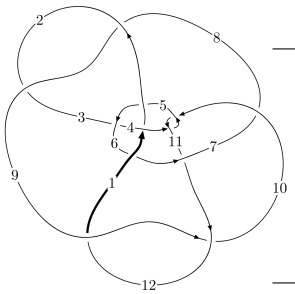
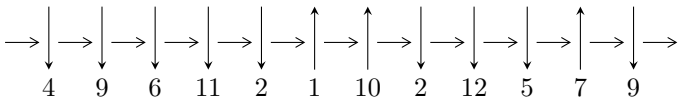
$12n_{0871}$ $(K12n_{0871})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -6.49376 \times 10^{915} u^{101} + 1.36988 \times 10^{916} u^{100} + \cdots + 1.53445 \times 10^{923} b + 2.64941 \times 10^{921}, \\ & 9.51197 \times 10^{922} u^{101} - 1.85089 \times 10^{923} u^{100} + \cdots + 6.71402 \times 10^{929} a - 2.46247 \times 10^{930}, \\ & u^{102} - 2u^{101} + \cdots + 8420092u - 4375517 \rangle \\ I_2^u = \langle & -2.56336 \times 10^{105} u^{42} - 7.11346 \times 10^{105} u^{41} + \cdots + 2.75081 \times 10^{102} b + 1.14602 \times 10^{106}, \\ & -1.01986 \times 10^{106} u^{42} - 2.86981 \times 10^{106} u^{41} + \cdots + 2.75081 \times 10^{102} a + 5.56514 \times 10^{106}, \\ & u^{43} + 3u^{42} + \cdots - 28u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 145 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. $\boldsymbol{I_1^u = \langle -6.49 \times 10^{915} u^{101} + 1.37 \times 10^{916} u^{100} + \cdots + 1.53 \times 10^{923} b + 2.65 \times 10^{921},\ 9.51 \times 10^{922} u^{101} - 1.85 \times 10^{923} u^{100} + \cdots + 6.71 \times 10^{929} a - 2.46 \times 10^{930},\ u^{102} - 2u^{101} + \cdots + 8420092u - 4375517 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} -1.41673 \times 10^{-7} u^{101} + 2.75676 \times 10^{-7} u^{100} + \cdots - 0.735672u + 3.66764 \\ 4.23197 \times 10^{-8} u^{101} - 8.92749 \times 10^{-8} u^{100} + \cdots + 0.936625u - 0.0172662 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2.05443 \times 10^{-7} u^{101} + 4.26875 \times 10^{-7} u^{100} + \cdots - 22.2758u - 0.835178 \\ 1.00487 \times 10^{-8} u^{101} - 2.32210 \times 10^{-8} u^{100} + \cdots + 3.61648u + 0.302504 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.76309 \times 10^{-7} u^{101} - 3.91156 \times 10^{-7} u^{100} + \cdots + 12.8200u + 0.790115 \\ 7.30728 \times 10^{-9} u^{101} - 1.35715 \times 10^{-8} u^{100} + \cdots + 0.427561u - 0.351917 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.25051 \times 10^{-7} u^{101} - 2.82188 \times 10^{-7} u^{100} + \cdots + 22.0518u - 1.94211 \\ -5.85977 \times 10^{-9} u^{101} + 1.76200 \times 10^{-8} u^{100} + \cdots - 0.0550341u + 0.402167 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.93843 \times 10^{-7} u^{101} + 4.01235 \times 10^{-7} u^{100} + \cdots - 17.6257u - 0.602635 \\ 8.79886 \times 10^{-9} u^{101} - 2.00013 \times 10^{-8} u^{100} + \cdots + 3.68779u + 0.291821 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -9.93535 \times 10^{-8} u^{101} + 1.86401 \times 10^{-7} u^{100} + \cdots + 0.200954u + 3.65038 \\ 4.23197 \times 10^{-8} u^{101} - 8.92749 \times 10^{-8} u^{100} + \cdots + 0.936625u - 0.0172662 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.14273 \times 10^{-9} u^{101} - 3.30148 \times 10^{-8} u^{100} + \cdots + 5.30898u - 5.51886 \\ 1.90361 \times 10^{-10} u^{101} - 2.90964 \times 10^{-9} u^{100} + \cdots + 3.74212u + 0.640727 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.14273 \times 10^{-9} u^{101} - 3.30148 \times 10^{-8} u^{100} + \cdots + 5.30898u - 5.51886 \\ 3.20935 \times 10^{-9} u^{101} - 8.91944 \times 10^{-9} u^{100} + \cdots + 4.00586u + 0.506270 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 7.49943 \times 10^{-8} u^{101} - 1.62627 \times 10^{-7} u^{100} + \cdots + 31.5583u + 2.87114 \\ 1.58743 \times 10^{-8} u^{101} - 2.92506 \times 10^{-8} u^{100} + \cdots - 3.56647u + 0.364248 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -7.07644 \times 10^{-8} u^{101} + 9.56061 \times 10^{-8} u^{100} + \cdots + 4.68523u - 4.86639$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{102} - 6u^{101} + \cdots - 13u + 1$
c_2, c_8	$u^{102} + 3u^{101} + \cdots - 2892097u - 211369$
c_3	$u^{102} - 12u^{101} + \cdots + 44683235u - 49868279$
c_4, c_{10}	$u^{102} - 2u^{101} + \cdots - 35912u - 22021$
c_5	$u^{102} - 2u^{101} + \cdots + 8420092u - 4375517$
c_6	$u^{102} + 4u^{101} + \cdots - 10237986u - 1560347$
c_7	$u^{102} + 6u^{101} + \cdots + 1478240064u + 120775104$
c_9, c_{12}	$u^{102} - 3u^{101} + \cdots + 17272u + 2887$
c_{11}	$u^{102} - 3u^{101} + \cdots + 4237u + 211$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{102} - 26y^{101} + \cdots + 3y + 1$
c_2, c_8	$y^{102} + 93y^{101} + \cdots + 186729819967y + 44676854161$
c_3	$y^{102} + 34y^{101} + \cdots + 32423793145983377y + 2486845250421841$
c_4, c_{10}	$y^{102} + 72y^{101} + \cdots + 13249120960y + 484924441$
c_5	$y^{102} + 34y^{101} + \cdots - 851807783365426y + 19145149017289$
c_6	$y^{102} - 42y^{101} + \cdots - 69780057418512y + 2434682760409$
c_7	$y^{102} - 56y^{101} + \cdots - 839500422669637632y + 14586625746210816$
c_9, c_{12}	$y^{102} + 83y^{101} + \cdots - 227405716y + 8334769$
c_{11}	$y^{102} + 13y^{101} + \cdots - 9748489y + 44521$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.578447 + 0.812318I$ $a = 0.270355 + 0.352500I$ $b = 0.654512 + 0.190971I$	$2.61090 - 2.24156I$	0
$u = 0.578447 - 0.812318I$ $a = 0.270355 - 0.352500I$ $b = 0.654512 - 0.190971I$	$2.61090 + 2.24156I$	0
$u = -0.640649 + 0.738622I$ $a = -1.40013 - 0.36420I$ $b = 0.178260 + 1.219860I$	$-1.36519 - 4.12170I$	0
$u = -0.640649 - 0.738622I$ $a = -1.40013 + 0.36420I$ $b = 0.178260 - 1.219860I$	$-1.36519 + 4.12170I$	0
$u = 0.785103 + 0.573070I$ $a = 1.26596 - 2.01109I$ $b = 0.477218 + 1.053040I$	$-1.44120 - 6.31655I$	0
$u = 0.785103 - 0.573070I$ $a = 1.26596 + 2.01109I$ $b = 0.477218 - 1.053040I$	$-1.44120 + 6.31655I$	0
$u = 0.388226 + 0.961377I$ $a = -0.492122 - 0.348872I$ $b = -1.052880 - 0.601333I$	$5.87214 - 3.57059I$	0
$u = 0.388226 - 0.961377I$ $a = -0.492122 + 0.348872I$ $b = -1.052880 + 0.601333I$	$5.87214 + 3.57059I$	0
$u = -0.893646 + 0.337908I$ $a = -0.204247 + 0.597815I$ $b = 0.607279 + 0.413909I$	$-3.27710 + 2.11779I$	$-16.4652 + 0.I$
$u = -0.893646 - 0.337908I$ $a = -0.204247 - 0.597815I$ $b = 0.607279 - 0.413909I$	$-3.27710 - 2.11779I$	$-16.4652 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.830323 + 0.440927I$ $a = 0.159520 + 0.434049I$ $b = 0.197571 + 0.786043I$	$2.90646 - 1.74561I$	0
$u = 0.830323 - 0.440927I$ $a = 0.159520 - 0.434049I$ $b = 0.197571 - 0.786043I$	$2.90646 + 1.74561I$	0
$u = 0.536482 + 0.767816I$ $a = 0.198515 - 1.013870I$ $b = -0.575438 + 0.925227I$	$-0.66291 + 3.42491I$	$-6.00000 + 0.I$
$u = 0.536482 - 0.767816I$ $a = 0.198515 + 1.013870I$ $b = -0.575438 - 0.925227I$	$-0.66291 - 3.42491I$	$-6.00000 + 0.I$
