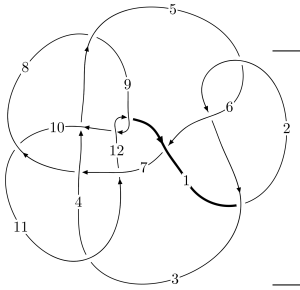
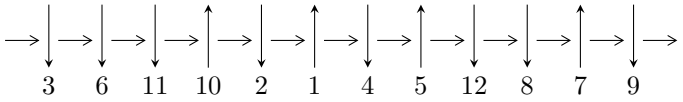
$12a_{0480}$ $(K12a_{0480})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5.53974 \times 10^{1782} u^{185} - 1.04886 \times 10^{1782} u^{184} + \cdots + 1.94118 \times 10^{1786} b - 1.46314 \times 10^{1786},$$
$$- 2.97721 \times 10^{1785} u^{185} + 6.39771 \times 10^{1785} u^{184} + \cdots + 2.13529 \times 10^{1787} a + 1.77330 \times 10^{1787},$$
$$u^{186} - 2u^{185} + \cdots + 36u + 88 \rangle$$
$$I_2^u = \langle -2.01366 \times 10^{18} u^{38} - 2.85310 \times 10^{18} u^{37} + \cdots + 3.17258 \times 10^{16} b + 5.50245 \times 10^{18},$$
$$- 1.58873 \times 10^{18} u^{38} - 1.90932 \times 10^{18} u^{37} + \cdots + 3.17258 \times 10^{16} a + 3.87866 \times 10^{18},\ u^{39} - 8u^{37} + \cdots - u +$$
$$I_3^u = \langle -u^3 - u^2 + b - 3u,\ -u^3 + a - 2u + 1,\ u^4 + u^3 + 3u^2 + u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 229 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. $\boldsymbol{I_1^u = \langle -5.54 \times 10^{1782} u^{185} - 1.05 \times 10^{1782} u^{184} + \cdots + 1.94 \times 10^{1786} b - 1.46 \times 10^{1786},\ -2.98 \times 10^{1785} u^{185} + 6.40 \times 10^{1785} u^{184} + \cdots + 2.14 \times 10^{1787} a + 1.77 \times 10^{1787},\ u^{186} - 2u^{185} + \cdots + 36u + 88 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0.0139429u^{185} - 0.0299617u^{184} + \cdots + 27.9469u - 0.830473 \\ 0.000285381u^{185} + 0.0000540324u^{184} + \cdots - 3.59654u + 0.753738 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0142463u^{185} + 0.0252800u^{184} + \cdots - 20.5127u - 1.57779 \\ -0.00499165u^{185} + 0.0105584u^{184} + \cdots + 3.21433u - 1.41591 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0267348u^{185} - 0.0563542u^{184} + \cdots + 62.5196u - 4.69174 \\ -0.00716177u^{185} + 0.0148747u^{184} + \cdots - 6.57632u - 1.44609 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.00925466u^{185} + 0.0147216u^{184} + \cdots - 23.7270u - 0.161882 \\ -0.00499165u^{185} + 0.0105584u^{184} + \cdots + 3.21433u - 1.41591 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0282924u^{185} - 0.0611872u^{184} + \cdots + 48.9451u - 4.17978 \\ -0.00392221u^{185} + 0.00742383u^{184} + \cdots - 5.18728u - 0.958823 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0381994u^{185} - 0.0873826u^{184} + \cdots + 22.1562u - 17.5234 \\ -0.00538202u^{185} + 0.0115863u^{184} + \cdots - 4.88044u - 0.286897 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0408306u^{185} + 0.0758692u^{184} + \cdots - 42.0542u - 6.21348 \\ -0.000658012u^{185} + 0.00163785u^{184} + \cdots - 1.35113u + 0.743251 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0152408u^{185} + 0.0271515u^{184} + \cdots - 21.4634u - 1.91111 \\ -0.00417663u^{185} + 0.00854602u^{184} + \cdots + 3.72464u - 1.45617 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0311906u^{185} + 0.0491555u^{184} + \cdots - 44.2840u - 15.9001 \\ -0.00170698u^{185} + 0.00411396u^{184} + \cdots - 3.64158u + 1.07199 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0273306u^{185} + 0.0429325u^{184} + \cdots + 5.94117u - 29.4743$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{186} + 93u^{185} + \cdots + 190u + 1$
c_2, c_5	$u^{186} + u^{185} + \cdots + 10u - 1$
c_3	$u^{186} + 5u^{185} + \cdots + 305u + 29$
c_4	$u^{186} + 2u^{185} + \cdots - 36u + 88$
c_6	$u^{186} - 9u^{185} + \cdots + 133392896u - 8998912$
c_7	$u^{186} + 4u^{185} + \cdots + 96u - 17$
c_8	$u^{186} + 3u^{185} + \cdots + 264890731u + 56493497$
c_9, c_{12}	$u^{186} + 11u^{185} + \cdots + 2925u + 459$
c_{10}	$u^{186} - 12u^{185} + \cdots + 104u - 16$
c_{11}	$u^{186} - 3u^{185} + \cdots + 2837302u + 121613$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{186} + 15y^{185} + \cdots - 32898y + 1$
c_2, c_5	$y^{186} - 93y^{185} + \cdots - 190y + 1$
c_3	$y^{186} - y^{185} + \cdots + 166641y + 841$
c_4	$y^{186} - 4y^{185} + \cdots + 366192y + 7744$
c_6	$y^{186} + 51y^{185} + \cdots - 15721607766212608y + 80980417183744$
c_7	$y^{186} - 6y^{185} + \cdots - 20878y + 289$
c_8	$y^{186} - 21y^{185} + \cdots - 86383388203073361y + 3191515203289009$
c_9, c_{12}	$y^{186} + 101y^{185} + \cdots - 66119733y + 210681$
c_{10}	$y^{186} + 2y^{185} + \cdots + 15552y + 256$
