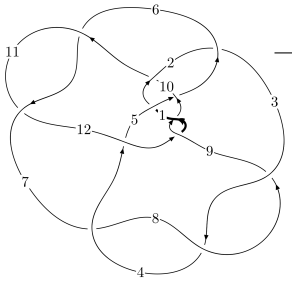
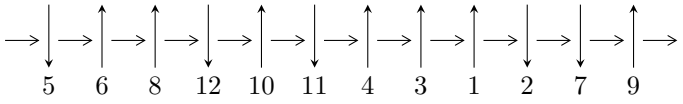
$12a_{1228}$ $(K12a_{1228})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -6.01811 \times 10^{386} u^{129} - 3.95810 \times 10^{385} u^{128} + \cdots + 1.46054 \times 10^{387} b - 5.70213 \times 10^{386}, \\ & 1.81978 \times 10^{387} u^{129} + 1.68335 \times 10^{386} u^{128} + \cdots + 1.46054 \times 10^{387} a - 7.47460 \times 10^{388}, \\ & u^{130} + 65 u^{128} + \cdots + 25 u + 1 \rangle \\ I_2^u = \langle & 2337 u^{31} - 6 u^{30} + \cdots + 631 b + 5039,\ 1267570 u^{31} + 992573 u^{30} + \cdots + 239149 a + 339493, \\ & u^{32} + u^{31} + \cdots + 4 u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 162 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. $\boldsymbol{I_1^u = \langle -6.02 \times 10^{386} u^{129} - 3.96 \times 10^{385} u^{128} + \cdots + 1.46 \times 10^{387} b - 5.70 \times 10^{386},\ 1.82 \times 10^{387} u^{129} + 1.68 \times 10^{386} u^{128} + \cdots + 1.46 \times 10^{387} a - 7.47 \times 10^{388},\ u^{130} + 65 u^{128} + \cdots + 25u + 1 \rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -1.24596u^{129} - 0.115255u^{128} + \cdots + 72.2066u + 51.1769 \\ 0.412047u^{129} + 0.0271002u^{128} + \cdots - 33.1795u + 0.390412 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.65801u^{129} - 0.142356u^{128} + \cdots + 105.386u + 50.7865 \\ 0.412047u^{129} + 0.0271002u^{128} + \cdots - 33.1795u + 0.390412 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2.49008u^{129} + 1.08728u^{128} + \cdots - 622.790u + 26.2361 \\ 0.690479u^{129} + 0.332737u^{128} + \cdots - 117.082u - 2.07945 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -1.17148u^{129} - 0.0845750u^{128} + \cdots + 93.0440u + 51.8431 \\ 0.316454u^{129} + 0.174664u^{128} + \cdots - 29.3185u + 0.537108 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.66777u^{129} + 0.545132u^{128} + \cdots + 118.027u - 65.5786 \\ -0.411679u^{129} - 0.145347u^{128} + \cdots + 52.8301u - 0.482638 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 7.00138u^{129} + 0.814010u^{128} + \cdots - 2243.97u + 34.5505 \\ -0.0796178u^{129} + 0.188534u^{128} + \cdots - 79.5670u + 1.05186 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 4.05410u^{129} + 0.547154u^{128} + \cdots - 65.5783u - 74.4592 \\ -0.0343714u^{129} + 0.0978812u^{128} + \cdots + 30.9080u - 1.20261 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.01406u^{129} + 0.00528034u^{128} + \cdots - 230.499u - 15.4118$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{130}+u^{129}+\cdots+4u+1$
c_2	$u^{130}+3u^{129}+\cdots+11268u+1367$
c_3, c_7, c_8	$u^{130}+65u^{128}+\cdots-25u+1$
c_4	$u^{130}-20u^{128}+\cdots+4232509101u+1162172247$
c_5	$u^{130}+3u^{129}+\cdots-4845u-2433$
c_6, c_{11}	$u^{130}-u^{129}+\cdots+20276u-12013$
c_9, c_{12}	$u^{130}-u^{129}+\cdots+72388u-2507$
c_{10}	$u^{130}+7u^{129}+\cdots-3637u-1103$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{130} + 21y^{129} + \cdots - 332y + 1$
c_2	$y^{130} + 27y^{129} + \cdots + 8414388y + 1868689$
c_3, c_7, c_8	$y^{130} + 130y^{129} + \cdots - 2035y + 1$
c_4	$y^{130} - 40y^{129} + \cdots - 4.82 \times 10^{19}y + 1.35 \times 10^{18}$
