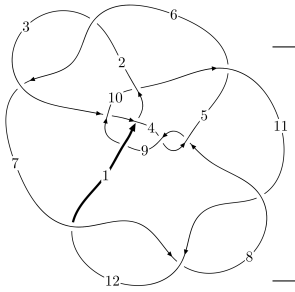
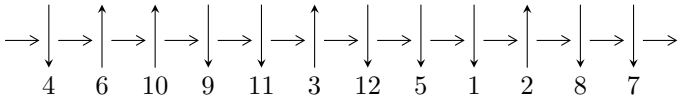
$12a_{0955}$ $(K12a_{0955})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.91588 \times 10^{1054} u^{135} + 6.69620 \times 10^{1054} u^{134} + \cdots + 1.75763 \times 10^{1054} b + 3.05109 \times 10^{1055},$$
$$- 2.92192 \times 10^{1056} u^{135} + 2.42676 \times 10^{1056} u^{134} + \cdots + 1.75763 \times 10^{1054} a + 1.61676 \times 10^{1057},$$
$$u^{136} - u^{135} + \cdots - 90u + 1 \rangle$$
$$I_2^u = \langle 1.29910 \times 10^{75} u^{39} + 6.04417 \times 10^{73} u^{38} + \cdots + 7.64937 \times 10^{75} b - 2.92334 \times 10^{75},$$
$$3.00344 \times 10^{74} u^{39} + 4.01392 \times 10^{74} u^{38} + \cdots + 7.64937 \times 10^{75} a + 1.89389 \times 10^{76},\ u^{40} + 6u^{38} + \cdots + 2u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 176 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. $\boldsymbol{I_1^u = \langle -9.92 \times 10^{1054} u^{135} + 6.70 \times 10^{1054} u^{134} + \cdots + 1.76 \times 10^{1054} b + 3.05 \times 10^{1055},\ -2.92 \times 10^{1056} u^{135} + 2.43 \times 10^{1056} u^{134} + \cdots + 1.76 \times 10^{1054} a + 1.62 \times 10^{1057},\ u^{136} - u^{135} + \cdots - 90u + 1 \rangle}$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} 166.241u^{135} - 138.070u^{134} + \cdots + 84755.9u - 919.851 \\ 5.64160u^{135} - 3.80978u^{134} + \cdots + 1561.92u - 17.3591 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 171.883u^{135} - 141.880u^{134} + \cdots + 86317.8u - 937.210 \\ 5.64160u^{135} - 3.80978u^{134} + \cdots + 1561.92u - 17.3591 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -112.241u^{135} + 97.0441u^{134} + \cdots - 67403.4u + 879.171 \\ 10.4249u^{135} - 6.60479u^{134} + \cdots + 1875.62u - 20.2786 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -160.594u^{135} + 137.593u^{134} + \cdots - 96574.1u + 1237.25 \\ -0.205345u^{135} + 2.30610u^{134} + \cdots - 3591.94u + 45.2540 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -103.598u^{135} + 92.1701u^{134} + \cdots - 66783.3u + 874.089 \\ 9.12403u^{135} - 5.70219u^{134} + \cdots + 1545.05u - 16.5096 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 147.567u^{135} - 121.755u^{134} + \cdots + 73520.8u - 834.757 \\ 0.975785u^{135} + 0.194203u^{134} + \cdots - 1776.12u + 23.0939 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -175.798u^{135} + 152.843u^{134} + \cdots - 109261.u + 1393.02 \\ -8.58222u^{135} + 7.48626u^{134} + \cdots - 5293.45u + 64.5618 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 163.248u^{135} - 136.229u^{134} + \cdots + 85190.3u - 925.173 \\ 6.21223u^{135} - 4.81821u^{134} + \cdots + 2835.38u - 33.0506 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 35.9075u^{135} - 30.6827u^{134} + \cdots + 21883.0u - 266.266 \\ -0.370479u^{135} - 0.414086u^{134} + \cdots + 989.079u - 12.4810 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -178.426u^{135} + 121.516u^{134} + \cdots - 41107.4u + 451.503$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{136} - 11u^{135} + \cdots - 99138u + 6727$
c_2, c_6	$u^{136} - 3u^{135} + \cdots - 1044u + 4261$
c_3	$u^{136} + u^{135} + \cdots + 90u + 1$
c_4, c_8	$u^{136} + 4u^{135} + \cdots - 238658u + 29957$
c_5	$u^{136} + u^{135} + \cdots - 958173436u + 138684577$
c_7, c_{11}, c_{12}	$u^{136} + 72u^{134} + \cdots - 558u + 71$
c_9	$u^{136} + 19u^{134} + \cdots - 157163u + 21971$