c_{11}	$y^{186} + y^{185} + \cdots + 730297573796y + 14789721769$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.307193+0.967341I$ $a=\ \ 0.781942-0.330599I$ $b=\ \ 1.066600-0.168179I$	$0.97519-5.05662I$	0
$u=-0.307193-0.967341I$ $a=\ \ 0.781942+0.330599I$ $b=\ \ 1.066600+0.168179I$	$0.97519+5.05662I$	0
$u=\ \ 0.253390+0.990747I$ $a=-0.242638+0.284026I$ $b=\ \ 0.380788+0.645948I$	$-1.86439-1.17440I$	0
$u=\ \ 0.253390-0.990747I$ $a=-0.242638-0.284026I$ $b=\ \ 0.380788-0.645948I$	$-1.86439+1.17440I$	0
$u=-0.675127+0.780576I$ $a=-0.613719+1.037810I$ $b=\ \ 1.07465+2.13225I$	$2.11722-10.27940I$	0
$u=-0.675127-0.780576I$ $a=-0.613719-1.037810I$ $b=\ \ 1.07465-2.13225I$	$2.11722+10.27940I$	0
$u=\ \ 0.853275+0.452540I$ $a=-0.088030-1.280050I$ $b=\ \ 0.45272-2.29319I$	$3.49418+6.86248I$	0
$u=\ \ 0.853275-0.452540I$ $a=-0.088030+1.280050I$ $b=\ \ 0.45272+2.29319I$	$3.49418-6.86248I$	0
$u=-0.804997+0.530431I$ $a=\ \ 0.171471-1.314710I$ $b=-0.40826-2.32898I$	$0.91102-12.26790I$	0
$u=-0.804997-0.530431I$ $a=\ \ 0.171471+1.314710I$ $b=-0.40826+2.32898I$	$0.91102+12.26790I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.083825 + 0.956958I$ $a = -1.119070 - 0.433268I$ $b = -1.258870 - 0.213178I$	$-2.73445 + 10.40150I$	0
$u = 0.083825 - 0.956958I$ $a = -1.119070 + 0.433268I$ $b = -1.258870 + 0.213178I$	$-2.73445 - 10.40150I$	0
$u = -0.674689 + 0.681706I$ $a = -0.598741 + 0.989226I$ $b = 1.28601 + 1.91959I$	$0.76354 - 2.80393I$	0
$u = -0.674689 - 0.681706I$ $a = -0.598741 - 0.989226I$ $b = 1.28601 - 1.91959I$	$0.76354 + 2.80393I$	0
$u = 0.437848 + 0.842864I$ $a = 0.147642 + 1.039510I$ $b = -0.577907 + 0.605984I$	$-2.56560 - 3.06621I$	0
$u = 0.437848 - 0.842864I$ $a = 0.147642 - 1.039510I$ $b = -0.577907 - 0.605984I$	$-2.56560 + 3.06621I$	0
$u = 0.717695 + 0.768921I$ $a = 0.633626 + 1.017910I$ $b = -1.02258 + 2.01828I$	$4.47017 + 5.65374I$	0
$u = 0.717695 - 0.768921I$ $a = 0.633626 - 1.017910I$ $b = -1.02258 - 2.01828I$	$4.47017 - 5.65374I$	0
$u = 1.012420 + 0.307233I$ $a = -1.199850 + 0.186361I$ $b = 0.364057 - 0.040225I$	$-2.46023 + 0.04685I$	0
$u = 1.012420 - 0.307233I$ $a = -1.199850 - 0.186361I$ $b = 0.364057 + 0.040225I$	$-2.46023 - 0.04685I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.572390 + 0.897115I$ $a = -0.663827 + 0.353353I$ $b = 0.133217 + 1.285900I$	$-0.80538 - 2.62868I$	0
$u = 0.572390 - 0.897115I$ $a = -0.663827 - 0.353353I$ $b = 0.133217 - 1.285900I$	$-0.80538 + 2.62868I$	0
$u = -0.354982 + 0.861592I$ $a = -0.305662 + 0.873306I$ $b = 0.413471 + 0.524540I$	$-0.32060 - 1.51914I$	0
$u = -0.354982 - 0.861592I$ $a = -0.305662 - 0.873306I$ $b = 0.413471 - 0.524540I$	$-0.32060 + 1.51914I$	0
$u = -0.722798 + 0.788914I$ $a = -0.257287 - 0.728218I$ $b = 0.363899 - 0.423076I$	$0.55644 - 3.03027I$	0
$u = -0.722798 - 0.788914I$ $a = -0.257287 + 0.728218I$ $b = 0.363899 + 0.423076I$	$0.55644 + 3.03027I$	0
$u = -0.096124 + 1.069100I$ $a = -0.601379 + 0.578893I$ $b = 0.467546 - 0.017428I$	$-0.06484 - 3.30755I$	0
$u = -0.096124 - 1.069100I$ $a = -0.601379 - 0.578893I$ $b = 0.467546 + 0.017428I$	$-0.06484 + 3.30755I$	0
$u = -0.138168 + 0.909744I$ $a = 1.045970 - 0.490376I$ $b = 1.224420 - 0.250675I$	$-0.19438 - 5.76200I$	0
$u = -0.138168 - 0.909744I$ $a = 1.045970 + 0.490376I$ $b = 1.224420 + 0.250675I$	$-0.19438 + 5.76200I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.059355+1.086540I$ $a=\ \ 0.788852+0.515087I$ $b=-0.458485-0.205965I$	$-1.89169+8.37857I$	0
$u=-0.059355-1.086540I$ $a=\ \ 0.788852-0.515087I$ $b=-0.458485+0.205965I$	$-1.89169-8.37857I$	0
$u=\ \ 0.363478+1.028510I$ $a=-0.731178-0.148405I$ $b=-1.038010-0.061869I$	$-0.537922+1.129420I$	0
$u=\ \ 0.363478-1.028510I$ $a=-0.731178+0.148405I$ $b=-1.038010+0.061869I$	$-0.537922-1.129420I$	0
$u=\ \ 0.824270+0.374120I$ $a=\ \ 0.639506+0.965348I$ $b=-1.02094+1.02954I$	$1.83442+4.12238I$	0
$u=\ \ 0.824270-0.374120I$ $a=\ \ 0.639506-0.965348I$ $b=-1.02094-1.02954I$	$1.83442-4.12238I$	0
$u=-0.314606+0.829544I$ $a=-0.444797+0.667757I$ $b=\ \ 0.092191+0.608271I$	$-0.38674-1.57867I$	0
$u=-0.314606-0.829544I$ $a=-0.444797-0.667757I$ $b=\ \ 0.092191-0.608271I$	$-0.38674+1.57867I$	0
$u=\ \ 0.461175+1.019950I$ $a=-0.443544+0.006626I$ $b=-0.877062+0.035310I$	$-0.59177+7.29260I$	0
