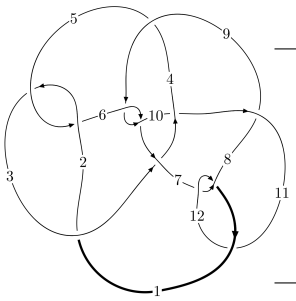
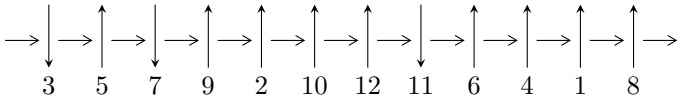
$12a_{0070}$ $(K12a_{0070})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4.73994 \times 10^{281} u^{121} + 1.62267 \times 10^{282} u^{120} + \cdots + 4.12994 \times 10^{281} b + 5.77778 \times 10^{282},$$
$$- 2.42748 \times 10^{282} u^{121} + 8.21343 \times 10^{282} u^{120} + \cdots + 2.06497 \times 10^{282} a + 9.97461 \times 10^{282},$$
$$u^{122} - 4u^{121} + \cdots + 199u + 25 \rangle$$
$$I_2^u = \langle -10a^2 + 13au + 5b - 5a + u + 1,\ 5a^3 - 4a^2 u - au - a - 1,\ u^2 + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 128 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. $\boldsymbol{I_1^u = \langle -4.74 \times 10^{281} u^{121} + 1.62 \times 10^{282} u^{120} + \cdots + 4.13 \times 10^{281} b + 5.78 \times 10^{282},\ -2.43 \times 10^{282} u^{121} + 8.21 \times 10^{282} u^{120} + \cdots + 2.06 \times 10^{282} a + 9.97 \times 10^{282},\ u^{122} - 4u^{121} + \cdots + 199u + 25 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.17555u^{121} - 3.97750u^{120} + \cdots - 47.5754u - 4.83038 \\ 1.14770u^{121} - 3.92903u^{120} + \cdots - 111.438u - 13.9900 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.869037u^{121} - 3.13754u^{120} + \cdots - 34.3561u - 3.25714 \\ 0.841186u^{121} - 3.08907u^{120} + \cdots - 98.2189u - 12.4167 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.25220u^{121} - 4.99677u^{120} + \cdots - 279.917u - 36.4053 \\ 1.16763u^{121} - 2.48554u^{120} + \cdots + 149.063u + 13.0091 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 0.134051u^{121} + 0.485797u^{120} + \cdots + 72.7723u + 10.5439 \\ -1.71953u^{121} + 6.19096u^{120} + \cdots + 223.156u + 28.4621 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0930748u^{121} + 0.186740u^{120} + \cdots - 25.6459u - 1.79576 \\ 0.0179185u^{121} - 0.626037u^{120} + \cdots - 119.121u - 13.9132 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.823254u^{121} + 3.23286u^{120} + \cdots + 200.194u + 26.4359 \\ -0.969644u^{121} + 2.62640u^{120} + \cdots - 8.27264u + 1.68771 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.622433u^{121} + 2.11008u^{120} + \cdots + 58.1543u + 8.71432 \\ -0.615775u^{121} + 1.57164u^{120} + \cdots - 49.5573u - 4.66944 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.314772u^{121} + 1.38514u^{120} + \cdots + 51.9020u + 17.1153$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{122} + 44u^{121} + \cdots - 11251u + 625$
c_2, c_5	$u^{122} + 4u^{121} + \cdots - 199u + 25$
