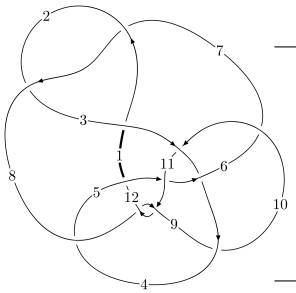
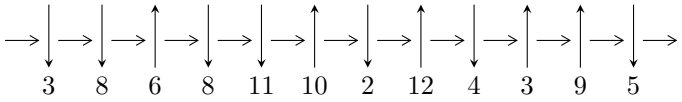
$12n_{0663}$ $(K12n_{0663})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -8.19807 \times 10^{112} u^{43} - 4.22174 \times 10^{112} u^{42} + \cdots + 2.66093 \times 10^{114} b - 1.56181 \times 10^{114}, \\
& - 8.19807 \times 10^{112} u^{43} - 4.22174 \times 10^{112} u^{42} + \cdots + 2.66093 \times 10^{114} a - 4.22274 \times 10^{114}, \\
& u^{44} - 18u^{42} + \cdots + 2u + 1 \rangle \\
I_2^u = \langle & -4.22056 \times 10^{31} u^{30} + 2.20340 \times 10^{32} u^{29} + \cdots + 1.00720 \times 10^{32} b + 8.09762 \times 10^{32}, \\
& - 4.22056 \times 10^{31} u^{30} + 2.20340 \times 10^{32} u^{29} + \cdots + 1.00720 \times 10^{32} a + 9.10482 \times 10^{32}, \ u^{31} + 8u^{29} + \cdots - 3u + \\
I_3^u = \langle & 5.43266 \times 10^{151} u^{43} - 8.90811 \times 10^{150} u^{42} + \cdots + 2.96118 \times 10^{156} b - 3.66107 \times 10^{156}, \\
& 4.95705 \times 10^{158} u^{43} - 6.16258 \times 10^{158} u^{42} + \cdots + 2.92136 \times 10^{162} a - 1.06601 \times 10^{163}, \\
& u^{44} - u^{43} + \cdots - 44412u - 15101 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 119 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. $\boldsymbol{I_1^u = \langle -8.20 \times 10^{112} u^{43} - 4.22 \times 10^{112} u^{42} + \cdots + 2.66 \times 10^{114} b - 1.56 \times 10^{114},\ -8.20 \times 10^{112} u^{43} - 4.22 \times 10^{112} u^{42} + \cdots + 2.66 \times 10^{114} a - 4.22 \times 10^{114},\ u^{44} - 18 u^{42} + \cdots + 2u + 1 \rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.0308091u^{43} + 0.0158657u^{42} + \cdots - 3.90450u + 1.58694 \\ 0.0308091u^{43} + 0.0158657u^{42} + \cdots - 3.90450u + 0.586943 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0.0308091u^{43} + 0.0158657u^{42} + \cdots - 3.90450u + 0.586943 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ 0.0158657u^{43} + 0.0189392u^{42} + \cdots + 1.52533u - 0.0308091 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0530718u^{43} - 0.0187857u^{42} + \cdots - 11.2966u + 1.08380 \\ 0.0222628u^{43} - 0.0346514u^{42} + \cdots - 7.39214u - 0.503148 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.357406u^{43} + 0.0114222u^{42} + \cdots + 6.14355u + 0.578976 \\ 0.220586u^{43} + 0.0415889u^{42} + \cdots + 6.14139u + 0.390597 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.102339u^{43} - 0.0535366u^{42} + \cdots + 6.75934u + 0.686328 \\ -0.0123699u^{43} - 0.00873329u^{42} + \cdots + 6.69838u + 0.626720 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0591298u^{43} - 0.0619282u^{42} + \cdots + 3.09120u - 0.165265 \\ 0.0273984u^{43} - 0.0288691u^{42} + \cdots + 6.49347u + 0.00931667 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0896482u^{43} - 0.0548409u^{42} + \cdots + 0.0656990u + 0.113144 \\ 0.0883392u^{43} - 0.0530903u^{42} + \cdots - 0.256176u + 0.163412 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0552606u^{43} + 0.0222813u^{42} + \cdots - 3.92001u + 1.60573 \\ 0.0609758u^{43} + 0.0207299u^{42} + \cdots - 3.81924u + 0.723763 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.04104u^{43} + 0.0210798u^{42} + \cdots + 86.9727u - 5.18413$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{44}+35u^{43}+\cdots+17825792u+4194304$