$u=\ \ 0.461175-1.019950I$ $a=-0.443544-0.006626I$ $b=-0.877062-0.035310I$	$-0.59177-7.29260I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.178724+1.105860I$ $a=-0.807341+0.478053I$ $b=-0.069089+0.893742I$	$0.16929-1.66192I$	0
$u=-0.178724-1.105860I$ $a=-0.807341-0.478053I$ $b=-0.069089-0.893742I$	$0.16929+1.66192I$	0
$u=0.180928+1.107630I$ $a=-0.837168+0.470067I$ $b=-0.052148+1.106190I$	$0.20180-2.41331I$	0
$u=0.180928-1.107630I$ $a=-0.837168-0.470067I$ $b=-0.052148-1.106190I$	$0.20180+2.41331I$	0
$u=0.645795+0.586749I$ $a=0.900189-0.344371I$ $b=0.662748+0.097500I$	$-1.59920+7.23039I$	0
$u=0.645795-0.586749I$ $a=0.900189+0.344371I$ $b=0.662748-0.097500I$	$-1.59920-7.23039I$	0
$u=1.118920+0.235863I$ $a=0.662261+1.001360I$ $b=-0.425293+1.057500I$	$3.68148-2.29871I$	0
$u=1.118920-0.235863I$ $a=0.662261-1.001360I$ $b=-0.425293-1.057500I$	$3.68148+2.29871I$	0
$u=0.793640+0.825156I$ $a=0.695600+0.985737I$ $b=-0.80313+1.93853I$	$5.36288+4.49134I$	0
$u=0.793640-0.825156I$ $a=0.695600-0.985737I$ $b=-0.80313-1.93853I$	$5.36288-4.49134I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.547707+1.009050I$ $a=\ \ 0.0232921-0.0858861I$ $b=\ \ 0.626031+0.023105I$	$0.64769-3.32832I$	0
$u=-0.547707-1.009050I$ $a=\ \ 0.0232921+0.0858861I$ $b=\ \ 0.626031-0.023105I$	$0.64769+3.32832I$	0
$u=-0.854073+0.774154I$ $a=\ \ 0.467182+0.340599I$ $b=-0.31259+1.45543I$	$-4.49622-0.82832I$	0
$u=-0.854073-0.774154I$ $a=\ \ 0.467182-0.340599I$ $b=-0.31259-1.45543I$	$-4.49622+0.82832I$	0
$u=\ \ 0.408699+0.733043I$ $a=\ \ 0.422778+1.292510I$ $b=-0.518609+0.803977I$	$-3.93842+4.35538I$	0
$u=\ \ 0.408699-0.733043I$ $a=\ \ 0.422778-1.292510I$ $b=-0.518609-0.803977I$	$-3.93842-4.35538I$	0
$u=-1.124830+0.340404I$ $a=-0.641335+1.005070I$ $b=\ \ 0.497320+1.184150I$	$5.59008-2.33345I$	0
$u=-1.124830-0.340404I$ $a=-0.641335-1.005070I$ $b=\ \ 0.497320-1.184150I$	$5.59008+2.33345I$	0
$u=\ \ 0.037545+0.823907I$ $a=-1.200190-0.581568I$ $b=-1.326440-0.283115I$	$-4.04651+2.52728I$	0
$u=\ \ 0.037545-0.823907I$ $a=-1.200190+0.581568I$ $b=-1.326440+0.283115I$	$-4.04651-2.52728I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.621603+0.537572I$ $a=-0.786093-0.301539I$ $b=-0.552595+0.187397I$	$0.92510-2.38169I$	0
$u=-0.621603-0.537572I$ $a=-0.786093+0.301539I$ $b=-0.552595-0.187397I$	$0.92510+2.38169I$	0
$u=-0.802130+0.868304I$ $a=-0.750133+0.960332I$ $b=0.70462+1.93410I$	$3.90480-0.23906I$	0
$u=-0.802130-0.868304I$ $a=-0.750133-0.960332I$ $b=0.70462-1.93410I$	$3.90480+0.23906I$	0
$u=-0.002919+0.805198I$ $a=0.815890+1.030460I$ $b=-0.121074-0.105187I$	$-4.49936+1.46905I$	0
$u=-0.002919-0.805198I$ $a=0.815890-1.030460I$ $b=-0.121074+0.105187I$	$-4.49936-1.46905I$	0
$u=0.555168+0.572524I$ $a=0.953028-0.052468I$ $b=0.794971+0.426716I$	$-3.23830-0.80541I$	0
$u=0.555168-0.572524I$ $a=0.953028+0.052468I$ $b=0.794971-0.426716I$	$-3.23830+0.80541I$	0
$u=-0.715525+0.305973I$ $a=-0.07814-1.46534I$ $b=-0.58982-2.36264I$	$-1.71930-3.48624I$	0
$u=-0.715525-0.305973I$ $a=-0.07814+1.46534I$ $b=-0.58982+2.36264I$	$-1.71930+3.48624I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.293268+1.195460I$ $a=-0.670844+0.095073I$ $b=\ \ 0.60534+1.50815I$	$0.93337+5.95821I$	0
$u=-0.293268-1.195460I$ $a=-0.670844-0.095073I$ $b=\ \ 0.60534-1.50815I$	$0.93337-5.95821I$	0
$u=\ \ 0.765582$ $a=-1.59013$ $b=\ \ 0.345767$	-2.40105	0
$u=\ \ 1.227480+0.151731I$ $a=\ \ 0.113179-0.892273I$ $b=\ \ 0.44000-2.10931I$	$6.17978+3.50042I$	0
$u=\ \ 1.227480-0.151731I$ $a=\ \ 0.113179+0.892273I$ $b=\ \ 0.44000+2.10931I$	$6.17978-3.50042I$	0
$u=\ \ 0.846541+0.902891I$ $a=\ \ 0.518287-0.568193I$ $b=-0.138262-0.293557I$	$1.13484+7.43949I$	0
$u=\ \ 0.846541-0.902891I$ $a=\ \ 0.518287+0.568193I$ $b=-0.138262+0.293557I$	$1.13484-7.43949I$	0
$u=-0.682853+1.040320I$ $a=\ \ 0.618865+0.451464I$ $b=-0.066563+1.392200I$	$-3.46205+7.14168I$	0
$u=-0.682853-1.040320I$ $a=\ \ 0.618865-0.451464I$ $b=-0.066563-1.392200I$	$-3.46205-7.14168I$	0
$u=-0.639613+0.337366I$ $a=-0.499949-0.582165I$ $b=-0.141593+0.133008I$	$2.53289-0.95957I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.639613-0.337366I$ $a=-0.499949+0.582165I$ $b=-0.141593-0.133008I$	$2.53289+0.95957I$	0
$u=-0.101596+1.277800I$ $a=0.851238+0.494891I$ $b=0.157976+1.074020I$	$-1.57205-1.31987I$	0