c_{10}	$u^{136} - 15u^{134} + \cdots + 28235809u + 4063723$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{136}+33y^{135}+\cdots+1941216156y+45252529$
c_2, c_6	$y^{136}-89y^{135}+\cdots-722664720y+18156121$
c_3	$y^{136}+5y^{135}+\cdots-3718y+1$
c_4, c_8	$y^{136}+122y^{135}+\cdots-20806491988y+897421849$
c_5	$y^{136}+79y^{135}+\cdots+1981830159489008108y+19233411897668929$
c_7, c_{11}, c_{12}	$y^{136}+144y^{135}+\cdots+122872y+5041$
c_9	$y^{136}+38y^{135}+\cdots+7897021639y+482724841$
c_{10}	$y^{136}-30y^{135}+\cdots-461058800492953y+16513844620729$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.002500+0.063014I$ $a=\ \ 2.26750-0.41171I$ $b=-1.233320+0.422915I$	$14.1826-7.7014I$	0
$u=-1.002500-0.063014I$ $a=\ \ 2.26750+0.41171I$ $b=-1.233320-0.422915I$	$14.1826+7.7014I$	0
$u=-0.268691+0.984175I$ $a=\ \ 0.504189+0.133192I$ $b=\ \ 0.318734+0.297660I$	$-0.41282-1.61897I$	0
$u=-0.268691-0.984175I$ $a=\ \ 0.504189-0.133192I$ $b=\ \ 0.318734-0.297660I$	$-0.41282+1.61897I$	0
$u=\ \ 0.605736+0.838936I$ $a=-0.728686+0.627850I$ $b=-0.409253+0.667357I$	$3.53391-2.67721I$	0
$u=\ \ 0.605736-0.838936I$ $a=-0.728686-0.627850I$ $b=-0.409253-0.667357I$	$3.53391+2.67721I$	0
$u=-0.479470+0.830260I$ $a=-0.438130-0.008324I$ $b=\ \ 0.432698-0.924634I$	$2.55578-3.30889I$	0
$u=-0.479470-0.830260I$ $a=-0.438130+0.008324I$ $b=\ \ 0.432698+0.924634I$	$2.55578+3.30889I$	0
$u=\ \ 0.816298+0.498199I$ $a=\ \ 2.30208-1.08177I$ $b=-1.095330-0.444551I$	$6.58510+5.02708I$	0
$u=\ \ 0.816298-0.498199I$ $a=\ \ 2.30208+1.08177I$ $b=-1.095330+0.444551I$	$6.58510-5.02708I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.727375+0.755504I$ $a=\ \ 0.351811-0.182094I$ $b=-0.616455-1.037090I$	$6.10494+2.29566I$	0
$u=-0.727375-0.755504I$ $a=\ \ 0.351811+0.182094I$ $b=-0.616455+1.037090I$	$6.10494-2.29566I$	0
$u=-0.389122+0.843441I$ $a=\ \ 0.321785-0.000734I$ $b=\ \ 0.062580+0.521542I$	$-0.36394-1.54443I$	0
$u=-0.389122-0.843441I$ $a=\ \ 0.321785+0.000734I$ $b=\ \ 0.062580-0.521542I$	$-0.36394+1.54443I$	0
$u=-0.398424+0.801121I$ $a=-0.621530+0.078693I$ $b=-0.418336+0.507954I$	$0.74586-4.82761I$	0
$u=-0.398424-0.801121I$ $a=-0.621530-0.078693I$ $b=-0.418336-0.507954I$	$0.74586+4.82761I$	0
$u=-0.658120+0.599733I$ $a=-1.39914-0.59882I$ $b=\ \ 1.47290-0.66787I$	$12.7343-10.3334I$	0
$u=-0.658120-0.599733I$ $a=-1.39914+0.59882I$ $b=\ \ 1.47290+0.66787I$	$12.7343+10.3334I$	0
$u=-1.048210+0.371939I$ $a=-1.86845-0.10856I$ $b=\ \ 1.324620-0.352471I$	$10.73120-5.00750I$	0
$u=-1.048210-0.371939I$ $a=-1.86845+0.10856I$ $b=\ \ 1.324620+0.352471I$	$10.73120+5.00750I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.712861+0.488127I$ $a=-0.412892+0.500570I$ $b=-0.167658-0.583468I$	$4.00300-1.05980I$	0
$u=-0.712861-0.488127I$ $a=-0.412892-0.500570I$ $b=-0.167658+0.583468I$	$4.00300+1.05980I$	0
$u=-0.187510+0.833352I$ $a=0.840276-0.688063I$ $b=0.813280-0.195468I$	$-0.70171-2.24730I$	0
$u=-0.187510-0.833352I$ $a=0.840276+0.688063I$ $b=0.813280+0.195468I$	$-0.70171+2.24730I$	0
$u=0.239091+0.819586I$ $a=-1.47388-0.99592I$ $b=-1.151490-0.233690I$	$11.5671+8.5371I$	0
$u=0.239091-0.819586I$ $a=-1.47388+0.99592I$ $b=-1.151490+0.233690I$	$11.5671-8.5371I$	0
$u=-0.793679+0.163901I$ $a=0.403955+1.273500I$ $b=0.259003+0.463813I$	$3.19544-2.72879I$	0
$u=-0.793679-0.163901I$ $a=0.403955-1.273500I$ $b=0.259003-0.463813I$	$3.19544+2.72879I$	0
$u=-0.088010+0.799434I$ $a=-2.24733+0.36788I$ $b=-1.039660+0.072164I$	$3.55213-3.56061I$	0
