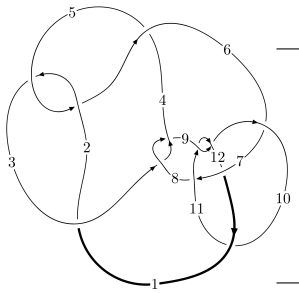
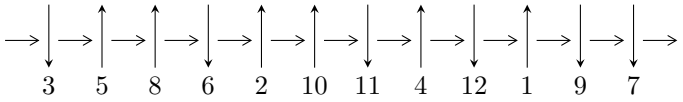
$12a_{0126}$ $(K12a_{0126})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.19568 \times 10^{514} u^{123} + 1.78570 \times 10^{514} u^{122} + \cdots + 1.37373 \times 10^{514} b + 9.44655 \times 10^{513},$$
$$- 8.50500 \times 10^{513} u^{123} + 2.28055 \times 10^{514} u^{122} + \cdots + 6.86865 \times 10^{513} a + 3.75076 \times 10^{514},$$
$$u^{124} - 3u^{123} + \cdots - 17u + 1 \rangle$$
$$I_2^u = \langle -u^4 b + u^3 b + 2u^4 + u^2 b - 4u^3 + b^2 - b + u + 2,\ a,\ u^5 - u^4 - 2u^3 + u^2 + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 134 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. $\boldsymbol{I_1^u = \langle -1.20 \times 10^{514} u^{123} + 1.79 \times 10^{514} u^{122} + \cdots + 1.37 \times 10^{514} b + 9.45 \times 10^{513},\ -8.51 \times 10^{513} u^{123} + 2.28 \times 10^{514} u^{122} + \cdots + 6.87 \times 10^{513} a + 3.75 \times 10^{514},\ u^{124} - 3u^{123} + \cdots - 17u + 1 \rangle}$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1.23823u^{123} - 3.32023u^{122} + \cdots + 92.0435u - 5.46069 \\ 0.870390u^{123} - 1.29989u^{122} + \cdots + 18.1293u - 0.687657 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.636769u^{123} - 3.20862u^{122} + \cdots + 84.3954u - 2.94586 \\ -1.14946u^{123} + 2.37316u^{122} + \cdots - 41.7539u + 2.55020 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 2.25351u^{123} - 8.02311u^{122} + \cdots + 332.546u - 26.9028 \\ -0.106456u^{123} + 1.24630u^{122} + \cdots - 6.66420u + 1.61535 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.512693u^{123} - 0.835457u^{122} + \cdots + 42.6415u - 0.395659 \\ -1.14946u^{123} + 2.37316u^{122} + \cdots - 41.7539u + 2.55020 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.363633u^{123} + 0.445779u^{122} + \cdots + 7.87842u - 3.65412 \\ 0.170523u^{123} - 0.430689u^{122} + \cdots - 0.767532u + 0.281487 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.626018u^{123} - 2.92628u^{122} + \cdots + 64.5489u - 1.65616 \\ -1.38877u^{123} + 2.78861u^{122} + \cdots - 42.2698u + 2.48540 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2.64583u^{123} - 8.44868u^{122} + \cdots + 327.721u - 25.5158 \\ 0.318080u^{123} + 0.453649u^{122} + \cdots + 6.76485u + 0.672544 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.13479u^{123} - 5.07219u^{122} + \cdots + 147.722u - 2.40535 \\ -0.709729u^{123} + 1.24243u^{122} + \cdots - 53.4260u + 3.18946 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6.43594u^{123} - 17.2046u^{122} + \cdots - 79.2712u + 10.6191$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{124} + 42u^{123} + \cdots + 2u + 1$