c_2, c_7	$u^{44}-23u^{43}+\cdots-15360u+2048$
c_3	$u^{44}+14u^{43}+\cdots+38u+4$
c_4, c_{12}	$u^{44}-18u^{42}+\cdots-2u+1$
c_5, c_9	$u^{44}-7u^{42}+\cdots+89u+21$
c_6, c_{10}	$u^{44}-u^{43}+\cdots-u+1$
c_8, c_{11}	$u^{44}+9u^{43}+\cdots+172u+16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{44} - 51y^{43} + \cdots + 3298534883328y + 17592186044416$
c_2, c_7	$y^{44} - 35y^{43} + \cdots - 17825792y + 4194304$
c_3	$y^{44} - 14y^{43} + \cdots + 612y + 16$
c_4, c_{12}	$y^{44} - 36y^{43} + \cdots + 28y + 1$
c_5, c_9	$y^{44} - 14y^{43} + \cdots - 9727y + 441$
c_6, c_{10}	$y^{44} + 31y^{43} + \cdots + 3y + 1$
c_8, c_{11}	$y^{44} + 25y^{43} + \cdots + 2896y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.876522 + 0.528391I$ $a = 1.09112 + 0.98148I$ $b = 0.091117 + 0.981484I$	$-2.64902 + 0.33804I$	$-9.24425 + 1.00857I$
$u = 0.876522 - 0.528391I$ $a = 1.09112 - 0.98148I$ $b = 0.091117 - 0.981484I$	$-2.64902 - 0.33804I$	$-9.24425 - 1.00857I$
$u = 1.079670 + 0.134336I$ $a = 0.239829 + 0.233289I$ $b = -0.760171 + 0.233289I$	$-1.52443 - 0.21103I$	$-4.97310 + 0.I$
$u = 1.079670 - 0.134336I$ $a = 0.239829 - 0.233289I$ $b = -0.760171 - 0.233289I$	$-1.52443 + 0.21103I$	$-4.97310 + 0.I$
$u = -1.189010 + 0.306258I$ $a = 0.67617 - 1.33662I$ $b = -0.323832 - 1.336620I$	$-6.03434 - 1.69757I$	0
$u = -1.189010 - 0.306258I$ $a = 0.67617 + 1.33662I$ $b = -0.323832 + 1.336620I$	$-6.03434 + 1.69757I$	0
$u = -1.207620 + 0.405136I$ $a = -0.011672 + 0.201487I$ $b = -1.011670 + 0.201487I$	$-0.85999 + 6.23657I$	0
$u = -1.207620 - 0.405136I$ $a = -0.011672 - 0.201487I$ $b = -1.011670 - 0.201487I$	$-0.85999 - 6.23657I$	0
$u = 1.253320 + 0.360663I$ $a = 0.58221 - 1.41088I$ $b = -0.41779 - 1.41088I$	$-13.0195 - 6.3051I$	0
$u = 1.253320 - 0.360663I$ $a = 0.58221 + 1.41088I$ $b = -0.41779 + 1.41088I$	$-13.0195 + 6.3051I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.609637 + 0.085004I$ $a = 0.800710 + 0.311107I$ $b = -0.199290 + 0.311107I$	$-1.232890 - 0.407507I$	$-8.23914 + 1.51919I$
$u = 0.609637 - 0.085004I$ $a = 0.800710 - 0.311107I$ $b = -0.199290 - 0.311107I$	$-1.232890 + 0.407507I$	$-8.23914 - 1.51919I$
$u = -0.15451 + 1.43462I$ $a = 0.738629 - 0.751056I$ $b = -0.261371 - 0.751056I$	$2.74125 - 1.62157I$	0
$u = -0.15451 - 1.43462I$ $a = 0.738629 + 0.751056I$ $b = -0.261371 + 0.751056I$	$2.74125 + 1.62157I$	0
$u = -0.399143 + 0.330546I$ $a = 1.40923 - 0.92070I$ $b = 0.409229 - 0.920695I$	$0.05653 - 2.19737I$	$0.00628 + 3.06449I$
$u = -0.399143 - 0.330546I$ $a = 1.40923 + 0.92070I$ $b = 0.409229 + 0.920695I$	$0.05653 + 2.19737I$	$0.00628 - 3.06449I$
$u = -1.50977 + 0.31090I$ $a = 0.560340 + 1.196140I$ $b = -0.439660 + 1.196140I$	$-12.57110 + 0.21179I$	0