c_5	$y^{130} - 27y^{129} + \cdots - 381850059y + 5919489$
c_6, c_{11}	$y^{130} - 109y^{129} + \cdots + 3652617438y + 144312169$
c_9, c_{12}	$y^{130} - 89y^{129} + \cdots - 1089734184y + 6285049$
c_{10}	$y^{130} - 25y^{129} + \cdots - 58049277y + 1216609$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.878351+0.479501I$ $a=\ \ 0.267905-0.715082I$ $b=\ \ 1.265230-0.145494I$	$-4.46528+3.18471I$	0
$u=-0.878351-0.479501I$ $a=\ \ 0.267905+0.715082I$ $b=\ \ 1.265230+0.145494I$	$-4.46528-3.18471I$	0
$u=-0.904178+0.479209I$ $a=\ \ 0.677224-0.825676I$ $b=\ \ 1.42958+0.41209I$	$-0.7984-14.1663I$	0
$u=-0.904178-0.479209I$ $a=\ \ 0.677224+0.825676I$ $b=\ \ 1.42958-0.41209I$	$-0.7984+14.1663I$	0
$u=-0.597787+0.841552I$ $a=-0.603320+0.306989I$ $b=-0.114008-0.193764I$	$2.91845-3.75419I$	0
$u=-0.597787-0.841552I$ $a=-0.603320-0.306989I$ $b=-0.114008+0.193764I$	$2.91845+3.75419I$	0
$u=-0.724677+0.634607I$ $a=-0.768164+0.720424I$ $b=-1.37841-0.37858I$	$-5.07932-8.49653I$	0
$u=-0.724677-0.634607I$ $a=-0.768164-0.720424I$ $b=-1.37841+0.37858I$	$-5.07932+8.49653I$	0
$u=-0.982121+0.472548I$ $a=-0.484899+0.576892I$ $b=-1.183440-0.246868I$	$1.58463-5.74871I$	0
$u=-0.982121-0.472548I$ $a=-0.484899-0.576892I$ $b=-1.183440+0.246868I$	$1.58463+5.74871I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.615550 + 0.655227I$ $a = 1.23994 + 1.59607I$ $b = 1.248160 - 0.021656I$	$-1.13752 + 4.31310I$	0
$u = 0.615550 - 0.655227I$ $a = 1.23994 - 1.59607I$ $b = 1.248160 + 0.021656I$	$-1.13752 - 4.31310I$	0
$u = 0.385384 + 0.792448I$ $a = -1.231870 + 0.402891I$ $b = 0.105055 + 0.547279I$	$3.03102 - 5.24392I$	0
$u = 0.385384 - 0.792448I$ $a = -1.231870 - 0.402891I$ $b = 0.105055 - 0.547279I$	$3.03102 + 5.24392I$	0
$u = -0.818503 + 0.290253I$ $a = 0.142451 + 0.334207I$ $b = -0.086924 - 0.484757I$	$4.56441 - 1.19346I$	0
$u = -0.818503 - 0.290253I$ $a = 0.142451 - 0.334207I$ $b = -0.086924 + 0.484757I$	$4.56441 + 1.19346I$	0
$u = -0.820647 + 0.789678I$ $a = -0.634880 + 0.632957I$ $b = -1.350430 + 0.261267I$	$-1.65517 + 8.35247I$	0
$u = -0.820647 - 0.789678I$ $a = -0.634880 - 0.632957I$ $b = -1.350430 - 0.261267I$	$-1.65517 - 8.35247I$	0
$u = 0.386861 + 1.075540I$ $a = 1.351750 - 0.141898I$ $b = 0.493213 - 0.154400I$	$2.20870 + 1.30818I$	0
$u = 0.386861 - 1.075540I$ $a = 1.351750 + 0.141898I$ $b = 0.493213 + 0.154400I$	$2.20870 - 1.30818I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.712561 + 0.448408I$ $a = -0.63173 - 1.27602I$ $b = -1.338250 + 0.447663I$	$-2.99150 + 6.35567I$	0
$u = \ 0.712561 - 0.448408I$ $a = -0.63173 + 1.27602I$ $b = -1.338250 - 0.447663I$	$-2.99150 - 6.35567I$	0
$u = \ 0.829587$ $a = \ 0.323136$ $b = -1.48778$	-4.55769	0
$u = \ 0.646603 + 0.513783I$ $a = \ 0.371738 + 0.586985I$ $b = \ 1.289990 + 0.231810I$	$-3.27855 - 1.86425I$	0
$u = \ 0.646603 - 0.513783I$ $a = \ 0.371738 - 0.586985I$ $b = \ 1.289990 - 0.231810I$	$-3.27855 + 1.86425I$	0
$u = \ 1.033090 + 0.570815I$ $a = \ 0.853456 + 0.628055I$ $b = \ 1.306130 - 0.156354I$	$0.26850 + 3.54378I$	0
$u = \ 1.033090 - 0.570815I$ $a = \ 0.853456 - 0.628055I$ $b = \ 1.306130 + 0.156354I$	$0.26850 - 3.54378I$	0