c_2, c_5	$u^{124} + 6u^{123} + \cdots + 2u + 1$
c_3, c_8	$u^{124} - u^{123} + \cdots + 5120u + 1024$
c_6	$u^{124} - 3u^{123} + \cdots + 1975u + 1031$
c_7	$u^{124} + 3u^{123} + \cdots - 376993u - 48793$
c_9, c_{11}	$u^{124} - 3u^{123} + \cdots - 17u + 1$
c_{10}	$u^{124} + 21u^{123} + \cdots + 3u + 1$
c_{12}	$u^{124} - 9u^{123} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{124} + 86y^{123} + \cdots - 1250y + 1$
c_2, c_5	$y^{124} + 42y^{123} + \cdots + 2y + 1$
c_3, c_8	$y^{124} - 55y^{123} + \cdots - 26214400y + 1048576$
c_6	$y^{124} + 131y^{123} + \cdots + 138554707y + 1062961$
c_7	$y^{124} + 83y^{123} + \cdots - 318551403169y + 2380756849$
c_9, c_{11}	$y^{124} - 85y^{123} + \cdots - 17y + 1$
c_{10}	$y^{124} + 3y^{123} + \cdots - 17y + 1$
c_{12}	$y^{124} - 21y^{123} + \cdots - 9y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.993111+0.053773I$ $a=\ \ 0.304536-0.731943I$ $b=-3.32424+1.95187I$	$-1.07695+2.69734I$	0
$u=-0.993111-0.053773I$ $a=\ \ 0.304536+0.731943I$ $b=-3.32424-1.95187I$	$-1.07695-2.69734I$	0
$u=\ \ 0.102129+0.978954I$ $a=\ \ 0.989365+0.390154I$ $b=-0.047901-0.761141I$	$2.42925+1.41500I$	0
$u=\ \ 0.102129-0.978954I$ $a=\ \ 0.989365-0.390154I$ $b=-0.047901+0.761141I$	$2.42925-1.41500I$	0
$u=\ \ 0.960892+0.127416I$ $a=-1.02339-1.08127I$ $b=\ \ 0.001099+0.605351I$	$-0.61080-4.13411I$	0
$u=\ \ 0.960892-0.127416I$ $a=-1.02339+1.08127I$ $b=\ \ 0.001099-0.605351I$	$-0.61080+4.13411I$	0
$u=\ \ 1.023570+0.155026I$ $a=-1.305260+0.028917I$ $b=-1.114000-0.105881I$	$-2.35592-4.60181I$	0
$u=\ \ 1.023570-0.155026I$ $a=-1.305260-0.028917I$ $b=-1.114000+0.105881I$	$-2.35592+4.60181I$	0
$u=\ \ 0.103026+1.034420I$ $a=-0.420200+0.976552I$ $b=\ \ 0.04073-1.77407I$	$2.86743+4.32090I$	0
$u=\ \ 0.103026-1.034420I$ $a=-0.420200-0.976552I$ $b=\ \ 0.04073+1.77407I$	$2.86743-4.32090I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.565867 + 0.885433I$ $a = 0.551247 - 1.154640I$ $b = -0.07495 + 1.59124I$	$8.29858 - 2.50158I$	0
$u = 0.565867 - 0.885433I$ $a = 0.551247 + 1.154640I$ $b = -0.07495 - 1.59124I$	$8.29858 + 2.50158I$	0
$u = -0.945786 + 0.068110I$ $a = -0.833155 - 0.190342I$ $b = -1.05192 + 3.40683I$	$-0.377994 + 0.348299I$	0
$u = -0.945786 - 0.068110I$ $a = -0.833155 + 0.190342I$ $b = -1.05192 - 3.40683I$	$-0.377994 - 0.348299I$	0