$u = -0.927521 + 0.012182I$ $a = -0.116711 - 0.927791I$ $b = -0.29093 + 1.44713I$	$-1.66180 + 0.53067I$	$-14.1328 + 9.6811I$
$u = -0.927521 - 0.012182I$ $a = -0.116711 + 0.927791I$ $b = -0.29093 - 1.44713I$	$-1.66180 - 0.53067I$	$-14.1328 - 9.6811I$
$u = 0.462524 + 0.975614I$ $a = -0.095337 + 1.036880I$ $b = 0.607615 - 1.043800I$	$1.67405 + 8.43926I$	0
$u = 0.462524 - 0.975614I$ $a = -0.095337 - 1.036880I$ $b = 0.607615 + 1.043800I$	$1.67405 - 8.43926I$	0
$u = -0.891060 + 0.018793I$ $a = -0.394094 + 0.410206I$ $b = -0.975211 + 0.681945I$	$0.997093 + 0.093900I$	$-3.60215 + 1.98192I$
$u = -0.891060 - 0.018793I$ $a = -0.394094 - 0.410206I$ $b = -0.975211 - 0.681945I$	$0.997093 - 0.093900I$	$-3.60215 - 1.98192I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.640255 + 0.960663I$ $a = -0.35799 + 1.48956I$ $b = -0.185489 - 1.251300I$	$3.04751 - 2.50600I$	0
$u = 0.640255 - 0.960663I$ $a = -0.35799 - 1.48956I$ $b = -0.185489 + 1.251300I$	$3.04751 + 2.50600I$	0
$u = 1.083950 + 0.498268I$ $a = 0.467119 - 0.389987I$ $b = 0.171905 - 0.609109I$	$4.20152 - 5.01214I$	0
$u = 1.083950 - 0.498268I$ $a = 0.467119 + 0.389987I$ $b = 0.171905 + 0.609109I$	$4.20152 + 5.01214I$	0
$u = 1.22973$ $a = 1.85972$ $b = 1.57058$	-7.95878	0
$u = 0.758319 + 0.976081I$ $a = 0.443026 - 0.834537I$ $b = 0.61949 + 1.38371I$	$4.95097 - 3.85407I$	0
$u = 0.758319 - 0.976081I$ $a = 0.443026 + 0.834537I$ $b = 0.61949 - 1.38371I$	$4.95097 + 3.85407I$	0
$u = 0.931306 + 0.828752I$ $a = 0.70992 - 1.24219I$ $b = 0.306421 + 1.241220I$	$5.33219 - 6.63790I$	0
$u = 0.931306 - 0.828752I$ $a = 0.70992 + 1.24219I$ $b = 0.306421 - 1.241220I$	$5.33219 + 6.63790I$	0
$u = 0.021438 + 1.263280I$ $a = 0.77335 - 1.52919I$ $b = -0.037608 + 1.187630I$	$4.98554 + 1.41809I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.021438 - 1.263280I$ $a = 0.77335 + 1.52919I$ $b = -0.037608 - 1.187630I$	$4.98554 - 1.41809I$	0
$u = -0.604900 + 0.398404I$ $a = 1.50133 + 0.47327I$ $b = -0.314470 + 0.216566I$	$1.35379 + 5.01097I$	$-4.29413 - 5.82522I$
$u = -0.604900 - 0.398404I$ $a = 1.50133 - 0.47327I$ $b = -0.314470 - 0.216566I$	$1.35379 - 5.01097I$	$-4.29413 + 5.82522I$
$u = -1.081470 + 0.701710I$ $a = -0.727456 - 0.787717I$ $b = 0.215463 + 0.924006I$	$-0.61960 - 3.63133I$	0
$u = -1.081470 - 0.701710I$ $a = -0.727456 + 0.787717I$ $b = 0.215463 - 0.924006I$	$-0.61960 + 3.63133I$	0
$u = -1.119540 + 0.708835I$ $a = -0.124837 - 0.074168I$ $b = -0.744192 - 0.630943I$	$1.11900 + 1.01088I$	0
$u = -1.119540 - 0.708835I$ $a = -0.124837 + 0.074168I$ $b = -0.744192 + 0.630943I$	$1.11900 - 1.01088I$	0
$u = -0.621598 + 1.198780I$ $a = 0.16801 + 1.81726I$ $b = 0.207158 - 1.166130I$	$6.23243 + 6.77828I$	0
$u = -0.621598 - 1.198780I$ $a = 0.16801 - 1.81726I$ $b = 0.207158 + 1.166130I$	$6.23243 - 6.77828I$	0
$u = 0.622914 + 1.201910I$ $a = -0.820504 + 0.851583I$ $b = -0.38872 - 1.58447I$	$8.17405 - 2.71521I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.622914 - 1.201910I$ $a = -0.820504 - 0.851583I$ $b = -0.38872 + 1.58447I$	$8.17405 + 2.71521I$	0
$u = -0.117787 + 0.635374I$ $a = -0.234595 - 1.221780I$ $b = -0.556422 + 0.759811I$	$-1.28229 + 1.29324I$	$-7.96430 - 5.38509I$