$u = -0.782500 + 0.949740I$ $a = \ 0.676862 - 0.554508I$ $b = \ 1.124950 - 0.039839I$	$0.214016 - 0.410424I$	0
$u = -0.782500 - 0.949740I$ $a = \ 0.676862 + 0.554508I$ $b = \ 1.124950 + 0.039839I$	$0.214016 + 0.410424I$	0
$u = -0.765551$ $a = \ 0.996922$ $b = -1.07406$	2.38604	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.293830+1.202900I$ $a=\ 0.267092-0.713391I$ $b=\ 1.032950+0.235404I$	$-1.28452-3.87204I$	0
$u=-0.293830-1.202900I$ $a=\ 0.267092+0.713391I$ $b=\ 1.032950-0.235404I$	$-1.28452+3.87204I$	0
$u=\ 0.755209$ $a=-0.818690$ $b=-1.40811$	0.825266	0
$u=-0.172994+1.236950I$ $a=\ 1.010490+0.983822I$ $b=-0.553804+0.385324I$	$-0.29613-4.62984I$	0
$u=-0.172994-1.236950I$ $a=\ 1.010490-0.983822I$ $b=-0.553804-0.385324I$	$-0.29613+4.62984I$	0
$u=\ 0.680901+0.316640I$ $a=\ 0.043183-0.636995I$ $b=-0.240222+0.999581I$	$4.48026+9.15437I$	0
$u=\ 0.680901-0.316640I$ $a=\ 0.043183+0.636995I$ $b=-0.240222-0.999581I$	$4.48026-9.15437I$	0
$u=\ 0.907749+0.880383I$ $a=-0.931871-0.374887I$ $b=-1.262540-0.007209I$	$-0.55631+3.09812I$	0
$u=\ 0.907749-0.880383I$ $a=-0.931871+0.374887I$ $b=-1.262540+0.007209I$	$-0.55631-3.09812I$	0
$u=\ 0.549788+0.436843I$ $a=\ 0.481999+1.016070I$ $b=\ 1.44060-0.34552I$	$-5.20986+2.23420I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.549788 - 0.436843I$ $a = 0.481999 - 1.016070I$ $b = 1.44060 + 0.34552I$	$-5.20986 - 2.23420I$	0
$u = -0.198012 + 0.660781I$ $a = 0.941167 - 0.516068I$ $b = 0.605312 + 0.327412I$	$-0.45180 - 1.44547I$	0
$u = -0.198012 - 0.660781I$ $a = 0.941167 + 0.516068I$ $b = 0.605312 - 0.327412I$	$-0.45180 + 1.44547I$	0
$u = 0.640848 + 0.248842I$ $a = -0.624993 + 0.530930I$ $b = -0.207654 - 0.661667I$	$4.55789 + 2.41284I$	0
$u = 0.640848 - 0.248842I$ $a = -0.624993 - 0.530930I$ $b = -0.207654 + 0.661667I$	$4.55789 - 2.41284I$	0
$u = -0.003165 + 1.314500I$ $a = 2.51529 + 0.49435I$ $b = 1.53646 + 0.66593I$	$-1.70839 + 2.06002I$	0
$u = -0.003165 - 1.314500I$ $a = 2.51529 - 0.49435I$ $b = 1.53646 - 0.66593I$	$-1.70839 - 2.06002I$	0
$u = 0.481434 + 0.475913I$ $a = -0.34312 - 1.73148I$ $b = -1.283160 - 0.031411I$	$-5.34195 + 1.26907I$	0
$u = 0.481434 - 0.475913I$ $a = -0.34312 + 1.73148I$ $b = -1.283160 + 0.031411I$	$-5.34195 - 1.26907I$	0
$u = 0.047332 + 1.339880I$ $a = 0.891276 - 0.261218I$ $b = 0.746224 + 0.725294I$	$-1.387670 + 0.222118I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.047332 - 1.339880I$ $a = 0.891276 + 0.261218I$ $b = 0.746224 - 0.725294I$	$-1.387670 - 0.222118I$	0
$u = 0.068839 + 1.349240I$ $a = -0.373812 + 0.116030I$ $b = -0.942190 - 0.670685I$	$-2.67934 - 5.08676I$	0
$u = 0.068839 - 1.349240I$ $a = -0.373812 - 0.116030I$ $b = -0.942190 + 0.670685I$	$-2.67934 + 5.08676I$	0
$u = 0.043777 + 1.357340I$ $a = 2.39054 - 0.17868I$ $b = 1.100650 + 0.282181I$	$-1.37511 + 1.88610I$	0
$u = 0.043777 - 1.357340I$ $a = 2.39054 + 0.17868I$ $b = 1.100650 - 0.282181I$	$-1.37511 - 1.88610I$	0
$u = -0.183770 + 1.357780I$ $a = -0.793688 + 0.411879I$ $b = -0.576633 - 0.928190I$	$-1.52719 - 0.68054I$	0
$u = -0.183770 - 1.357780I$ $a = -0.793688 - 0.411879I$ $b = -0.576633 + 0.928190I$	$-1.52719 + 0.68054I$	0
$u = -0.186654 + 1.357790I$ $a = -0.458767 - 0.472489I$ $b = -0.012757 - 0.569359I$	$-4.00591 - 3.47140I$	0