$u = -0.272313 + 1.015970I$ $a = -0.756103 - 0.410555I$ $b = -0.170492 + 0.784563I$	$-2.52436 + 2.17800I$	0
$u = -0.272313 - 1.015970I$ $a = -0.756103 + 0.410555I$ $b = -0.170492 - 0.784563I$	$-2.52436 - 2.17800I$	0
$u = -1.069430 + 0.043655I$ $a = 0.723563 + 0.551297I$ $b = -1.14955 - 3.56938I$	$-3.73679 + 2.23882I$	0
$u = -1.069430 - 0.043655I$ $a = 0.723563 - 0.551297I$ $b = -1.14955 + 3.56938I$	$-3.73679 - 2.23882I$	0
$u = 0.048860 + 1.071540I$ $a = -0.942153 - 0.429798I$ $b = 0.022218 + 0.800063I$	$1.80176 + 6.87033I$	0
$u = 0.048860 - 1.071540I$ $a = -0.942153 + 0.429798I$ $b = 0.022218 - 0.800063I$	$1.80176 - 6.87033I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500691 + 0.951826I$ $a = -0.529260 + 1.127890I$ $b = 0.08208 - 1.62211I$	$8.48525 + 3.48002I$	0
$u = 0.500691 - 0.951826I$ $a = -0.529260 - 1.127890I$ $b = 0.08208 + 1.62211I$	$8.48525 - 3.48002I$	0
$u = -0.923100 + 0.020045I$ $a = -0.057279 + 0.769698I$ $b = 2.93503 - 0.54583I$	$-0.80831 - 2.19531I$	0
$u = -0.923100 - 0.020045I$ $a = -0.057279 - 0.769698I$ $b = 2.93503 + 0.54583I$	$-0.80831 + 2.19531I$	0
$u = 0.938192 + 0.536727I$ $a = 1.156670 - 0.778648I$ $b = 0.715665 + 1.058740I$	$7.06445 - 2.67846I$	0
$u = 0.938192 - 0.536727I$ $a = 1.156670 + 0.778648I$ $b = 0.715665 - 1.058740I$	$7.06445 + 2.67846I$	0
$u = -1.080170 + 0.152845I$ $a = 0.401983 + 0.218301I$ $b = 4.28532 - 1.02349I$	$-2.27737 + 2.37996I$	0
$u = -1.080170 - 0.152845I$ $a = 0.401983 - 0.218301I$ $b = 4.28532 + 1.02349I$	$-2.27737 - 2.37996I$	0
$u = -1.087680 + 0.156368I$ $a = -0.959787 - 0.541892I$ $b = 0.50589 + 2.83589I$	$2.30512 + 1.82489I$	0
$u = -1.087680 - 0.156368I$ $a = -0.959787 + 0.541892I$ $b = 0.50589 - 2.83589I$	$2.30512 - 1.82489I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.893094 + 0.091057I$ $a = -0.08288 - 1.62886I$ $b = 0.043133 + 0.471122I$	$0.47580 - 3.10935I$	0
$u = 0.893094 - 0.091057I$ $a = -0.08288 + 1.62886I$ $b = 0.043133 - 0.471122I$	$0.47580 + 3.10935I$	0
$u = 1.098910 + 0.149918I$ $a = -0.962113 + 0.829318I$ $b = -0.681615 - 1.092050I$	$-4.64464 - 4.28743I$	0
$u = 1.098910 - 0.149918I$ $a = -0.962113 - 0.829318I$ $b = -0.681615 + 1.092050I$	$-4.64464 + 4.28743I$	0
$u = -1.120530 + 0.139444I$ $a = 0.937700 + 0.597521I$ $b = -0.68811 - 2.80862I$	$1.44662 + 7.51048I$	0
$u = -1.120530 - 0.139444I$ $a = 0.937700 - 0.597521I$ $b = -0.68811 + 2.80862I$	$1.44662 - 7.51048I$	0
$u = -0.046282 + 1.136960I$ $a = 0.455372 - 0.888816I$ $b = 0.07800 + 1.76206I$	$-1.39443 + 6.91886I$	0