$u=-0.088010-0.799434I$ $a=-2.24733-0.36788I$ $b=-1.039660-0.072164I$	$3.55213+3.56061I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.887942 + 0.814621I$ $a = 0.066964 - 0.228052I$ $b = 0.129749 - 1.058500I$	$-1.56586 + 3.74407I$	0
$u = 0.887942 - 0.814621I$ $a = 0.066964 + 0.228052I$ $b = 0.129749 + 1.058500I$	$-1.56586 - 3.74407I$	0
$u = -0.692156 + 0.990198I$ $a = 1.47593 + 0.13370I$ $b = -0.878064 - 0.164448I$	$4.10114 + 0.66022I$	0
$u = -0.692156 - 0.990198I$ $a = 1.47593 - 0.13370I$ $b = -0.878064 + 0.164448I$	$4.10114 - 0.66022I$	0
$u = -1.027430 + 0.637510I$ $a = 1.60176 + 0.29050I$ $b = -1.50451 + 0.23809I$	$16.3588 - 3.0418I$	0
$u = -1.027430 - 0.637510I$ $a = 1.60176 - 0.29050I$ $b = -1.50451 - 0.23809I$	$16.3588 + 3.0418I$	0
$u = -0.553504 + 0.558455I$ $a = 1.008670 + 0.672872I$ $b = -0.980509 + 0.372582I$	$1.89932 - 1.74077I$	0
$u = -0.553504 - 0.558455I$ $a = 1.008670 - 0.672872I$ $b = -0.980509 - 0.372582I$	$1.89932 + 1.74077I$	0
$u = 0.121197 + 0.762928I$ $a = 0.541844 + 0.084245I$ $b = -0.014393 + 0.583516I$	$-0.80117 - 1.41412I$	0
$u = 0.121197 - 0.762928I$ $a = 0.541844 - 0.084245I$ $b = -0.014393 - 0.583516I$	$-0.80117 + 1.41412I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.596209+0.479918I$ $a=\ \ 1.39245+1.03343I$ $b=-1.34852+0.65533I$	$8.40609-5.75438I$	0
$u=-0.596209-0.479918I$ $a=\ \ 1.39245-1.03343I$ $b=-1.34852-0.65533I$	$8.40609+5.75438I$	0
$u=-0.660020+0.385811I$ $a=-1.178570-0.050631I$ $b=\ \ 1.39664+0.63986I$	$7.54221-2.75018I$	0
$u=-0.660020-0.385811I$ $a=-1.178570+0.050631I$ $b=\ \ 1.39664-0.63986I$	$7.54221+2.75018I$	0
$u=\ \ 0.837017+0.915713I$ $a=-0.226742+0.092602I$ $b=-0.014695+1.060940I$	$3.44137+8.50029I$	0
$u=\ \ 0.837017-0.915713I$ $a=-0.226742-0.092602I$ $b=-0.014695-1.060940I$	$3.44137-8.50029I$	0
$u=\ \ 0.565967+1.144860I$ $a=-0.094721+0.616456I$ $b=\ \ 1.008800+0.175200I$	$5.15870+5.32280I$	0
$u=\ \ 0.565967-1.144860I$ $a=-0.094721-0.616456I$ $b=\ \ 1.008800-0.175200I$	$5.15870-5.32280I$	0
$u=\ \ 0.958967+0.871863I$ $a=-1.55424+0.69528I$ $b=\ \ 1.187340+0.441105I$	$2.79943+5.61282I$	0
$u=\ \ 0.958967-0.871863I$ $a=-1.55424-0.69528I$ $b=\ \ 1.187340-0.441105I$	$2.79943-5.61282I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.765743+1.085720I$ $a=-0.328234-0.289606I$ $b=\ 0.562214+0.242411I$	$1.30346-3.92039I$	0
$u=-0.765743-1.085720I$ $a=-0.328234+0.289606I$ $b=\ 0.562214-0.242411I$	$1.30346+3.92039I$	0
$u=\ 0.791285+1.067280I$ $a=-1.143380+0.775089I$ $b=\ 1.150870-0.080158I$	$7.61172-0.99607I$	0
$u=\ 0.791285-1.067280I$ $a=-1.143380-0.775089I$ $b=\ 1.150870+0.080158I$	$7.61172+0.99607I$	0
$u=\ 0.785394+1.073990I$ $a=-0.427491+0.713269I$ $b=\ 0.910080+0.222265I$	$5.10789+5.30901I$	0
$u=\ 0.785394-1.073990I$ $a=-0.427491-0.713269I$ $b=\ 0.910080-0.222265I$	$5.10789-5.30901I$	0
$u=\ 0.615778+0.258179I$ $a=\ 0.48844-1.51099I$ $b=\ 0.100617+0.656427I$	$10.40450+3.59236I$	0
$u=\ 0.615778-0.258179I$ $a=\ 0.48844+1.51099I$ $b=\ 0.100617-0.656427I$	$10.40450-3.59236I$	0
$u=\ 1.299960+0.324998I$ $a=-1.083360-0.026428I$ $b=\ 1.63019-0.35452I$	$16.8741+5.7954I$	0
$u=\ 1.299960-0.324998I$ $a=-1.083360+0.026428I$ $b=\ 1.63019+0.35452I$	$16.8741-5.7954I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.250060+0.491063I$ $a=\ \ 1.195670+0.003182I$ $b=-1.228970-0.245647I$	$3.66584+0.57684I$	0
$u=-1.250060-0.491063I$ $a=\ \ 1.195670-0.003182I$ $b=-1.228970+0.245647I$	$3.66584-0.57684I$	0
