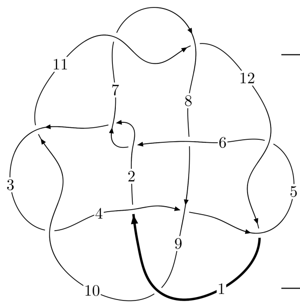
$12a_{1074}$ $(K12a_{1074})$



A knot diagram[1]

Linearized knot diagam

$$\begin{array}{ccccccccccccccccccccccccc} \to & \downarrow & \to & \downarrow & \to & \uparrow & \to & \downarrow & \to & \uparrow & \to & \downarrow & \to & \downarrow & \to & \downarrow & \to & \downarrow & \to & \uparrow & \to & \downarrow & \to & \uparrow & \to \\ & 4 & & 7 & & 10 & & 9 & & 12 & & 2 & & 11 & & 6 & & 1 & & 3 & & 8 & & 5 & \end{array}$$

Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -2.13559 \times 10^{526} u^{120} - 5.74073 \times 10^{526} u^{119} + \cdots + 1.31201 \times 10^{528} b - 3.70864 \times 10^{528}, \\ & -2.82909 \times 10^{528} u^{120} - 9.33657 \times 10^{528} u^{119} + \cdots + 2.37473 \times 10^{530} a - 1.67417 \times 10^{531}, \\ & u^{121} + 3u^{120} + \cdots + 1450u - 181 \rangle \\ I_2^u = \langle & -2231694469u^{20} - 1226056090u^{19} + \cdots + 4164425005b - 7694689318, \\ & -4558154114u^{20} - 8410552925u^{19} + \cdots + 4164425005a - 26590478038, \\ & u^{21} + 2u^{20} + \cdots + 10u - 1 \rangle \\ I_3^u = \langle & au + b + u - 1,\ 3a^2 + 5au - a - u - 1,\ u^2 - u + 1 \rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 146 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $I_1^u = \langle -2.14 \times 10^{526} u^{120} - 5.74 \times 10^{526} u^{119} + \cdots + 1.31 \times 10^{528} b - 3.71 \times 10^{528},\ -2.83 \times 10^{528} u^{120} - 9.34 \times 10^{528} u^{119} + \cdots + 2.37 \times 10^{530} a - 1.67 \times 10^{531},\ u^{121} + 3u^{120} + \cdots + 1450u - 181 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0119133u^{120} + 0.0393164u^{119} + \cdots - 24.0871u + 7.04992 \\ 0.0162773u^{120} + 0.0437554u^{119} + \cdots - 13.5908u + 2.82670 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.0305520u^{120} + 0.0872986u^{119} + \cdots - 37.4239u + 8.61611 \\ 0.0349160u^{120} + 0.0917376u^{119} + \cdots - 26.9275u + 4.39289 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.00834731u^{120} + 0.0202093u^{119} + \cdots - 8.92810u - 2.19712 \\ 0.0107908u^{120} + 0.0304109u^{119} + \cdots - 8.31838u + 0.839455 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0107132u^{120} - 0.0229770u^{119} + \cdots + 15.8883u - 5.22605 \\ -0.00537169u^{120} - 0.0154859u^{119} + \cdots + 2.14823u + 0.152098 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.00167720u^{120} + 0.00967718u^{119} + \cdots + 51.0564u - 10.8752 \\ 0.00864426u^{120} + 0.0627551u^{119} + \cdots + 32.5635u - 4.96936 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0278504u^{120} + 0.0806356u^{119} + \cdots - 40.7073u + 10.5239 \\ 0.0341964u^{120} + 0.0879060u^{119} + \cdots - 25.8887u + 4.00174 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.00356820u^{120} + 0.0105675u^{119} + \cdots - 3.51017u + 8.89582 \\ -0.0106742u^{120} - 0.0401533u^{119} + \cdots + 0.141025u + 0.717633 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.0197899u^{120} - 0.0323881u^{119} + \cdots + 12.0684u + 4.91754 \\ -0.0397528u^{120} - 0.0871958u^{119} + \cdots + 45.3723u - 5.06625 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.00625773u^{120} + 0.0304442u^{119} + \cdots - 36.4250u + 2.96180$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$5(5u^{121} - 64u^{120} + \cdots + 4296u - 144)$
c_2, c_6	$u^{121} - 2u^{120} + \cdots + 16178u + 383$
c_3, c_{10}	$3(3u^{121} + 3u^{120} + \cdots + 1609956u + 261691)$
c_4	$15(15u^{121} + 72u^{120} + \cdots + 140u - 29)$
c_5, c_{12}	$u^{121} - 3u^{120} + \cdots + 1450u + 181$
c_7, c_{11}	$5(5u^{121} + 8u^{120} + \cdots - 10917u - 4981)$