$u = -0.046282 - 1.136960I$ $a = 0.455372 + 0.888816I$ $b = 0.07800 - 1.76206I$	$-1.39443 - 6.91886I$	0
$u = 0.007623 + 0.853337I$ $a = 0.275150 - 0.956648I$ $b = -0.13714 + 1.95173I$	$0.462211 + 0.187148I$	0
$u = 0.007623 - 0.853337I$ $a = 0.275150 + 0.956648I$ $b = -0.13714 - 1.95173I$	$0.462211 - 0.187148I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.110490 + 0.325853I$ $a = 0.803970 - 0.959931I$ $b = 0.46369 + 1.37691I$	$2.31904 - 5.54243I$	0
$u = 1.110490 - 0.325853I$ $a = 0.803970 + 0.959931I$ $b = 0.46369 - 1.37691I$	$2.31904 + 5.54243I$	0
$u = 1.010790 + 0.568163I$ $a = -1.041410 + 0.777099I$ $b = -0.79240 - 1.20253I$	$6.82559 - 8.92441I$	0
$u = 1.010790 - 0.568163I$ $a = -1.041410 - 0.777099I$ $b = -0.79240 + 1.20253I$	$6.82559 + 8.92441I$	0
$u = 0.837469$ $a = 1.74493$ $b = 0.651596$	1.32843	0
$u = 0.834619 + 0.068459I$ $a = 1.11868 - 1.15771I$ $b = 0.122964 + 0.871724I$	$1.05796 - 1.60667I$	0
$u = 0.834619 - 0.068459I$ $a = 1.11868 + 1.15771I$ $b = 0.122964 - 0.871724I$	$1.05796 + 1.60667I$	0
$u = -0.747301 + 0.300818I$ $a = -1.43570 - 0.17399I$ $b = -0.28753 + 1.78837I$	$3.08312 - 0.32521I$	0
$u = -0.747301 - 0.300818I$ $a = -1.43570 + 0.17399I$ $b = -0.28753 - 1.78837I$	$3.08312 + 0.32521I$	0
$u = 1.171950 + 0.319156I$ $a = -0.769449 + 0.921693I$ $b = -0.53141 - 1.44621I$	$0.91583 - 11.46570I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.171950 - 0.319156I$ $a = -0.769449 - 0.921693I$ $b = -0.53141 + 1.44621I$	$0.91583 + 11.46570I$	0
$u = -0.676753 + 0.340805I$ $a = 1.57458 + 0.16811I$ $b = 0.22913 - 1.62356I$	$2.44745 - 5.97053I$	0
$u = -0.676753 - 0.340805I$ $a = 1.57458 - 0.16811I$ $b = 0.22913 + 1.62356I$	$2.44745 + 5.97053I$	0
$u = -1.155550 + 0.484145I$ $a = 0.476705 - 0.398292I$ $b = 0.870599 + 0.369387I$	$-1.89822 - 0.09517I$	0
$u = -1.155550 - 0.484145I$ $a = 0.476705 + 0.398292I$ $b = 0.870599 - 0.369387I$	$-1.89822 + 0.09517I$	0
$u = 0.067607 + 1.268540I$ $a = -0.517657 + 0.930992I$ $b = -0.02936 - 1.68368I$	$5.38445 + 7.13126I$	0
$u = 0.067607 - 1.268540I$ $a = -0.517657 - 0.930992I$ $b = -0.02936 + 1.68368I$	$5.38445 - 7.13126I$	0
$u = -1.271640 + 0.128056I$ $a = 0.298289 - 0.180579I$ $b = 0.544558 - 0.103827I$	$-2.56232 + 0.10384I$	0
$u = -1.271640 - 0.128056I$ $a = 0.298289 + 0.180579I$ $b = 0.544558 + 0.103827I$	$-2.56232 - 0.10384I$	0