$u=\ \ 0.946176+0.971207I$ $a=\ \ 0.961632-0.604019I$ $b=-0.953124-0.659253I$	$7.32100+3.63789I$	0
$u=\ \ 0.946176-0.971207I$ $a=\ \ 0.961632+0.604019I$ $b=-0.953124+0.659253I$	$7.32100-3.63789I$	0
$u=\ \ 0.970389+0.962515I$ $a=\ \ 1.48843-0.67039I$ $b=-1.37225-0.39614I$	$7.91599+7.79466I$	0
$u=\ \ 0.970389-0.962515I$ $a=\ \ 1.48843+0.67039I$ $b=-1.37225+0.39614I$	$7.91599-7.79466I$	0
$u=-0.326293+1.331470I$ $a=\ \ 0.391756-0.149787I$ $b=-0.733453-0.039222I$	$-0.181456-0.824990I$	0
$u=-0.326293-1.331470I$ $a=\ \ 0.391756+0.149787I$ $b=-0.733453+0.039222I$	$-0.181456+0.824990I$	0
$u=-0.506818+0.332194I$ $a=-1.64596-2.31339I$ $b=\ \ 1.199610-0.596259I$	$13.04380-1.33924I$	0
$u=-0.506818-0.332194I$ $a=-1.64596+2.31339I$ $b=\ \ 1.199610+0.596259I$	$13.04380+1.33924I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.068370+0.896863I$ $a=-0.137972-0.075513I$ $b=-0.152161-1.282390I$	$10.7662-12.1647I$	0
$u=-1.068370-0.896863I$ $a=-0.137972+0.075513I$ $b=-0.152161+1.282390I$	$10.7662+12.1647I$	0
$u=0.388015+0.427820I$ $a=-2.91520+1.62097I$ $b=1.016000+0.292192I$	$1.77191+4.25174I$	$0.-10.36937I$
$u=0.388015-0.427820I$ $a=-2.91520-1.62097I$ $b=1.016000-0.292192I$	$1.77191-4.25174I$	$0.+10.36937I$
$u=1.00155+1.01256I$ $a=-0.256009+0.230430I$ $b=0.690240-0.696246I$	$7.41627+3.66701I$	0
$u=1.00155-1.01256I$ $a=-0.256009-0.230430I$ $b=0.690240+0.696246I$	$7.41627-3.66701I$	0
$u=0.461023+0.321603I$ $a=-1.66934+0.25789I$ $b=1.60627+0.54957I$	$5.49438+4.60657I$	$6.1450-15.7932I$
$u=0.461023-0.321603I$ $a=-1.66934-0.25789I$ $b=1.60627-0.54957I$	$5.49438-4.60657I$	$6.1450+15.7932I$
$u=0.477951+0.228463I$ $a=1.83816-0.83096I$ $b=-1.225920-0.559909I$	$2.04680+2.93313I$	$-4.00000-7.70322I$
$u=0.477951-0.228463I$ $a=1.83816+0.83096I$ $b=-1.225920+0.559909I$	$2.04680-2.93313I$	$-4.00000+7.70322I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.86123 + 1.20580I$ $a = 0.489954 + 0.234127I$ $b = -0.608678 + 0.375773I$	$3.92341 + 2.36412I$	0
$u = 0.86123 - 1.20580I$ $a = 0.489954 - 0.234127I$ $b = -0.608678 - 0.375773I$	$3.92341 - 2.36412I$	0
$u = -0.511567 + 0.037095I$ $a = -3.21381 + 3.28057I$ $b = -0.397714 + 0.141416I$	$9.05237 + 6.53367I$	$-1.42833 + 1.74114I$
$u = -0.511567 - 0.037095I$ $a = -3.21381 - 3.28057I$ $b = -0.397714 - 0.141416I$	$9.05237 - 6.53367I$	$-1.42833 - 1.74114I$
$u = 0.420727 + 0.270479I$ $a = -0.146294 - 0.722424I$ $b = -0.421680 - 1.047550I$	$-0.88286 + 2.88516I$	$-5.78499 + 11.42640I$
$u = 0.420727 - 0.270479I$ $a = -0.146294 + 0.722424I$ $b = -0.421680 + 1.047550I$	$-0.88286 - 2.88516I$	$-5.78499 - 11.42640I$
$u = 0.074926 + 0.490562I$ $a = -1.89688 - 3.53029I$ $b = 0.576351 + 0.285810I$	$10.50980 + 3.34688I$	$7.60713 - 1.33462I$
$u = 0.074926 - 0.490562I$ $a = -1.89688 + 3.53029I$ $b = 0.576351 - 0.285810I$	$10.50980 - 3.34688I$	$7.60713 + 1.33462I$
$u = 0.463444 + 0.139671I$ $a = 2.37154 + 0.95293I$ $b = -1.255360 + 0.045964I$	$3.71404 + 2.01864I$	$5.51705 - 1.86309I$
$u = 0.463444 - 0.139671I$ $a = 2.37154 - 0.95293I$ $b = -1.255360 - 0.045964I$	$3.71404 - 2.01864I$	$5.51705 + 1.86309I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.32571+0.75177I$ $a=\ 0.078249+0.258186I$ $b=\ 0.119889+1.399890I$	$4.20104-5.36025I$	0
$u=-1.32571-0.75177I$ $a=\ 0.078249-0.258186I$ $b=\ 0.119889-1.399890I$	$4.20104+5.36025I$	0
$u=-1.26946+0.87372I$ $a=-1.334030-0.083329I$ $b=\ 1.157180+0.001078I$	$6.28349-4.35744I$	0