$u=-0.101596-1.277800I$ $a=0.851238-0.494891I$ $b=0.157976-1.074020I$	$-1.57205+1.31987I$	0
$u=0.091246+1.279690I$ $a=0.858364+0.464336I$ $b=0.172612+0.955527I$	$-1.60697+5.32803I$	0
$u=0.091246-1.279690I$ $a=0.858364-0.464336I$ $b=0.172612-0.955527I$	$-1.60697-5.32803I$	0
$u=-0.418444+0.571193I$ $a=-0.82281+1.84186I$ $b=0.565354+1.053840I$	$-3.00011-4.21287I$	0
$u=-0.418444-0.571193I$ $a=-0.82281-1.84186I$ $b=0.565354-1.053840I$	$-3.00011+4.21287I$	0
$u=-0.611661+0.327872I$ $a=-0.27677-1.71708I$ $b=0.479420-1.082340I$	$2.32492-8.13792I$	0
$u=-0.611661-0.327872I$ $a=-0.27677+1.71708I$ $b=0.479420+1.082340I$	$2.32492+8.13792I$	0
$u=-0.435279+0.530494I$ $a=-0.92675+2.06327I$ $b=0.599255+1.119230I$	$-0.84229-11.89770I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.435279-0.530494I$ $a=-0.92675-2.06327I$ $b=\ \ 0.599255-1.119230I$	$-0.84229+11.89770I$	0
$u=\ \ 0.370947+1.267630I$ $a=\ \ 0.654292+0.196612I$ $b=-0.68397+1.55861I$	$3.12360-0.94460I$	0
$u=\ \ 0.370947-1.267630I$ $a=\ \ 0.654292-0.196612I$ $b=-0.68397-1.55861I$	$3.12360+0.94460I$	0
$u=\ \ 0.417987+0.530629I$ $a=\ \ 0.98985+1.98238I$ $b=-0.568856+1.120570I$	$1.46747+6.91470I$	0
$u=\ \ 0.417987-0.530629I$ $a=\ \ 0.98985-1.98238I$ $b=-0.568856-1.120570I$	$1.46747-6.91470I$	0
$u=-1.221560+0.514171I$ $a=-0.597594+1.016380I$ $b=\ \ 0.47132+1.42236I$	$5.77218-3.85236I$	0
$u=-1.221560-0.514171I$ $a=-0.597594-1.016380I$ $b=\ \ 0.47132-1.42236I$	$5.77218+3.85236I$	0
$u=-0.830250+1.038160I$ $a=-0.716728+0.715138I$ $b=\ \ 0.63657+1.82484I$	$3.47498-5.76688I$	0
$u=-0.830250-1.038160I$ $a=-0.716728-0.715138I$ $b=\ \ 0.63657-1.82484I$	$3.47498+5.76688I$	0
$u=\ \ 0.643271+0.161549I$ $a=\ \ 0.461478-0.859519I$ $b=-0.230469+0.103148I$	$1.73882-3.43689I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.643271 - 0.161549I$ $a = 0.461478 + 0.859519I$ $b = -0.230469 - 0.103148I$	$1.73882 + 3.43689I$	0
$u = -1.294190 + 0.363504I$ $a = 1.108570 + 0.054805I$ $b = -0.315063 - 0.130755I$	$-4.88652 - 4.11270I$	0
$u = -1.294190 - 0.363504I$ $a = 1.108570 - 0.054805I$ $b = -0.315063 + 0.130755I$	$-4.88652 + 4.11270I$	0
$u = -1.217090 + 0.640607I$ $a = 0.961568 + 0.094814I$ $b = -0.466197 - 0.179941I$	$-5.46535 + 3.31603I$	0
$u = -1.217090 - 0.640607I$ $a = 0.961568 - 0.094814I$ $b = -0.466197 + 0.179941I$	$-5.46535 - 3.31603I$	0
$u = -0.697787 + 1.188290I$ $a = -0.605485 + 0.063395I$ $b = 0.114003 + 0.399850I$	$-1.38437 - 1.96944I$	0
$u = -0.697787 - 1.188290I$ $a = -0.605485 - 0.063395I$ $b = 0.114003 - 0.399850I$	$-1.38437 + 1.96944I$	0
$u = 0.951603 + 0.997162I$ $a = 0.719305 - 0.490876I$ $b = 0.058488 - 0.224399I$	$-0.72612 + 9.18905I$	0
$u = 0.951603 - 0.997162I$ $a = 0.719305 + 0.490876I$ $b = 0.058488 + 0.224399I$	$-0.72612 - 9.18905I$	0
$u = 0.365991 + 0.499289I$ $a = 1.26815 + 1.82874I$ $b = -0.480101 + 1.164880I$	$2.81213 + 4.88759I$	$-4.00000 - 9.10296I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.365991 - 0.499289I$ $a = 1.26815 - 1.82874I$ $b = -0.480101 - 1.164880I$	$2.81213 - 4.88759I$	$-4.00000 + 9.10296I$
$u = -1.379470 + 0.184451I$ $a = -0.236400 + 0.685503I$ $b = -0.27132 + 2.02531I$	$5.70496 - 2.36563I$	0
$u = -1.379470 - 0.184451I$ $a = -0.236400 - 0.685503I$ $b = -0.27132 - 2.02531I$	$5.70496 + 2.36563I$	0
$u = -0.925176 + 1.059580I$ $a = -0.727097 - 0.395706I$ $b = -0.068902 - 0.126321I$	$-5.15090 - 6.14978I$	0
$u = -0.925176 - 1.059580I$ $a = -0.727097 + 0.395706I$ $b = -0.068902 + 0.126321I$	$-5.15090 + 6.14978I$	0
$u = -1.238120 + 0.675738I$ $a = 0.083225 - 0.504729I$ $b = -1.07876 - 2.46030I$	$-5.05688 - 0.16003I$	0
$u = -1.238120 - 0.675738I$ $a = 0.083225 + 0.504729I$ $b = -1.07876 + 2.46030I$	$-5.05688 + 0.16003I$	0
$u = 0.701301 + 1.225250I$ $a = 0.671438 + 0.486964I$ $b = -0.68615 + 1.77249I$	$4.39661 + 1.22197I$	0
$u = 0.701301 - 1.225250I$ $a = 0.671438 - 0.486964I$ $b = -0.68615 - 1.77249I$	$4.39661 - 1.22197I$	0
$u = -0.986305 + 1.010700I$ $a = -0.769777 - 0.494077I$ $b = -0.110094 - 0.230099I$	$-3.2064 - 14.1549I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.986305-1.010700I$ $a=-0.769777+0.494077I$ $b=-0.110094+0.230099I$	$-3.2064+14.1549I$	0
$u=0.76886+1.18718I$ $a=0.674711-0.081138I$ $b=-0.004975+0.221349I$	$-5.58145+5.26946I$	0
$u=0.76886-1.18718I$ $a=0.674711+0.081138I$ $b=-0.004975-0.221349I$	$-5.58145-5.26946I$	0