$u = 1.275730 + 0.099499I$ $a = -0.261216 + 0.699980I$ $b = 0.022657 - 0.303271I$	$-7.15417 - 1.85942I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.275730 - 0.099499I$ $a = -0.261216 - 0.699980I$ $b = 0.022657 + 0.303271I$	$-7.15417 + 1.85942I$	0
$u = 1.253080 + 0.305726I$ $a = -0.258569 - 0.695811I$ $b = 0.144347 + 0.268476I$	$-4.19980 - 4.72472I$	0
$u = 1.253080 - 0.305726I$ $a = -0.258569 + 0.695811I$ $b = 0.144347 - 0.268476I$	$-4.19980 + 4.72472I$	0
$u = -0.747473 + 1.053770I$ $a = 0.598405 + 0.554465I$ $b = 0.506477 - 1.049490I$	$2.05301 + 3.14695I$	0
$u = -0.747473 - 1.053770I$ $a = 0.598405 - 0.554465I$ $b = 0.506477 + 1.049490I$	$2.05301 - 3.14695I$	0
$u = -0.645630 + 1.123760I$ $a = -0.641009 - 0.548285I$ $b = -0.393996 + 1.017120I$	$1.53090 - 2.31840I$	0
$u = -0.645630 - 1.123760I$ $a = -0.641009 + 0.548285I$ $b = -0.393996 - 1.017120I$	$1.53090 + 2.31840I$	0
$u = -1.163600 + 0.574178I$ $a = 0.410632 + 0.513633I$ $b = 1.41359 - 1.56128I$	$-1.69027 + 2.64124I$	0
$u = -1.163600 - 0.574178I$ $a = 0.410632 - 0.513633I$ $b = 1.41359 + 1.56128I$	$-1.69027 - 2.64124I$	0
$u = 0.025146 + 1.303070I$ $a = 0.528325 - 0.913491I$ $b = 0.04675 + 1.67028I$	$4.30507 + 12.99410I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.025146 - 1.303070I$ $a = 0.528325 + 0.913491I$ $b = 0.04675 - 1.67028I$	$4.30507 - 12.99410I$	0
$u = 1.289380 + 0.465433I$ $a = 0.649741 - 0.572712I$ $b = 1.46690 + 1.79403I$	$-3.47353 - 5.02118I$	0
$u = 1.289380 - 0.465433I$ $a = 0.649741 + 0.572712I$ $b = 1.46690 - 1.79403I$	$-3.47353 + 5.02118I$	0
$u = 1.284990 + 0.513116I$ $a = -0.644786 - 0.665377I$ $b = 0.296157 + 0.279172I$	$-1.27305 - 6.74434I$	0
$u = 1.284990 - 0.513116I$ $a = -0.644786 + 0.665377I$ $b = 0.296157 - 0.279172I$	$-1.27305 + 6.74434I$	0
$u = -1.343930 + 0.365232I$ $a = -0.278349 - 0.476771I$ $b = -1.63765 + 2.49147I$	$-3.12646 - 1.54964I$	0
$u = -1.343930 - 0.365232I$ $a = -0.278349 + 0.476771I$ $b = -1.63765 - 2.49147I$	$-3.12646 + 1.54964I$	0
$u = 1.297560 + 0.532107I$ $a = -0.650697 + 0.674013I$ $b = -1.20656 - 1.84644I$	$-0.88277 - 9.86930I$	0
$u = 1.297560 - 0.532107I$ $a = -0.650697 - 0.674013I$ $b = -1.20656 + 1.84644I$	$-0.88277 + 9.86930I$	0
$u = -1.278490 + 0.598838I$ $a = -0.546587 + 0.376035I$ $b = -0.671701 - 0.458776I$	$-2.69231 + 4.85276I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.278490-0.598838I$ $a=-0.546587-0.376035I$ $b=-0.671701+0.458776I$	$-2.69231-4.85276I$	0
$u=1.32523+0.53448I$ $a=0.683241+0.613107I$ $b=-0.319094-0.260395I$	$-2.19410-12.52910I$	0