$u=-1.26946-0.87372I$ $a=-1.334030+0.083329I$ $b=\ 1.157180-0.001078I$	$6.28349+4.35744I$	0
$u=\ 0.456842+0.023233I$ $a=-3.62121-1.42336I$ $b=\ 0.996680-0.466465I$	$6.74551-1.77319I$	$6.89232+0.99553I$
$u=\ 0.456842-0.023233I$ $a=-3.62121+1.42336I$ $b=\ 0.996680+0.466465I$	$6.74551+1.77319I$	$6.89232-0.99553I$
$u=\ 1.29737+0.83550I$ $a=-1.52539+0.32309I$ $b=\ 1.036890+0.328272I$	$2.90263+6.75650I$	0
$u=\ 1.29737-0.83550I$ $a=-1.52539-0.32309I$ $b=\ 1.036890-0.328272I$	$2.90263-6.75650I$	0
$u=-1.33508+0.78876I$ $a=-1.58569-0.47217I$ $b=\ 0.893175-0.523408I$	$8.01886-8.38965I$	0
$u=-1.33508-0.78876I$ $a=-1.58569+0.47217I$ $b=\ 0.893175+0.523408I$	$8.01886+8.38965I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.07362+1.13981I$ $a=\ \ 1.27707+0.72580I$ $b=-1.35272+0.53335I$	$7.6233-14.1804I$	0
$u=-1.07362-1.13981I$ $a=\ \ 1.27707-0.72580I$ $b=-1.35272-0.53335I$	$7.6233+14.1804I$	0
$u=\ \ 0.404418+0.133429I$ $a=-0.445258+0.806474I$ $b=-0.422704-1.028030I$	$5.35849+0.81312I$	$4.06819-2.00701I$
$u=\ \ 0.404418-0.133429I$ $a=-0.445258-0.806474I$ $b=-0.422704+1.028030I$	$5.35849-0.81312I$	$4.06819+2.00701I$
$u=-0.62254+1.49088I$ $a=-0.612380-0.790840I$ $b=\ \ 1.242770-0.114162I$	$13.69740-3.47264I$	0
$u=-0.62254-1.49088I$ $a=-0.612380+0.790840I$ $b=\ \ 1.242770+0.114162I$	$13.69740+3.47264I$	0
$u=-1.13705+1.17245I$ $a=-1.165560-0.663334I$ $b=\ \ 1.296720-0.529973I$	$2.15662-9.34279I$	0
$u=-1.13705-1.17245I$ $a=-1.165560+0.663334I$ $b=\ \ 1.296720+0.529973I$	$2.15662+9.34279I$	0
$u=-1.37742+0.93861I$ $a=-1.086560-0.191967I$ $b=\ \ 1.257740+0.268629I$	$8.32935+5.72247I$	0
$u=-1.37742-0.93861I$ $a=-1.086560+0.191967I$ $b=\ \ 1.257740-0.268629I$	$8.32935-5.72247I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.298162 + 0.097877I$ $a = -0.101249 - 0.637838I$ $b = 0.62019 + 1.64062I$	$8.65752 - 2.24574I$	$32.4612 - 14.6799I$
$u = 0.298162 - 0.097877I$ $a = -0.101249 + 0.637838I$ $b = 0.62019 - 1.64062I$	$8.65752 + 2.24574I$	$32.4612 + 14.6799I$
$u = 0.18075 + 1.69000I$ $a = 0.290240 + 0.120261I$ $b = -1.078440 - 0.004368I$	$5.02250 - 0.25714I$	0
$u = 0.18075 - 1.69000I$ $a = 0.290240 - 0.120261I$ $b = -1.078440 + 0.004368I$	$5.02250 + 0.25714I$	0
$u = 1.19788 + 1.22102I$ $a = 1.152210 - 0.689156I$ $b = -1.38581 - 0.64138I$	$14.7054 + 18.8851I$	0
$u = 1.19788 - 1.22102I$ $a = 1.152210 + 0.689156I$ $b = -1.38581 + 0.64138I$	$14.7054 - 18.8851I$	0
$u = 0.286273$ $a = 3.31127$ $b = 0.415258$	-1.14438	-9.87290
$u = 1.24672 + 1.23588I$ $a = 1.257460 - 0.411902I$ $b = -1.041830 - 0.154203I$	$1.08261 + 2.17619I$	0
$u = 1.24672 - 1.23588I$ $a = 1.257460 + 0.411902I$ $b = -1.041830 + 0.154203I$	$1.08261 - 2.17619I$	0
$u = -0.60047 + 1.71440I$ $a = -0.081253 - 0.827842I$ $b = -0.660091 - 1.074370I$	$9.11350 + 5.02216I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.60047-1.71440I$ $a=-0.081253+0.827842I$ $b=-0.660091+1.074370I$	$9.11350-5.02216I$	0
$u=\ \ 0.144317+0.005571I$ $a=-7.50699-11.88810I$ $b=-0.749599-0.093849I$	$2.76729-2.67367I$	$-0.40334-2.26799I$
$u=\ \ 0.144317-0.005571I$ $a=-7.50699+11.88810I$ $b=-0.749599+0.093849I$	$2.76729+2.67367I$	$-0.40334+2.26799I$
$u=\ \ 1.31322+1.32237I$ $a=-0.986907+0.591761I$ $b=\ \ 1.43640+0.60904I$	$8.5998+12.2951I$	0
$u=\ \ 1.31322-1.32237I$ $a=-0.986907-0.591761I$ $b=\ \ 1.43640-0.60904I$	$8.5998-12.2951I$	0
$u=-0.96962+1.60627I$ $a=\ \ 0.723616+0.817787I$ $b=-1.25005+0.68230I$	$5.33250-3.06203I$	0