$u = -1.50977 - 0.31090I$ $a = 0.560340 - 1.196140I$ $b = -0.439660 - 1.196140I$	$-12.57110 - 0.21179I$	0
$u = 0.414615 + 0.126074I$ $a = 1.46142 + 1.21039I$ $b = 0.461422 + 1.210400I$	$-2.58939 + 6.06896I$	$-6.96240 - 5.29777I$
$u = 0.414615 - 0.126074I$ $a = 1.46142 - 1.21039I$ $b = 0.461422 - 1.210400I$	$-2.58939 - 6.06896I$	$-6.96240 + 5.29777I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.54962 + 0.23074I$ $a = 0.439073 + 1.200720I$ $b = -0.560927 + 1.200720I$	$-4.34261 - 4.88782I$	0
$u = 1.54962 - 0.23074I$ $a = 0.439073 - 1.200720I$ $b = -0.560927 - 1.200720I$	$-4.34261 + 4.88782I$	0
$u = -1.33716 + 0.82047I$ $a = 0.163799 + 0.042605I$ $b = -0.836201 + 0.042605I$	$-8.84801 + 4.59946I$	0
$u = -1.33716 - 0.82047I$ $a = 0.163799 - 0.042605I$ $b = -0.836201 - 0.042605I$	$-8.84801 - 4.59946I$	0
$u = 0.53152 + 1.54489I$ $a = 0.728029 + 0.866444I$ $b = -0.271971 + 0.866444I$	$2.40594 - 4.26197I$	0
$u = 0.53152 - 1.54489I$ $a = 0.728029 - 0.866444I$ $b = -0.271971 - 0.866444I$	$2.40594 + 4.26197I$	0
$u = -0.071957 + 0.347959I$ $a = 1.68636 - 0.27524I$ $b = 0.686363 - 0.275238I$	$1.56185 - 1.94947I$	$2.03078 + 4.77946I$
$u = -0.071957 - 0.347959I$ $a = 1.68636 + 0.27524I$ $b = 0.686363 + 0.275238I$	$1.56185 + 1.94947I$	$2.03078 - 4.77946I$
$u = 1.37910 + 0.91921I$ $a = -0.0534857 - 0.1038620I$ $b = -1.053490 - 0.103862I$	$-8.1171 - 11.6018I$	0
$u = 1.37910 - 0.91921I$ $a = -0.0534857 + 0.1038620I$ $b = -1.053490 + 0.103862I$	$-8.1171 + 11.6018I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.64285+0.31556I$ $a=\ 1.00976-1.01253I$ $b=\ 0.009762-1.012530I$	$-10.55820-0.01477I$	0
$u=-1.64285-0.31556I$ $a=\ 1.00976+1.01253I$ $b=\ 0.009762+1.012530I$	$-10.55820+0.01477I$	0
$u=\ 1.44509+0.84306I$ $a=\ 0.610238+1.224140I$ $b=-0.389762+1.224140I$	$-5.59770-4.07714I$	0
$u=\ 1.44509-0.84306I$ $a=\ 0.610238-1.224140I$ $b=-0.389762-1.224140I$	$-5.59770+4.07714I$	0
$u=-1.59950+0.65744I$ $a=\ 0.417136-1.269310I$ $b=-0.582864-1.269310I$	$-4.18114+11.97330I$	0
$u=-1.59950-0.65744I$ $a=\ 0.417136+1.269310I$ $b=-0.582864+1.269310I$	$-4.18114-11.97330I$	0
$u=-0.142365+0.099749I$ $a=\ 2.04560+0.61037I$ $b=\ 1.045600+0.610374I$	$2.62916+1.12288I$	$-7.07882+9.08866I$
$u=-0.142365-0.099749I$ $a=\ 2.04560-0.61037I$ $b=\ 1.045600-0.610374I$	$2.62916-1.12288I$	$-7.07882-9.08866I$
$u=\ 0.044194+0.164660I$ $a=\ 1.93626-1.21271I$ $b=\ 0.93626-1.21271I$	$0.80464-6.11087I$	$-11.6087+22.8648I$
$u=\ 0.044194-0.164660I$ $a=\ 1.93626+1.21271I$ $b=\ 0.93626+1.21271I$	$0.80464+6.11087I$	$-11.6087-22.8648I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.67061+1.16694I$ $a=\ \ 0.531277-1.236650I$ $b=-0.468723-1.236650I$	$-12.4436+9.3189I$	0
$u=-1.67061-1.16694I$ $a=\ \ 0.531277+1.236650I$ $b=-0.468723+1.236650I$	$-12.4436-9.3189I$	0
$u=\ \ 1.74121+1.12234I$ $a=\ \ 0.437976+1.307160I$ $b=-0.56202+1.30716I$	$-11.8590-17.3430I$	0
$u=\ \ 1.74121-1.12234I$ $a=\ \ 0.437976-1.307160I$ $b=-0.56202-1.30716I$	$-11.8590+17.3430I$	0

II.

