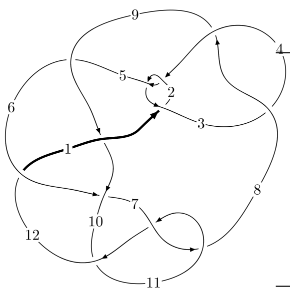
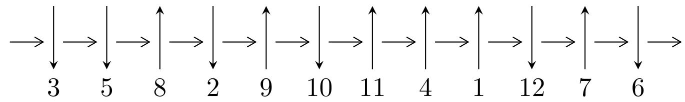
$12a_{0077}$ $(K12a_{0077})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{121} + u^{120} + \cdots + b + u,\ u^{121} + u^{120} + \cdots + a - u,\ u^{122} + 2u^{121} + \cdots + 3u + 1\rangle$$
$$I_2^u = \langle b - u,\ -u^3 + a - u - 1,\ u^4 + u^2 + u + 1\rangle$$
$$I_3^u = \langle u^5 - u^4 + 2u^3 - 2u^2 + b + 2u - 1,\ -u^4 - u^2 + a,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 132 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.

$$I_1^u = \langle u^{121}+u^{120}+\cdots+b+u,\ u^{121}+u^{120}+\cdots+a-u,\ u^{122}+2u^{121}+\cdots+3u+1\rangle$$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^{121} - u^{120} + \cdots - 4u^3 + u \\ -u^{121} - u^{120} + \cdots - 3u^2 - u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{19} + 4u^{17} + 8u^{15} + 8u^{13} + 3u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{19} + 5u^{17} + 12u^{15} + 17u^{13} + 15u^{11} + 9u^9 + 4u^7 + 2u^5 + u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{120} + u^{119} + \cdots + 4u + 1 \\ u^{120} - u^{119} + \cdots - 2u^3 - u^2 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{11} + 2u^9 + 2u^7 - u^3 \\ u^{11} + 3u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{32} + 7u^{30} + \cdots + 2u^{12} + 1 \\ u^{32} + 8u^{30} + \cdots + 12u^8 + 4u^6 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{117} + u^{116} + \cdots + 3u + 1 \\ -u^{119} - u^{118} + \cdots - 3u^3 - 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{121} + 16u^{120} + \cdots + 25u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{122} + 57u^{121} + \cdots - 6u + 1$
c_2, c_4	$u^{122} - 11u^{121} + \cdots - 10u + 1$
c_3, c_8	$u^{122} + u^{121} + \cdots + 3072u + 1024$
c_5	$u^{122} - 2u^{121} + \cdots - 8688533u + 4045417$
c_6	$u^{122} + 2u^{121} + \cdots + 45832u + 4360$
c_7, c_{11}	$u^{122} - 2u^{121} + \cdots - 3u + 1$
c_9	$u^{122} + 14u^{121} + \cdots + 8849u + 409$
c_{10}	$u^{122} + 58u^{121} + \cdots + 5u + 1$
c_{12}	$u^{122} - 10u^{121} + \cdots - 24512u + 5824$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{122} + 27y^{121} + \cdots - 66y + 1$
c_2, c_4	$y^{122} - 57y^{121} + \cdots + 6y + 1$
c_3, c_8	$y^{122} - 63y^{121} + \cdots - 30932992y + 1048576$
c_5	$y^{122} - 38y^{121} + \cdots - 180991027544255y + 16365398703889$
c_6	$y^{122} - 30y^{121} + \cdots - 1148670864y + 19009600$
c_7, c_{11}	$y^{122} + 58y^{121} + \cdots + 5y + 1$
c_9	$y^{122} + 22y^{121} + \cdots + 25546025y + 167281$
c_{10}	$y^{122} + 14y^{121} + \cdots + 13y + 1$