$u=1.32523-0.53448I$ $a=0.683241-0.613107I$ $b=-0.319094+0.260395I$	$-2.19410+12.52910I$	0
$u=-0.139563+0.548703I$ $a=0.772155-0.274422I$ $b=-0.118828-0.464969I$	$-0.05266+1.50098I$	$0.-4.29764I$
$u=-0.139563-0.548703I$ $a=0.772155+0.274422I$ $b=-0.118828+0.464969I$	$-0.05266-1.50098I$	$0.+4.29764I$
$u=1.38493+0.40377I$ $a=0.512376+0.464165I$ $b=-0.251393-0.180457I$	$-7.69575-7.07073I$	0
$u=1.38493-0.40377I$ $a=0.512376-0.464165I$ $b=-0.251393+0.180457I$	$-7.69575+7.07073I$	0
$u=1.37071+0.53049I$ $a=0.551202-0.692060I$ $b=1.17591+2.09806I$	$-5.82157-12.73140I$	0
$u=1.37071-0.53049I$ $a=0.551202+0.692060I$ $b=1.17591-2.09806I$	$-5.82157+12.73140I$	0
$u=1.47962+0.18220I$ $a=-0.393884+0.127316I$ $b=0.163230-0.097710I$	$-5.48389-6.66654I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.47962 - 0.18220I$ $a = -0.393884 - 0.127316I$ $b = 0.163230 + 0.097710I$	$-5.48389 + 6.66654I$	0
$u = 1.37869 + 0.60252I$ $a = -0.564872 + 0.782469I$ $b = -0.96335 - 2.05274I$	$1.23211 - 13.59160I$	0
$u = 1.37869 - 0.60252I$ $a = -0.564872 - 0.782469I$ $b = -0.96335 + 2.05274I$	$1.23211 + 13.59160I$	0
$u = 0.048491 + 0.492832I$ $a = -1.43730 + 2.36932I$ $b = 0.512932 - 0.721088I$	$4.15621 + 8.24899I$	$3.35176 - 3.91144I$
$u = 0.048491 - 0.492832I$ $a = -1.43730 - 2.36932I$ $b = 0.512932 + 0.721088I$	$4.15621 - 8.24899I$	$3.35176 + 3.91144I$
$u = 1.49041 + 0.25080I$ $a = 0.427983 + 0.059763I$ $b = -0.199490 + 0.011130I$	$-5.55367 - 1.98303I$	0
$u = 1.49041 - 0.25080I$ $a = 0.427983 - 0.059763I$ $b = -0.199490 - 0.011130I$	$-5.55367 + 1.98303I$	0
$u = 0.121490 + 0.460336I$ $a = 1.69615 - 2.29216I$ $b = -0.422681 + 0.669438I$	$5.08524 + 2.34478I$	$5.19497 + 0.97374I$
$u = 0.121490 - 0.460336I$ $a = 1.69615 + 2.29216I$ $b = -0.422681 - 0.669438I$	$5.08524 - 2.34478I$	$5.19497 - 0.97374I$
$u = 1.40485 + 0.60107I$ $a = 0.535007 - 0.788858I$ $b = 0.94234 + 2.11613I$	$-0.0610 - 19.5513I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.40485 - 0.60107I$ $a = 0.535007 + 0.788858I$ $b = 0.94234 - 2.11613I$	$-0.0610 + 19.5513I$	0
$u = -1.41679 + 0.63944I$ $a = -0.344477 - 0.596096I$ $b = -1.00557 + 1.98778I$	$-5.81970 + 4.41330I$	0
$u = -1.41679 - 0.63944I$ $a = -0.344477 + 0.596096I$ $b = -1.00557 - 1.98778I$	$-5.81970 - 4.41330I$	0
$u = -1.51823 + 0.46024I$ $a = -0.579018 + 0.256271I$ $b = -0.476720 - 0.279194I$	$-6.14991 - 0.54757I$	0
$u = -1.51823 - 0.46024I$ $a = -0.579018 - 0.256271I$ $b = -0.476720 + 0.279194I$	$-6.14991 + 0.54757I$	0