$\boldsymbol{I_2^u = \langle -4.22\times 10^{31}u^{30}+2.20\times 10^{32}u^{29}+\cdots+1.01\times 10^{32}b+8.10\times 10^{32},\ -4.22\times 10^{31}u^{30}+2.20\times 10^{32}u^{29}+\cdots+1.01\times 10^{32}a+9.10\times 10^{32},\ u^{31}+8u^{29}+\cdots-3u+1\rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.419039u^{30} - 2.18765u^{29} + \cdots + 14.5202u - 9.03974 \\ 0.419039u^{30} - 2.18765u^{29} + \cdots + 14.5202u - 8.03974 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1 \\ 0.419039u^{30} - 2.18765u^{29} + \cdots + 14.5202u - 8.03974 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ 2.18765u^{30} + 1.08094u^{29} + \cdots + 7.78263u + 0.419039 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.500932u^{30} - 1.84733u^{29} + \cdots + 5.71896u - 7.55669 \\ -0.0818935u^{30} - 4.03498u^{29} + \cdots + 20.2391u - 16.5964 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.134161u^{30} + 0.273690u^{29} + \cdots + 1.51196u - 0.199830 \\ 1.24808u^{30} + 0.183025u^{29} + \cdots + 10.7167u - 3.11982 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.57804u^{30} + 0.544822u^{29} + \cdots + 4.95031u - 0.596126 \\ 2.25205u^{30} + 0.921857u^{29} + \cdots + 5.25234u + 1.41922 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2.13048u^{30} + 0.190785u^{29} + \cdots + 9.66763u - 1.11457 \\ -2.66458u^{30} + 1.29047u^{29} + \cdots - 27.0753u + 10.7100 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.914126u^{30} + 0.818689u^{29} + \cdots + 0.245607u + 2.56016 \\ -5.70362u^{30} - 1.64130u^{29} + \cdots - 27.9449u + 3.71554 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.18661u^{30} - 2.18060u^{29} + \cdots + 19.5612u - 10.8871 \\ 0.509703u^{30} - 1.77620u^{29} + \cdots + 13.2934u - 6.65750 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5.23434u^{30} - 0.611283u^{29} + \cdots + 1.07019u + 13.5933$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{31} - 32u^{30} + \cdots + 18u - 1$
c_2	$u^{31} - 16u^{29} + \cdots - 6u + 1$
c_3	$u^{31} + 19u^{30} + \cdots + 13u + 1$
c_4, c_{12}	$u^{31} + 8u^{29} + \cdots - 3u + 1$
c_5, c_9	$u^{31} - u^{29} + \cdots + 7u^2 - 1$
c_6, c_{10}	$u^{31} - u^{30} + \cdots - 9u^3 - 1$
c_7	$u^{31} - 16u^{29} + \cdots - 6u - 1$
c_8	$u^{31} + 10u^{30} + \cdots + 11u + 5$
c_{11}	$u^{31} - 10u^{30} + \cdots + 11u - 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{31} - 44y^{30} + \cdots - 1382y - 1$
c_2, c_7	$y^{31} - 32y^{30} + \cdots + 18y - 1$
c_3	$y^{31} - 13y^{30} + \cdots + 11y - 1$
c_4, c_{12}	$y^{31} + 16y^{30} + \cdots - 9y - 1$
c_5, c_9	$y^{31} - 2y^{30} + \cdots + 14y - 1$
c_6, c_{10}	$y^{31} - 13y^{30} + \cdots + 6y^2 - 1$
c_8, c_{11}	$y^{31} + 18y^{30} + \cdots - 169y - 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.452905+0.853811I$ $a=-0.41115+1.40701I$ $b=\ \ 0.58885+1.40701I$	$-1.88667+7.24502I$	$-3.56693-12.29348I$
$u=-0.452905-0.853811I$ $a=-0.41115-1.40701I$ $b=\ \ 0.58885-1.40701I$	$-1.88667-7.24502I$	$-3.56693+12.29348I$
$u=-0.537908+0.776764I$ $a=-1.25638+0.81390I$ $b=-0.256377+0.813898I$	$1.05321-4.42170I$	$1.63233+2.08309I$
$u=-0.537908-0.776764I$ $a=-1.25638-0.81390I$ $b=-0.256377-0.813898I$	$1.05321+4.42170I$	$1.63233-2.08309I$
$u=\ \ 0.186959+0.922387I$ $a=\ \ 0.136989+0.093867I$ $b=\ \ 1.136990+0.093867I$	$2.74478+1.10405I$	$4.27026-4.94566I$