c_3	$25(25u^{122} - 110u^{121} + \cdots - 2.01822 \times 10^8 u + 2.90241 \times 10^7)$
c_4	$25(25u^{122} + 285u^{121} + \cdots + 1.39320 \times 10^8 u - 4.70438 \times 10^8)$
c_6, c_9	$u^{122} - 3u^{121} + \cdots + 6u - 1$
c_7, c_{12}	$u^{122} - 3u^{121} + \cdots + 2u - 1$
c_8	$u^{122} - 9u^{121} + \cdots + 464382u - 40851$
c_{10}	$u^{122} - 3u^{121} + \cdots - 64800u + 8000$
c_{11}	$u^{122} - 61u^{121} + \cdots - 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{122} + 72y^{121} + \cdots - 671351251y + 390625$
c_2, c_5	$y^{122} + 44y^{121} + \cdots - 11251y + 625$
c_3	$625(625y^{122} + 33050y^{121} + \cdots + 9.83882 \times 10^{15}y + 8.42397 \times 10^{14})$
c_4	$625(625y^{122} - 37825y^{121} + \cdots - 5.31980 \times 10^{18}y + 2.21312 \times 10^{17})$
c_6, c_9	$y^{122} - 77y^{121} + \cdots - 6y + 1$
c_7, c_{12}	$y^{122} - 61y^{121} + \cdots - 6y + 1$
c_8	$y^{122} + 55y^{121} + \cdots - 105170828166y + 1668804201$
c_{10}	$y^{122} - 35y^{121} + \cdots - 1976960000y + 64000000$
c_{11}	$y^{122} + 3y^{121} + \cdots - 26y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.326285 + 0.942418I$ $a = 0.692847 + 0.187568I$ $b = 1.78757 + 0.05136I$	$-3.66042 + 5.13633I$	0
$u = 0.326285 - 0.942418I$ $a = 0.692847 - 0.187568I$ $b = 1.78757 - 0.05136I$	$-3.66042 - 5.13633I$	0
$u = -0.572010 + 0.816257I$ $a = 0.507803 - 0.572524I$ $b = 0.260550 - 0.686004I$	$0.73647 - 2.28933I$	0
$u = -0.572010 - 0.816257I$ $a = 0.507803 + 0.572524I$ $b = 0.260550 + 0.686004I$	$0.73647 + 2.28933I$	0
$u = 0.553016 + 0.850381I$ $a = -0.437624 + 0.409552I$ $b = -1.53016 - 0.57476I$	$-2.78287 - 0.75215I$	0
$u = 0.553016 - 0.850381I$ $a = -0.437624 - 0.409552I$ $b = -1.53016 + 0.57476I$	$-2.78287 + 0.75215I$	0
$u = 0.218439 + 0.992336I$ $a = -0.799538 - 0.333829I$ $b = -1.69967 - 0.12677I$	$-4.61287 + 0.09185I$	0
$u = 0.218439 - 0.992336I$ $a = -0.799538 + 0.333829I$ $b = -1.69967 + 0.12677I$	$-4.61287 - 0.09185I$	0
$u = 0.795450 + 0.578520I$ $a = 0.373619 - 1.026800I$ $b = 0.839001 - 0.103657I$	$4.78667 - 7.85752I$	0
$u = 0.795450 - 0.578520I$ $a = 0.373619 + 1.026800I$ $b = 0.839001 + 0.103657I$	$4.78667 + 7.85752I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.529652+0.820417I$ $a=-1.76543+3.76659I$ $b=-2.39046+2.84255I$	$1.90583-1.93557I$	0
$u=-0.529652-0.820417I$ $a=-1.76543-3.76659I$ $b=-2.39046-2.84255I$	$1.90583+1.93557I$	0
$u=0.749029+0.701395I$ $a=0.469358-0.870420I$ $b=1.055920+0.011491I$	$6.29582+1.05570I$	0
$u=0.749029-0.701395I$ $a=0.469358+0.870420I$ $b=1.055920-0.011491I$	$6.29582-1.05570I$	0