c_{12}	$y^{122} + 26y^{121} + \cdots + 3082177920y + 33918976$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.147503 + 1.019890I$ $a = 0.160638 + 0.361005I$ $b = 1.257490 - 0.009631I$	$0.80605 - 4.42181I$	0
$u = -0.147503 - 1.019890I$ $a = 0.160638 - 0.361005I$ $b = 1.257490 + 0.009631I$	$0.80605 + 4.42181I$	0
$u = -0.503910 + 0.793936I$ $a = 0.823657 + 0.701487I$ $b = 0.718290 + 0.623909I$	$0.05395 - 4.08608I$	0
$u = -0.503910 - 0.793936I$ $a = 0.823657 - 0.701487I$ $b = 0.718290 - 0.623909I$	$0.05395 + 4.08608I$	0
$u = -0.187037 + 1.064040I$ $a = -0.257633 + 0.087294I$ $b = -1.56569 + 0.12591I$	$1.92349 + 0.97666I$	0
$u = -0.187037 - 1.064040I$ $a = -0.257633 - 0.087294I$ $b = -1.56569 - 0.12591I$	$1.92349 - 0.97666I$	0
$u = 0.663437 + 0.631192I$ $a = -2.79895 + 0.94536I$ $b = -0.33616 + 1.66340I$	$4.25458 + 10.76030I$	0
$u = 0.663437 - 0.631192I$ $a = -2.79895 - 0.94536I$ $b = -0.33616 - 1.66340I$	$4.25458 - 10.76030I$	0
$u = 0.664047 + 0.613237I$ $a = 2.86898 - 0.94744I$ $b = 0.30798 - 1.84487I$	$6.35315 + 5.04876I$	0
$u = 0.664047 - 0.613237I$ $a = 2.86898 + 0.94744I$ $b = 0.30798 + 1.84487I$	$6.35315 - 5.04876I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.580897 + 0.939576I$ $a = 1.40599 - 0.64077I$ $b = 1.31558 - 2.50343I$	$3.34514 - 5.92062I$	0
$u = 0.580897 - 0.939576I$ $a = 1.40599 + 0.64077I$ $b = 1.31558 + 2.50343I$	$3.34514 + 5.92062I$	0
$u = -0.563945 + 0.687578I$ $a = -0.463939 - 0.933720I$ $b = -0.226560 - 0.728292I$	$0.391182 - 0.219141I$	0
$u = -0.563945 - 0.687578I$ $a = -0.463939 + 0.933720I$ $b = -0.226560 + 0.728292I$	$0.391182 + 0.219141I$	0
$u = 0.247747 + 1.082810I$ $a = 0.246194 + 1.053460I$ $b = 0.771686 + 0.150808I$	$-3.15692 + 0.14365I$	0
$u = 0.247747 - 1.082810I$ $a = 0.246194 - 1.053460I$ $b = 0.771686 - 0.150808I$	$-3.15692 - 0.14365I$	0
$u = -0.557353 + 0.961980I$ $a = 0.942594 - 0.238886I$ $b = 1.147840 - 0.156245I$	$0.384580 - 0.022257I$	0
$u = -0.557353 - 0.961980I$ $a = 0.942594 + 0.238886I$ $b = 1.147840 + 0.156245I$	$0.384580 + 0.022257I$	0
$u = -0.642511 + 0.606712I$ $a = 0.423802 - 1.223920I$ $b = 0.581380 - 0.647488I$	$1.42902 - 4.68272I$	0
$u = -0.642511 - 0.606712I$ $a = 0.423802 + 1.223920I$ $b = 0.581380 + 0.647488I$	$1.42902 + 4.68272I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.578496 + 0.957006I$ $a = -1.73350 + 0.73489I$ $b = -1.46493 + 2.74505I$	$5.33977 - 0.21651I$	0
$u = 0.578496 - 0.957006I$ $a = -1.73350 - 0.73489I$ $b = -1.46493 - 2.74505I$	$5.33977 + 0.21651I$	0
$u = 0.545074 + 0.978382I$ $a = 2.55909 - 0.38765I$ $b = 2.14304 - 3.11468I$	$-0.83283 + 2.32108I$	0