c_8	$3(3u^{121} - 45u^{120} + \cdots + 6.34847 \times 10^8 u - 4.47793 \times 10^7)$
c_9	$u^{121} + 4u^{120} + \cdots + 125847u - 25899$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$25(25y^{121} + 94y^{120} + \cdots + 2546496y - 20736)$
c_2, c_6	$y^{121} - 88y^{120} + \cdots + 86309854y - 146689$
c_3, c_{10}	$9(9y^{121} + 1023y^{120} + \cdots + 3.08179 \times 10^{11}y - 6.84822 \times 10^{10})$
c_4	$225(225y^{121} + 2346y^{120} + \cdots + 73134y - 841)$
c_5, c_{12}	$y^{121} + 99y^{120} + \cdots + 1609818y - 32761$
c_7, c_{11}	$25(25y^{121} - 3284y^{120} + \cdots + 1.46387 \times 10^{8}y - 2.48104 \times 10^{7})$
c_8	9 $\cdot (9y^{121} - 435y^{120} + \cdots + 46885882861787876y - 2005189738629025)$
c_9	$y^{121} - 46y^{120} + \cdots + 37919317395y - 670758201$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.022340 + 0.009120I$ $a = -0.242541 - 0.181469I$ $b = 0.776282 - 0.785492I$	$-3.80048 + 7.14105I$	0
$u = -1.022340 - 0.009120I$ $a = -0.242541 + 0.181469I$ $b = 0.776282 + 0.785492I$	$-3.80048 - 7.14105I$	0
$u = 0.922714 + 0.289721I$ $a = -0.275385 - 0.108522I$ $b = -0.783960 + 0.951417I$	$-2.70950 + 7.34236I$	0
$u = 0.922714 - 0.289721I$ $a = -0.275385 + 0.108522I$ $b = -0.783960 - 0.951417I$	$-2.70950 - 7.34236I$	0
$u = -0.474189 + 0.840234I$ $a = 0.555027 - 0.472580I$ $b = 0.264974 + 0.753965I$	$-0.00933 - 1.96008I$	0
$u = -0.474189 - 0.840234I$ $a = 0.555027 + 0.472580I$ $b = 0.264974 - 0.753965I$	$-0.00933 + 1.96008I$	0
$u = 0.528297 + 0.799355I$ $a = -0.40673 - 1.48975I$ $b = -0.320808 + 0.500076I$	$-1.83670 + 2.30670I$	0
$u = 0.528297 - 0.799355I$ $a = -0.40673 + 1.48975I$ $b = -0.320808 - 0.500076I$	$-1.83670 - 2.30670I$	0
$u = 0.957844 + 0.014072I$ $a = 0.353123 - 0.157882I$ $b = -0.605381 + 0.634924I$	$-0.20287 + 3.82489I$	0
$u = 0.957844 - 0.014072I$ $a = 0.353123 + 0.157882I$ $b = -0.605381 - 0.634924I$	$-0.20287 - 3.82489I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.060511 + 0.935302I$ $a = 1.57543 - 1.64152I$ $b = 1.17243 - 1.12497I$	$-5.94582 - 1.40487I$	0
$u = -0.060511 - 0.935302I$ $a = 1.57543 + 1.64152I$ $b = 1.17243 + 1.12497I$	$-5.94582 + 1.40487I$	0
$u = -0.689945 + 0.819206I$ $a = -0.600596 + 1.145110I$ $b = -0.013533 - 0.584783I$	$-4.38555 - 2.66513I$	0
$u = -0.689945 - 0.819206I$ $a = -0.600596 - 1.145110I$ $b = -0.013533 + 0.584783I$	$-4.38555 + 2.66513I$	0
$u = -1.029900 + 0.321000I$ $a = 0.152897 - 0.056636I$ $b = 0.497317 + 0.767887I$	$0.70176 - 3.38003I$	0
$u = -1.029900 - 0.321000I$ $a = 0.152897 + 0.056636I$ $b = 0.497317 - 0.767887I$	$0.70176 + 3.38003I$	0
$u = 0.299735 + 1.045810I$ $a = -1.83923 + 0.32494I$ $b = -0.519863 + 0.497910I$	$-4.58942 + 5.33357I$	0
$u = 0.299735 - 1.045810I$ $a = -1.83923 - 0.32494I$ $b = -0.519863 - 0.497910I$	$-4.58942 - 5.33357I$	0
$u = 0.159861 + 0.872828I$ $a = 0.270231 + 1.150450I$ $b = 0.249673 - 0.935457I$	$-0.15646 + 3.50547I$	0
$u = 0.159861 - 0.872828I$ $a = 0.270231 - 1.150450I$ $b = 0.249673 + 0.935457I$	$-0.15646 - 3.50547I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.316646 + 1.074730I$ $a = -1.308740 - 0.270194I$ $b = -0.313587 - 0.109541I$	$-2.69879 + 1.53463I$	0
$u = 0.316646 - 1.074730I$ $a = -1.308740 + 0.270194I$ $b = -0.313587 + 0.109541I$	$-2.69879 - 1.53463I$	0
$u = -0.030630 + 1.120100I$ $a = -0.01175 - 2.08893I$ $b = 0.00611 - 3.04806I$	$-6.55002 + 0.45879I$	0
$u = -0.030630 - 1.120100I$ $a = -0.01175 + 2.08893I$ $b = 0.00611 + 3.04806I$	$-6.55002 - 0.45879I$	0
$u = 0.805315 + 0.310316I$ $a = -0.635861 + 0.962292I$ $b = -0.240042 - 0.826388I$	$-8.49552 - 5.40077I$	0