$u=-0.510762+0.914144I$ $a=-3.17676-1.26449I$ $b=-3.73598-2.07584I$	$1.59606-2.27047I$	0
$u=-0.510762-0.914144I$ $a=-3.17676+1.26449I$ $b=-3.73598+2.07584I$	$1.59606+2.27047I$	0
$u=0.779251+0.539024I$ $a=0.58932-1.31309I$ $b=-0.381525-0.131833I$	$3.36722-6.19016I$	0
$u=0.779251-0.539024I$ $a=0.58932+1.31309I$ $b=-0.381525+0.131833I$	$3.36722+6.19016I$	0
$u=0.724387+0.597756I$ $a=-0.332312+0.938470I$ $b=-0.850470-0.028516I$	$1.82069-2.81316I$	0
$u=0.724387-0.597756I$ $a=-0.332312-0.938470I$ $b=-0.850470+0.028516I$	$1.82069+2.81316I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.242829+1.033120I$ $a=\ \ 0.789327+0.692107I$ $b=\ \ 1.194330+0.413124I$	$0.308045+0.406265I$	0
$u=-0.242829-1.033120I$ $a=\ \ 0.789327-0.692107I$ $b=\ \ 1.194330-0.413124I$	$0.308045-0.406265I$	0
$u=\ \ 0.559214+0.903189I$ $a=\ \ 0.571243-0.340975I$ $b=\ \ 1.71545+0.36241I$	$-2.96199+5.17216I$	0
$u=\ \ 0.559214-0.903189I$ $a=\ \ 0.571243+0.340975I$ $b=\ \ 1.71545-0.36241I$	$-2.96199-5.17216I$	0
$u=\ \ 0.026443+1.069990I$ $a=-0.909170-0.542272I$ $b=-1.56204-0.29348I$	$-3.43542-1.88104I$	0
$u=\ \ 0.026443-1.069990I$ $a=-0.909170+0.542272I$ $b=-1.56204+0.29348I$	$-3.43542+1.88104I$	0
$u=\ \ 0.681014+0.619625I$ $a=-0.438429+1.272400I$ $b=\ \ 0.446348-0.085207I$	$2.94385-1.10084I$	0
$u=\ \ 0.681014-0.619625I$ $a=-0.438429-1.272400I$ $b=\ \ 0.446348+0.085207I$	$2.94385+1.10084I$	0
$u=\ \ 0.078954+1.079210I$ $a=-0.314714-0.213547I$ $b=-0.711670-1.188950I$	$-1.82843-0.11722I$	0
$u=\ \ 0.078954-1.079210I$ $a=-0.314714+0.213547I$ $b=-0.711670+1.188950I$	$-1.82843+0.11722I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.713590 + 0.819160I$ $a = -0.549865 + 0.433932I$ $b = -1.82136 + 0.96114I$	$8.11043 - 1.78541I$	0
$u = 0.713590 - 0.819160I$ $a = -0.549865 - 0.433932I$ $b = -1.82136 - 0.96114I$	$8.11043 + 1.78541I$	0
$u = 0.691033 + 0.838832I$ $a = -0.458451 + 0.897802I$ $b = 0.058154 - 0.460882I$	$5.24954 + 1.80028I$	0
$u = 0.691033 - 0.838832I$ $a = -0.458451 - 0.897802I$ $b = 0.058154 + 0.460882I$	$5.24954 - 1.80028I$	0
$u = -0.912021$ $a = -1.22780$ $b = 0.0961263$	5.29705	0
$u = -0.425723 + 0.799219I$ $a = -1.38513 - 4.06579I$ $b = -0.84055 - 2.95736I$	$3.93682 + 1.93972I$	0
$u = -0.425723 - 0.799219I$ $a = -1.38513 + 4.06579I$ $b = -0.84055 + 2.95736I$	$3.93682 - 1.93972I$	0
$u = -0.433038 + 1.007040I$ $a = -0.496728 - 0.724378I$ $b = -0.773503 - 0.549607I$	$-0.87402 - 2.91759I$	0
$u = -0.433038 - 1.007040I$ $a = -0.496728 + 0.724378I$ $b = -0.773503 + 0.549607I$	$-0.87402 + 2.91759I$	0