$u = -1.36723 + 0.83790I$ $a = 0.408896 + 0.635332I$ $b = 0.80910 - 1.74193I$	$0.26862 + 4.52922I$	0
$u = -1.36723 - 0.83790I$ $a = 0.408896 - 0.635332I$ $b = 0.80910 + 1.74193I$	$0.26862 - 4.52922I$	0
$u = -0.357513 + 0.109882I$ $a = 2.14428 - 0.92121I$ $b = 0.411541 - 0.982590I$	$-2.39931 - 1.48408I$	$-5.07693 + 4.49405I$
$u = -0.357513 - 0.109882I$ $a = 2.14428 + 0.92121I$ $b = 0.411541 + 0.982590I$	$-2.39931 + 1.48408I$	$-5.07693 - 4.49405I$
$u = -1.43629 + 0.83574I$ $a = -0.391723 - 0.651726I$ $b = -0.76511 + 1.81712I$	$-0.73749 + 10.18020I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.43629-0.83574I$ $a=-0.391723+0.651726I$ $b=-0.76511-1.81712I$	$-0.73749-10.18020I$	0
$u=\ 0.322544+0.075287I$ $a=\ 2.13709+1.54640I$ $b=-0.292459-0.797611I$	$1.20860+1.42458I$	$6.98331-3.17622I$
$u=\ 0.322544-0.075287I$ $a=\ 2.13709-1.54640I$ $b=-0.292459+0.797611I$	$1.20860-1.42458I$	$6.98331+3.17622I$
$u=-1.70080+0.27789I$ $a=\ 0.617357-0.138645I$ $b=\ 0.354154+0.150732I$	$-0.730807-0.398436I$	0
$u=-1.70080-0.27789I$ $a=\ 0.617357+0.138645I$ $b=\ 0.354154-0.150732I$	$-0.730807+0.398436I$	0
$u=-1.72382+0.35792I$ $a=-0.640029+0.169683I$ $b=-0.338904-0.198761I$	$-1.57172-5.89073I$	0
$u=-1.72382-0.35792I$ $a=-0.640029-0.169683I$ $b=-0.338904+0.198761I$	$-1.57172+5.89073I$	0
$u=-0.055868+0.219662I$ $a=-1.02732+4.31608I$ $b=\ 0.727666-0.348325I$	$-1.73197+2.72965I$	$-1.78279-3.15925I$
$u=-0.055868-0.219662I$ $a=-1.02732-4.31608I$ $b=\ 0.727666+0.348325I$	$-1.73197-2.72965I$	$-1.78279+3.15925I$
$u=-0.024246+0.217367I$ $a=\ 1.88720+2.29140I$ $b=\ 1.036280-0.835866I$	$0.00137+2.90749I$	$3.98420-0.02765I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.024246-0.217367I$ $a=\ \ 1.88720-2.29140I$ $b=\ \ 1.036280+0.835866I$	$0.00137-2.90749I$	$3.98420+0.02765I$
$u=\ \ 0.181935$ $a=\ \ 5.68101$ $b=-0.345979$	1.67471	6.64690
$u=\ \ 0.1082860+0.0882436I$ $a=\ \ 3.45481+5.96508I$ $b=\ \ 0.021195-0.708290I$	$0.94696+2.64839I$	$1.91996-2.43957I$
$u=\ \ 0.1082860-0.0882436I$ $a=\ \ 3.45481-5.96508I$ $b=\ \ 0.021195+0.708290I$	$0.94696-2.64839I$	$1.91996+2.43957I$

II. $I_2^u = \langle -u^4b + 2u^4 + \cdots - b + 2,\ a,\ u^5 - u^4 - 2u^3 + u^2 + u + 1\rangle$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^4 + u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^4 - u^2 - 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^4b - u^3b + 2u^2b + 3bu + b \\ bu + 2b \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^4 + u^2 + 1 \\ -2u^4 + u^3 + 3u^2 + b - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^3b + u^4 - u^2b + u^3 - 6bu + 2u^2 + 2b - 7u - 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2+y+1)^5$