$u = 0.805315 - 0.310316I$ $a = -0.635861 - 0.962292I$ $b = -0.240042 + 0.826388I$	$-8.49552 + 5.40077I$	0
$u = -0.231644 + 0.814629I$ $a = 1.171320 - 0.298246I$ $b = 0.163209 + 0.367042I$	$-0.01580 - 1.58349I$	0
$u = -0.231644 - 0.814629I$ $a = 1.171320 + 0.298246I$ $b = 0.163209 - 0.367042I$	$-0.01580 + 1.58349I$	0
$u = -0.050240 + 1.153920I$ $a = -1.028920 - 0.755889I$ $b = -0.435896 - 0.162913I$	$-1.91827 - 2.69742I$	0
$u = -0.050240 - 1.153920I$ $a = -1.028920 + 0.755889I$ $b = -0.435896 + 0.162913I$	$-1.91827 + 2.69742I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.189499 + 1.187980I$ $a = -1.84930 - 0.21352I$ $b = -1.50373 + 0.55250I$	$-4.90801 + 2.13134I$	0
$u = 0.189499 - 1.187980I$ $a = -1.84930 + 0.21352I$ $b = -1.50373 - 0.55250I$	$-4.90801 - 2.13134I$	0
$u = 0.016176 + 1.206930I$ $a = -0.980033 - 0.097239I$ $b = -0.64985 + 1.34099I$	$-8.15940 + 2.80868I$	0
$u = 0.016176 - 1.206930I$ $a = -0.980033 + 0.097239I$ $b = -0.64985 - 1.34099I$	$-8.15940 - 2.80868I$	0
$u = 0.407852 + 1.144410I$ $a = 1.86020 + 0.23523I$ $b = 0.319835 - 0.428833I$	$-11.0421 + 9.9007I$	0
$u = 0.407852 - 1.144410I$ $a = 1.86020 - 0.23523I$ $b = 0.319835 + 0.428833I$	$-11.0421 - 9.9007I$	0
$u = 0.020583 + 1.216020I$ $a = -1.50759 - 0.15475I$ $b = -1.05285 - 0.99302I$	$-4.91369 + 0.61656I$	0
$u = 0.020583 - 1.216020I$ $a = -1.50759 + 0.15475I$ $b = -1.05285 + 0.99302I$	$-4.91369 - 0.61656I$	0
$u = -0.382210 + 0.662903I$ $a = -0.33079 + 2.20870I$ $b = -1.19951 + 1.10983I$	$-7.06278 - 0.70692I$	$-4.00000 + 0.I$
$u = -0.382210 - 0.662903I$ $a = -0.33079 - 2.20870I$ $b = -1.19951 - 1.10983I$	$-7.06278 + 0.70692I$	$-4.00000 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.737114 + 0.066944I$ $a = 0.462389 + 0.004012I$ $b = -0.349052 + 0.833100I$	$2.49912 - 0.05962I$	$2.63807 + 1.88743I$
$u = -0.737114 - 0.066944I$ $a = 0.462389 - 0.004012I$ $b = -0.349052 - 0.833100I$	$2.49912 + 0.05962I$	$2.63807 - 1.88743I$
$u = -0.209534 + 1.248830I$ $a = 1.65129 + 0.70435I$ $b = 0.365469 + 0.100547I$	$-7.44223 - 3.92659I$	0
$u = -0.209534 - 1.248830I$ $a = 1.65129 - 0.70435I$ $b = 0.365469 - 0.100547I$	$-7.44223 + 3.92659I$	0
$u = 0.011485 + 1.269170I$ $a = 1.86992 - 0.56189I$ $b = 1.010960 + 0.681278I$	$-14.6335 - 7.2486I$	0
$u = 0.011485 - 1.269170I$ $a = 1.86992 + 0.56189I$ $b = 1.010960 - 0.681278I$	$-14.6335 + 7.2486I$	0
$u = 0.213791 + 1.252970I$ $a = 1.339260 - 0.051118I$ $b = 1.40192 - 0.69182I$	$-5.21112 + 0.23468I$	0
$u = 0.213791 - 1.252970I$ $a = 1.339260 + 0.051118I$ $b = 1.40192 + 0.69182I$	$-5.21112 - 0.23468I$	0
$u = -1.228090 + 0.339234I$ $a = -0.1296310 + 0.0373765I$ $b = -0.755863 - 0.837074I$	$-9.4401 - 12.7748I$	0
$u = -1.228090 - 0.339234I$ $a = -0.1296310 - 0.0373765I$ $b = -0.755863 + 0.837074I$	$-9.4401 + 12.7748I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.330316 + 1.239210I$ $a = 1.397660 + 0.208551I$ $b = 1.07470 + 1.07681I$	$-1.13573 - 3.83643I$	0
$u = -0.330316 - 1.239210I$ $a = 1.397660 - 0.208551I$ $b = 1.07470 - 1.07681I$	$-1.13573 + 3.83643I$	0
$u = 0.124104 + 1.313070I$ $a = 1.57672 + 0.55923I$ $b = 1.56836 + 1.20234I$	$-15.4412 + 9.2136I$	0
$u = 0.124104 - 1.313070I$ $a = 1.57672 - 0.55923I$ $b = 1.56836 - 1.20234I$	$-15.4412 - 9.2136I$	0
$u = -0.290086 + 1.290960I$ $a = -1.43392 + 0.48396I$ $b = -0.974027 - 0.789928I$	$-10.19190 - 5.66988I$	0
$u = -0.290086 - 1.290960I$ $a = -1.43392 - 0.48396I$ $b = -0.974027 + 0.789928I$	$-10.19190 + 5.66988I$	0
$u = -0.108199 + 1.318820I$ $a = 2.57773 - 0.03109I$ $b = 1.93179 - 0.26017I$	$-8.61538 - 1.18236I$	0