$u = 0.545074 - 0.978382I$ $a = 2.55909 + 0.38765I$ $b = 2.14304 + 3.11468I$	$-0.83283 - 2.32108I$	0
$u = 0.676980 + 0.556127I$ $a = 2.75159 - 0.80208I$ $b = 0.29221 - 2.16620I$	$7.33859 + 0.89759I$	0
$u = 0.676980 - 0.556127I$ $a = 2.75159 + 0.80208I$ $b = 0.29221 + 2.16620I$	$7.33859 - 0.89759I$	0
$u = 0.310246 + 1.083390I$ $a = -0.358349 + 1.021320I$ $b = 0.570849 + 0.641805I$	$-3.70234 + 0.56339I$	0
$u = 0.310246 - 1.083390I$ $a = -0.358349 - 1.021320I$ $b = 0.570849 - 0.641805I$	$-3.70234 - 0.56339I$	0
$u = 0.685820 + 0.531680I$ $a = -2.55763 + 0.78007I$ $b = -0.22955 + 2.19623I$	$5.98830 - 4.81101I$	0
$u = 0.685820 - 0.531680I$ $a = -2.55763 - 0.78007I$ $b = -0.22955 - 2.19623I$	$5.98830 + 4.81101I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.243131 + 1.108750I$ $a = 1.01081 - 1.20474I$ $b = 2.71881 - 0.53821I$	$-5.30960 + 1.62774I$	0
$u = -0.243131 - 1.108750I$ $a = 1.01081 + 1.20474I$ $b = 2.71881 + 0.53821I$	$-5.30960 - 1.62774I$	0
$u = -0.480136 + 1.029710I$ $a = 0.060217 + 0.435203I$ $b = 0.183899 + 0.551516I$	$-0.61714 - 3.08115I$	0
$u = -0.480136 - 1.029710I$ $a = 0.060217 - 0.435203I$ $b = 0.183899 - 0.551516I$	$-0.61714 + 3.08115I$	0
$u = 0.626554 + 0.591288I$ $a = -3.17061 + 0.97693I$ $b = -0.01997 + 2.10665I$	$0.30602 + 2.29616I$	0
$u = 0.626554 - 0.591288I$ $a = -3.17061 - 0.97693I$ $b = -0.01997 - 2.10665I$	$0.30602 - 2.29616I$	0
$u = 0.232311 + 1.117320I$ $a = -0.580972 - 1.076570I$ $b = -0.823114 + 0.039156I$	$-4.37882 - 4.12065I$	0
$u = 0.232311 - 1.117320I$ $a = -0.580972 + 1.076570I$ $b = -0.823114 - 0.039156I$	$-4.37882 + 4.12065I$	0
$u = -0.557153 + 0.997293I$ $a = -0.679241 + 0.573310I$ $b = -0.974590 + 0.622642I$	$0.84323 - 4.34495I$	0
$u = -0.557153 - 0.997293I$ $a = -0.679241 - 0.573310I$ $b = -0.974590 - 0.622642I$	$0.84323 + 4.34495I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.217849+1.124370I$ $a=-0.187626+1.188830I$ $b=-2.03552+0.87762I$	$0.39410+4.66441I$	0
$u=-0.217849-1.124370I$ $a=-0.187626-1.188830I$ $b=-2.03552-0.87762I$	$0.39410-4.66441I$	0
$u=-0.638088+0.561092I$ $a=-0.798780+0.964384I$ $b=-0.691669+0.304217I$	$2.12882-0.34486I$	0
$u=-0.638088-0.561092I$ $a=-0.798780-0.964384I$ $b=-0.691669-0.304217I$	$2.12882+0.34486I$	0
$u=-0.334748+1.103830I$ $a=-0.83313-1.90432I$ $b=-0.29049-2.26529I$	$-6.22983-1.88137I$	0
$u=-0.334748-1.103830I$ $a=-0.83313+1.90432I$ $b=-0.29049+2.26529I$	$-6.22983+1.88137I$	0
$u=-0.773736+0.340441I$ $a=-2.27642+0.95926I$ $b=-0.64290-2.33332I$	$2.78144+13.02340I$	0
$u=-0.773736-0.340441I$ $a=-2.27642-0.95926I$ $b=-0.64290+2.33332I$	$2.78144-13.02340I$	0