$u = -0.117787 - 0.635374I$ $a = -0.234595 + 1.221780I$ $b = -0.556422 - 0.759811I$	$-1.28229 - 1.29324I$	$-7.96430 + 5.38509I$
$u = -0.637979 + 0.054784I$ $a = \quad 0.94673 - 2.63004I$ $b = \quad 0.196852 - 0.700152I$	$-3.63718 - 2.68680I$	$-19.7191 + 1.0309I$
$u = -0.637979 - 0.054784I$ $a = \quad 0.94673 + 2.63004I$ $b = \quad 0.196852 + 0.700152I$	$-3.63718 + 2.68680I$	$-19.7191 - 1.0309I$
$u = -0.630129$ $a = -0.281979$ $b = -0.482624$	-0.874381	-11.7060
$u = \quad 0.381446 + 1.333600I$ $a = \quad 0.577005 - 0.792791I$ $b = \quad 0.48223 + 1.69159I$	$13.5875 + 4.2210I$	0
$u = \quad 0.381446 - 1.333600I$ $a = \quad 0.577005 + 0.792791I$ $b = \quad 0.48223 - 1.69159I$	$13.5875 - 4.2210I$	0
$u = \quad 1.280040 + 0.559635I$ $a = -1.26835 + 1.09747I$ $b = -0.676662 - 0.970337I$	$2.02370 - 6.46913I$	0
$u = \quad 1.280040 - 0.559635I$ $a = -1.26835 - 1.09747I$ $b = -0.676662 + 0.970337I$	$2.02370 + 6.46913I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.114976 + 1.398030I$ $a = -0.070057 - 0.419974I$ $b = -1.45170 + 0.09247I$	$1.96391 - 4.09956I$	0
$u = 0.114976 - 1.398030I$ $a = -0.070057 + 0.419974I$ $b = -1.45170 - 0.09247I$	$1.96391 + 4.09956I$	0
$u = 0.85618 + 1.13679I$ $a = 0.994333 - 0.607763I$ $b = 0.45510 + 1.40983I$	$12.8090 - 9.7238I$	0
$u = 0.85618 - 1.13679I$ $a = 0.994333 + 0.607763I$ $b = 0.45510 - 1.40983I$	$12.8090 + 9.7238I$	0
$u = 0.434355 + 0.370831I$ $a = -0.81976 - 1.90229I$ $b = 0.143362 + 0.620182I$	$-0.86396 + 1.69582I$	$-4.56303 - 2.55235I$
$u = 0.434355 - 0.370831I$ $a = -0.81976 + 1.90229I$ $b = 0.143362 - 0.620182I$	$-0.86396 - 1.69582I$	$-4.56303 + 2.55235I$
$u = 1.28469 + 0.69073I$ $a = -0.315215 + 0.773825I$ $b = -0.55875 - 1.68138I$	$9.05761 - 6.51883I$	0
$u = 1.28469 - 0.69073I$ $a = -0.315215 - 0.773825I$ $b = -0.55875 + 1.68138I$	$9.05761 + 6.51883I$	0
$u = 0.33639 + 1.43648I$ $a = -0.213568 - 1.280870I$ $b = -0.040602 + 1.409330I$	$8.11805 + 0.97622I$	0
$u = 0.33639 - 1.43648I$ $a = -0.213568 + 1.280870I$ $b = -0.040602 - 1.409330I$	$8.11805 - 0.97622I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.467785+0.056572I$ $a=\ 0.552988+0.784397I$ $b=\ 1.031520-0.176518I$	$0.46845+3.00397I$	$-6.44837-8.33144I$
$u=-0.467785-0.056572I$ $a=\ 0.552988-0.784397I$ $b=\ 1.031520+0.176518I$	$0.46845-3.00397I$	$-6.44837+8.33144I$
$u=\ 0.62649+1.43614I$ $a=\ 0.131084+0.242971I$ $b=\ 1.340060-0.085585I$	$7.81773-11.25560I$	0
$u=\ 0.62649-1.43614I$ $a=\ 0.131084-0.242971I$ $b=\ 1.340060+0.085585I$	$7.81773+11.25560I$	0
$u=\ 0.206203+0.378033I$ $a=-1.04319+1.92882I$ $b=\ 0.444813-0.992717I$	$3.48779+1.18350I$	$0.466384-0.755659I$
$u=\ 0.206203-0.378033I$ $a=-1.04319-1.92882I$ $b=\ 0.444813+0.992717I$	$3.48779-1.18350I$	$0.466384+0.755659I$
$u=-1.56760+0.22766I$ $a=\ 0.047477+0.185643I$ $b=-0.042340-1.045710I$	$-0.10095+2.17396I$	0
$u=-1.56760-0.22766I$ $a=\ 0.047477-0.185643I$ $b=-0.042340+1.045710I$	$-0.10095-2.17396I$	0
$u=-0.017667+0.390853I$ $a=\ 0.323909+1.038640I$ $b=\ 0.939261-0.458593I$	$-0.03263-2.94373I$	$3.57558+3.19837I$
$u=-0.017667-0.390853I$ $a=\ 0.323909-1.038640I$ $b=\ 0.939261+0.458593I$	$-0.03263+2.94373I$	$3.57558-3.19837I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.60708 + 1.52672I$ $a = -0.507253 - 0.219819I$ $b = -0.765030 + 0.142961I$	$7.72482 - 1.06832I$	0