$u = 0.689166 + 0.869505I$ $a = 0.662720 - 0.365295I$ $b = 1.90462 - 0.97010I$	$5.15598 + 3.50593I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.689166 - 0.869505I$ $a = 0.662720 + 0.365295I$ $b = 1.90462 + 0.97010I$	$5.15598 - 3.50593I$	0
$u = 0.957418 + 0.574316I$ $a = 0.71742 - 1.26333I$ $b = -0.137405 - 0.288808I$	$6.71552 - 7.89088I$	0
$u = 0.957418 - 0.574316I$ $a = 0.71742 + 1.26333I$ $b = -0.137405 + 0.288808I$	$6.71552 + 7.89088I$	0
$u = -0.501781 + 0.723894I$ $a = -2.66535 + 0.96560I$ $b = -2.19693 + 1.68940I$	$4.16095 - 5.28585I$	0
$u = -0.501781 - 0.723894I$ $a = -2.66535 - 0.96560I$ $b = -2.19693 - 1.68940I$	$4.16095 + 5.28585I$	0
$u = 0.777934 + 0.809289I$ $a = 0.577136 - 0.989100I$ $b = -0.008776 + 0.238221I$	$10.29660 - 1.59255I$	0
$u = 0.777934 - 0.809289I$ $a = 0.577136 + 0.989100I$ $b = -0.008776 - 0.238221I$	$10.29660 + 1.59255I$	0
$u = 0.699861 + 0.892444I$ $a = 0.514457 - 0.817381I$ $b = 0.086762 + 0.498270I$	$7.88589 + 7.19296I$	0
$u = 0.699861 - 0.892444I$ $a = 0.514457 + 0.817381I$ $b = 0.086762 - 0.498270I$	$7.88589 - 7.19296I$	0
$u = -0.020184 + 1.138770I$ $a = 0.965921 + 0.597820I$ $b = 1.55915 + 0.39430I$	$-1.16117 - 6.62977I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.020184-1.138770I$ $a=\ \ 0.965921-0.597820I$ $b=\ \ 1.55915-0.39430I$	$-1.16117+6.62977I$	0
$u=\ \ 0.953494+0.635428I$ $a=-0.72314+1.21847I$ $b=\ \ 0.067037+0.220763I$	$11.22670-4.20625I$	0
$u=\ \ 0.953494-0.635428I$ $a=-0.72314-1.21847I$ $b=\ \ 0.067037-0.220763I$	$11.22670+4.20625I$	0
$u=-0.571594+0.994383I$ $a=-0.149444-0.907016I$ $b=-0.433310-0.836597I$	$0.08551-3.09844I$	0
$u=-0.571594-0.994383I$ $a=-0.149444+0.907016I$ $b=-0.433310+0.836597I$	$0.08551+3.09844I$	0
$u=\ \ 0.995946+0.569704I$ $a=-0.74153+1.27175I$ $b=\ \ 0.104011+0.338940I$	$9.5742-12.9639I$	0
$u=\ \ 0.995946-0.569704I$ $a=-0.74153-1.27175I$ $b=\ \ 0.104011-0.338940I$	$9.5742+12.9639I$	0
$u=-0.653324+0.960248I$ $a=-0.084653+1.054180I$ $b=\ \ 0.227226+1.025350I$	$3.22768+0.36125I$	0
$u=-0.653324-0.960248I$ $a=-0.084653-1.054180I$ $b=\ \ 0.227226-1.025350I$	$3.22768-0.36125I$	0
$u=\ \ 0.743559+0.916319I$ $a=-0.780882+0.492500I$ $b=-1.92101+1.06915I$	$9.96690+7.32303I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.743559 - 0.916319I$ $a = -0.780882 - 0.492500I$ $b = -1.92101 - 1.06915I$	$9.96690 - 7.32303I$	0
$u = -0.011779 + 1.182160I$ $a = 0.452481 + 0.351888I$ $b = 0.83058 + 1.24696I$	$-2.50939 - 4.58346I$	0
$u = -0.011779 - 1.182160I$ $a = 0.452481 - 0.351888I$ $b = 0.83058 - 1.24696I$	$-2.50939 + 4.58346I$	0