$u = -0.108199 - 1.318820I$ $a = 2.57773 + 0.03109I$ $b = 1.93179 + 0.26017I$	$-8.61538 + 1.18236I$	0
$u = 0.641214 + 0.090897I$ $a = -0.522311 + 0.015492I$ $b = 0.608590 - 0.936126I$	$1.39715 + 4.27966I$	$0.96817 - 5.82626I$
$u = 0.641214 - 0.090897I$ $a = -0.522311 - 0.015492I$ $b = 0.608590 + 0.936126I$	$1.39715 - 4.27966I$	$0.96817 + 5.82626I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.302763 + 1.319770I$ $a = -1.60720 + 0.42776I$ $b = -1.31943 + 1.27371I$	$-3.02240 + 7.81264I$	0
$u = \ \ 0.302763 - 1.319770I$ $a = -1.60720 - 0.42776I$ $b = -1.31943 - 1.27371I$	$-3.02240 - 7.81264I$	0
$u = \ \ 1.35516$ $a = -0.133599$ $b = -0.580947$	-5.89826	0
$u = -1.356190 + 0.004675I$ $a = -0.119759 + 0.196038I$ $b = -0.696315 - 0.295138I$	$-10.52060 + 2.35330I$	0
$u = -1.356190 - 0.004675I$ $a = -0.119759 - 0.196038I$ $b = -0.696315 + 0.295138I$	$-10.52060 - 2.35330I$	0
$u = \ \ 0.721060 + 1.149960I$ $a = \ \ 0.189133 + 0.606593I$ $b = \ \ 0.553190 + 0.406994I$	$-4.90744 - 1.63438I$	0
$u = \ \ 0.721060 - 1.149960I$ $a = \ \ 0.189133 - 0.606593I$ $b = \ \ 0.553190 - 0.406994I$	$-4.90744 + 1.63438I$	0
$u = -0.104136 + 1.361060I$ $a = -1.260990 + 0.210760I$ $b = -1.23089 + 0.90630I$	$-10.88540 - 3.73003I$	0
$u = -0.104136 - 1.361060I$ $a = -1.260990 - 0.210760I$ $b = -1.23089 - 0.90630I$	$-10.88540 + 3.73003I$	0
$u = \ \ 0.409563 + 1.310960I$ $a = \ \ 1.381620 - 0.019101I$ $b = \ \ 1.14323 - 1.12648I$	$-4.37784 + 8.61034I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.409563 - 1.310960I$ $a = 1.381620 + 0.019101I$ $b = 1.14323 + 1.12648I$	$-4.37784 - 8.61034I$	0
$u = -0.469396 + 1.307450I$ $a = -1.55110 - 0.09204I$ $b = -1.38068 - 1.14377I$	$-7.8701 - 12.3854I$	0
$u = -0.469396 - 1.307450I$ $a = -1.55110 + 0.09204I$ $b = -1.38068 + 1.14377I$	$-7.8701 + 12.3854I$	0
$u = 0.224581 + 0.555638I$ $a = 1.225180 - 0.574453I$ $b = -0.204818 + 0.042322I$	$-0.20475 - 1.54591I$	$-2.26783 + 4.24475I$
$u = 0.224581 - 0.555638I$ $a = 1.225180 + 0.574453I$ $b = -0.204818 - 0.042322I$	$-0.20475 + 1.54591I$	$-2.26783 - 4.24475I$
$u = 0.035104 + 1.411250I$ $a = -0.20565 - 2.05359I$ $b = -0.22717 - 2.42005I$	$-7.54670 - 0.46592I$	0
$u = 0.035104 - 1.411250I$ $a = -0.20565 + 2.05359I$ $b = -0.22717 + 2.42005I$	$-7.54670 + 0.46592I$	0
$u = 0.531459 + 0.245760I$ $a = 0.583624 - 0.405997I$ $b = 0.299281 + 1.076830I$	$-2.32007 - 2.01771I$	$-4.62460 + 0.08491I$
$u = 0.531459 - 0.245760I$ $a = 0.583624 + 0.405997I$ $b = 0.299281 - 1.076830I$	$-2.32007 + 2.01771I$	$-4.62460 - 0.08491I$
$u = 0.340821 + 0.456240I$ $a = 0.026431 - 0.732116I$ $b = 0.430135 - 0.914497I$	$-1.94000 + 0.97114I$	$-10.63969 + 0.13238I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.340821 - 0.456240I$ $a = 0.026431 + 0.732116I$ $b = 0.430135 + 0.914497I$	$-1.94000 - 0.97114I$	$-10.63969 - 0.13238I$
$u = -0.518874 + 0.198720I$ $a = -0.04637 - 1.57067I$ $b = 1.041570 + 0.109265I$	$-5.84022 - 2.60029I$	$-9.35063 + 2.25636I$
$u = -0.518874 - 0.198720I$ $a = -0.04637 + 1.57067I$ $b = 1.041570 - 0.109265I$	$-5.84022 + 2.60029I$	$-9.35063 - 2.25636I$
$u = 1.42746 + 0.34142I$ $a = 0.125641 + 0.096762I$ $b = 0.599915 - 0.675820I$	$-4.36285 + 5.23411I$	0
$u = 1.42746 - 0.34142I$ $a = 0.125641 - 0.096762I$ $b = 0.599915 + 0.675820I$	$-4.36285 - 5.23411I$	0
$u = 0.17365 + 1.46402I$ $a = 0.525300 + 0.328473I$ $b = 0.556501 + 1.105140I$	$-14.5306 - 1.9666I$	0
$u = 0.17365 - 1.46402I$ $a = 0.525300 - 0.328473I$ $b = 0.556501 - 1.105140I$	$-14.5306 + 1.9666I$	0
$u = 0.37688 + 1.44182I$ $a = 1.70645 - 0.25860I$ $b = 1.27781 - 1.12368I$	$-8.2036 + 12.0004I$	0