$u = 0.60708 - 1.52672I$ $a = -0.507253 + 0.219819I$ $b = -0.765030 - 0.142961I$	$7.72482 + 1.06832I$	0
$u = -0.02581 + 1.67606I$ $a = 0.317248 + 0.644991I$ $b = 1.065830 - 0.281927I$	$7.60998 + 4.47661I$	0
$u = -0.02581 - 1.67606I$ $a = 0.317248 - 0.644991I$ $b = 1.065830 + 0.281927I$	$7.60998 - 4.47661I$	0
$u = -0.198769 + 0.106085I$ $a = 5.94644 + 2.42648I$ $b = -0.442931 - 0.691015I$	$1.29275 - 5.13529I$	$-4.85647 + 5.39780I$
$u = -0.198769 - 0.106085I$ $a = 5.94644 - 2.42648I$ $b = -0.442931 + 0.691015I$	$1.29275 + 5.13529I$	$-4.85647 - 5.39780I$
$u = 0.119450 + 0.086603I$ $a = 2.80930 + 5.11498I$ $b = 0.308645 - 0.973601I$	$-0.57388 - 1.45394I$	$-5.08577 + 3.51030I$
$u = 0.119450 - 0.086603I$ $a = 2.80930 - 5.11498I$ $b = 0.308645 + 0.973601I$	$-0.57388 + 1.45394I$	$-5.08577 - 3.51030I$
$u = -0.94704 + 1.61116I$ $a = 0.324213 + 1.195960I$ $b = 0.391276 - 1.259480I$	$6.80887 + 6.18363I$	0
$u = -0.94704 - 1.61116I$ $a = 0.324213 - 1.195960I$ $b = 0.391276 + 1.259480I$	$6.80887 - 6.18363I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.14001 + 1.89916I$ $a = 0.191102 + 1.151240I$ $b = -0.306706 - 1.357360I$	$6.26027 - 8.13426I$	0
$u = 0.14001 - 1.89916I$ $a = 0.191102 - 1.151240I$ $b = -0.306706 + 1.357360I$	$6.26027 + 8.13426I$	0
$u = 0.88769 + 1.73485I$ $a = -0.591684 + 0.787057I$ $b = -0.195447 - 1.283190I$	$12.14500 - 2.16932I$	0
$u = 0.88769 - 1.73485I$ $a = -0.591684 - 0.787057I$ $b = -0.195447 + 1.283190I$	$12.14500 + 2.16932I$	0
$u = -0.73926 + 1.87167I$ $a = -0.186300 - 1.081720I$ $b = -0.61651 + 1.47320I$	$6.57040 + 11.23110I$	0
$u = -0.73926 - 1.87167I$ $a = -0.186300 + 1.081720I$ $b = -0.61651 - 1.47320I$	$6.57040 - 11.23110I$	0
$u = 1.94506 + 0.57389I$ $a = 0.018583 - 0.755361I$ $b = -0.204489 + 0.773130I$	$-3.78120 + 1.28591I$	0
$u = 1.94506 - 0.57389I$ $a = 0.018583 + 0.755361I$ $b = -0.204489 - 0.773130I$	$-3.78120 - 1.28591I$	0
$u = -1.16309 + 1.83888I$ $a = -0.168805 - 1.016590I$ $b = -0.37611 + 1.48026I$	$12.3609 + 8.4412I$	0
$u = -1.16309 - 1.83888I$ $a = -0.168805 + 1.016590I$ $b = -0.37611 - 1.48026I$	$12.3609 - 8.4412I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.22621+1.83672I$ $a=\ \ 0.340072+1.032140I$ $b=\ \ 0.64018-1.42705I$	$12.0876+18.1403I$	0
$u=-1.22621-1.83672I$ $a=\ \ 0.340072-1.032140I$ $b=\ \ 0.64018+1.42705I$	$12.0876-18.1403I$	0
$u=-0.09203+2.24603I$ $a=\ \ 0.030866+0.903213I$ $b=\ \ 0.75635-1.46658I$	$10.80000+2.52658I$	0
$u=-0.09203-2.24603I$ $a=\ \ 0.030866-0.903213I$ $b=\ \ 0.75635+1.46658I$	$10.80000-2.52658I$	0
$u=\ \ 0.26203+2.26872I$ $a=-0.481013+0.837915I$ $b=-0.549181-1.043110I$	$10.87960-2.17273I$	0
$u=\ \ 0.26203-2.26872I$ $a=-0.481013-0.837915I$ $b=-0.549181+1.043110I$	$10.87960+2.17273I$	0
$u=\ \ 2.24269+1.11459I$ $a=\ \ 0.06831+1.51402I$ $b=-0.026281-0.656218I$	$5.73946+4.09658I$	0
$u=\ \ 2.24269-1.11459I$ $a=\ \ 0.06831-1.51402I$ $b=-0.026281+0.656218I$	$5.73946-4.09658I$	0
$u=-1.40790+2.19475I$ $a=-0.447499-0.965940I$ $b=-0.472802+1.188240I$	$10.84730+5.64112I$	0
$u=-1.40790-2.19475I$ $a=-0.447499+0.965940I$ $b=-0.472802-1.188240I$	$10.84730-5.64112I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-3.27458+0.21401I$		