$u = -0.186654 - 1.357790I$ $a = -0.458767 + 0.472489I$ $b = -0.012757 + 0.569359I$	$-4.00591 + 3.47140I$	0
$u = -0.065013 + 1.377570I$ $a = 0.91114 - 1.09535I$ $b = 0.96985 - 1.44530I$	$-2.74451 - 4.13753I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.065013-1.377570I$ $a=\ \ 0.91114+1.09535I$ $b=\ \ 0.96985+1.44530I$	$-2.74451+4.13753I$	0
$u=\ \ 0.290700+0.537887I$ $a=-2.30465-0.48448I$ $b=-1.054250+0.323843I$	$-1.56827+4.27892I$	$-1.40759-8.91376I$
$u=\ \ 0.290700-0.537887I$ $a=-2.30465+0.48448I$ $b=-1.054250-0.323843I$	$-1.56827-4.27892I$	$-1.40759+8.91376I$
$u=\ \ 0.035608+1.395810I$ $a=-3.38425+0.34756I$ $b=-1.224580+0.160316I$	$-2.71386+6.58703I$	0
$u=\ \ 0.035608-1.395810I$ $a=-3.38425-0.34756I$ $b=-1.224580-0.160316I$	$-2.71386-6.58703I$	0
$u=-0.009747+1.410940I$ $a=-2.17215-0.53564I$ $b=-1.53403+0.30115I$	$-6.45759-0.12198I$	0
$u=-0.009747-1.410940I$ $a=-2.17215+0.53564I$ $b=-1.53403-0.30115I$	$-6.45759+0.12198I$	0
$u=-0.14870+1.41051I$ $a=-0.596599-0.610104I$ $b=-0.095364-1.151950I$	$-4.52718-3.68202I$	0
$u=-0.14870-1.41051I$ $a=-0.596599+0.610104I$ $b=-0.095364+1.151950I$	$-4.52718+3.68202I$	0
$u=-0.28006+1.39162I$ $a=\ \ 0.494115-0.027065I$ $b=\ \ 0.417573+0.706412I$	$-0.73826-5.10736I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.28006-1.39162I$ $a=\ 0.494115+0.027065I$ $b=\ 0.417573-0.706412I$	$-0.73826+5.10736I$	0
$u=\ 0.08530+1.41776I$ $a=-0.797089+0.934847I$ $b=-0.63152+1.53765I$	$-5.42127+5.20183I$	0
$u=\ 0.08530-1.41776I$ $a=-0.797089-0.934847I$ $b=-0.63152-1.53765I$	$-5.42127-5.20183I$	0
$u=-0.461485+0.342497I$ $a=\ 0.697444-0.802577I$ $b=-0.077226+0.844098I$	$1.04116-1.46431I$	$-0.71657+3.65612I$
$u=-0.461485-0.342497I$ $a=\ 0.697444+0.802577I$ $b=-0.077226-0.844098I$	$1.04116+1.46431I$	$-0.71657-3.65612I$
$u=-0.561393+0.101743I$ $a=-1.26827-1.50964I$ $b=\ 0.567221+0.706722I$	$3.11725+1.98534I$	$6.85144-2.18321I$
$u=-0.561393-0.101743I$ $a=-1.26827+1.50964I$ $b=\ 0.567221-0.706722I$	$3.11725-1.98534I$	$6.85144+2.18321I$
$u=\ 0.20547+1.42554I$ $a=-0.002859+0.302596I$ $b=\ 0.053895+1.035460I$	$-0.86547+5.40565I$	0
$u=\ 0.20547-1.42554I$ $a=-0.002859-0.302596I$ $b=\ 0.053895-1.035460I$	$-0.86547-5.40565I$	0
$u=\ 0.36834+1.39918I$ $a=\ 1.45946+1.01129I$ $b=\ 1.55482-0.14774I$	$-9.13006+4.36537I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.36834 - 1.39918I$ $a = 1.45946 - 1.01129I$ $b = 1.55482 + 0.14774I$	$-9.13006 - 4.36537I$	0
$u = 0.233772 + 0.496655I$ $a = 1.36274 - 1.04709I$ $b = 0.176878 - 0.210114I$	$-0.96711 - 1.54704I$	$-2.41396 - 0.36879I$
$u = 0.233772 - 0.496655I$ $a = 1.36274 + 1.04709I$ $b = 0.176878 + 0.210114I$	$-0.96711 + 1.54704I$	$-2.41396 + 0.36879I$
$u = 0.23607 + 1.43584I$ $a = 0.800263 - 0.436336I$ $b = 0.414096 - 1.262410I$	$-1.16551 + 12.45170I$	0
$u = 0.23607 - 1.43584I$ $a = 0.800263 + 0.436336I$ $b = 0.414096 + 1.262410I$	$-1.16551 - 12.45170I$	0
$u = -0.500081 + 0.212374I$ $a = 0.595144 - 0.272323I$ $b = -0.180192 + 0.565372I$	$0.956398 - 0.962055I$	$6.03045 + 1.88099I$
$u = -0.500081 - 0.212374I$ $a = 0.595144 + 0.272323I$ $b = -0.180192 - 0.565372I$	$0.956398 + 0.962055I$	$6.03045 - 1.88099I$