$u = -0.875105 + 0.803170I$ $a = 0.149464 - 0.598556I$ $b = 0.928365 + 0.020905I$	$4.50074 - 3.19439I$	0
$u = -0.875105 - 0.803170I$ $a = 0.149464 + 0.598556I$ $b = 0.928365 - 0.020905I$	$4.50074 + 3.19439I$	0
$u = 0.693464 + 0.978885I$ $a = -0.834108 + 0.544061I$ $b = -1.62142 - 0.02779I$	$5.46282 + 4.43629I$	0
$u = 0.693464 - 0.978885I$ $a = -0.834108 - 0.544061I$ $b = -1.62142 + 0.02779I$	$5.46282 - 4.43629I$	0
$u = -0.457721 + 0.655697I$ $a = 1.62774 - 0.29982I$ $b = 1.23330 - 0.88799I$	$1.17158 - 1.37282I$	0
$u = -0.457721 - 0.655697I$ $a = 1.62774 + 0.29982I$ $b = 1.23330 + 0.88799I$	$1.17158 + 1.37282I$	0
$u = 0.645820 + 1.012120I$ $a = 1.041090 - 0.252556I$ $b = 2.08578 - 1.01278I$	$1.77974 + 6.27141I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.645820 - 1.012120I$ $a = 1.041090 + 0.252556I$ $b = 2.08578 + 1.01278I$	$1.77974 - 6.27141I$	0
$u = -0.593737 + 0.532852I$ $a = -1.37729 + 0.86342I$ $b = -0.756077 + 1.075050I$	$4.19754 - 5.34475I$	0
$u = -0.593737 - 0.532852I$ $a = -1.37729 - 0.86342I$ $b = -0.756077 - 1.075050I$	$4.19754 + 5.34475I$	0
$u = -0.503368 + 0.610247I$ $a = -2.27049 - 0.13633I$ $b = -1.85631 + 0.60038I$	$4.19470 + 2.54550I$	0
$u = -0.503368 - 0.610247I$ $a = -2.27049 + 0.13633I$ $b = -1.85631 - 0.60038I$	$4.19470 - 2.54550I$	0
$u = -0.614406 + 1.041270I$ $a = 0.174033 + 1.088120I$ $b = 0.489999 + 1.019260I$	$2.74814 - 7.31758I$	0
$u = -0.614406 - 1.041270I$ $a = 0.174033 - 1.088120I$ $b = 0.489999 - 1.019260I$	$2.74814 + 7.31758I$	0
$u = 0.656841 + 1.024640I$ $a = 0.891513 - 0.450024I$ $b = 1.70916 + 0.04238I$	$0.56417 + 8.12101I$	0
$u = 0.656841 - 1.024640I$ $a = 0.891513 + 0.450024I$ $b = 1.70916 - 0.04238I$	$0.56417 - 8.12101I$	0
$u = -1.116760 + 0.485850I$ $a = -0.597238 - 0.318389I$ $b = 0.337151 + 0.046329I$	$5.65832 - 1.89007I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.116760-0.485850I$ $a=-0.597238+0.318389I$ $b=\ \ 0.337151-0.046329I$	$5.65832+1.89007I$	0
$u=\ \ 0.664030+1.057230I$ $a=-1.156050+0.319791I$ $b=-2.13165+1.05308I$	$1.85276+11.64830I$	0
$u=\ \ 0.664030-1.057230I$ $a=-1.156050-0.319791I$ $b=-2.13165-1.05308I$	$1.85276-11.64830I$	0
$u=\ \ 0.677240+1.051660I$ $a=-0.950846+0.470654I$ $b=-1.72762-0.00115I$	$3.37832+13.41190I$	0
$u=\ \ 0.677240-1.051660I$ $a=-0.950846-0.470654I$ $b=-1.72762+0.00115I$	$3.37832-13.41190I$	0
$u=-0.072612+0.715576I$ $a=\ \ 0.798310+0.776198I$ $b=\ \ 1.356260-0.019710I$	$0.537586+0.056581I$	$7.50385+0.I$
$u=-0.072612-0.715576I$ $a=\ \ 0.798310-0.776198I$ $b=\ \ 1.356260+0.019710I$	$0.537586-0.056581I$	$7.50385+0.I$