$u=-0.96962-1.60627I$ $a=\ \ 0.723616-0.817787I$ $b=-1.25005-0.68230I$	$5.33250+3.06203I$	0
$u=-1.46239+1.33953I$ $a=\ \ 1.181910+0.523487I$ $b=-1.039450+0.331730I$	$5.24762-5.44019I$	0
$u=-1.46239-1.33953I$ $a=\ \ 1.181910-0.523487I$ $b=-1.039450-0.331730I$	$5.24762+5.44019I$	0
$u=\ \ 0.0167571$ $a=\ \ 88.2974$ $b=\ \ 0.703402$	-1.11227	-11.6150

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 2.00277 + 0.36986I$ $a = 0.889022 + 0.021614I$ $b = -1.58650 + 0.29439I$	$10.63410 - 1.18271I$	0
$u = 2.00277 - 0.36986I$ $a = 0.889022 - 0.021614I$ $b = -1.58650 - 0.29439I$	$10.63410 + 1.18271I$	0
$u = 1.72432 + 1.18066I$ $a = -0.861788 + 0.103902I$ $b = 1.38253 - 0.33823I$	$15.2827 - 9.1211I$	0
$u = 1.72432 - 1.18066I$ $a = -0.861788 - 0.103902I$ $b = 1.38253 + 0.33823I$	$15.2827 + 9.1211I$	0
$u = 1.37717 + 2.17321I$ $a = 0.563590 - 0.550051I$ $b = -1.55956 - 0.80089I$	$11.65750 + 3.05874I$	0
$u = 1.37717 - 2.17321I$ $a = 0.563590 + 0.550051I$ $b = -1.55956 + 0.80089I$	$11.65750 - 3.05874I$	0

II.

$\boldsymbol{I_2^u = \langle 1.30\times 10^{75}u^{39}+6.04\times 10^{73}u^{38}+\cdots+7.65\times 10^{75}b-2.92\times 10^{75},\ 3.00\times 10^{74}u^{39}+4.01\times 10^{74}u^{38}+\cdots+7.65\times 10^{75}a+1.89\times 10^{76},\ u^{40}+6u^{38}+\cdots+2u+1\rangle}$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix}-0.0392638u^{39}-0.0524739u^{38}+\cdots+0.606930u-2.47588\\-0.169830u^{39}-0.00790152u^{38}+\cdots-5.66165u+0.382167\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.209094u^{39}-0.0603754u^{38}+\cdots-5.05472u-2.09371\\-0.169830u^{39}-0.00790152u^{38}+\cdots-5.66165u+0.382167\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.523060u^{39}-0.0751174u^{38}+\cdots+13.6209u+0.319118\\-0.181403u^{39}-0.0222854u^{38}+\cdots-8.97741u-1.32005\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}0.653272u^{39}-0.391160u^{38}+\cdots-7.84448u+1.99508\\-0.375237u^{39}+0.218175u^{38}+\cdots+6.38692u-0.0825126\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.383856u^{39}-0.120476u^{38}+\cdots+4.27063u-0.925810\\-0.174249u^{39}-0.0314766u^{38}+\cdots-9.20734u-1.36540\end{pmatrix}$$

$$a_5 = \begin{pmatrix}0.329544u^{39}-0.0318034u^{38}+\cdots+2.41934u+1.86609\\-0.0499788u^{39}-0.0514062u^{38}+\cdots-2.10243u-1.67809\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.413042u^{39}-0.107330u^{38}+\cdots+1.67777u+1.91333\\-0.127500u^{39}+0.131798u^{38}+\cdots+5.20467u-0.497728\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-0.402858u^{39}+0.171998u^{38}+\cdots+2.22164u-1.67341\\0.0927416u^{39}-0.0628101u^{38}+\cdots-2.06166u+1.00230\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0.338358u^{39}-0.192969u^{38}+\cdots-3.15479u+1.74535\\-0.314398u^{39}+0.0984837u^{38}+\cdots-0.441439u-0.368607\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -0.851008u^{39}-0.484788u^{38}+\cdots-62.4749u-6.17641$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{40} - 4u^{39} + \cdots + 6u^2 + 1$
c_2	$u^{40} + 2u^{39} + \cdots - 16u^2 + 1$
c_3	$u^{40} + 6u^{38} + \cdots + 2u + 1$
c_4	$u^{40} + u^{39} + \cdots + 4u + 1$
c_5	$u^{40} + 5u^{38} + \cdots + 226u + 37$
c_6	$u^{40} - 2u^{39} + \cdots - 16u^2 + 1$
c_7	$u^{40} + u^{39} + \cdots - 2u + 1$
c_8	$u^{40} - u^{39} + \cdots - 4u + 1$
c_9	$u^{40} + 5u^{39} + \cdots - u + 1$
c_{10}	$u^{40} - u^{39} + \cdots - 5u + 1$
c_{11}, c_{12}	$u^{40} - u^{39} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{40} + 8y^{39} + \cdots + 12y + 1$