$u=\ \ 0.186959-0.922387I$ $a=\ \ 0.136989-0.093867I$ $b=\ \ 1.136990-0.093867I$	$2.74478-1.10405I$	$4.27026+4.94566I$
$u=\ \ 0.785470+0.888097I$ $a=-0.68298-1.26508I$ $b=\ \ 0.317017-1.265080I$	$-2.98382-5.05597I$	$-1.85048+6.61092I$
$u=\ \ 0.785470-0.888097I$ $a=-0.68298+1.26508I$ $b=\ \ 0.317017+1.265080I$	$-2.98382+5.05597I$	$-1.85048-6.61092I$
$u=\ \ 0.716103+0.268510I$ $a=-1.33254-1.08651I$ $b=-0.332542-1.086510I$	$-0.64391+6.63799I$	$-4.09253-8.74235I$
$u=\ \ 0.716103-0.268510I$ $a=-1.33254+1.08651I$ $b=-0.332542+1.086510I$	$-0.64391-6.63799I$	$-4.09253+8.74235I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.870665 + 0.895756I$ $a = -0.413460 - 1.291070I$ $b = 0.58654 - 1.29107I$	$-0.92154 - 4.91630I$	$-0.630490 + 1.059159I$
$u = 0.870665 - 0.895756I$ $a = -0.413460 + 1.291070I$ $b = 0.58654 + 1.29107I$	$-0.92154 + 4.91630I$	$-0.630490 - 1.059159I$
$u = -1.28812$ $a = 0.0316573$ $b = 1.03166$	-5.54014	-6.97090
$u = 0.337074 + 0.547150I$ $a = -1.333870 - 0.200623I$ $b = -0.333874 - 0.200623I$	$1.82880 - 3.66778I$	$3.40426 + 8.66722I$
$u = 0.337074 - 0.547150I$ $a = -1.333870 + 0.200623I$ $b = -0.333874 + 0.200623I$	$1.82880 + 3.66778I$	$3.40426 - 8.66722I$
$u = -0.550474 + 0.090472I$ $a = -1.48951 + 0.83661I$ $b = -0.489508 + 0.836612I$	$0.747383 + 1.132650I$	$-2.64987 + 1.35406I$
$u = -0.550474 - 0.090472I$ $a = -1.48951 - 0.83661I$ $b = -0.489508 - 0.836612I$	$0.747383 - 1.132650I$	$-2.64987 - 1.35406I$
$u = 0.275688 + 0.445827I$ $a = 0.090985 - 0.553978I$ $b = 1.090990 - 0.553978I$	$2.79142 - 1.37520I$	$7.9988 + 12.6336I$
$u = 0.275688 - 0.445827I$ $a = 0.090985 + 0.553978I$ $b = 1.090990 + 0.553978I$	$2.79142 + 1.37520I$	$7.9988 - 12.6336I$
$u = -0.03863 + 1.48036I$ $a = -0.685298 + 0.806812I$ $b = 0.314702 + 0.806812I$	$2.64360 - 1.37646I$	$-7.6626 - 13.0384I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.03863-1.48036I$ $a=-0.685298-0.806812I$ $b=\ 0.314702-0.806812I$	$2.64360+1.37646I$	$-7.6626+13.0384I$
$u=\ 0.56127+1.43073I$ $a=-0.718872-0.806067I$ $b=\ 0.281128-0.806067I$	$2.65382-4.19990I$	$12.92958+1.02953I$
$u=\ 0.56127-1.43073I$ $a=-0.718872+0.806067I$ $b=\ 0.281128+0.806067I$	$2.65382+4.19990I$	$12.92958-1.02953I$
$u=\ 0.181284+0.425324I$ $a=-0.071576+1.199900I$ $b=\ 0.92842+1.19990I$	$0.90637+5.93162I$	$7.27226+10.53139I$
$u=\ 0.181284-0.425324I$ $a=-0.071576-1.199900I$ $b=\ 0.92842-1.19990I$	$0.90637-5.93162I$	$7.27226-10.53139I$
$u=-1.49593+0.44328I$ $a=-0.52089+1.33114I$ $b=\ 0.47911+1.33114I$	$-9.78380+5.35394I$	$-8.97149-3.53143I$
$u=-1.49593-0.44328I$ $a=-0.52089-1.33114I$ $b=\ 0.47911-1.33114I$	$-9.78380-5.35394I$	$-8.97149+3.53143I$
$u=-0.44448+1.60114I$ $a=-0.874742+1.099660I$ $b=\ 0.125258+1.099660I$	$-8.55901+4.17105I$	$-9.11820+0.I$
$u=-0.44448-1.60114I$ $a=-0.874742-1.099660I$ $b=\ 0.125258-1.099660I$	$-8.55901-4.17105I$	$-9.11820+0.I$
$u=\ 0.24987+1.74772I$ $a=-0.952529-0.868304I$ $b=\ 0.047471-0.868304I$	$-7.55978+3.46072I$	0

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.24987-1.74772I$		
$a=$	$-0.952529+0.868304I$	$-7.55978-3.46072I$	0
$b=$	$0.047471+0.868304I$		