$u=-1.218330+0.404273I$ $a=\ \ 0.672627+0.192179I$ $b=-0.248140-0.081316I$	$8.92181+2.07048I$	0
$u=-1.218330-0.404273I$ $a=\ \ 0.672627-0.192179I$ $b=-0.248140+0.081316I$	$8.92181-2.07048I$	0
$u=-0.596675+1.156060I$ $a=\ \ 0.899024+0.398696I$ $b=\ \ 1.42676+1.09731I$	$2.02198-5.17207I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.596675-1.156060I$ $a=\ 0.899024-0.398696I$ $b=\ 1.42676-1.09731I$	$2.02198+5.17207I$	0
$u=\ 0.753335+1.085870I$ $a=\ 1.187310-0.556416I$ $b=\ 2.12414-1.18059I$	$9.8172+10.4510I$	0
$u=\ 0.753335-1.085870I$ $a=\ 1.187310+0.556416I$ $b=\ 2.12414+1.18059I$	$9.8172-10.4510I$	0
$u=-0.153694+1.313130I$ $a=\ 0.617355+0.477053I$ $b=\ 0.98972+1.27926I$	$-0.92102-5.87396I$	0
$u=-0.153694-1.313130I$ $a=\ 0.617355-0.477053I$ $b=\ 0.98972-1.27926I$	$-0.92102+5.87396I$	0
$u=-1.206020+0.560336I$ $a=\ 0.509477+0.205574I$ $b=-0.347031-0.145978I$	$8.74939-6.05779I$	0
$u=-1.206020-0.560336I$ $a=\ 0.509477-0.205574I$ $b=-0.347031+0.145978I$	$8.74939+6.05779I$	0
$u=\ 0.729094+1.112350I$ $a=-1.262590+0.511220I$ $b=-2.17153+1.16295I$	$5.0449+14.0548I$	0
$u=\ 0.729094-1.112350I$ $a=-1.262590-0.511220I$ $b=-2.17153-1.16295I$	$5.0449-14.0548I$	0
$u=-0.297528+1.305940I$ $a=-0.667993-0.561744I$ $b=-1.07985-1.31993I$	$2.89346-2.86957I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.297528-1.305940I$ $a=-0.667993+0.561744I$ $b=-1.07985+1.31993I$	$2.89346+2.86957I$	0
$u=\ 0.740307+1.130060I$ $a=\ 1.298890-0.547578I$ $b=\ 2.18914-1.18710I$	$7.8209+19.2722I$	0
$u=\ 0.740307-1.130060I$ $a=\ 1.298890+0.547578I$ $b=\ 2.18914+1.18710I$	$7.8209-19.2722I$	0
$u=-0.369678+0.527243I$ $a=\ 1.42430-0.57175I$ $b=\ 0.642330-1.116470I$	$1.16813-1.35653I$	$6.09677+4.56023I$
$u=-0.369678-0.527243I$ $a=\ 1.42430+0.57175I$ $b=\ 0.642330+1.116470I$	$1.16813+1.35653I$	$6.09677-4.56023I$
$u=-0.165478+1.382290I$ $a=-0.668460-0.472612I$ $b=-1.02244-1.25149I$	$1.60319-10.55180I$	0
$u=-0.165478-1.382290I$ $a=-0.668460+0.472612I$ $b=-1.02244+1.25149I$	$1.60319+10.55180I$	0
$u=-0.187260+0.574208I$ $a=-1.60794-2.72382I$ $b=-0.996029-0.814349I$	$3.72913-4.62245I$	$8.61256+6.77564I$
$u=-0.187260-0.574208I$ $a=-1.60794+2.72382I$ $b=-0.996029+0.814349I$	$3.72913+4.62245I$	$8.61256-6.77564I$
$u=-0.498350+0.331849I$ $a=-1.78519+0.75335I$ $b=-0.836764+0.929097I$	$4.26111+2.58560I$	$9.74178-0.06925I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.498350-0.331849I$ $a=-1.78519-0.75335I$ $b=-0.836764-0.929097I$	$4.26111-2.58560I$	$9.74178+0.06925I$
$u=-0.82132+1.16633I$ $a=0.569140+0.173431I$ $b=1.137980+0.782970I$	$3.61094-5.00772I$	0