$a=-0.037805+0.627899I$	$7.88225-5.01987I$	0
$b=-0.135440-1.188390I$		
$u=-3.27458-0.21401I$		
$a=-0.037805-0.627899I$	$7.88225+5.01987I$	0
$b=-0.135440+1.188390I$		

II. $\boldsymbol{I_2^u = \langle -2.56 \times 10^{105} u^{42} - 7.11 \times 10^{105} u^{41} + \cdots + 2.75 \times 10^{102} b + 1.15 \times 10^{106},\ -1.02 \times 10^{106} u^{42} - 2.87 \times 10^{106} u^{41} + \cdots + 2.75 \times 10^{102} a + 5.57 \times 10^{106},\ u^{43} + 3u^{42} + \cdots - 28u - 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} 3707.49u^{42} + 10432.6u^{41} + \cdots - 454966.u - 20230.9 \\ 931.857u^{42} + 2585.95u^{41} + \cdots - 97746.0u - 4166.13 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 59.1829u^{42} + 145.069u^{41} + \cdots + 5329.50u + 455.518 \\ 702.224u^{42} + 1949.37u^{41} + \cdots - 72606.5u - 3054.31 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1296.36u^{42} + 3722.50u^{41} + \cdots - 196370.u - 9266.12 \\ -242.457u^{42} - 668.784u^{41} + \cdots + 22997.2u + 930.911 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2530.36u^{42} + 7212.55u^{41} + \cdots - 352926.u - 16218.1 \\ 261.611u^{42} + 733.273u^{41} + \cdots - 30874.6u - 1366.31 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 752.283u^{42} + 2069.21u^{41} + \cdots - 66426.7u - 2566.31 \\ 736.124u^{42} + 2043.82u^{41} + \cdots - 76257.7u - 3209.46 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 4639.35u^{42} + 13018.5u^{41} + \cdots - 552712.u - 24397.0 \\ 931.857u^{42} + 2585.95u^{41} + \cdots - 97746.0u - 4166.13 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 730.819u^{42} + 2020.00u^{41} + \cdots - 70941.1u - 2893.51 \\ 1032.12u^{42} + 2844.81u^{41} + \cdots - 100064.u - 4162.72 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 730.819u^{42} + 2020.00u^{41} + \cdots - 70941.1u - 2893.51 \\ 1071.12u^{42} + 2953.23u^{41} + \cdots - 104162.u - 4335.18 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1591.04u^{42} + 4370.98u^{41} + \cdots - 155239.u - 6636.61 \\ 835.606u^{42} + 2305.04u^{41} + \cdots - 80814.4u - 3357.21 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5893.66u^{42} + 16293.1u^{41} + \cdots - 577290.u - 23846.5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{43} - 15u^{42} + \cdots + 11u - 1$
c_2	$u^{43} - 2u^{42} + \cdots + u - 1$
c_3	$u^{43} + 3u^{42} + \cdots - 3u + 1$
c_4	$u^{43} + u^{42} + \cdots + 4u - 1$
c_5	$u^{43} + 3u^{42} + \cdots - 28u - 1$
c_6	$u^{43} - u^{42} + \cdots + 110u - 11$
c_7	$u^{43} + 13u^{42} + \cdots - 268u - 152$
c_8	$u^{43} + 2u^{42} + \cdots + u + 1$
c_9	$u^{43} - 4u^{42} + \cdots + 2u - 5$
c_{10}	$u^{43} - u^{42} + \cdots + 4u + 1$
c_{11}	$u^{43} + 13u^{41} + \cdots + u + 1$
c_{12}	$u^{43} + 4u^{42} + \cdots + 2u + 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{43} - 25y^{42} + \cdots + 11y - 1$
c_2, c_8	$y^{43} + 10y^{42} + \cdots + 7y - 1$
c_3	$y^{43} - 13y^{42} + \cdots + 29y - 1$
c_4, c_{10}	$y^{43} + 25y^{42} + \cdots - 26y - 1$
c_5	$y^{43} - 25y^{42} + \cdots + 128y - 1$
c_6	$y^{43} - 9y^{42} + \cdots - 110y - 121$
c_7	$y^{43} - 7y^{42} + \cdots + 719952y - 23104$
c_9, c_{12}	$y^{43} + 28y^{42} + \cdots - 486y - 25$