III. $I_3^u = \langle 5.43\times10^{151}u^{43} - 8.91\times10^{150}u^{42} + \cdots + 2.96\times10^{156}b - 3.66\times10^{156},\ 4.96\times10^{158}u^{43} - 6.16\times10^{158}u^{42} + \cdots + 2.92\times10^{162}a - 1.07\times10^{163},\ u^{44} - u^{43} + \cdots - 44412u - 15101\rangle$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -0.000169683u^{43} + 0.000210949u^{42} + \cdots + 5.78299u + 3.64903 \\ -0.0000183462u^{43} + 3.00829\times10^{-6}u^{42} + \cdots + 0.211471u + 1.23635 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.000151336u^{43} + 0.000207940u^{42} + \cdots + 5.57152u + 2.41268 \\ -0.0000183462u^{43} + 3.00829\times10^{-6}u^{42} + \cdots + 0.211471u + 1.23635 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0000756392u^{43} + 0.0000596207u^{42} + \cdots + 5.24244u + 3.86675 \\ 0.0000561723u^{43} - 0.0000698589u^{42} + \cdots - 2.23717u - 0.996626 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0000850891u^{43} + 0.000117555u^{42} + \cdots + 3.71467u + 1.98036 \\ -0.0000190918u^{43} - 4.61504\times10^{-6}u^{42} + \cdots + 1.55518u + 1.28646 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0000606296u^{43} - 0.0000562866u^{42} + \cdots - 1.42364u - 1.02194 \\ -0.0000643844u^{43} + 0.000160536u^{42} + \cdots + 2.39137u - 0.0933425 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.000156271u^{43} + 0.000208628u^{42} + \cdots + 5.58861u + 4.03110 \\ -0.0000100454u^{43} - 0.0000181491u^{42} + \cdots - 0.0516493u + 1.17222 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0000549133u^{43} + 0.0000701005u^{42} + \cdots + 1.66912u + 2.45455 \\ 2.89573\times10^{-6}u^{43} - 0.0000135692u^{42} + \cdots - 0.206033u + 0.374072 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.000202715u^{43} + 0.000277055u^{42} + \cdots + 7.83899u + 4.15309 \\ -0.0000258823u^{43} - 9.15989\times10^{-6}u^{42} + \cdots + 0.308767u + 1.59630 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.000217536u^{43} + 0.000305300u^{42} + \cdots + 9.06131u + 5.15377 \\ -0.0000433575u^{43} - 4.00488\times10^{-6}u^{42} + \cdots + 2.70727u + 2.71279 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.000482548u^{43} - 0.000947210u^{42} + \cdots - 25.8562u - 10.1385$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^2+3u+1)^{22}$
c_2, c_7	$(u^2+u-1)^{22}$
c_3	$(u^{11}-5u^{10}+12u^9-15u^8+8u^7+4u^6-8u^5+3u^4+3u^3-3u^2+1)^4$
c_4, c_{12}	$u^{44}+u^{43}+\cdots+44412u-15101$
c_5, c_9	$u^{44}-u^{43}+\cdots+13386u-3929$
c_6, c_{10}	$u^{44}-3u^{43}+\cdots+4314u+5531$
c_8, c_{11}	$(u^{11}-3u^{10}+\cdots+2u-1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^2-7y+1)^{22}$
c_2, c_7	$(y^2-3y+1)^{22}$
c_3	$(y^{11}-y^{10}+\cdots+6y-1)^4$
c_4, c_{12}	$y^{44}+3y^{43}+\cdots-694095892y+228040201$
c_5, c_9	$y^{44}-17y^{43}+\cdots+89464308y+15437041$
c_6, c_{10}	$y^{44}-5y^{43}+\cdots-38477948y+30591961$
c_8, c_{11}	$(y^{11}+7y^{10}+\cdots-6y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.996280$ $a=-0.412904$ $b=\ \ 1.10821$	-4.85895	8.26130
$u=-0.266771+0.948488I$ $a=\ \ 2.77905-1.65654I$ $b=-0.253759-0.946686I$	$-7.37536+5.21629I$	$-3.56397-9.01278I$
$u=-0.266771-0.948488I$ $a=\ \ 2.77905+1.65654I$ $b=-0.253759+0.946686I$	$-7.37536-5.21629I$	$-3.56397+9.01278I$
$u=\ \ 0.482860+0.928813I$ $a=-0.363105+0.172184I$ $b=-0.234018-0.605151I$	$1.46087-2.70441I$	$-0.532381-0.083327I$
$u=\ \ 0.482860-0.928813I$ $a=-0.363105-0.172184I$ $b=-0.234018+0.605151I$	$1.46087+2.70441I$	$-0.532381+0.083327I$