$u = 0.005862 + 0.543268I$ $a = 0.969732 - 0.107902I$ $b = 1.180790 + 0.603741I$	$-1.68067 - 2.91742I$	$-11.07453 + 3.11081I$
$u = 0.005862 - 0.543268I$ $a = 0.969732 + 0.107902I$ $b = 1.180790 - 0.603741I$	$-1.68067 + 2.91742I$	$-11.07453 - 3.11081I$
$u = 0.04669 + 1.46872I$ $a = -0.317423 + 0.358759I$ $b = -0.073696 - 0.495255I$	$-7.31537 - 0.73791I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.04669 - 1.46872I$ $a = -0.317423 - 0.358759I$ $b = -0.073696 + 0.495255I$	$-7.31537 + 0.73791I$	0
$u = 0.18521 + 1.47509I$ $a = -2.18595 - 0.51282I$ $b = -1.71102 + 0.47552I$	$-11.43610 + 4.90281I$	0
$u = 0.18521 - 1.47509I$ $a = -2.18595 + 0.51282I$ $b = -1.71102 - 0.47552I$	$-11.43610 - 4.90281I$	0
$u = 0.14443 + 1.50571I$ $a = 1.86482 + 0.97913I$ $b = 1.352160 - 0.221798I$	$-11.90240 + 3.47629I$	0
$u = 0.14443 - 1.50571I$ $a = 1.86482 - 0.97913I$ $b = 1.352160 + 0.221798I$	$-11.90240 - 3.47629I$	0
$u = 0.26191 + 1.49075I$ $a = 1.95805 + 0.81840I$ $b = 1.45285 - 0.56782I$	$-9.27069 + 9.92657I$	0
$u = 0.26191 - 1.49075I$ $a = 1.95805 - 0.81840I$ $b = 1.45285 + 0.56782I$	$-9.27069 - 9.92657I$	0
$u = -0.09744 + 1.51353I$ $a = 0.125674 - 0.460826I$ $b = -0.219409 + 0.279876I$	$-4.89332 - 5.59507I$	0
$u = -0.09744 - 1.51353I$ $a = 0.125674 + 0.460826I$ $b = -0.219409 - 0.279876I$	$-4.89332 + 5.59507I$	0
$u = 0.22905 + 1.51053I$ $a = -1.78934 - 0.67579I$ $b = -1.46516 - 0.01842I$	$-9.84771 + 1.38248I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.22905 - 1.51053I$ $a = -1.78934 + 0.67579I$ $b = -1.46516 + 0.01842I$	$-9.84771 - 1.38248I$	0
$u = -0.06162 + 1.53827I$ $a = -1.97016 - 0.19495I$ $b = -1.58796 - 0.68750I$	$-8.73447 - 3.47295I$	0
$u = -0.06162 - 1.53827I$ $a = -1.97016 + 0.19495I$ $b = -1.58796 + 0.68750I$	$-8.73447 + 3.47295I$	0
$u = 0.371720 + 0.235007I$ $a = -0.310980 + 0.290500I$ $b = 0.227435 - 1.022650I$	$-0.10767 + 3.70505I$	$2.74727 - 13.27960I$
$u = 0.371720 - 0.235007I$ $a = -0.310980 - 0.290500I$ $b = 0.227435 + 1.022650I$	$-0.10767 - 3.70505I$	$2.74727 + 13.27960I$
$u = 0.23568 + 1.54603I$ $a = -1.85989 - 1.16308I$ $b = -1.266550 + 0.197806I$	$-8.29668 + 7.58722I$	0
$u = 0.23568 - 1.54603I$ $a = -1.85989 + 1.16308I$ $b = -1.266550 - 0.197806I$	$-8.29668 - 7.58722I$	0
$u = -0.32817 + 1.53205I$ $a = -1.94604 + 0.74188I$ $b = -1.54921 - 0.49226I$	$-7.3079 - 18.6467I$	0
$u = -0.32817 - 1.53205I$ $a = -1.94604 - 0.74188I$ $b = -1.54921 + 0.49226I$	$-7.3079 + 18.6467I$	0
$u = -0.23255 + 1.55567I$ $a = 2.00664 - 0.44118I$ $b = 1.59935 + 0.48550I$	$-12.2657 - 11.9906I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.23255-1.55567I$ $a=\ \ 2.00664+0.44118I$ $b=\ \ 1.59935-0.48550I$	$-12.2657+11.9906I$	0
$u=\ \ 0.18039+1.56433I$ $a=\ \ 2.18609+0.36844I$ $b=\ \ 1.41126-0.22394I$	$-8.98805+6.28691I$	0
$u=\ \ 0.18039-1.56433I$ $a=\ \ 2.18609-0.36844I$ $b=\ \ 1.41126+0.22394I$	$-8.98805-6.28691I$	0
$u=-0.34223+1.54613I$ $a=\ \ 1.60199-0.60685I$ $b=\ \ 1.328650+0.427406I$	$-4.98303-10.52040I$	0
$u=-0.34223-1.54613I$ $a=\ \ 1.60199+0.60685I$ $b=\ \ 1.328650-0.427406I$	$-4.98303+10.52040I$	0
$u=-0.12880+1.58791I$ $a=-1.69628+0.20298I$ $b=-1.289580-0.451232I$	$-8.49217-2.94716I$	0