$u = 0.37688 - 1.44182I$ $a = 1.70645 + 0.25860I$ $b = 1.27781 + 1.12368I$	$-8.2036 - 12.0004I$	0
$u = 0.00550 + 1.49053I$ $a = 0.429417 - 0.572355I$ $b = 0.375842 + 0.288891I$	$-14.1924 - 1.5887I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.00550 - 1.49053I$ $a = 0.429417 + 0.572355I$ $b = 0.375842 - 0.288891I$	$-14.1924 + 1.5887I$	0
$u = -0.42917 + 1.44757I$ $a = -1.394580 - 0.196137I$ $b = -1.09253 - 1.04210I$	$-4.80590 - 8.55401I$	0
$u = -0.42917 - 1.44757I$ $a = -1.394580 + 0.196137I$ $b = -1.09253 + 1.04210I$	$-4.80590 + 8.55401I$	0
$u = 0.51124 + 1.43735I$ $a = 1.177190 + 0.193204I$ $b = 1.060620 - 0.597161I$	$-10.86410 + 6.28199I$	0
$u = 0.51124 - 1.43735I$ $a = 1.177190 - 0.193204I$ $b = 1.060620 + 0.597161I$	$-10.86410 - 6.28199I$	0
$u = -0.49655 + 1.45926I$ $a = -0.664026 - 0.006783I$ $b = -0.488572 - 0.316789I$	$-2.66917 - 3.90264I$	0
$u = -0.49655 - 1.45926I$ $a = -0.664026 + 0.006783I$ $b = -0.488572 + 0.316789I$	$-2.66917 + 3.90264I$	0
$u = -0.56494 + 1.45866I$ $a = 1.151820 - 0.244624I$ $b = 0.944352 + 0.876457I$	$-15.3332 - 4.2378I$	0
$u = -0.56494 - 1.45866I$ $a = 1.151820 + 0.244624I$ $b = 0.944352 - 0.876457I$	$-15.3332 + 4.2378I$	0
$u = -0.51619 + 1.48893I$ $a = 1.083510 - 0.195090I$ $b = 1.267710 + 0.345221I$	$-15.6838 - 8.9310I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.51619-1.48893I$ $a=\ 1.083510+0.195090I$ $b=\ 1.267710-0.345221I$	$-15.6838+8.9310I$	0
$u=-0.48544+1.49961I$ $a=\ 1.44977+0.13964I$ $b=\ 1.21602+1.17355I$	$-15.1920-18.7481I$	0
$u=-0.48544-1.49961I$ $a=\ 1.44977-0.13964I$ $b=\ 1.21602-1.17355I$	$-15.1920+18.7481I$	0
$u=\ 0.51621+1.52241I$ $a=-1.245620+0.067624I$ $b=-1.04512+1.12378I$	$-10.1998+11.7877I$	0
$u=\ 0.51621-1.52241I$ $a=-1.245620-0.067624I$ $b=-1.04512-1.12378I$	$-10.1998-11.7877I$	0
$u=-0.377678+0.014743I$ $a=-3.18967+0.66718I$ $b=-0.179356-0.829029I$	$-3.68084-1.55057I$	$-3.21971+4.21559I$
$u=-0.377678-0.014743I$ $a=-3.18967-0.66718I$ $b=-0.179356+0.829029I$	$-3.68084+1.55057I$	$-3.21971-4.21559I$
$u=-0.335388+0.157476I$ $a=-1.59623-0.09530I$ $b=-1.33982-1.16101I$	$-4.01387+0.45479I$	$14.6406+6.1497I$
$u=-0.335388-0.157476I$ $a=-1.59623+0.09530I$ $b=-1.33982+1.16101I$	$-4.01387-0.45479I$	$14.6406-6.1497I$
$u=\ 0.365435$ $a=-0.299871$ $b=\ 0.873931$	-1.58749	-2.61860

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.48890 + 1.58677I$ $a = -0.211346 + 0.304967I$ $b = -0.445652 - 0.138505I$	$-8.51138 + 1.30633I$	0
$u = -0.48890 - 1.58677I$ $a = -0.211346 - 0.304967I$ $b = -0.445652 + 0.138505I$	$-8.51138 - 1.30633I$	0
$u = -0.054728 + 0.330524I$ $a = -0.14776 + 4.26458I$ $b = 0.631561 + 0.217685I$	$-5.40320 - 2.73968I$	$-12.84076 + 2.28451I$
$u = -0.054728 - 0.330524I$ $a = -0.14776 - 4.26458I$ $b = 0.631561 - 0.217685I$	$-5.40320 + 2.73968I$	$-12.84076 - 2.28451I$
$u = 0.39124 + 1.68170I$ $a = -0.779829 + 0.282564I$ $b = -0.869501 + 0.693561I$	$-9.87843 + 3.64795I$	0
$u = 0.39124 - 1.68170I$ $a = -0.779829 - 0.282564I$ $b = -0.869501 - 0.693561I$	$-9.87843 - 3.64795I$	0
$u = 0.211229 + 0.100342I$ $a = -3.53839 + 4.40818I$ $b = -1.047710 - 0.235799I$	$-10.94850 + 7.81060I$	$-11.31954 - 4.68345I$
$u = 0.211229 - 0.100342I$ $a = -3.53839 - 4.40818I$ $b = -1.047710 + 0.235799I$	$-10.94850 - 7.81060I$	$-11.31954 + 4.68345I$
$u = 0.176942$ $a = 4.24643$ $b = 0.693149$	-1.46101	-4.87080
$u = -1.17013 + 1.93777I$ $a = 0.143439 - 0.126282I$ $b = 0.383096 + 0.026772I$	$-12.32860 + 4.17898I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.17013 - 1.93777I$ $a = \ \ 0.143439 + 0.126282I$ $b = \ \ 0.383096 - 0.026772I$	$-12.32860 - 4.17898I$	0

II.