$u=-0.766387+0.349666I$ $a=2.38500-0.93938I$ $b=0.65193+2.19129I$	$5.02651+7.30828I$	0
$u=-0.766387-0.349666I$ $a=2.38500+0.93938I$ $b=0.65193-2.19129I$	$5.02651-7.30828I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.580775 + 1.002240I$ $a = -2.32556 + 1.16823I$ $b = -1.49852 + 3.23792I$	$6.02309 + 3.97372I$	0
$u = 0.580775 - 1.002240I$ $a = -2.32556 - 1.16823I$ $b = -1.49852 - 3.23792I$	$6.02309 - 3.97372I$	0
$u = -0.222634 + 1.137130I$ $a = 0.04620 - 1.47787I$ $b = 2.02261 - 1.14560I$	$-1.87191 + 10.28300I$	0
$u = -0.222634 - 1.137130I$ $a = 0.04620 + 1.47787I$ $b = 2.02261 + 1.14560I$	$-1.87191 - 10.28300I$	0
$u = -0.742446 + 0.388031I$ $a = 2.41605 - 0.76410I$ $b = 0.78560 + 1.54744I$	$6.50957 + 3.19238I$	0
$u = -0.742446 - 0.388031I$ $a = 2.41605 + 0.76410I$ $b = 0.78560 - 1.54744I$	$6.50957 - 3.19238I$	0
$u = -0.730426 + 0.409385I$ $a = -2.28243 + 0.74960I$ $b = -0.89107 - 1.21865I$	$5.39473 - 2.49625I$	0
$u = -0.730426 - 0.409385I$ $a = -2.28243 - 0.74960I$ $b = -0.89107 + 1.21865I$	$5.39473 + 2.49625I$	0
$u = 0.351696 + 1.109570I$ $a = 0.94996 - 1.25525I$ $b = -0.412184 - 1.221590I$	$-5.61386 + 4.27204I$	0
$u = 0.351696 - 1.109570I$ $a = 0.94996 + 1.25525I$ $b = -0.412184 + 1.221590I$	$-5.61386 - 4.27204I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.274646 + 1.138280I$ $a = -0.900239 - 0.382822I$ $b = -0.554801 + 0.399175I$	$-5.66097 + 1.23463I$	0
$u = 0.274646 - 1.138280I$ $a = -0.900239 + 0.382822I$ $b = -0.554801 - 0.399175I$	$-5.66097 - 1.23463I$	0
$u = 0.754006 + 0.343369I$ $a = 0.403285 - 0.833170I$ $b = -1.019380 - 0.886124I$	$0.13714 - 6.77256I$	$0. + 5.74192I$
$u = 0.754006 - 0.343369I$ $a = 0.403285 + 0.833170I$ $b = -1.019380 + 0.886124I$	$0.13714 + 6.77256I$	$0. - 5.74192I$
$u = 0.582684 + 1.018360I$ $a = 2.41797 - 1.26623I$ $b = 1.46594 - 3.24790I$	$4.55439 + 9.71101I$	0
$u = 0.582684 - 1.018360I$ $a = 2.41797 + 1.26623I$ $b = 1.46594 + 3.24790I$	$4.55439 - 9.71101I$	0
$u = -0.374798 + 1.116820I$ $a = 0.04976 + 1.74262I$ $b = -0.30164 + 1.53458I$	$-1.26418 - 4.75234I$	0
$u = -0.374798 - 1.116820I$ $a = 0.04976 - 1.74262I$ $b = -0.30164 - 1.53458I$	$-1.26418 + 4.75234I$	0
$u = 0.308936 + 1.138480I$ $a = 1.112100 - 0.379507I$ $b = 0.224418 - 0.838709I$	$-6.04051 - 1.73738I$	0
$u = 0.308936 - 1.138480I$ $a = 1.112100 + 0.379507I$ $b = 0.224418 + 0.838709I$	$-6.04051 + 1.73738I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.741592+0.341947I$ $a=-2.68131+1.04936I$ $b=-0.29140-2.09408I$	$-0.89417+4.25803I$	$2.47020-4.79794I$
$u=-0.741592-0.341947I$ $a=-2.68131-1.04936I$ $b=-0.29140+2.09408I$	$-0.89417-4.25803I$	$2.47020+4.79794I$
