I$
$u=-1.16519+0.92556I$ $a=-0.104464+0.206239I$ $b=-0.103477-0.485368I$	$1.27402-3.96073I$	0
$u=-1.16519-0.92556I$ $a=-0.104464-0.206239I$ $b=-0.103477+0.485368I$	$1.27402+3.96073I$	0
$u=-1.14397+0.96921I$ $a=1.205010-0.652882I$ $b=1.38530+0.50548I$	$-1.94816-9.09119I$	0
$u=-1.14397-0.96921I$ $a=1.205010+0.652882I$ $b=1.38530-0.50548I$	$-1.94816+9.09119I$	0
$u=-0.52765+1.40725I$ $a=1.074260-0.512404I$ $b=0.957876+0.073390I$	$-5.44235-0.12690I$	0
$u=-0.52765-1.40725I$ $a=1.074260+0.512404I$ $b=0.957876-0.073390I$	$-5.44235+0.12690I$	0
$u=-0.420068+0.241749I$ $a=-1.175000-0.342744I$ $b=-1.28386+1.01152I$	$-4.84120-6.22354I$	$5.4710+14.7902I$
$u=-0.420068-0.241749I$ $a=-1.175000+0.342744I$ $b=-1.28386-1.01152I$	$-4.84120+6.22354I$	$5.4710-14.7902I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.422698 + 0.095404I$ $a = 0.705862 - 0.295463I$ $b = 1.11556 + 1.11797I$	$1.22229 + 1.85561I$	$22.0787 - 10.1963I$
$u = 0.422698 - 0.095404I$ $a = 0.705862 + 0.295463I$ $b = 1.11556 - 1.11797I$	$1.22229 - 1.85561I$	$22.0787 + 10.1963I$
$u = -1.30242 + 0.98890I$ $a = -0.792237 + 0.650634I$ $b = -1.067590 - 0.224668I$	$-0.30081 - 4.46992I$	0
$u = -1.30242 - 0.98890I$ $a = -0.792237 - 0.650634I$ $b = -1.067590 + 0.224668I$	$-0.30081 + 4.46992I$	0
$u = 1.23838 + 1.07050I$ $a = -1.258080 - 0.531794I$ $b = -1.41627 + 0.49751I$	$-0.8149 + 14.4271I$	0
$u = 1.23838 - 1.07050I$ $a = -1.258080 + 0.531794I$ $b = -1.41627 - 0.49751I$	$-0.8149 - 14.4271I$	0
$u = -0.293653 + 0.069234I$ $a = 3.55119 + 3.51423I$ $b = 0.796509 - 0.134342I$	$2.42862 + 0.45229I$	$4.76661 - 2.11342I$
$u = -0.293653 - 0.069234I$ $a = 3.55119 - 3.51423I$ $b = 0.796509 + 0.134342I$	$2.42862 - 0.45229I$	$4.76661 + 2.11342I$
$u = 1.39175 + 0.98851I$ $a = -0.740426 - 0.493712I$ $b = -1.148850 - 0.051129I$	$-3.96210 - 1.34417I$	0
$u = 1.39175 - 0.98851I$ $a = -0.740426 + 0.493712I$ $b = -1.148850 + 0.051129I$	$-3.96210 + 1.34417I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.26021+1.16288I$ $a=\ 1.319990-0.482391I$ $b=\ 1.42923+0.48933I$	$-6.9416-18.7247I$	0
$u=-1.26021-1.16288I$ $a=\ 1.319990+0.482391I$ $b=\ 1.42923-0.48933I$	$-6.9416+18.7247I$	0
$u=\ 1.45814+0.99541I$ $a=\ 1.038330+0.232523I$ $b=\ 1.252460+0.129503I$	$-9.12657+0.95203I$	0
$u=\ 1.45814-0.99541I$ $a=\ 1.038330-0.232523I$ $b=\ 1.252460-0.129503I$	$-9.12657-0.95203I$	0
$u=\ 0.210588+0.062546I$ $a=\ 8.30722+7.91597I$ $b=\ 1.088860-0.276135I$	$-5.49689+8.93624I$	$1.05657-9.91092I$
$u=\ 0.210588-0.062546I$ $a=\ 8.30722-7.91597I$ $b=\ 1.088860+0.276135I$	$-5.49689-8.93624I$	$1.05657+9.91092I$