$u=0.68895+1.23531I$ $a=0.710996+0.087797I$ $b=0.030842+0.439913I$	$-4.05694-2.84491I$	0
$u=0.68895-1.23531I$ $a=0.710996-0.087797I$ $b=0.030842-0.439913I$	$-4.05694+2.84491I$	0
$u=0.521128+0.254008I$ $a=0.22101-2.03419I$ $b=-0.541828-1.218760I$	$4.03353+3.21451I$	$4.49469-2.83648I$
$u=0.521128-0.254008I$ $a=0.22101+2.03419I$ $b=-0.541828+1.218760I$	$4.03353-3.21451I$	$4.49469+2.83648I$
$u=1.30479+0.57272I$ $a=0.571035+1.031390I$ $b=-0.41150+1.50202I$	$3.96900+8.33656I$	0
$u=1.30479-0.57272I$ $a=0.571035-1.031390I$ $b=-0.41150-1.50202I$	$3.96900-8.33656I$	0
$u=-0.330798+0.457917I$ $a=-1.49358+1.75805I$ $b=0.418440+1.208040I$	$1.80293-0.20080I$	$-4.77768+1.73588I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.330798-0.457917I$ $a=-1.49358-1.75805I$ $b=\ \ 0.418440-1.208040I$	$1.80293+0.20080I$	$-4.77768-1.73588I$
$u=\ \ 0.533399$ $a=-0.100301$ $b=\ \ 0.781356$	-1.45997	-5.66050
$u=-1.12881+0.94406I$ $a=\ \ 0.122375-0.634524I$ $b=-0.89438-2.45920I$	$-5.34460-9.57074I$	0
$u=-1.12881-0.94406I$ $a=\ \ 0.122375+0.634524I$ $b=-0.89438+2.45920I$	$-5.34460+9.57074I$	0
$u=\ \ 1.24756+0.79717I$ $a=\ \ 0.517378+0.963276I$ $b=-0.49348+1.67529I$	$2.91136+2.09500I$	0
$u=\ \ 1.24756-0.79717I$ $a=\ \ 0.517378-0.963276I$ $b=-0.49348-1.67529I$	$2.91136-2.09500I$	0
$u=\ \ 1.27668+0.87777I$ $a=-0.143565-0.555392I$ $b=\ \ 0.98852-2.41560I$	$-1.26908+4.99883I$	0
$u=\ \ 1.27668-0.87777I$ $a=-0.143565+0.555392I$ $b=\ \ 0.98852+2.41560I$	$-1.26908-4.99883I$	0
$u=\ \ 0.010258+0.441700I$ $a=-1.05374+2.72731I$ $b=-0.224893-0.121630I$	$-5.70613-2.53172I$	$-20.3875+1.6323I$
$u=\ \ 0.010258-0.441700I$ $a=-1.05374-2.72731I$ $b=-0.224893+0.121630I$	$-5.70613+2.53172I$	$-20.3875-1.6323I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.13680+1.06938I$ $a=-0.481763+0.803075I$ $b=\ \ 0.56686+1.83842I$	$3.55886-5.57036I$	0
$u=-1.13680-1.06938I$ $a=-0.481763-0.803075I$ $b=\ \ 0.56686-1.83842I$	$3.55886+5.57036I$	0
$u=\ \ 0.400057+0.045006I$ $a=\ \ 0.77351-2.82258I$ $b=-0.42683-1.45461I$	$4.19086+0.75001I$	$3.27417+0.13817I$
$u=\ \ 0.400057-0.045006I$ $a=\ \ 0.77351+2.82258I$ $b=-0.42683+1.45461I$	$4.19086-0.75001I$	$3.27417-0.13817I$
$u=-0.287162+0.267129I$ $a=-1.35562+0.56299I$ $b=\ \ 1.80061-1.94611I$	$-4.74316-7.71668I$	$-9.96585-1.63222I$
$u=-0.287162-0.267129I$ $a=-1.35562-0.56299I$ $b=\ \ 1.80061+1.94611I$	$-4.74316+7.71668I$	$-9.96585+1.63222I$
$u=\ \ 1.07333+1.21138I$ $a=-0.291230-0.806384I$ $b=\ \ 0.65857-2.28199I$	$-2.53426+12.40190I$	0
$u=\ \ 1.07333-1.21138I$ $a=-0.291230+0.806384I$ $b=\ \ 0.65857+2.28199I$	$-2.53426-12.40190I$	0
$u=-0.369294+0.070497I$ $a=-1.41211+2.83552I$ $b=\ \ 0.34832+1.45326I$	$2.68352-4.22087I$	$-0.81306+5.45920I$
$u=-0.369294-0.070497I$ $a=-1.41211-2.83552I$ $b=\ \ 0.34832-1.45326I$	$2.68352+4.22087I$	$-0.81306-5.45920I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.07242 + 1.24808I$ $a = -0.337702 - 0.841266I$ $b = 0.60871 - 2.24097I$	$0.1064 + 20.9577I$	0
$u = 1.07242 - 1.24808I$ $a = -0.337702 + 0.841266I$ $b = 0.60871 + 2.24097I$	$0.1064 - 20.9577I$	0
$u = -1.08343 + 1.23985I$ $a = 0.336914 - 0.817093I$ $b = -0.63477 - 2.23477I$	$2.6134 - 15.6022I$	0
$u = -1.08343 - 1.23985I$ $a = 0.336914 + 0.817093I$ $b = -0.63477 + 2.23477I$	$2.6134 + 15.6022I$	0
$u = -0.229683 + 0.255138I$ $a = 1.01410 - 2.80851I$ $b = 0.97055 - 1.73598I$	$-1.25481 - 1.94131I$	$8.53453 - 2.73130I$
$u = -0.229683 - 0.255138I$ $a = 1.01410 + 2.80851I$ $b = 0.97055 + 1.73598I$	$-1.25481 + 1.94131I$	$8.53453 + 2.73130I$
$u = 0.256082 + 0.209733I$ $a = 1.70323 + 0.85487I$ $b = -1.30025 - 1.74459I$	$-1.58904 + 3.04262I$	$-6.84058 + 1.82365I$
$u = 0.256082 - 0.209733I$ $a = 1.70323 - 0.85487I$ $b = -1.30025 + 1.74459I$	$-1.58904 - 3.04262I$	$-6.84058 - 1.82365I$
$u = -1.13926 + 1.22688I$ $a = 0.346437 - 0.725370I$ $b = -0.73699 - 2.19566I$	$4.92487 - 12.44190I$	0
$u = -1.13926 - 1.22688I$ $a = 0.346437 + 0.725370I$ $b = -0.73699 + 2.19566I$	$4.92487 + 12.44190I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.15454+1.67076I$ $a=-0.449066+0.206440I$ $b=\ \ 1.06769+1.37615I$	$-1.61710-1.48439I$	0
$u=-0.15454-1.67076I$ $a=-0.449066-0.206440I$ $b=\ \ 1.06769-1.37615I$	$-1.61710+1.48439I$	0
$u=-0.174449+0.266572I$ $a=-2.08380+0.09535I$ $b=\ \ 0.99896-2.25646I$	$-5.46277+0.97801I$	$-14.5997-4.2517I$