$\boldsymbol{I^u_2 = \langle -2.23\times 10^{9}u^{20} - 1.23\times 10^{9}u^{19} + \cdots + 4.16\times 10^{9}b - 7.69\times 10^{9},\ -4.56\times 10^{9}u^{20} - 8.41\times 10^{9}u^{19} + \cdots + 4.16\times 10^{9}a - 2.66\times 10^{10},\ u^{21} + 2u^{20} + \cdots + 10u - 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_9 = \begin{pmatrix} 1.09455u^{20} + 2.01962u^{19} + \cdots + 33.3111u + 6.38515 \\ 0.535895u^{20} + 0.294412u^{19} + \cdots - 8.29149u + 1.84772 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.985437u^{20} + 1.49513u^{19} + \cdots + 27.7907u + 6.99306 \\ 0.426786u^{20} - 0.230079u^{19} + \cdots - 13.8119u + 2.45563 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.64810u^{20} - 3.62277u^{19} + \cdots - 44.9956u - 5.48655 \\ -0.0435294u^{20} - 0.342012u^{19} + \cdots - 6.18042u - 0.741698 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.160574u^{20} - 1.60193u^{19} + \cdots - 37.9076u - 2.13219 \\ 0.684125u^{20} + 0.231403u^{19} + \cdots - 13.4866u + 0.507992 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.02645u^{20} - 1.96684u^{19} + \cdots - 11.7659u - 0.865916 \\ 0.904450u^{20} + 1.90674u^{19} + \cdots + 3.99361u - 0.856469 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.42598u^{20} + 2.11170u^{19} + \cdots + 27.8089u + 8.06340 \\ 0.462593u^{20} - 0.152102u^{19} + \cdots - 14.3308u + 2.41851 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.30735u^{20} + 1.64339u^{19} + \cdots + 11.7568u + 6.62435 \\ 0.487125u^{20} + 0.381448u^{19} + \cdots - 6.44302u + 1.43581 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.192177u^{20} + 0.230124u^{19} + \cdots + 24.7489u + 2.80644 \\ -0.119601u^{20} - 1.03826u^{19} + \cdots - 11.6121u + 1.62961 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{686470800819}{104110625125}u^{20} + \frac{244123936684}{20822125025}u^{19} + \cdots - \frac{3902536941714}{104110625125}u - \frac{2147815459402}{104110625125}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$5(5u^{21} - 31u^{20} + \cdots + 169u - 61)$
c_2	$u^{21} + u^{20} + \cdots + 2u - 1$
c_3	$u^{21} + 11u^{19} + \cdots - u - 1$
c_4	$5(5u^{21} + 9u^{20} + \cdots - 7u - 1)$
c_5	$u^{21} + 2u^{20} + \cdots + 10u - 1$
c_6	$u^{21} - u^{20} + \cdots + 2u + 1$
c_7	$5(5u^{21} + 17u^{20} + \cdots - u - 1)$
c_8	$u^{21} + 3u^{20} + \cdots + 14u + 5$
c_9	$u^{21} + 4u^{20} + \cdots + 8u^2 - 1$
c_{10}	$u^{21} + 11u^{19} + \cdots - u + 1$
c_{11}	$5(5u^{21} - 17u^{20} + \cdots - u + 1)$
c_{12}	$u^{21} - 2u^{20} + \cdots + 10u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$25(25y^{21} - 11y^{20} + \cdots + 16849y - 3721)$
c_2, c_6	$y^{21} - 11y^{20} + \cdots + 8y - 1$
c_3, c_{10}	$y^{21} + 22y^{20} + \cdots - 21y - 1$
c_4	$25(25y^{21} - 11y^{20} + \cdots + y - 1)$
c_5, c_{12}	$y^{21} + 20y^{20} + \cdots + 200y - 1$
c_7, c_{11}	$25(25y^{21} - 429y^{20} + \cdots - 77y - 1)$
c_8	$y^{21} - 7y^{20} + \cdots + 116y - 25$
c_9	$y^{21} - 12y^{20} + \cdots + 16y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.036680 + 0.222294I$ $a = -0.013763 - 0.189499I$ $b = 0.660682 + 0.676613I$	$-0.88157 - 4.32093I$	$-9.24254 + 8.10881I$