c_3, c_8	y^{10}
c_6, c_{10}	$(y^5+3y^4+4y^3+y^2-y-1)^2$
c_7, c_9, c_{11}	$(y^5-5y^4+8y^3-3y^2-y-1)^2$
c_{12}	$(y^5-y^4+8y^3-3y^2+3y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.21774$ $a=0$ $b=1.76091+3.04998I$	$-2.40108-2.02988I$	$2.76075-3.67600I$
$u=-1.21774$ $a=0$ $b=1.76091-3.04998I$	$-2.40108+2.02988I$	$2.76075+3.67600I$
$u=-0.309916+0.549911I$ $a=0$ $b=0.864485-0.518603I$	$-0.32910+3.56046I$	$-2.01870-9.75023I$
$u=-0.309916+0.549911I$ $a=0$ $b=0.016881+1.007970I$	$-0.329100-0.499304I$	$-1.95395+0.91636I$
$u=-0.309916-0.549911I$ $a=0$ $b=0.864485+0.518603I$	$-0.32910-3.56046I$	$-2.01870+9.75023I$
$u=-0.309916-0.549911I$ $a=0$ $b=0.016881-1.007970I$	$-0.329100+0.499304I$	$-1.95395-0.91636I$
$u=1.41878+0.21917I$ $a=0$ $b=0.369732+0.377747I$	$-5.87256-2.37095I$	$-6.85700+6.98324I$
$u=1.41878+0.21917I$ $a=0$ $b=-0.512005+0.131324I$	$-5.87256-6.43072I$	$-9.93110+1.72471I$
$u=1.41878-0.21917I$ $a=0$ $b=0.369732-0.377747I$	$-5.87256+2.37095I$	$-6.85700-6.98324I$
$u=1.41878-0.21917I$ $a=0$ $b=-0.512005-0.131324I$	$-5.87256+6.43072I$	$-9.93110-1.72471I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$((u^2-u+1)^5)(u^{124}+42u^{123}+\cdots+2u+1)$
c_2	$((u^2+u+1)^5)(u^{124}+6u^{123}+\cdots+2u+1)$
c_3, c_8	$u^{10}(u^{124}-u^{123}+\cdots+5120u+1024)$
c_5	$((u^2-u+1)^5)(u^{124}+6u^{123}+\cdots+2u+1)$
c_6	$((u^5-u^4+2u^3-u^2+u-1)^2)(u^{124}-3u^{123}+\cdots+1975u+1031)$
c_7	$((u^5+u^4-2u^3-u^2+u-1)^2)(u^{124}+3u^{123}+\cdots-376993u-48793)$
c_9	$((u^5+u^4-2u^3-u^2+u-1)^2)(u^{124}-3u^{123}+\cdots-17u+1)$
c_{10}	$((u^5-u^4+2u^3-u^2+u-1)^2)(u^{124}+21u^{123}+\cdots+3u+1)$
c_{11}	$((u^5-u^4-2u^3+u^2+u+1)^2)(u^{124}-3u^{123}+\cdots-17u+1)$
c_{12}	$((u^5+3u^4+4u^3+u^2-u-1)^2)(u^{124}-9u^{123}+\cdots-3u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^5)(y^{124}+86y^{123}+\cdots-1250y+1)$
c_2, c_5	$((y^2+y+1)^5)(y^{124}+42y^{123}+\cdots+2y+1)$
c_3, c_8	$y^{10}(y^{124}-55y^{123}+\cdots-2.62144\times10^7y+1048576)$
c_6	$(y^5+3y^4+4y^3+y^2-y-1)^2$ $\cdot(y^{124}+131y^{123}+\cdots+138554707y+1062961)$
c_7	$(y^5-5y^4+8y^3-3y^2-y-1)^2$ $\cdot(y^{124}+83y^{123}+\cdots-318551403169y+2380756849)$
c_9, c_{11}	$((y^5-5y^4+8y^3-3y^2-y-1)^2)(y^{124}-85y^{123}+\cdots-17y+1)$
c_{10}	$((y^5+3y^4+4y^3+y^2-y-1)^2)(y^{124}+3y^{123}+\cdots-17y+1)$
c_{12}	$((y^5-y^4+8y^3-3y^2+3y-1)^2)(y^{124}-21y^{123}+\cdots-9y+1)$