$u=-0.174449-0.266572I$ $a=-2.08380-0.09535I$ $b=\ \ 0.99896+2.25646I$	$-5.46277-0.97801I$	$-14.5997+4.2517I$
$u=\ \ 1.17960+1.21445I$ $a=-0.332414-0.673726I$ $b=\ \ 0.80605-2.19720I$	$4.37546+6.86401I$	0
$u=\ \ 1.17960-1.21445I$ $a=-0.332414+0.673726I$ $b=\ \ 0.80605+2.19720I$	$4.37546-6.86401I$	0
$u=\ \ 0.127811+0.229812I$ $a=-1.77834+4.57496I$ $b=\ \ 0.314870-0.036918I$	$-2.38230-0.30495I$	$-16.3360+1.1551I$
$u=\ \ 0.127811-0.229812I$ $a=-1.77834-4.57496I$ $b=\ \ 0.314870+0.036918I$	$-2.38230+0.30495I$	$-16.3360-1.1551I$
$u=\ \ 0.023336+0.246033I$ $a=-1.67282+5.52026I$ $b=-0.337698-0.094041I$	$-4.60142+4.66851I$	$-20.3165-6.3367I$
$u=\ \ 0.023336-0.246033I$ $a=-1.67282-5.52026I$ $b=-0.337698+0.094041I$	$-4.60142-4.66851I$	$-20.3165+6.3367I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.37973+1.30339I$ $a=-0.226482+0.743299I$ $b=\ \ 0.45514+2.02654I$	$1.16961-6.67914I$	0
$u=-1.37973-1.30339I$ $a=-0.226482-0.743299I$ $b=\ \ 0.45514-2.02654I$	$1.16961+6.67914I$	0
$u=-1.80288+0.66701I$ $a=\ \ 0.268661-0.534707I$ $b=-0.78407-2.08035I$	$6.29892+2.87587I$	0
$u=-1.80288-0.66701I$ $a=\ \ 0.268661+0.534707I$ $b=-0.78407+2.08035I$	$6.29892-2.87587I$	0
$u=\ \ 1.43016+1.28872I$ $a=\ \ 0.181783+0.779872I$ $b=-0.40479+2.02226I$	$-1.48526+11.61390I$	0
$u=\ \ 1.43016-1.28872I$ $a=\ \ 0.181783-0.779872I$ $b=-0.40479-2.02226I$	$-1.48526-11.61390I$	0
$u=\ \ 1.85916+0.60812I$ $a=-0.188537-0.497905I$ $b=\ \ 0.82440-2.28050I$	$5.77448+3.00391I$	0
$u=\ \ 1.85916-0.60812I$ $a=-0.188537+0.497905I$ $b=\ \ 0.82440+2.28050I$	$5.77448-3.00391I$	0
$u=\ \ 1.42988+1.40107I$ $a=\ \ 0.164074+0.655578I$ $b=-0.44938+2.14186I$	$-3.19745+3.29806I$	0
$u=\ \ 1.42988-1.40107I$ $a=\ \ 0.164074-0.655578I$ $b=-0.44938-2.14186I$	$-3.19745-3.29806I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.77888 + 0.94606I$ $a = -0.504641 - 0.476537I$ $b = 0.76720 - 1.58178I$	$1.42330 - 11.72270I$	0
$u = 1.77888 - 0.94606I$ $a = -0.504641 + 0.476537I$ $b = 0.76720 + 1.58178I$	$1.42330 + 11.72270I$	0
$u = -1.80357 + 0.90455I$ $a = 0.453871 - 0.479591I$ $b = -0.81713 - 1.67987I$	$3.90295 + 6.32077I$	0
$u = -1.80357 - 0.90455I$ $a = 0.453871 + 0.479591I$ $b = -0.81713 + 1.67987I$	$3.90295 - 6.32077I$	0
$u = 1.95336 + 0.94168I$ $a = -0.403468 - 0.378015I$ $b = 1.10730 - 1.68504I$	$-1.40233 - 3.13589I$	0
$u = 1.95336 - 0.94168I$ $a = -0.403468 + 0.378015I$ $b = 1.10730 + 1.68504I$	$-1.40233 + 3.13589I$	0

II.

$\boldsymbol{I_2^u = \langle -2.01\times10^{18}u^{38}-2.85\times10^{18}u^{37}+\cdots+3.17\times10^{16}b+5.50\times10^{18},\ -1.59\times10^{18}u^{38}-1.91\times10^{18}u^{37}+\cdots+3.17\times10^{16}a+3.88\times10^{18},\ u^{39}-8u^{37}+\cdots-u+1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix}50.0769u^{38}+60.1821u^{37}+\cdots+0.190740u-122.256\\63.4708u^{38}+89.9299u^{37}+\cdots+47.2960u-173.438\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-121.065u^{38}-122.256u^{37}+\cdots+47.8502u+259.551\\-49.0769u^{38}-60.1821u^{37}+\cdots-8.19074u+121.256\end{pmatrix}$$

$$a_1 = \begin{pmatrix}307.401u^{38}+259.551u^{37}+\cdots-223.007u-576.187\\134.459u^{38}+152.003u^{37}+\cdots-0.744935u-310.733\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-71.9880u^{38}-62.0736u^{37}+\cdots+56.0409u+138.295\\-49.0769u^{38}-60.1821u^{37}+\cdots-8.19074u+121.256\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}305.457u^{38}+179.341u^{37}+\cdots-362.078u-437.682\\114.348u^{38}+75.2218u^{37}+\cdots-118.116u-178.341\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-437.682u^{38}-305.457u^{37}+\cdots+281.639u+800.761\\-178.341u^{38}-114.348u^{37}+\cdots+132.225u+296.457\end{pmatrix}$$

$$a_2 = \begin{pmatrix}8000.01u^{38}+4309.48u^{37}+\cdots-7949.09u-9510.25\\2234.16u^{38}+1562.41u^{37}+\cdots-1396.48u-3185.54\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-93.3820u^{38}-92.8213u^{37}+\cdots+37.9357u+197.477\\-60.0868u^{38}-76.3117u^{37}+\cdots-17.5445u+152.003\end{pmatrix}$$

$$a_6 = \begin{pmatrix}2780.01u^{38}+1229.69u^{37}+\cdots-3610.28u-3101.50\\574.178u^{38}+114.004u^{37}+\cdots-1020.43u-404.066\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{85785770042272963235}{15862900254506647}u^{38}+\frac{359617894200403433821}{31725800509013294}u^{37}+\cdots+\frac{1868940608177890837 07}{15862900254506647}u-\frac{751272827301618047625}{31725800509013294}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{39} - 20u^{38} + \cdots + 10u - 1$