$u = -1.036680 - 0.222294I$ $a = -0.013763 + 0.189499I$ $b = 0.660682 - 0.676613I$	$-0.88157 + 4.32093I$	$-9.24254 - 8.10881I$
$u = -0.657311 + 0.575090I$ $a = 0.25820 + 1.63221I$ $b = -0.335365 - 0.559305I$	$-4.57696 - 3.41359I$	$-7.02899 + 8.15451I$
$u = -0.657311 - 0.575090I$ $a = 0.25820 - 1.63221I$ $b = -0.335365 + 0.559305I$	$-4.57696 + 3.41359I$	$-7.02899 - 8.15451I$
$u = -0.092410 + 1.195380I$ $a = -1.94593 - 0.36913I$ $b = -1.88653 - 1.15638I$	$-5.99931 - 0.30532I$	$-16.7808 - 3.2068I$
$u = -0.092410 - 1.195380I$ $a = -1.94593 + 0.36913I$ $b = -1.88653 + 1.15638I$	$-5.99931 + 0.30532I$	$-16.7808 + 3.2068I$
$u = 0.419031 + 1.135220I$ $a = 1.70730 + 0.86533I$ $b = 0.919540 - 0.271947I$	$-12.1227 + 9.7002I$	$-13.8642 - 7.5342I$
$u = 0.419031 - 1.135220I$ $a = 1.70730 - 0.86533I$ $b = 0.919540 + 0.271947I$	$-12.1227 - 9.7002I$	$-13.8642 + 7.5342I$
$u = -0.320861 + 0.671213I$ $a = -0.02766 - 1.53686I$ $b = -0.104828 - 0.850227I$	$-4.73939 + 0.65981I$	$-9.72782 + 0.65487I$
$u = -0.320861 - 0.671213I$ $a = -0.02766 + 1.53686I$ $b = -0.104828 + 0.850227I$	$-4.73939 - 0.65981I$	$-9.72782 - 0.65487I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.154817 + 0.694283I$ $a = 0.36059 - 1.52207I$ $b = 0.334827 + 0.848128I$	$0.28217 - 3.24555I$	$2.82499 + 2.64646I$
$u = -0.154817 - 0.694283I$ $a = 0.36059 + 1.52207I$ $b = 0.334827 - 0.848128I$	$0.28217 + 3.24555I$	$2.82499 - 2.64646I$
$u = 0.213375 + 1.296620I$ $a = -0.899376 + 0.294739I$ $b = -0.484933 + 0.033724I$	$-2.73211 + 3.18016I$	$-11.34850 - 3.23329I$
$u = 0.213375 - 1.296620I$ $a = -0.899376 - 0.294739I$ $b = -0.484933 - 0.033724I$	$-2.73211 - 3.18016I$	$-11.34850 + 3.23329I$
$u = 0.106029 + 1.370470I$ $a = 0.81198 - 1.29320I$ $b = 0.82238 - 1.75564I$	$-7.58118 - 0.74448I$	$-16.6449 + 6.9771I$
$u = 0.106029 - 1.370470I$ $a = 0.81198 + 1.29320I$ $b = 0.82238 + 1.75564I$	$-7.58118 + 0.74448I$	$-16.6449 - 6.9771I$
$u = -0.40785 + 1.40980I$ $a = -1.48443 - 0.11988I$ $b = -1.21342 - 1.07962I$	$-6.01954 - 9.28556I$	$-11.76954 + 7.07733I$
$u = -0.40785 - 1.40980I$ $a = -1.48443 + 0.11988I$ $b = -1.21342 + 1.07962I$	$-6.01954 + 9.28556I$	$-11.76954 - 7.07733I$
$u = 0.0690864$ $a = 9.44183$ $b = 1.13221$	-2.13952	-22.6930
$u = 0.89695 + 1.80846I$ $a = 0.1121760 + 0.0160469I$ $b = -0.178461 + 0.200785I$	$-12.13230 - 4.17684I$	$2.79294 + 5.21993I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.89695 - 1.80846I$ $a = 0.1121760 - 0.0160469I$ $b = -0.178461 - 0.200785I$	$-12.13230 + 4.17684I$	$2.79294 - 5.21993I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{2}{9}au - \frac{73}{9}a - \frac{58}{9}u - \frac{16}{9}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	u^4
c_2, c_5	$(u^2 - u + 1)^2$
c_3, c_4	$3(3u^4 + 4u^2 + u + 1)$
c_6, c_{12}	$(u^2 + u + 1)^2$
c_7	$(u - 1)^4$
c_8	$3(3u^4 + 9u^3 + 10u^2 + 6u + 3)$
c_9	$u^4 - u^3 + u^2 + 3u + 3$
c_{10}	$3(3u^4 + 4u^2 - u + 1)$
c_{11}	$(u + 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	y^4
c_2, c_5, c_6 c_{12}	$(y^2+y+1)^2$
c_3, c_4, c_{10}	$9(9y^4+24y^3+22y^2+7y+1)$
c_7, c_{11}	$(y-1)^4$
c_8	$9(9y^4-21y^3+10y^2+24y+9)$