$u=\ \ 1.066300+0.071698I$ $a=-1.87842-2.10327I$ $b=\ \ 0.290349-1.272230I$	$-11.86840-5.00074I$	$-11.84059+6.22751I$
$u=\ \ 1.066300-0.071698I$ $a=-1.87842+2.10327I$ $b=\ \ 0.290349+1.272230I$	$-11.86840+5.00074I$	$-11.84059-6.22751I$
$u=-0.923334+0.570347I$ $a=-0.611529-0.812570I$ $b=\ \ 0.572881+0.536287I$	$-6.81371+2.24779I$	$-0.36418-5.06360I$
$u=-0.923334-0.570347I$ $a=-0.611529+0.812570I$ $b=\ \ 0.572881-0.536287I$	$-6.81371-2.24779I$	$-0.36418+5.06360I$
$u=-0.630454+0.605922I$ $a=-1.37698+1.21851I$ $b=\ \ 0.290349+1.272230I$	$-3.97275+5.00074I$	$-11.84059-6.22751I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.630454-0.605922I$ $a=-1.37698-1.21851I$ $b=\ \ 0.290349-1.272230I$	$-3.97275-5.00074I$	$-11.84059+6.22751I$
$u=-0.835914+0.774383I$ $a=-0.44948+1.56622I$ $b=\ \ 0.57044+1.34258I$	$-1.10226+5.92443I$	$-0.82955-10.02355I$
$u=-0.835914-0.774383I$ $a=-0.44948-1.56622I$ $b=\ \ 0.57044-1.34258I$	$-1.10226-5.92443I$	$-0.82955+10.02355I$
$u=-0.099154+0.846413I$ $a=\ \ 0.135288+0.231121I$ $b=\ \ 1.10821$	3.03673	$8.26134+0.I$
$u=-0.099154-0.846413I$ $a=\ \ 0.135288-0.231121I$ $b=\ \ 1.10821$	3.03673	$8.26134+0.I$
$u=\ \ 0.205413+0.812965I$ $a=-0.0283734+0.0059244I$ $b=\ \ 0.572881-0.536287I$	$1.08197-2.24779I$	$-0.36418+5.06360I$
$u=\ \ 0.205413-0.812965I$ $a=-0.0283734-0.0059244I$ $b=\ \ 0.572881+0.536287I$	$1.08197+2.24779I$	$-0.36418-5.06360I$
$u=-0.784330+0.255447I$ $a=-0.44192-1.85707I$ $b=-0.234018-0.605151I$	$1.46087-2.70441I$	$-0.532381-0.083327I$
$u=-0.784330-0.255447I$ $a=-0.44192+1.85707I$ $b=-0.234018+0.605151I$	$1.46087+2.70441I$	$-0.532381+0.083327I$
$u=\ \ 0.679381+0.976751I$ $a=-0.365051-1.137450I$ $b=\ \ 0.57044-1.34258I$	$-1.10226-5.92443I$	$-0.82955+10.02355I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.679381 - 0.976751I$ $a = -0.365051 + 1.137450I$ $b = 0.57044 + 1.34258I$	$-1.10226 + 5.92443I$	$-0.82955 - 10.02355I$
$u = 0.741850 + 0.143502I$ $a = -0.66856 + 2.90045I$ $b = -0.253759 + 0.946686I$	$0.52032 - 5.21629I$	$-3.56397 + 9.01278I$
$u = 0.741850 - 0.143502I$ $a = -0.66856 - 2.90045I$ $b = -0.253759 - 0.946686I$	$0.52032 + 5.21629I$	$-3.56397 - 9.01278I$
$u = -0.462531 + 1.189510I$ $a = 0.806013 - 0.851616I$ $b = -0.234018 + 0.605151I$	$-6.43481 + 2.70441I$	$-0.532381 + 0.083327I$
$u = -0.462531 - 1.189510I$ $a = 0.806013 + 0.851616I$ $b = -0.234018 - 0.605151I$	$-6.43481 - 2.70441I$	$-0.532381 - 0.083327I$
$u = -0.564304 + 0.377422I$ $a = -0.344364 + 1.363460I$ $b = 0.572881 + 0.536287I$	$1.08197 + 2.24779I$	$-0.36418 - 5.06360I$
$u = -0.564304 - 0.377422I$ $a = -0.344364 - 1.363460I$ $b = 0.572881 - 0.536287I$	$1.08197 - 2.24779I$	$-0.36418 + 5.06360I$
$u = -1.27598 + 0.68156I$ $a = -0.506884 + 0.886061I$ $b = 0.57044 + 1.34258I$	$-8.99794 + 5.92443I$	$-0.82955 - 10.02355I$
$u = -1.27598 - 0.68156I$ $a = -0.506884 - 0.886061I$ $b = 0.57044 - 1.34258I$	$-8.99794 - 5.92443I$	$-0.82955 + 10.02355I$
$u = 1.08373 + 0.97640I$ $a = -0.308790 - 1.291540I$ $b = 0.290349 - 1.272230I$	$-3.97275 - 5.00074I$	$-11.84059 + 6.22751I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.08373 - 0.97640I$ $a = -0.308790 + 1.291540I$ $b = 0.290349 + 1.272230I$	$-3.97275 + 5.00074I$	$-11.84059 - 6.22751I$