$u=-0.12880-1.58791I$ $a=-1.69628-0.20298I$ $b=-1.289580+0.451232I$	$-8.49217+2.94716I$	0
$u=-0.30686+1.57844I$ $a=-1.43518+0.75757I$ $b=-1.301000-0.119352I$	$-11.24220-1.26863I$	0
$u=-0.30686-1.57844I$ $a=-1.43518-0.75757I$ $b=-1.301000+0.119352I$	$-11.24220+1.26863I$	0
$u=\ \ 0.35907+1.57898I$ $a=-1.88641-0.71128I$ $b=-1.45217+0.25923I$	$-6.70202+8.60411I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.35907 - 1.57898I$ $a = -1.88641 + 0.71128I$ $b = -1.45217 - 0.25923I$	$-6.70202 - 8.60411I$	0
$u = -0.12106 + 1.62349I$ $a = 1.82984 - 0.51769I$ $b = 1.377390 - 0.001363I$	$-10.26370 + 5.02475I$	0
$u = -0.12106 - 1.62349I$ $a = 1.82984 + 0.51769I$ $b = 1.377390 + 0.001363I$	$-10.26370 - 5.02475I$	0
$u = -0.292599 + 0.100882I$ $a = -0.19699 - 1.47954I$ $b = -1.08004 + 0.94210I$	$2.00640 - 2.90128I$	$19.4629 + 9.4955I$
$u = -0.292599 - 0.100882I$ $a = -0.19699 + 1.47954I$ $b = -1.08004 - 0.94210I$	$2.00640 + 2.90128I$	$19.4629 - 9.4955I$
$u = 0.270851 + 0.030304I$ $a = -3.06598 + 3.02737I$ $b = -0.701050 - 0.221904I$	$2.94768 - 0.93202I$	$4.67553 + 3.22730I$
$u = 0.270851 - 0.030304I$ $a = -3.06598 - 3.02737I$ $b = -0.701050 + 0.221904I$	$2.94768 + 0.93202I$	$4.67553 - 3.22730I$
$u = 0.139901 + 0.034692I$ $a = 0.35663 - 13.34670I$ $b = 0.980046 + 0.343604I$	$1.99500 - 6.03837I$	$8.72732 + 7.41792I$
$u = 0.139901 - 0.034692I$ $a = 0.35663 + 13.34670I$ $b = 0.980046 - 0.343604I$	$1.99500 + 6.03837I$	$8.72732 - 7.41792I$
$u = -0.0228074$ $a = 45.9496$ $b = 1.44123$	-1.54394	-6.88820

II. $I_2^u = \langle 2337u^{31} - 6u^{30} + \cdots + 631b + 5039,\ 1.27 \times 10^6 u^{31} + 9.93 \times 10^5 u^{30} + \cdots + 2.39 \times 10^5 a + 3.39 \times 10^5,\ u^{32} + u^{31} + \cdots + 4u - 1\rangle$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -5.30034u^{31} - 4.15044u^{30} + \cdots + 20.6869u - 1.41959 \\ -3.70365u^{31} + 0.00950872u^{30} + \cdots + 28.4089u - 7.98574 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.59669u^{31} - 4.15995u^{30} + \cdots - 7.72202u + 6.56615 \\ -3.70365u^{31} + 0.00950872u^{30} + \cdots + 28.4089u - 7.98574 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -5.44632u^{31} - 6.09473u^{30} + \cdots - 8.20803u - 1.85582 \\ 2.09877u^{31} + 0.892732u^{30} + \cdots + 3.79909u + 0.639890 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -3.47161u^{31} - 6.20553u^{30} + \cdots + 3.17546u + 2.12442 \\ -2.14039u^{31} + 2.45216u^{30} + \cdots + 33.4560u - 9.38905 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.63989u^{31} + 3.73866u^{30} + \cdots - 10.8946u + 7.35865 \\ u^{31} + u^{30} + \cdots - 11u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 4.93064u^{31} + 11.0192u^{30} + \cdots + 12.5588u - 7.51211 \\ -3.27823u^{31} - 2.88564u^{30} + \cdots + 21.6195u - 4.00787 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.505568u^{31} + 7.56423u^{30} + \cdots - 1.35553u + 4.89516 \\ -3.09481u^{31} - 8.08433u^{30} + \cdots - 13.4995u + 2.92760 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{739750}{239149}u^{31} + \frac{7850251}{239149}u^{30} + \cdots + \frac{31823625}{239149}u - \frac{11103106}{239149}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32}+10u^{30}+\cdots-u-1$