$u=-1.78051$ $a=\ 0.639192$ $b=\ 1.34270$	-4.06041	0
$u=-0.178443+0.120032I$ $a=\ 4.61817-8.10142I$ $b=-0.896347+0.294156I$	$1.53512+4.48092I$	$6.80496-6.48563I$
$u=-0.178443-0.120032I$ $a=\ 4.61817+8.10142I$ $b=-0.896347-0.294156I$	$1.53512-4.48092I$	$6.80496+6.48563I$
$u=\ 1.33776+1.22497I$ $a=\ 1.039230+0.354705I$ $b=\ 1.137430-0.374234I$	$2.12244+7.00804I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.33776 - 1.22497I$ $a = 1.039230 - 0.354705I$ $b = 1.137430 + 0.374234I$	$2.12244 - 7.00804I$	0
$u = -0.088296 + 0.152527I$ $a = 4.97308 + 4.88599I$ $b = 1.48620 - 0.09686I$	$-6.31465 - 0.78917I$	$-6.24217 - 0.30715I$
$u = -0.088296 - 0.152527I$ $a = 4.97308 - 4.88599I$ $b = 1.48620 + 0.09686I$	$-6.31465 + 0.78917I$	$-6.24217 + 0.30715I$
$u = -1.32067 + 1.29312I$ $a = -1.090110 + 0.238999I$ $b = -1.168530 - 0.457287I$	$-2.77584 - 9.74851I$	0
$u = -1.32067 - 1.29312I$ $a = -1.090110 - 0.238999I$ $b = -1.168530 + 0.457287I$	$-2.77584 + 9.74851I$	0
$u = 0.61897 + 1.76307I$ $a = 1.203580 + 0.294382I$ $b = 1.233020 + 0.136176I$	$-2.46866 - 5.31459I$	0
$u = 0.61897 - 1.76307I$ $a = 1.203580 - 0.294382I$ $b = 1.233020 - 0.136176I$	$-2.46866 + 5.31459I$	0
$u = -1.28788 + 1.36468I$ $a = -1.36172 + 0.40287I$ $b = -1.278860 - 0.292862I$	$0.99532 - 5.52281I$	0
$u = -1.28788 - 1.36468I$ $a = -1.36172 - 0.40287I$ $b = -1.278860 + 0.292862I$	$0.99532 + 5.52281I$	0
$u = 1.16983 + 1.50893I$ $a = 1.53578 + 0.45763I$ $b = 1.314610 - 0.244974I$	$-3.16990 + 6.81082I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.16983 - 1.50893I$ $a = 1.53578 - 0.45763I$ $b = 1.314610 + 0.244974I$	$-3.16990 - 6.81082I$	0
$u = 1.93101 + 0.10644I$ $a = -0.712713 - 0.091674I$ $b = -1.341950 - 0.115937I$	$-8.40996 + 3.46860I$	0
$u = 1.93101 - 0.10644I$ $a = -0.712713 + 0.091674I$ $b = -1.341950 + 0.115937I$	$-8.40996 - 3.46860I$	0
$u = 1.44864 + 1.31043I$ $a = 1.325420 + 0.262887I$ $b = 1.306550 - 0.331865I$	$-3.54424 + 3.76653I$	0
$u = 1.44864 - 1.31043I$ $a = 1.325420 - 0.262887I$ $b = 1.306550 + 0.331865I$	$-3.54424 - 3.76653I$	0
$u = 0.0256857$ $a = -41.0569$ $b = -1.43304$	-1.59020	-6.43260
$u = -1.83014 + 1.05812I$ $a = 0.789120 - 0.368630I$ $b = 1.150740 - 0.110794I$	$-9.33600 + 4.11530I$	0
$u = -1.83014 - 1.05812I$ $a = 0.789120 + 0.368630I$ $b = 1.150740 + 0.110794I$	$-9.33600 - 4.11530I$	0
$u = -0.85403 + 2.15944I$ $a = -1.192310 + 0.243332I$ $b = -1.232990 + 0.134244I$	$-8.26846 + 8.61335I$	0
$u = -0.85403 - 2.15944I$ $a = -1.192310 - 0.243332I$ $b = -1.232990 - 0.134244I$	$-8.26846 - 8.61335I$	0

II.