$u = -0.58809 + 1.38988I$ $a = -0.357739 + 0.456930I$ $b = -0.253759 + 0.946686I$	$0.52032 - 5.21629I$	$-3.56397 + 9.01278I$
$u = -0.58809 - 1.38988I$ $a = -0.357739 - 0.456930I$ $b = -0.253759 - 0.946686I$	$0.52032 + 5.21629I$	$-3.56397 - 9.01278I$
$u = 1.51546$ $a = 0.450801$ $b = 1.10821$	-4.85895	8.26130
$u = 1.68578 + 0.15175I$ $a = -0.21648 - 1.67604I$ $b = 0.57044 - 1.34258I$	$-8.99794 - 5.92443I$	$0. + 10.02355I$
$u = 1.68578 - 0.15175I$ $a = -0.21648 + 1.67604I$ $b = 0.57044 + 1.34258I$	$-8.99794 + 5.92443I$	$0. - 10.02355I$
$u = 1.86292 + 0.56992I$ $a = 0.205308 + 0.954895I$ $b = 0.572881 + 0.536287I$	$-6.81371 + 2.24779I$	0
$u = 1.86292 - 0.56992I$ $a = 0.205308 - 0.954895I$ $b = 0.572881 - 0.536287I$	$-6.81371 - 2.24779I$	0
$u = 1.25179 + 1.91093I$ $a = 0.090602 + 1.059850I$ $b = -0.234018 + 0.605151I$	$-6.43481 + 2.70441I$	0
$u = 1.25179 - 1.91093I$ $a = 0.090602 - 1.059850I$ $b = -0.234018 - 0.605151I$	$-6.43481 - 2.70441I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-2.25299+1.04163I$ $a=-0.111708+1.118170I$ $b=\ \ 0.290349+1.272230I$	$-11.86840+5.00074I$	0
$u=-2.25299-1.04163I$ $a=-0.111708-1.118170I$ $b=\ \ 0.290349-1.272230I$	$-11.86840-5.00074I$	0
$u=-0.13577+3.06595I$ $a=\ \ 0.058843-0.873519I$ $b=-0.253759-0.946686I$	$-7.37536+5.21629I$	0
$u=-0.13577-3.06595I$ $a=\ \ 0.058843+0.873519I$ $b=-0.253759+0.946686I$	$-7.37536-5.21629I$	0

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+3u+1)^{22})(u^{31}-32u^{30}+\cdots+18u-1)$ $\cdot(u^{44}+35u^{43}+\cdots+17825792u+4194304)$
c_2	$((u^2+u-1)^{22})(u^{31}-16u^{29}+\cdots-6u+1)$ $\cdot(u^{44}-23u^{43}+\cdots-15360u+2048)$
c_3	$(u^{11}-5u^{10}+12u^9-15u^8+8u^7+4u^6-8u^5+3u^4+3u^3-3u^2+1)^4$ $\cdot(u^{31}+19u^{30}+\cdots+13u+1)(u^{44}+14u^{43}+\cdots+38u+4)$
c_4, c_{12}	$(u^{31}+8u^{29}+\cdots-3u+1)(u^{44}-18u^{42}+\cdots-2u+1)$ $\cdot(u^{44}+u^{43}+\cdots+44412u-15101)$
c_5, c_9	$(u^{31}-u^{29}+\cdots+7u^2-1)(u^{44}-7u^{42}+\cdots+89u+21)$ $\cdot(u^{44}-u^{43}+\cdots+13386u-3929)$
c_6, c_{10}	$(u^{31}-u^{30}+\cdots-9u^3-1)(u^{44}-3u^{43}+\cdots+4314u+5531)$ $\cdot(u^{44}-u^{43}+\cdots-u+1)$
c_7	$((u^2+u-1)^{22})(u^{31}-16u^{29}+\cdots-6u-1)$ $\cdot(u^{44}-23u^{43}+\cdots-15360u+2048)$
c_8	$((u^{11}-3u^{10}+\cdots+2u-1)^4)(u^{31}+10u^{30}+\cdots+11u+5)$ $\cdot(u^{44}+9u^{43}+\cdots+172u+16)$
c_{11}	$((u^{11}-3u^{10}+\cdots+2u-1)^4)(u^{31}-10u^{30}+\cdots+11u-5)$ $\cdot(u^{44}+9u^{43}+\cdots+172u+16)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2-7y+1)^{22})(y^{31}-44y^{30}+\cdots-1382y-1)$ $\cdot(y^{44}-51y^{43}+\cdots+3298534883328y+17592186044416)$
c_2, c_7	$((y^2-3y+1)^{22})(y^{31}-32y^{30}+\cdots+18y-1)$ $\cdot(y^{44}-35y^{43}+\cdots-17825792y+4194304)$
c_3	$((y^{11}-y^{10}+\cdots+6y-1)^4)(y^{31}-13y^{30}+\cdots+11y-1)$ $\cdot(y^{44}-14y^{43}+\cdots+612y+16)$
c_4, c_{12}	$(y^{31}+16y^{30}+\cdots-9y-1)(y^{44}-36y^{43}+\cdots+28y+1)$ $\cdot(y^{44}+3y^{43}+\cdots-694095892y+228040201)$
c_5, c_9	$(y^{31}-2y^{30}+\cdots+14y-1)$ $\cdot(y^{44}-17y^{43}+\cdots+89464308y+15437041)$ $\cdot(y^{44}-14y^{43}+\cdots-9727y+441)$
c_6, c_{10}	$(y^{31}-13y^{30}+\cdots+6y^2-1)$ $\cdot(y^{44}-5y^{43}+\cdots-38477948y+30591961)$ $\cdot(y^{44}+31y^{43}+\cdots+3y+1)$
c_8, c_{11}	$((y^{11}+7y^{10}+\cdots-6y-1)^4)(y^{31}+18y^{30}+\cdots-169y-25)$ $\cdot(y^{44}+25y^{43}+\cdots+2896y+256)$