$u=-0.82132-1.16633I$ $a=0.569140-0.173431I$ $b=1.137980-0.782970I$	$3.61094+5.00772I$	0
$u=-0.92261+1.13281I$ $a=-0.401577-0.115397I$ $b=-0.996486-0.685874I$	$7.03734-1.38824I$	0
$u=-0.92261-1.13281I$ $a=-0.401577+0.115397I$ $b=-0.996486+0.685874I$	$7.03734+1.38824I$	0
$u=-0.85763+1.23391I$ $a=-0.500717-0.266840I$ $b=-1.047550-0.852973I$	$6.45296-9.37183I$	0
$u=-0.85763-1.23391I$ $a=-0.500717+0.266840I$ $b=-1.047550+0.852973I$	$6.45296+9.37183I$	0
$u=0.479337+0.129610I$ $a=0.083018+1.272890I$ $b=-0.116490-0.155795I$	$-1.50913-2.14084I$	$2.75911+4.53321I$
$u=0.479337-0.129610I$ $a=0.083018-1.272890I$ $b=-0.116490+0.155795I$	$-1.50913+2.14084I$	$2.75911-4.53321I$
$u=-0.220613+0.234043I$ $a=3.21386+2.90701I$ $b=0.651078+0.309476I$	$1.98893-0.45223I$	$4.53206+0.87147I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.220613-0.234043I$		
$a=\ \ 3.21386-2.90701I$	$1.98893+0.45223I$	$4.53206-0.87147I$
$b=\ \ 0.651078-0.309476I$		
$u=-0.150736$		
$a=\ \ 3.16545$	0.958244	11.0420
$b=\ \ 0.528544$		

II.

$\boldsymbol{I_2^u = \langle -10a^2 + 13au + 5b - 5a + u + 1,\ 5a^3 - 4a^2u - au - a - 1,\ u^2 + u + 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ 2a^2 - \frac{13}{5}au + a - \frac{1}{5}u - \frac{1}{5} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2a^2u - 2a^2 - \frac{8}{5}a + \frac{1}{5}u \\ -2a^2u - \frac{13}{5}au - \frac{8}{5}a - \frac{1}{5} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -a + 2u \\ -a^2 - \frac{6}{5}au - a + \frac{3}{5}u - \frac{7}{5} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -a^2u \\ -2a^2u - a^2 + \frac{1}{5}a + \frac{3}{5}u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2a^2u - 2a^2 - \frac{8}{5}a + \frac{1}{5}u \\ -2a^2u - \frac{13}{5}au - \frac{8}{5}a - \frac{1}{5} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3a^2u + 3a^2 + \frac{17}{5}a + \frac{1}{5}u \\ 3a^2u + \frac{7}{5}au + \frac{17}{5}a - \frac{1}{5} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -4a^2u - 4a^2 - \frac{21}{5}a + \frac{2}{5}u \\ -4a^2u - \frac{13}{5}au + \cdots - \frac{21}{5}a - \frac{1}{5} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 19a^2u + 13a^2 - \frac{61}{5}au + \frac{27}{5}a - \frac{41}{5}u - \frac{7}{5}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^2-u+1)^3$
c_2	$(u^2+u+1)^3$
c_3	$25(25u^6-55u^5+91u^4-56u^3+25u^2-6u+1)$
c_4	$25(25u^6-20u^5+11u^4+6u^3-3u^2-u+1)$
c_6, c_{11}	$(u^3+u^2+2u+1)^2$
c_7	$(u^3-u^2+1)^2$
c_8	$(u^3-3u^2+2u+1)^2$
c_9	$(u^3-u^2+2u-1)^2$
c_{10}	u^6
c_{12}	$(u^3+u^2-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$(y^2+y+1)^3$