$\boldsymbol{I_2^u = \langle 1.40\times 10^{34}u^{27}-2.23\times 10^{34}u^{26}+\cdots+6.98\times 10^{34}b-1.17\times 10^{34},\ -5.21\times 10^{33}u^{27}+5.88\times 10^{33}u^{26}+\cdots+6.98\times 10^{34}a-3.33\times 10^{34},\ u^{28}-u^{27}+\cdots+2u^2-1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} 0.0747036u^{27} - 0.0842364u^{26} + \cdots + 0.676191u + 0.477563 \\ -0.200297u^{27} + 0.320133u^{26} + \cdots - 2.64575u + 0.167391 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.275000u^{27} - 0.404370u^{26} + \cdots + 3.32194u + 0.310172 \\ -0.200297u^{27} + 0.320133u^{26} + \cdots - 2.64575u + 0.167391 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.412925u^{27} - 0.266049u^{26} + \cdots + 0.599395u - 0.0538737 \\ -0.0161311u^{27} - 0.169651u^{26} + \cdots + 1.03640u - 0.190873 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.110744u^{27} - 0.180276u^{26} + \cdots + 0.951191u + 0.348194 \\ -0.154486u^{27} + 0.260582u^{26} + \cdots - 2.48150u + 0.107553 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0870212u^{27} + 0.00317008u^{26} + \cdots + 2.78654u + 0.885461 \\ 0.0154756u^{27} - 0.0382360u^{26} + \cdots - 0.704365u - 0.480013 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.110051u^{27} - 0.215550u^{26} + \cdots + 3.07528u + 0.561378 \\ 0.300924u^{27} - 0.390292u^{26} + \cdots - 0.556516u - 0.475022 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.448691u^{27} - 0.413532u^{26} + \cdots - 0.133095u + 0.230493 \\ -0.269754u^{27} + 0.251001u^{26} + \cdots - 0.809373u + 0.148073 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.144262u^{27} - 0.269879u^{26} + \cdots + 2.55923u - 0.00600078 \\ -0.0712664u^{27} + 0.106809u^{26} + \cdots - 0.645798u - 0.355688 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.229256u^{27} + 0.190505u^{26} + \cdots + 1.39225u + 0.140222 \\ 0.0991592u^{27} - 0.0151344u^{26} + \cdots - 2.82861u + 0.111125 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -1.40921u^{27} + 2.29903u^{26} + \cdots + 1.28950u - 2.94091$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 12u^{27} + \cdots - 33u + 1$
c_2	$u^{28} - 4u^{27} + \cdots - 2u - 7$
c_3	$u^{28} - 5u^{27} + \cdots - 6u - 1$
c_4, c_5	$u^{28} + 14u^{26} + \cdots + 6u^2 + 1$
c_6	$u^{28} - 11u^{26} + \cdots - 14u + 7$
c_7	$u^{28} - u^{27} + \cdots + 2u^2 - 1$
c_8	$u^{28} - 11u^{26} + \cdots - 2u + 7$
c_9	$u^{28} + 14u^{26} + \cdots + 6u^2 + 1$
c_{10}	$u^{28} - 3u^{26} + \cdots + 2u + 1$
c_{11}	$u^{28} - 11u^{26} + \cdots + 14u + 7$
c_{12}	$u^{28} - 11u^{26} + \cdots + 2u + 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 12y^{27} + \cdots - 593y + 1$