c_{11}	$y^{43} + 26y^{42} + \cdots + 51y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.952403+0.212650I$ $a=\ 0.162567-0.952315I$ $b=\ 0.03324+1.42461I$	$-1.64596-0.83812I$	0
$u=-0.952403-0.212650I$ $a=\ 0.162567+0.952315I$ $b=\ 0.03324-1.42461I$	$-1.64596+0.83812I$	0
$u=\ 0.965425+0.356886I$ $a=-0.937624+0.457624I$ $b=-0.006561+0.619968I$	$4.22886-5.41734I$	0
$u=\ 0.965425-0.356886I$ $a=-0.937624-0.457624I$ $b=-0.006561-0.619968I$	$4.22886+5.41734I$	0
$u=-1.018330+0.152999I$ $a=\ 0.198757+0.759729I$ $b=\ 0.507978+0.511243I$	$-2.50615+2.11294I$	0
$u=-1.018330-0.152999I$ $a=\ 0.198757-0.759729I$ $b=\ 0.507978-0.511243I$	$-2.50615-2.11294I$	0
$u=\ 0.911600+0.492578I$ $a=\ 1.37553-1.72298I$ $b=\ 0.505583+1.058080I$	$-0.81706-6.31715I$	0
$u=\ 0.911600-0.492578I$ $a=\ 1.37553+1.72298I$ $b=\ 0.505583-1.058080I$	$-0.81706+6.31715I$	0
$u=-0.733272+0.745428I$ $a=-0.582277-1.119630I$ $b=\ 0.408985+0.860139I$	$-1.48315-3.89969I$	0
$u=-0.733272-0.745428I$ $a=-0.582277+1.119630I$ $b=\ 0.408985-0.860139I$	$-1.48315+3.89969I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.046520+0.040392I$ $a=-0.036704-1.056260I$ $b=\ \ 0.202171+0.202968I$	$-1.89530-2.23499I$	0
$u=-1.046520-0.040392I$ $a=-0.036704+1.056260I$ $b=\ \ 0.202171-0.202968I$	$-1.89530+2.23499I$	0
$u=-0.735950+0.567166I$ $a=-1.316120-0.290199I$ $b=\ \ 0.274488+1.085180I$	$-1.98811-4.21451I$	0
$u=-0.735950-0.567166I$ $a=-1.316120+0.290199I$ $b=\ \ 0.274488-1.085180I$	$-1.98811+4.21451I$	0
$u=-0.507572+0.952195I$ $a=\ \ 0.281181+0.953252I$ $b=-0.560388-1.063890I$	$1.26781-8.27086I$	0
$u=-0.507572-0.952195I$ $a=\ \ 0.281181-0.953252I$ $b=-0.560388+1.063890I$	$1.26781+8.27086I$	0
$u=\ \ 0.125952+0.869748I$ $a=-0.102915-0.438320I$ $b=-1.165420-0.271081I$	$1.76412-3.06782I$	0
$u=\ \ 0.125952-0.869748I$ $a=-0.102915+0.438320I$ $b=-1.165420+0.271081I$	$1.76412+3.06782I$	0
$u=\ \ 0.991450+0.570116I$ $a=-1.46859+1.56054I$ $b=-0.552387-0.899414I$	$1.24968-6.77664I$	0
$u=\ \ 0.991450-0.570116I$ $a=-1.46859-1.56054I$ $b=-0.552387+0.899414I$	$1.24968+6.77664I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.23708$ $a = 1.84183$ $b = 1.58285$	-7.94416	0
$u = 0.606338 + 0.420080I$ $a = -0.051289 - 1.095620I$ $b = -0.313256 - 0.727655I$	$2.52284 - 2.02235I$	$-12.31783 + 6.22843I$
$u = 0.606338 - 0.420080I$ $a = -0.051289 + 1.095620I$ $b = -0.313256 + 0.727655I$	$2.52284 + 2.02235I$	$-12.31783 - 6.22843I$
$u = 0.830825 + 0.953806I$ $a = -0.560415 + 0.943472I$ $b = -0.51078 - 1.39813I$	$5.50052 - 3.51324I$	0
$u = 0.830825 - 0.953806I$ $a = -0.560415 - 0.943472I$ $b = -0.51078 + 1.39813I$	$5.50052 + 3.51324I$	0
$u = -1.281600 + 0.465204I$ $a = -0.128805 - 0.121328I$ $b = -0.561535 - 1.052650I$	$1.70570 + 2.12472I$	0
$u = -1.281600 - 0.465204I$ $a = -0.128805 + 0.121328I$ $b = -0.561535 + 1.052650I$	$1.70570 - 2.12472I$	0
$u = -0.89179 + 1.30826I$ $a = -0.45289 - 1.37332I$ $b = -0.337379 + 1.239830I$	$7.27538 + 7.09896I$	0
$u = -0.89179 - 1.30826I$ $a = -0.45289 + 1.37332I$ $b = -0.337379 - 1.239830I$	$7.27538 - 7.09896I$	0
$u = -0.254980 + 0.061062I$ $a = 0.563380 + 0.985070I$ $b = 0.682002 + 1.075080I$	$-0.965175 - 0.413694I$	$-3.44126 - 3.89109I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.254980-0.061062I$ $a=\ 0.563380-0.985070I$ $b=\ 0.682002-1.075080I$	$-0.965175+0.413694I$	$-3.44126+3.89109I$