c_3	$625(625y^6+1525y^5+3371y^4+804y^3+135y^2+14y+1)$
c_4	$625(625y^6+150y^5+211y^4-92y^3+43y^2-7y+1)$
c_6, c_9, c_{11}	$(y^3+3y^2+2y-1)^2$
c_7, c_{12}	$(y^3-y^2+2y-1)^2$
c_8	$(y^3-5y^2+10y-1)^2$
c_{10}	y^6

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=-0.421928+0.730800I$ $b=-0.137007+1.224300I$	$1.11345-2.02988I$	$14.4703-2.2563I$
$u=-0.500000+0.866025I$ $a=\ \ 0.432147+0.224180I$ $b=\ \ 1.67170-0.24313I$	$-3.02413-4.85801I$	$7.32782-6.16510I$
$u=-0.500000+0.866025I$ $a=-0.410219-0.262160I$ $b=-1.43470+0.57768I$	$-3.02413+0.79824I$	$-7.97807-3.39120I$
$u=-0.500000-0.866025I$ $a=-0.421928-0.730800I$ $b=-0.137007-1.224300I$	$1.11345+2.02988I$	$14.4703+2.2563I$
$u=-0.500000-0.866025I$ $a=\ \ 0.432147-0.224180I$ $b=\ \ 1.67170+0.24313I$	$-3.02413+4.85801I$	$7.32782+6.16510I$
$u=-0.500000-0.866025I$ $a=-0.410219+0.262160I$ $b=-1.43470-0.57768I$	$-3.02413-0.79824I$	$-7.97807+3.39120I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^3)(u^{122}+44u^{121}+\cdots-11251u+625)$
c_2	$((u^2+u+1)^3)(u^{122}+4u^{121}+\cdots-199u+25)$
c_3	$625(25u^6-55u^5+91u^4-56u^3+25u^2-6u+1)$ $\cdot(25u^{122}-110u^{121}+\cdots-201821590u+29024081)$
c_4	$625(25u^6-20u^5+11u^4+6u^3-3u^2-u+1)$ $\cdot(25u^{122}+285u^{121}+\cdots+139320349u-470437783)$
c_5	$((u^2-u+1)^3)(u^{122}+4u^{121}+\cdots-199u+25)$
c_6	$((u^3+u^2+2u+1)^2)(u^{122}-3u^{121}+\cdots+6u-1)$
c_7	$((u^3-u^2+1)^2)(u^{122}-3u^{121}+\cdots+2u-1)$
c_8	$((u^3-3u^2+2u+1)^2)(u^{122}-9u^{121}+\cdots+464382u-40851)$
c_9	$((u^3-u^2+2u-1)^2)(u^{122}-3u^{121}+\cdots+6u-1)$
c_{10}	$u^6(u^{122}-3u^{121}+\cdots-64800u+8000)$
c_{11}	$((u^3+u^2+2u+1)^2)(u^{122}-61u^{121}+\cdots-6u+1)$
c_{12}	$((u^3+u^2-1)^2)(u^{122}-3u^{121}+\cdots+2u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^3)(y^{122}+72y^{121}+\cdots-6.71351\times10^8y+390625)$
c_2, c_5	$((y^2+y+1)^3)(y^{122}+44y^{121}+\cdots-11251y+625)$
c_3	$390625(625y^6+1525y^5+3371y^4+804y^3+135y^2+14y+1)$ $\cdot(625y^{122}+3.31\times10^4y^{121}+\cdots+9.84\times10^{15}y+8.42\times10^{14})$
c_4	$390625(625y^6+150y^5+211y^4-92y^3+43y^2-7y+1)$ $\cdot(625y^{122}-3.78\times10^4y^{121}+\cdots-5.32\times10^{18}y+2.21\times10^{17})$
c_6, c_9	$((y^3+3y^2+2y-1)^2)(y^{122}-77y^{121}+\cdots-6y+1)$
c_7, c_{12}	$((y^3-y^2+2y-1)^2)(y^{122}-61y^{121}+\cdots-6y+1)$
c_8	$(y^3-5y^2+10y-1)^2$ $\cdot(y^{122}+55y^{121}+\cdots-105170828166y+1668804201)$
c_{10}	$y^6(y^{122}-35y^{121}+\cdots-1.97696\times10^9y+6.40000\times10^7)$
c_{11}	$((y^3+3y^2+2y-1)^2)(y^{122}+3y^{121}+\cdots-26y+1)$