c_2	$u^{32}-4u^{31}+\cdots+u-1$
c_3	$u^{32}-u^{31}+\cdots-4u-1$
c_4	$u^{32}+u^{31}+\cdots-8u-1$
c_5	$u^{32}-4u^{30}+\cdots-4u^2+1$
c_6	$u^{32}-13u^{30}+\cdots+3u+1$
c_7, c_8	$u^{32}+u^{31}+\cdots+4u-1$
c_9	$u^{32}-13u^{30}+\cdots+29u+1$
c_{10}	$u^{32}-u^{30}+\cdots-3u^2+1$
c_{11}	$u^{32}-13u^{30}+\cdots-3u+1$
c_{12}	$u^{32}-13u^{30}+\cdots-29u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} + 20y^{31} + \cdots + 11y + 1$
c_2	$y^{32} + 18y^{31} + \cdots - y + 1$
c_3, c_7, c_8	$y^{32} + 33y^{31} + \cdots + 28y + 1$
c_4	$y^{32} + 11y^{31} + \cdots + 34y + 1$
c_5	$y^{32} - 8y^{31} + \cdots - 8y + 1$
c_6, c_{11}	$y^{32} - 26y^{31} + \cdots - 39y + 1$
c_9, c_{12}	$y^{32} - 26y^{31} + \cdots - 853y + 1$
c_{10}	$y^{32} - 2y^{31} + \cdots - 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.487953 + 0.806481I$ $a = -0.125588 - 0.135831I$ $b = -0.738483 - 0.210641I$	$2.16674 + 3.11635I$	$2.52582 - 3.28583I$
$u = 0.487953 - 0.806481I$ $a = -0.125588 + 0.135831I$ $b = -0.738483 + 0.210641I$	$2.16674 - 3.11635I$	$2.52582 + 3.28583I$
$u = 0.413152 + 0.973822I$ $a = 1.38308 + 0.48888I$ $b = 0.734899 + 0.159771I$	$1.87700 + 0.53920I$	$3.40143 + 2.52576I$
$u = 0.413152 - 0.973822I$ $a = 1.38308 - 0.48888I$ $b = 0.734899 - 0.159771I$	$1.87700 - 0.53920I$	$3.40143 - 2.52576I$
$u = -0.751467 + 0.794913I$ $a = 0.754134 - 0.301288I$ $b = 1.248340 + 0.108268I$	$-0.18285 - 1.72470I$	$1.25158 + 1.80974I$
$u = -0.751467 - 0.794913I$ $a = 0.754134 + 0.301288I$ $b = 1.248340 - 0.108268I$	$-0.18285 + 1.72470I$	$1.25158 - 1.80974I$
$u = -0.933653 + 0.714953I$ $a = -0.985948 + 0.784089I$ $b = -1.249270 - 0.091457I$	$-0.03671 - 4.33244I$	$3.73411 + 9.59889I$
$u = -0.933653 - 0.714953I$ $a = -0.985948 - 0.784089I$ $b = -1.249270 + 0.091457I$	$-0.03671 + 4.33244I$	$3.73411 - 9.59889I$
$u = 0.059501 + 1.201540I$ $a = -1.025630 + 0.092892I$ $b = 0.883133 - 0.328106I$	$-0.76484 + 6.41596I$	$1.55951 - 7.59182I$
$u = 0.059501 - 1.201540I$ $a = -1.025630 - 0.092892I$ $b = 0.883133 + 0.328106I$	$-0.76484 - 6.41596I$	$1.55951 + 7.59182I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.103639 + 1.290290I$ $a = -0.402195 + 0.549295I$ $b = -0.584388 + 0.607280I$	$-4.42591 + 4.06684I$	$-5.84079 - 5.51367I$
$u = \ 0.103639 - 1.290290I$ $a = -0.402195 - 0.549295I$ $b = -0.584388 - 0.607280I$	$-4.42591 - 4.06684I$	$-5.84079 + 5.51367I$
$u = \ 0.207615 + 1.285740I$ $a = \ 0.712522 - 0.721672I$ $b = -0.275818 + 0.122841I$	$0.17205 + 3.02622I$	$4.32560 - 2.19241I$
$u = \ 0.207615 - 1.285740I$ $a = \ 0.712522 + 0.721672I$ $b = -0.275818 - 0.122841I$	$0.17205 - 3.02622I$	$4.32560 + 2.19241I$
$u = \ 0.002920 + 1.326090I$ $a = \ 2.33068 - 0.44533I$ $b = \ 1.31110 - 0.90212I$	$-2.00157 - 2.48669I$	$-3.99457 + 8.83308I$
$u = \ 0.002920 - 1.326090I$ $a = \ 2.33068 + 0.44533I$ $b = \ 1.31110 + 0.90212I$	$-2.00157 + 2.48669I$	$-3.99457 - 8.83308I$
$u = \ 0.047122 + 0.659210I$ $a = -3.57985 - 0.58464I$ $b = -0.998636 - 0.273022I$	$1.28173 - 5.91897I$	$-2.36688 + 5.32829I$
$u = \ 0.047122 - 0.659210I$ $a = -3.57985 + 0.58464I$ $b = -0.998636 + 0.273022I$	$1.28173 + 5.91897I$	$-2.36688 - 5.32829I$
$u = \ 0.653768$ $a = -1.32573$ $b = \ 0.317079$	4.04613	10.7920