c_2	$y^{28} + 12y^{27} + \cdots + 276y + 49$
c_3	$y^{28} + y^{27} + \cdots + 6y + 1$
c_4, c_5, c_9	$y^{28} + 28y^{27} + \cdots + 12y + 1$
c_6, c_{11}	$y^{28} - 22y^{27} + \cdots - 238y + 49$
c_7	$y^{28} - y^{27} + \cdots - 4y + 1$
c_8, c_{12}	$y^{28} - 22y^{27} + \cdots - 914y + 49$
c_{10}	$y^{28} - 6y^{27} + \cdots - 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.758334+0.602441I$ $a=-0.69891+1.87292I$ $b=-0.956714-0.381670I$	$0.82571-5.53765I$	$5.41524+9.85008I$
$u=-0.758334-0.602441I$ $a=-0.69891-1.87292I$ $b=-0.956714+0.381670I$	$0.82571+5.53765I$	$5.41524-9.85008I$
$u=\ \ 0.910630+0.530148I$ $a=-0.213744+0.306495I$ $b=-0.127418-0.806707I$	$3.57812+2.01110I$	$5.46859-1.35426I$
$u=\ \ 0.910630-0.530148I$ $a=-0.213744-0.306495I$ $b=-0.127418+0.806707I$	$3.57812-2.01110I$	$5.46859+1.35426I$
$u=-0.143010+0.871281I$ $a=\ \ 1.54017-0.05513I$ $b=\ \ 1.141760+0.504943I$	$-1.61488-2.77291I$	$6.90476+9.92387I$
$u=-0.143010-0.871281I$ $a=\ \ 1.54017+0.05513I$ $b=\ \ 1.141760-0.504943I$	$-1.61488+2.77291I$	$6.90476-9.92387I$
$u=-0.427966+0.694619I$ $a=-1.69240+0.47235I$ $b=-1.041500+0.502581I$	$-7.45689+4.49635I$	$-1.85980-5.03187I$
$u=-0.427966-0.694619I$ $a=-1.69240-0.47235I$ $b=-1.041500-0.502581I$	$-7.45689-4.49635I$	$-1.85980+5.03187I$
$u=\ \ 0.797799$ $a=-2.22618$ $b=\ \ 0.591117$	3.54254	14.0110
$u=\ \ 0.432625+1.322100I$ $a=-1.278190+0.038416I$ $b=-1.169260+0.422704I$	$-5.16754+2.08965I$	$-3.78900-0.26988I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.432625 - 1.322100I$ $a = -1.278190 - 0.038416I$ $b = -1.169260 - 0.422704I$	$-5.16754 - 2.08965I$	$-3.78900 + 0.26988I$
$u = -1.41764$ $a = \ 0.456061$ $b = \ 1.27135$	-4.97081	-8.77290
$u = -1.23503 + 0.69672I$ $a = \ 0.436080 + 0.129576I$ $b = \ 0.200941 - 0.429773I$	$1.29821 - 3.06154I$	$4.35639 + 0.26454I$
$u = -1.23503 - 0.69672I$ $a = \ 0.436080 - 0.129576I$ $b = \ 0.200941 + 0.429773I$	$1.29821 + 3.06154I$	$4.35639 - 0.26454I$
$u = \ 0.10638 + 1.41683I$ $a = \ 2.22121 + 0.03563I$ $b = \ 1.141470 - 0.182881I$	$-6.75521 + 8.25117I$	$-2.16745 - 6.88789I$
$u = \ 0.10638 - 1.41683I$ $a = \ 2.22121 - 0.03563I$ $b = \ 1.141470 + 0.182881I$	$-6.75521 - 8.25117I$	$-2.16745 + 6.88789I$
$u = -0.014313 + 0.534166I$ $a = -0.476988 - 0.693353I$ $b = \ 0.793011 - 0.664719I$	$-5.31490 - 5.76828I$	$-3.55742 + 3.00884I$
$u = -0.014313 - 0.534166I$ $a = -0.476988 + 0.693353I$ $b = \ 0.793011 + 0.664719I$	$-5.31490 + 5.76828I$	$-3.55742 - 3.00884I$
$u = -0.422823 + 0.178177I$ $a = \ 0.82062 - 1.18025I$ $b = \ 1.18409 + 0.78004I$	$-0.77471 - 3.45746I$	$-4.4934 + 13.6152I$