c_9	$y^4+y^3+13y^2-3y+9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.83844 - 1.27359I$ $b = -0.183740 + 0.496878I$	$-1.64493 + 2.02988I$	$1.95261 + 4.44629I$
$u = 0.500000 + 0.866025I$ $a = 0.338439 - 0.169788I$ $b = 0.183740 - 1.074230I$	$-1.64493 + 2.02988I$	$-7.67484 - 4.15762I$
$u = 0.500000 - 0.866025I$ $a = -0.83844 + 1.27359I$ $b = -0.183740 - 0.496878I$	$-1.64493 - 2.02988I$	$1.95261 - 4.44629I$
$u = 0.500000 - 0.866025I$ $a = 0.338439 + 0.169788I$ $b = 0.183740 + 1.074230I$	$-1.64493 - 2.02988I$	$-7.67484 + 4.15762I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$25u^4(5u^{21} - 31u^{20} + \cdots + 169u - 61)$ $\cdot (5u^{121} - 64u^{120} + \cdots + 4296u - 144)$
c_2	$((u^2 - u + 1)^2)(u^{21} + u^{20} + \cdots + 2u - 1)$ $\cdot (u^{121} - 2u^{120} + \cdots + 16178u + 383)$
c_3	$9(3u^4 + 4u^2 + u + 1)(u^{21} + 11u^{19} + \cdots - u - 1)$ $\cdot (3u^{121} + 3u^{120} + \cdots + 1609956u + 261691)$
c_4	$225(3u^4 + 4u^2 + u + 1)(5u^{21} + 9u^{20} + \cdots - 7u - 1)$ $\cdot (15u^{121} + 72u^{120} + \cdots + 140u - 29)$
c_5	$((u^2 - u + 1)^2)(u^{21} + 2u^{20} + \cdots + 10u - 1)$ $\cdot (u^{121} - 3u^{120} + \cdots + 1450u + 181)$
c_6	$((u^2 + u + 1)^2)(u^{21} - u^{20} + \cdots + 2u + 1)$ $\cdot (u^{121} - 2u^{120} + \cdots + 16178u + 383)$
c_7	$25(u - 1)^4(5u^{21} + 17u^{20} + \cdots - u - 1)$ $\cdot (5u^{121} + 8u^{120} + \cdots - 10917u - 4981)$
c_8	$9(3u^4 + 9u^3 + \cdots + 6u + 3)(u^{21} + 3u^{20} + \cdots + 14u + 5)$ $\cdot (3u^{121} - 45u^{120} + \cdots + 634846856u - 44779345)$
c_9	$(u^4 - u^3 + u^2 + 3u + 3)(u^{21} + 4u^{20} + \cdots + 8u^2 - 1)$ $\cdot (u^{121} + 4u^{120} + \cdots + 125847u - 25899)$
c_{10}	$9(3u^4 + 4u^2 - u + 1)(u^{21} + 11u^{19} + \cdots - u + 1)$ $\cdot (3u^{121} + 3u^{120} + \cdots + 1609956u + 261691)$
c_{11}	$25(u + 1)^4(5u^{21} - 17u^{20} + \cdots - u + 1)$ $\cdot (5u^{121} + 8u^{120} + \cdots - 10917u - 4981)$
c_{12}	$((u^2 + u + 1)^2)(u^{21} - 2u^{20} + \cdots + 10u + 1)$ $\cdot (u^{121} - 3u^{120} + \cdots + 1450u + 181)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$625y^4(25y^{21} - 11y^{20} + \cdots + 16849y - 3721)$ $\cdot (25y^{121} + 94y^{120} + \cdots + 2546496y - 20736)$
c_2, c_6	$((y^2 + y + 1)^2)(y^{21} - 11y^{20} + \cdots + 8y - 1)$ $\cdot (y^{121} - 88y^{120} + \cdots + 86309854y - 146689)$
c_3, c_{10}	$81(9y^4 + 24y^3 + \cdots + 7y + 1)(y^{21} + 22y^{20} + \cdots - 21y - 1)$ $\cdot (9y^{121} + 1023y^{120} + \cdots + 308178871408y - 68482179481)$
c_4	$50625(9y^4 + 24y^3 + \cdots + 7y + 1)(25y^{21} - 11y^{20} + \cdots + y - 1)$ $\cdot (225y^{121} + 2346y^{120} + \cdots + 73134y - 841)$
c_5, c_{12}	$((y^2 + y + 1)^2)(y^{21} + 20y^{20} + \cdots + 200y - 1)$ $\cdot (y^{121} + 99y^{120} + \cdots + 1609818y - 32761)$
c_7, c_{11}	$625(y - 1)^4(25y^{21} - 429y^{20} + \cdots - 77y - 1)$ $\cdot (25y^{121} - 3284y^{120} + \cdots + 146387111y - 24810361)$
c_8	$81(9y^4 - 21y^3 + \cdots + 24y + 9)(y^{21} - 7y^{20} + \cdots + 116y - 25)$ $\cdot (9y^{121} - 435y^{120} + \cdots + 46885882861787876y - 2005189738629025)$
c_9	$(y^4 + y^3 + 13y^2 - 3y + 9)(y^{21} - 12y^{20} + \cdots + 16y - 1)$ $\cdot (y^{121} - 46y^{120} + \cdots + 37919317395y - 670758201)$