$u = -0.596192$ $a = -0.908572$ $b = \ 1.40186$	-5.46167	-8.19610

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.12781 + 1.41707I$ $a = -0.113512 + 0.672939I$ $b = 0.235524 + 1.022770I$	$-4.00918 + 4.33888I$	$0. - 7.82866I$
$u = 0.12781 - 1.41707I$ $a = -0.113512 - 0.672939I$ $b = 0.235524 - 1.022770I$	$-4.00918 - 4.33888I$	$0. + 7.82866I$
$u = -0.23390 + 1.46212I$ $a = -1.72159 + 0.82623I$ $b = -1.46036 - 0.21565I$	$-10.55490 - 3.10377I$	0
$u = -0.23390 - 1.46212I$ $a = -1.72159 - 0.82623I$ $b = -1.46036 + 0.21565I$	$-10.55490 + 3.10377I$	0
$u = -0.07356 + 1.55907I$ $a = -1.86796 - 0.07839I$ $b = -1.44603 - 0.61412I$	$-8.49476 - 3.48331I$	0
$u = -0.07356 - 1.55907I$ $a = -1.86796 + 0.07839I$ $b = -1.44603 + 0.61412I$	$-8.49476 + 3.48331I$	0
$u = 0.115165 + 0.399617I$ $a = 2.03473 + 0.33450I$ $b = 0.963064 + 0.544751I$	$-1.23939 - 3.12612I$	$3.40722 + 7.64554I$
$u = 0.115165 - 0.399617I$ $a = 2.03473 - 0.33450I$ $b = 0.963064 - 0.544751I$	$-1.23939 + 3.12612I$	$3.40722 - 7.64554I$
$u = -0.27035 + 1.57486I$ $a = 1.98133 - 0.79427I$ $b = 1.353040 + 0.294691I$	$-7.64206 - 8.57742I$	0
$u = -0.27035 - 1.57486I$ $a = 1.98133 + 0.79427I$ $b = 1.353040 - 0.294691I$	$-7.64206 + 8.57742I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.169265 + 0.273346I$		
$a = 1.74293 + 0.28410I$	$1.66368 + 2.81317I$	$-3.44179 - 3.42840I$
$b = -0.835581 - 0.750642I$		
$u = 0.169265 - 0.273346I$		
$a = 1.74293 - 0.28410I$	$1.66368 - 2.81317I$	$-3.44179 + 3.42840I$
$b = -0.835581 + 0.750642I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{32}+10u^{30}+\cdots-u-1)(u^{130}+u^{129}+\cdots+4u+1)$
c_2	$(u^{32}-4u^{31}+\cdots+u-1)(u^{130}+3u^{129}+\cdots+11268u+1367)$
c_3	$(u^{32}-u^{31}+\cdots-4u-1)(u^{130}+65u^{128}+\cdots-25u+1)$
c_4	$(u^{32}+u^{31}+\cdots-8u-1)$ $\cdot(u^{130}-20u^{128}+\cdots+4232509101u+1162172247)$
c_5	$(u^{32}-4u^{30}+\cdots-4u^2+1)(u^{130}+3u^{129}+\cdots-4845u-2433)$
c_6	$(u^{32}-13u^{30}+\cdots+3u+1)(u^{130}-u^{129}+\cdots+20276u-12013)$
c_7, c_8	$(u^{32}+u^{31}+\cdots+4u-1)(u^{130}+65u^{128}+\cdots-25u+1)$
c_9	$(u^{32}-13u^{30}+\cdots+29u+1)(u^{130}-u^{129}+\cdots+72388u-2507)$
c_{10}	$(u^{32}-u^{30}+\cdots-3u^2+1)(u^{130}+7u^{129}+\cdots-3637u-1103)$
c_{11}	$(u^{32}-13u^{30}+\cdots-3u+1)(u^{130}-u^{129}+\cdots+20276u-12013)$
c_{12}	$(u^{32}-13u^{30}+\cdots-29u+1)(u^{130}-u^{129}+\cdots+72388u-2507)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{32}+20y^{31}+\cdots+11y+1)(y^{130}+21y^{129}+\cdots-332y+1)$
c_2	$(y^{32}+18y^{31}+\cdots-y+1)$ $\cdot(y^{130}+27y^{129}+\cdots+8414388y+1868689)$
c_3, c_7, c_8	$(y^{32}+33y^{31}+\cdots+28y+1)(y^{130}+130y^{129}+\cdots-2035y+1)$
c_4	$(y^{32}+11y^{31}+\cdots+34y+1)$ $\cdot(y^{130}-40y^{129}+\cdots-4.82\times10^{19}y+1.35\times10^{18})$
c_5	$(y^{32}-8y^{31}+\cdots-8y+1)$ $\cdot(y^{130}-27y^{129}+\cdots-381850059y+5919489)$
c_6, c_{11}	$(y^{32}-26y^{31}+\cdots-39y+1)$ $\cdot(y^{130}-109y^{129}+\cdots+3652617438y+144312169)$
c_9, c_{12}	$(y^{32}-26y^{31}+\cdots-853y+1)$ $\cdot(y^{130}-89y^{129}+\cdots-1089734184y+6285049)$
c_{10}	$(y^{32}-2y^{31}+\cdots-6y+1)$ $\cdot(y^{130}-25y^{129}+\cdots-58049277y+1216609)$