c_2, c_6	$y^{40} - 22y^{39} + \cdots - 32y + 1$
c_3	$y^{40} + 12y^{39} + \cdots + 30y + 1$
c_4, c_8	$y^{40} + 37y^{39} + \cdots + 28y + 1$
c_5	$y^{40} + 10y^{39} + \cdots + 45716y + 1369$
c_7, c_{11}, c_{12}	$y^{40} + 43y^{39} + \cdots + 24y + 1$
c_9	$y^{40} + 17y^{39} + \cdots + 3y + 1$
c_{10}	$y^{40} + 13y^{39} + \cdots - y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.796206 + 0.351155I$ $a = 1.051500 + 0.299097I$ $b = -1.054250 + 0.633032I$	$5.01478 + 0.50916I$	$5.83747 - 2.93176I$
$u = 0.796206 - 0.351155I$ $a = 1.051500 - 0.299097I$ $b = -1.054250 - 0.633032I$	$5.01478 - 0.50916I$	$5.83747 + 2.93176I$
$u = 0.067408 + 1.164890I$ $a = -0.184864 + 0.371657I$ $b = -0.751676 + 0.011062I$	$0.35050 + 1.85110I$	$2.99827 - 3.67948I$
$u = 0.067408 - 1.164890I$ $a = -0.184864 - 0.371657I$ $b = -0.751676 - 0.011062I$	$0.35050 - 1.85110I$	$2.99827 + 3.67948I$
$u = -0.955477 + 0.684517I$ $a = -0.090499 + 0.681133I$ $b = -0.115268 + 0.832906I$	$2.93569 - 4.19999I$	$-1.49983 + 5.26459I$
$u = -0.955477 - 0.684517I$ $a = -0.090499 - 0.681133I$ $b = -0.115268 - 0.832906I$	$2.93569 + 4.19999I$	$-1.49983 - 5.26459I$
$u = 0.805319 + 0.172926I$ $a = -1.49322 + 1.12153I$ $b = 1.308480 - 0.354168I$	$13.2214 - 8.1179I$	$3.48258 + 6.14970I$
$u = 0.805319 - 0.172926I$ $a = -1.49322 - 1.12153I$ $b = 1.308480 + 0.354168I$	$13.2214 + 8.1179I$	$3.48258 - 6.14970I$
$u = 0.439552 + 1.105110I$ $a = 0.406443 - 0.451885I$ $b = -0.761999 - 0.169824I$	$-0.20418 + 1.56599I$	$-5.22807 - 4.02362I$
$u = 0.439552 - 1.105110I$ $a = 0.406443 + 0.451885I$ $b = -0.761999 + 0.169824I$	$-0.20418 - 1.56599I$	$-5.22807 + 4.02362I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.737294+0.318440I$ $a=-1.48663-2.99524I$ $b=\ \ 0.597362-0.105154I$	$9.36711-6.94685I$	$8.05447+10.02472I$
$u=-0.737294-0.318440I$ $a=-1.48663+2.99524I$ $b=\ \ 0.597362+0.105154I$	$9.36711+6.94685I$	$8.05447-10.02472I$
$u=\ \ 0.647043+1.054320I$ $a=-0.018902+0.484212I$ $b=\ \ 0.687876-0.132743I$	$1.78821+4.07878I$	$6.64587-4.68971I$
$u=\ \ 0.647043-1.054320I$ $a=-0.018902-0.484212I$ $b=\ \ 0.687876+0.132743I$	$1.78821-4.07878I$	$6.64587+4.68971I$
$u=-0.571213+0.449556I$ $a=\ \ 1.61367+0.59318I$ $b=-1.294590+0.354516I$	$3.04497-2.81941I$	$2.78869+7.19991I$
$u=-0.571213-0.449556I$ $a=\ \ 1.61367-0.59318I$ $b=-1.294590-0.354516I$	$3.04497+2.81941I$	$2.78869-7.19991I$
$u=\ \ 0.555686+0.441278I$ $a=\ \ 0.001021-0.269896I$ $b=-0.316054-1.061020I$	$-0.79791+3.15337I$	$2.4481-14.9170I$
$u=\ \ 0.555686-0.441278I$ $a=\ \ 0.001021+0.269896I$ $b=-0.316054+1.061020I$	$-0.79791-3.15337I$	$2.4481+14.9170I$
$u=-1.097080+0.724650I$ $a=-1.65995-0.35445I$ $b=\ \ 1.134360-0.373387I$	$3.88443-6.41404I$	$4.53460+6.66931I$
$u=-1.097080-0.724650I$ $a=-1.65995+0.35445I$ $b=\ \ 1.134360+0.373387I$	$3.88443+6.41404I$	$4.53460-6.66931I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.244411 + 0.571122I$ $a = 2.88253 + 2.47488I$ $b = 0.763694 + 0.014160I$	$2.52572 + 3.16079I$	$-8.21754 - 9.16753I$
$u = 0.244411 - 0.571122I$ $a = 2.88253 - 2.47488I$ $b = 0.763694 - 0.014160I$	$2.52572 - 3.16079I$	$-8.21754 + 9.16753I$
$u = -1.01325 + 1.03698I$ $a = 0.801511 + 0.680746I$ $b = -0.871894 + 0.338195I$	$4.54439 - 4.55226I$	0
$u = -1.01325 - 1.03698I$ $a = 0.801511 - 0.680746I$ $b = -0.871894 - 0.338195I$	$4.54439 + 4.55226I$	0