$u = -0.422823 - 0.178177I$ $a = \ 0.82062 + 1.18025I$ $b = \ 1.18409 - 0.78004I$	$-0.77471 + 3.45746I$	$-4.4934 - 13.6152I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.58839 + 0.16635I$ $a = -0.649203 - 0.298228I$ $b = -1.260500 - 0.086969I$	$-9.68404 + 2.01031I$	$-7.36492 - 1.05081I$
$u = 1.58839 - 0.16635I$ $a = -0.649203 + 0.298228I$ $b = -1.260500 + 0.086969I$	$-9.68404 - 2.01031I$	$-7.36492 + 1.05081I$
$u = -1.02734 + 1.22338I$ $a = -1.40391 + 0.63467I$ $b = -1.210340 - 0.292693I$	$0.32018 - 5.90828I$	$-0.46916 + 8.80719I$
$u = -1.02734 - 1.22338I$ $a = -1.40391 - 0.63467I$ $b = -1.210340 + 0.292693I$	$0.32018 + 5.90828I$	$-0.46916 - 8.80719I$
$u = 0.273786 + 0.199222I$ $a = 1.000540 + 0.850896I$ $b = -0.909510 - 0.821098I$	$0.91146 + 1.75767I$	$-4.49324 - 2.36990I$
$u = 0.273786 - 0.199222I$ $a = 1.000540 - 0.850896I$ $b = -0.909510 + 0.821098I$	$0.91146 - 1.75767I$	$-4.49324 + 2.36990I$
$u = 1.52693 + 1.52024I$ $a = 1.279800 + 0.324810I$ $b = 1.282740 - 0.228036I$	$-2.35006 + 5.61851I$	0
$u = 1.52693 - 1.52024I$ $a = 1.279800 - 0.324810I$ $b = 1.282740 + 0.228036I$	$-2.35006 - 5.61851I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{28}-12u^{27}+\cdots-33u+1)$ $\cdot(u^{130}+11u^{129}+\cdots+1619394u-1908844)$
c_2	$(u^{28}-4u^{27}+\cdots-2u-7)(u^{130}+3u^{129}+\cdots+2106443u+199853)$
c_3	$(u^{28}-5u^{27}+\cdots-6u-1)(u^{130}-3u^{128}+\cdots-69u+7)$
c_4, c_5	$(u^{28}+14u^{26}+\cdots+6u^2+1)(u^{130}-3u^{129}+\cdots+229u-29)$
c_6	$(u^{28}-11u^{26}+\cdots-14u+7)(u^{130}-u^{129}+\cdots-346u-28)$
c_7	$(u^{28}-u^{27}+\cdots+2u^2-1)(u^{130}-2u^{128}+\cdots-31u+1)$
c_8	$(u^{28}-11u^{26}+\cdots-2u+7)(u^{130}+u^{129}+\cdots+130501u-12281)$
c_9	$(u^{28}+14u^{26}+\cdots+6u^2+1)(u^{130}-3u^{129}+\cdots+229u-29)$
c_{10}	$(u^{28}-3u^{26}+\cdots+2u+1)$ $\cdot(u^{130}+7u^{129}+\cdots-32698791u-1935199)$
c_{11}	$(u^{28}-11u^{26}+\cdots+14u+7)(u^{130}-u^{129}+\cdots-346u-28)$
c_{12}	$(u^{28}-11u^{26}+\cdots+2u+7)(u^{130}+u^{129}+\cdots+130501u-12281)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{28}+12y^{27}+\cdots-593y+1)$ $\cdot(y^{130}-23y^{129}+\cdots-118783470217580y+3643685416336)$
c_2	$(y^{28}+12y^{27}+\cdots+276y+49)$ $\cdot(y^{130}+29y^{129}+\cdots+1803493276335y+39941221609)$
c_3	$(y^{28}+y^{27}+\cdots+6y+1)(y^{130}-6y^{129}+\cdots-6679y+49)$
c_4, c_5, c_9	$(y^{28}+28y^{27}+\cdots+12y+1)(y^{130}+125y^{129}+\cdots-59517y+841)$
c_6, c_{11}	$(y^{28}-22y^{27}+\cdots-238y+49)(y^{130}-97y^{129}+\cdots-35996y+784)$
c_7	$(y^{28}-y^{27}+\cdots-4y+1)(y^{130}-4y^{129}+\cdots-1573y+1)$
c_8, c_{12}	$(y^{28}-22y^{27}+\cdots-914y+49)$ $\cdot(y^{130}-89y^{129}+\cdots-4730278955y+150822961)$
c_{10}	$(y^{28}-6y^{27}+\cdots-6y+1)$ $\cdot(y^{130}-53y^{129}+\cdots-307271885066539y+3744995169601)$