c_2	$u^{39} + 4u^{38} + \cdots - 4u - 1$
c_3	$u^{39} - u^{38} + \cdots - 8u^2 + 1$
c_4	$u^{39} - 8u^{37} + \cdots - u + 1$
c_5	$u^{39} - 4u^{38} + \cdots - 4u + 1$
c_6	$u^{39} - 12u^{38} + \cdots - 116u + 21$
c_7	$u^{39} - u^{38} + \cdots - 3u + 1$
c_8	$u^{39} + 2u^{38} + \cdots + 76u - 7$
c_9	$u^{39} - 12u^{38} + \cdots + 5u - 1$
c_{10}	$u^{39} + 7u^{38} + \cdots + 25u + 21$
c_{11}	$u^{39} + 2u^{38} + \cdots + 40u + 7$
c_{12}	$u^{39} + 12u^{38} + \cdots + 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{39}+8y^{38}+\cdots-10y-1$
c_2, c_5	$y^{39}-20y^{38}+\cdots+10y-1$
c_3	$y^{39}-17y^{38}+\cdots+16y-1$
c_4	$y^{39}-16y^{38}+\cdots+17y-1$
c_6	$y^{39}+4y^{38}+\cdots+5938y-441$
c_7	$y^{39}+11y^{38}+\cdots+9y-1$
c_8	$y^{39}+12y^{38}+\cdots+6756y-49$
c_9, c_{12}	$y^{39}+20y^{38}+\cdots-37y-1$
c_{10}	$y^{39}-13y^{38}+\cdots+5203y-441$
c_{11}	$y^{39}-20y^{38}+\cdots+3574y-49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.924815+0.311925I$ $a=\ 0.11561+1.43404I$ $b=\ 0.42783+1.56351I$	$-0.07877-11.10230I$	$-3.74058+8.27396I$
$u=-0.924815-0.311925I$ $a=\ 0.11561-1.43404I$ $b=\ 0.42783-1.56351I$	$-0.07877+11.10230I$	$-3.74058-8.27396I$
$u=-1.008910+0.188119I$ $a=\ 0.309077+1.135640I$ $b=\ 0.25662+1.64816I$	$-2.21558-2.89296I$	$-7.37143+3.04083I$
$u=-1.008910-0.188119I$ $a=\ 0.309077-1.135640I$ $b=\ 0.25662-1.64816I$	$-2.21558+2.89296I$	$-7.37143-3.04083I$
$u=\ 0.989116+0.329453I$ $a=-0.050509+1.281840I$ $b=-0.42702+1.63862I$	$2.44099+6.06191I$	$0.-5.19492I$
$u=\ 0.989116-0.329453I$ $a=-0.050509-1.281840I$ $b=-0.42702-1.63862I$	$2.44099-6.06191I$	$0.+5.19492I$
$u=-0.697260+0.646015I$ $a=\ 0.438485-0.439550I$ $b=\ 0.79668-1.77678I$	$-1.15827-3.68014I$	$-1.40034+6.36118I$
$u=-0.697260-0.646015I$ $a=\ 0.438485+0.439550I$ $b=\ 0.79668+1.77678I$	$-1.15827+3.68014I$	$-1.40034-6.36118I$
$u=\ 0.266485+1.020910I$ $a=-0.597928-0.451213I$ $b=-0.361876+0.275235I$	$-0.15316+8.20817I$	$-2.18178-11.23071I$
$u=\ 0.266485-1.020910I$ $a=-0.597928+0.451213I$ $b=-0.361876-0.275235I$	$-0.15316-8.20817I$	$-2.18178+11.23071I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.857879+0.670338I$ $a=-0.738335+1.154920I$ $b=\ \ 0.69369+1.62725I$	$3.31730-0.83841I$	$-4.00000+0.I$
$u=-0.857879-0.670338I$ $a=-0.738335-1.154920I$ $b=\ \ 0.69369-1.62725I$	$3.31730+0.83841I$	$-4.00000+0.I$
$u=\ \ 0.285396+0.860515I$ $a=-0.522568-0.526250I$ $b=-1.019580+0.332745I$	$-1.11714+1.99999I$	$-8.19167-3.78237I$
$u=\ \ 0.285396-0.860515I$ $a=-0.522568+0.526250I$ $b=-1.019580-0.332745I$	$-1.11714-1.99999I$	$-8.19167+3.78237I$
$u=\ \ 0.765917+0.475113I$ $a=-0.461266-0.452206I$ $b=-0.42801-2.31073I$	$-4.91010-0.66634I$	$-4.08848-0.66761I$
$u=\ \ 0.765917-0.475113I$ $a=-0.461266+0.452206I$ $b=-0.42801+2.31073I$	$-4.91010+0.66634I$	$-4.08848+0.66761I$
$u=-0.384592+0.805398I$ $a=\ \ 0.472005-0.488912I$ $b=\ \ 1.300900-0.209954I$	$0.19142-5.06118I$	$-8.60265+7.14127I$
$u=-0.384592-0.805398I$ $a=\ \ 0.472005+0.488912I$ $b=\ \ 1.300900+0.209954I$	$0.19142+5.06118I$	$-8.60265-7.14127I$
$u=-0.402380+1.051580I$ $a=\ \ 0.538047-0.411212I$ $b=\ \ 0.305401-0.158350I$	$1.26027-3.77559I$	$0.+6.22471I$
$u=-0.402380-1.051580I$ $a=\ \ 0.538047+0.411212I$ $b=\ \ 0.305401+0.158350I$	$1.26027+3.77559I$	$0.-6.22471I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.947825 + 0.627237I$ $a = 0.535172 + 1.131600I$ $b = -0.66404 + 1.66961I$	$4.52388 + 4.83558I$	0
$u = 0.947825 - 0.627237I$ $a = 0.535172 - 1.131600I$ $b = -0.66404 - 1.66961I$	$4.52388 - 4.83558I$	0
$u = -0.847256 + 0.806635I$ $a = -0.827554 + 0.899088I$ $b = 0.75375 + 1.61764I$	$3.17795 - 6.62251I$	0
$u = -0.847256 - 0.806635I$ $a = -0.827554 - 0.899088I$ $b = 0.75375 - 1.61764I$	$3.17795 + 6.62251I$	0
$u = 0.581387 + 0.571673I$ $a = -0.433652 - 0.432178I$ $b = -1.42230 - 2.06228I$	$-4.53761 + 8.18453I$	$-4.02113 - 11.95988I$
$u = 0.581387 - 0.571673I$ $a = -0.433652 + 0.432178I$ $b = -1.42230 + 2.06228I$	$-4.53761 - 8.18453I$	$-4.02113 + 11.95988I$
$u = 0.950084 + 0.865043I$ $a = 0.684070 + 0.793506I$ $b = -0.79803 + 1.66370I$	$4.16853 + 2.84209I$	0