$u = -0.31846 + 1.43705I$ $a = 0.990036 - 0.026463I$ $b = -0.547814 + 0.111721I$	$3.25955 + 0.19369I$	0
$u = -0.31846 - 1.43705I$ $a = 0.990036 + 0.026463I$ $b = -0.547814 - 0.111721I$	$3.25955 - 0.19369I$	0
$u = -0.70686 + 1.39444I$ $a = 0.742529 + 1.050330I$ $b = -1.145230 + 0.653615I$	$5.10594 - 3.10337I$	0
$u = -0.70686 - 1.39444I$ $a = 0.742529 - 1.050330I$ $b = -1.145230 - 0.653615I$	$5.10594 + 3.10337I$	0
$u = -0.94792 + 1.28866I$ $a = -0.631620 - 0.041139I$ $b = 0.639127 + 0.234313I$	$4.20396 - 4.23338I$	0
$u = -0.94792 - 1.28866I$ $a = -0.631620 + 0.041139I$ $b = 0.639127 - 0.234313I$	$4.20396 + 4.23338I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.37956 + 1.55763I$ $a = 0.395941 - 1.206920I$ $b = -0.868175 - 0.790254I$	$9.25452 + 4.30867I$	0
$u = 0.37956 - 1.55763I$ $a = 0.395941 + 1.206920I$ $b = -0.868175 + 0.790254I$	$9.25452 - 4.30867I$	0
$u = -0.344912 + 0.080803I$ $a = -3.52289 + 0.70225I$ $b = 1.308950 - 0.405254I$	$5.31373 - 4.02937I$	$1.09577 + 2.14504I$
$u = -0.344912 - 0.080803I$ $a = -3.52289 - 0.70225I$ $b = 1.308950 + 0.405254I$	$5.31373 + 4.02937I$	$1.09577 - 2.14504I$
$u = 1.43420 + 1.05243I$ $a = -1.328130 + 0.473695I$ $b = 1.067980 + 0.416029I$	$5.97147 + 7.29999I$	0
$u = 1.43420 - 1.05243I$ $a = -1.328130 - 0.473695I$ $b = 1.067980 - 0.416029I$	$5.97147 - 7.29999I$	0
$u = 0.035720 + 0.201543I$ $a = -2.28495 + 0.06055I$ $b = 0.68977 - 1.35787I$	$8.52959 + 2.35400I$	$-5.1591 - 14.8120I$
$u = 0.035720 - 0.201543I$ $a = -2.28495 - 0.06055I$ $b = 0.68977 + 1.35787I$	$8.52959 - 2.35400I$	$-5.1591 + 14.8120I$
$u = 1.28735 + 1.33079I$ $a = 0.816468 - 0.657189I$ $b = -1.47065 - 0.63385I$	$11.38220 + 2.64327I$	0
$u = 1.28735 - 1.33079I$ $a = 0.816468 + 0.657189I$ $b = -1.47065 + 0.63385I$	$11.38220 - 2.64327I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{40}-4u^{39}+\cdots+6u^2+1)(u^{136}-11u^{135}+\cdots-99138u+6727)$
c_2	$(u^{40}+2u^{39}+\cdots-16u^2+1)(u^{136}-3u^{135}+\cdots-1044u+4261)$
c_3	$(u^{40}+6u^{38}+\cdots+2u+1)(u^{136}+u^{135}+\cdots+90u+1)$
c_4	$(u^{40}+u^{39}+\cdots+4u+1)(u^{136}+4u^{135}+\cdots-238658u+29957)$
c_5	$(u^{40}+5u^{38}+\cdots+226u+37)$ $\cdot(u^{136}+u^{135}+\cdots-958173436u+138684577)$
c_6	$(u^{40}-2u^{39}+\cdots-16u^2+1)(u^{136}-3u^{135}+\cdots-1044u+4261)$
c_7	$(u^{40}+u^{39}+\cdots-2u+1)(u^{136}+72u^{134}+\cdots-558u+71)$
c_8	$(u^{40}-u^{39}+\cdots-4u+1)(u^{136}+4u^{135}+\cdots-238658u+29957)$
c_9	$(u^{40}+5u^{39}+\cdots-u+1)(u^{136}+19u^{134}+\cdots-157163u+21971)$
c_{10}	$(u^{40}-u^{39}+\cdots-5u+1)$ $\cdot(u^{136}-15u^{134}+\cdots+28235809u+4063723)$
c_{11}, c_{12}	$(u^{40}-u^{39}+\cdots+2u+1)(u^{136}+72u^{134}+\cdots-558u+71)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{40}+8y^{39}+\cdots+12y+1)$ $\cdot(y^{136}+33y^{135}+\cdots+1941216156y+45252529)$
c_2, c_6	$(y^{40}-22y^{39}+\cdots-32y+1)$ $\cdot(y^{136}-89y^{135}+\cdots-722664720y+18156121)$
c_3	$(y^{40}+12y^{39}+\cdots+30y+1)(y^{136}+5y^{135}+\cdots-3718y+1)$
c_4, c_8	$(y^{40}+37y^{39}+\cdots+28y+1)$ $\cdot(y^{136}+122y^{135}+\cdots-20806491988y+897421849)$
c_5	$(y^{40}+10y^{39}+\cdots+45716y+1369)$ $\cdot(y^{136}+79y^{135}+\cdots+1981830159489008108y+19233411897668929)$
c_7, c_{11}, c_{12}	$(y^{40}+43y^{39}+\cdots+24y+1)(y^{136}+144y^{135}+\cdots+122872y+5041)$
c_9	$(y^{40}+17y^{39}+\cdots+3y+1)$ $\cdot(y^{136}+38y^{135}+\cdots+7897021639y+482724841)$
c_{10}	$(y^{40}+13y^{39}+\cdots-y+1)$ $\cdot(y^{136}-30y^{135}+\cdots-461058800492953y+16513844620729)$