$u=-0.249131+0.026846I$ $a=\ 0.771247-0.668285I$ $b=-0.997616-0.548752I$	$-0.39026+2.98506I$	$-18.6911-6.9299I$
$u=-0.249131-0.026846I$ $a=\ 0.771247+0.668285I$ $b=-0.997616+0.548752I$	$-0.39026-2.98506I$	$-18.6911+6.9299I$
$u=-0.178025+0.011812I$ $a=\ 3.57509-10.92340I$ $b=\ 0.085395-0.839110I$	$-3.26472-2.79547I$	$0.62203+6.00588I$
$u=-0.178025-0.011812I$ $a=\ 3.57509+10.92340I$ $b=\ 0.085395+0.839110I$	$-3.26472+2.79547I$	$0.62203-6.00588I$
$u=\ 1.92161+1.02325I$ $a=\ 0.296475-0.726225I$ $b=\ 0.39084+1.36482I$	$9.30357-5.42295I$	0
$u=\ 1.92161-1.02325I$ $a=\ 0.296475+0.726225I$ $b=\ 0.39084-1.36482I$	$9.30357+5.42295I$	0
$u=\ 2.18724+0.36684I$ $a=\ 0.183996-0.709664I$ $b=\ 0.006947+0.845184I$	$-3.51494+0.72185I$	0
$u=\ 2.18724-0.36684I$ $a=\ 0.183996+0.709664I$ $b=\ 0.006947-0.845184I$	$-3.51494-0.72185I$	0
$u=-0.23008+2.41700I$ $a=\ 0.192132+0.932867I$ $b=\ 0.666582-1.152700I$	$9.92606+2.98593I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.23008-2.41700I$ $a=\ \ 0.192132-0.932867I$ $b=\ \ 0.666582+1.152700I$	$9.92606-2.98593I$	0
$u=-2.57933+0.94459I$ $a=\ \ 0.116361+1.405020I$ $b=-0.050307-0.647959I$	$5.66223-4.31515I$	0
$u=-2.57933-0.94459I$ $a=\ \ 0.116361-1.405020I$ $b=-0.050307+0.647959I$	$5.66223+4.31515I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{43}-15u^{42}+\cdots+11u-1)(u^{102}-6u^{101}+\cdots-13u+1)$
c_2	$(u^{43}-2u^{42}+\cdots+u-1)(u^{102}+3u^{101}+\cdots-2892097u-211369)$
c_3	$(u^{43}+3u^{42}+\cdots-3u+1)$ $\cdot(u^{102}-12u^{101}+\cdots+44683235u-49868279)$
c_4	$(u^{43}+u^{42}+\cdots+4u-1)(u^{102}-2u^{101}+\cdots-35912u-22021)$
c_5	$(u^{43}+3u^{42}+\cdots-28u-1)$ $\cdot(u^{102}-2u^{101}+\cdots+8420092u-4375517)$
c_6	$(u^{43}-u^{42}+\cdots+110u-11)$ $\cdot(u^{102}+4u^{101}+\cdots-10237986u-1560347)$
c_7	$(u^{43}+13u^{42}+\cdots-268u-152)$ $\cdot(u^{102}+6u^{101}+\cdots+1478240064u+120775104)$
c_8	$(u^{43}+2u^{42}+\cdots+u+1)(u^{102}+3u^{101}+\cdots-2892097u-211369)$
c_9	$(u^{43}-4u^{42}+\cdots+2u-5)(u^{102}-3u^{101}+\cdots+17272u+2887)$
c_{10}	$(u^{43}-u^{42}+\cdots+4u+1)(u^{102}-2u^{101}+\cdots-35912u-22021)$
c_{11}	$(u^{43}+13u^{41}+\cdots+u+1)(u^{102}-3u^{101}+\cdots+4237u+211)$
c_{12}	$(u^{43}+4u^{42}+\cdots+2u+5)(u^{102}-3u^{101}+\cdots+17272u+2887)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{43}-25y^{42}+\cdots+11y-1)(y^{102}-26y^{101}+\cdots+3y+1)$
c_2, c_8	$(y^{43}+10y^{42}+\cdots+7y-1)$ $\cdot(y^{102}+93y^{101}+\cdots+186729819967y+44676854161)$
c_3	$(y^{43}-13y^{42}+\cdots+29y-1)$ $\cdot(y^{102}+34y^{101}+\cdots+32423793145983377y+2486845250421841)$
c_4, c_{10}	$(y^{43}+25y^{42}+\cdots-26y-1)$ $\cdot(y^{102}+72y^{101}+\cdots+13249120960y+484924441)$
c_5	$(y^{43}-25y^{42}+\cdots+128y-1)$ $\cdot(y^{102}+34y^{101}+\cdots-851807783365426y+19145149017289)$
c_6	$(y^{43}-9y^{42}+\cdots-110y-121)$ $\cdot(y^{102}-42y^{101}+\cdots-69780057418512y+2434682760409)$
c_7	$(y^{43}-7y^{42}+\cdots+719952y-23104)$ $\cdot(y^{102}-56y^{101}+\cdots-839500422669637632y+14586625746210816)$
c_9, c_{12}	$(y^{43}+28y^{42}+\cdots-486y-25)$ $\cdot(y^{102}+83y^{101}+\cdots-227405716y+8334769)$
c_{11}	$(y^{43}+26y^{42}+\cdots+51y-1)$ $\cdot(y^{102}+13y^{101}+\cdots-9748489y+44521)$