$u = 0.950084 - 0.865043I$ $a = 0.684070 - 0.793506I$ $b = -0.79803 - 1.66370I$	$4.16853 - 2.84209I$	0
$u = 0.707436 + 0.020386I$ $a = -1.71851 + 0.48438I$ $b = 0.218626 + 0.433517I$	$-5.05783 + 2.49669I$	$-7.12716 + 1.05845I$
$u = 0.707436 - 0.020386I$ $a = -1.71851 - 0.48438I$ $b = 0.218626 - 0.433517I$	$-5.05783 - 2.49669I$	$-7.12716 - 1.05845I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.706508$ $a=\ \ 1.50028$ $b=-0.586471$	-2.80431	-20.6800
$u=-0.691067+0.008533I$ $a=\ \ 1.97336+0.18453I$ $b=-0.109378+0.137192I$	$-2.00961+0.36405I$	$7.95914-5.45782I$
$u=-0.691067-0.008533I$ $a=\ \ 1.97336-0.18453I$ $b=-0.109378-0.137192I$	$-2.00961-0.36405I$	$7.95914+5.45782I$
$u=\ \ 0.687085+0.019158I$ $a=-2.07300+0.38544I$ $b=\ \ 0.007592+0.255466I$	$-4.17830-4.65303I$	$0.33083+7.03077I$
$u=\ \ 0.687085-0.019158I$ $a=-2.07300-0.38544I$ $b=\ \ 0.007592-0.255466I$	$-4.17830+4.65303I$	$0.33083-7.03077I$
$u=\ \ 1.63181+0.14526I$ $a=-0.060200+0.628299I$ $b=-0.29768+2.19968I$	$5.66252+3.73843I$	0
$u=\ \ 1.63181-0.14526I$ $a=-0.060200-0.628299I$ $b=-0.29768-2.19968I$	$5.66252-3.73843I$	0
$u=-1.64513+0.19079I$ $a=\ \ 0.167542-0.553973I$ $b=\ \ 0.06007-2.21301I$	$5.36554-2.30314I$	0
$u=-1.64513-0.19079I$ $a=\ \ 0.167542+0.553973I$ $b=\ \ 0.06007+2.21301I$	$5.36554+2.30314I$	0

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

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3 + 2u - 1 \\ u^3 + u^2 + 3u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^2 - u - 2 \\ -1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u^2 + u + 2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 6u^3 + 2u^2 + 7u - 13$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.148403+0.632502I$ $a=-1.12196+1.05376I$ $b=-0.64840+1.49853I$	$-1.64493-2.02988I$	$-13.74584+2.78456I$
$u=-0.148403-0.632502I$ $a=-1.12196-1.05376I$ $b=-0.64840-1.49853I$	$-1.64493+2.02988I$	$-13.74584-2.78456I$
$u=-0.35160+1.49853I$ $a=\ \ 0.621964+0.187730I$ $b=-0.851597+0.632502I$	$-1.64493+2.02988I$	$-5.75416-8.47377I$
$u=-0.35160-1.49853I$ $a=\ \ 0.621964-0.187730I$ $b=-0.851597-0.632502I$	$-1.64493-2.02988I$	$-5.75416+8.47377I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{39}-20u^{38}+\cdots+10u-1)(u^{186}+93u^{185}+\cdots+190u+1)$
c_2	$((u-1)^4)(u^{39}+4u^{38}+\cdots-4u-1)(u^{186}+u^{185}+\cdots+10u-1)$
c_3	$(u^4+u^3+3u^2+u+1)(u^{39}-u^{38}+\cdots-8u^2+1)$ $\cdot(u^{186}+5u^{185}+\cdots+305u+29)$
c_4	$(u^4+u^3+3u^2+u+1)(u^{39}-8u^{37}+\cdots-u+1)$ $\cdot(u^{186}+2u^{185}+\cdots-36u+88)$
c_5	$((u+1)^4)(u^{39}-4u^{38}+\cdots-4u+1)(u^{186}+u^{185}+\cdots+10u-1)$
c_6	$u^4(u^{39}-12u^{38}+\cdots-116u+21)$ $\cdot(u^{186}-9u^{185}+\cdots+133392896u-8998912)$
c_7	$(u^4+2u^3-u+1)(u^{39}-u^{38}+\cdots-3u+1)(u^{186}+4u^{185}+\cdots+96u-17)$
c_8	$(u^4+2u^3-u+1)(u^{39}+2u^{38}+\cdots+76u-7)$ $\cdot(u^{186}+3u^{185}+\cdots+264890731u+56493497)$
c_9	$((u^2-u+1)^2)(u^{39}-12u^{38}+\cdots+5u-1)$ $\cdot(u^{186}+11u^{185}+\cdots+2925u+459)$
c_{10}	$u^4(u^{39}+7u^{38}+\cdots+25u+21)(u^{186}-12u^{185}+\cdots+104u-16)$
c_{11}	$((u^2-u+1)^2)(u^{39}+2u^{38}+\cdots+40u+7)$ $\cdot(u^{186}-3u^{185}+\cdots+2837302u+121613)$
c_{12}	$((u^2+u+1)^2)(u^{39}+12u^{38}+\cdots+5u+1)$ $\cdot(u^{186}+11u^{185}+\cdots+2925u+459)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^4)(y^{39}+8y^{38}+\cdots-10y-1)(y^{186}+15y^{185}+\cdots-32898y+1)$
c_2, c_5	$((y-1)^4)(y^{39}-20y^{38}+\cdots+10y-1)(y^{186}-93y^{185}+\cdots-190y+1)$
c_3	$(y^4+5y^3+9y^2+5y+1)(y^{39}-17y^{38}+\cdots+16y-1)$ $\cdot(y^{186}-y^{185}+\cdots+166641y+841)$
c_4	$(y^4+5y^3+9y^2+5y+1)(y^{39}-16y^{38}+\cdots+17y-1)$ $\cdot(y^{186}-4y^{185}+\cdots+366192y+7744)$
c_6	$y^4(y^{39}+4y^{38}+\cdots+5938y-441)$ $\cdot(y^{186}+51y^{185}+\cdots-15721607766212608y+80980417183744)$
c_7	$(y^4-4y^3+6y^2-y+1)(y^{39}+11y^{38}+\cdots+9y-1)$ $\cdot(y^{186}-6y^{185}+\cdots-20878y+289)$
c_8	$(y^4-4y^3+6y^2-y+1)(y^{39}+12y^{38}+\cdots+6756y-49)$ $\cdot(y^{186}-21y^{185}+\cdots-86383388203073361y+3191515203289009)$
c_9, c_{12}	$((y^2+y+1)^2)(y^{39}+20y^{38}+\cdots-37y-1)$ $\cdot(y^{186}+101y^{185}+\cdots-66119733y+210681)$
c_{10}	$y^4(y^{39}-13y^{38}+\cdots+5203y-441)$ $\cdot(y^{186}+2y^{185}+\cdots+15552y+256)$
c_{11}	$((y^2+y+1)^2)(y^{39}-20y^{38}+\cdots+3574y-49)$ $\cdot(y^{186}+y^{185}+\cdots+730297573796y+14789721769)$