$u=\ \ 0.727560+0.357150I$ $a=-0.676826+0.613682I$ $b=\ \ 0.610983+1.066460I$	$1.16636-2.32617I$	$3.33942+0.I$
$u=\ \ 0.727560-0.357150I$ $a=-0.676826-0.613682I$ $b=\ \ 0.610983-1.066460I$	$1.16636+2.32617I$	$3.33942+0.I$
$u=-0.366393+1.135130I$ $a=\ \ 0.03793-2.08248I$ $b=\ \ 0.62048-1.73701I$	$-3.47259-10.00020I$	0
$u=-0.366393-1.135130I$ $a=\ \ 0.03793+2.08248I$ $b=\ \ 0.62048+1.73701I$	$-3.47259+10.00020I$	0
$u=-0.474706+1.099400I$ $a=-0.380284+0.418935I$ $b=\ \ 0.184497+0.371876I$	$-0.60185-2.76992I$	0
$u=-0.474706-1.099400I$ $a=-0.380284-0.418935I$ $b=\ \ 0.184497-0.371876I$	$-0.60185+2.76992I$	0
$u=\ \ 0.742897+0.291124I$ $a=-0.116461-0.570194I$ $b=-0.970990+0.058027I$	$-1.35964-1.73759I$	$2.29144-2.31325I$
$u=\ \ 0.742897-0.291124I$ $a=-0.116461+0.570194I$ $b=-0.970990-0.058027I$	$-1.35964+1.73759I$	$2.29144+2.31325I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.505779 + 1.104550I$ $a = -1.00118 + 1.86287I$ $b = 0.58455 + 2.08301I$	$-4.58051 + 3.20726I$	0
$u = 0.505779 - 1.104550I$ $a = -1.00118 - 1.86287I$ $b = 0.58455 - 2.08301I$	$-4.58051 - 3.20726I$	0
$u = -0.519041 + 1.107540I$ $a = -0.142012 + 0.389842I$ $b = -1.316650 - 0.337487I$	$-4.97820 - 5.58195I$	0
$u = -0.519041 - 1.107540I$ $a = -0.142012 - 0.389842I$ $b = -1.316650 + 0.337487I$	$-4.97820 + 5.58195I$	0
$u = -0.484369 + 1.125250I$ $a = 0.819496 - 0.149267I$ $b = -0.112185 + 0.136501I$	$-2.68020 + 2.19171I$	0
$u = -0.484369 - 1.125250I$ $a = 0.819496 + 0.149267I$ $b = -0.112185 - 0.136501I$	$-2.68020 - 2.19171I$	0
$u = 0.536230 + 1.104700I$ $a = 1.03791 - 1.12148I$ $b = 0.04903 - 1.60825I$	$-2.15124 + 6.76591I$	0
$u = 0.536230 - 1.104700I$ $a = 1.03791 + 1.12148I$ $b = 0.04903 + 1.60825I$	$-2.15124 - 6.76591I$	0
$u = -0.576567 + 1.090460I$ $a = 0.82502 + 1.79493I$ $b = -0.26431 + 2.97096I$	$3.39134 - 2.48781I$	0
$u = -0.576567 - 1.090460I$ $a = 0.82502 - 1.79493I$ $b = -0.26431 - 2.97096I$	$3.39134 + 2.48781I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.715919 + 0.244608I$ $a = 0.402000 + 0.499492I$ $b = 0.881830 - 0.783285I$	$-1.99977 - 4.88959I$	$-0.19185 + 6.83299I$
$u = 0.715919 - 0.244608I$ $a = 0.402000 - 0.499492I$ $b = 0.881830 + 0.783285I$	$-1.99977 + 4.88959I$	$-0.19185 - 6.83299I$
$u = -0.576427 + 1.102190I$ $a = -1.22366 - 2.00645I$ $b = 0.14513 - 3.45387I$	$4.40913 - 8.20349I$	0
$u = -0.576427 - 1.102190I$ $a = -1.22366 + 2.00645I$ $b = 0.14513 + 3.45387I$	$4.40913 + 8.20349I$	0
$u = 0.563785 + 1.110100I$ $a = 1.62962 - 0.12987I$ $b = 1.27778 - 1.18135I$	$-1.03613 + 7.25005I$	0
$u = 0.563785 - 1.110100I$ $a = 1.62962 + 0.12987I$ $b = 1.27778 + 1.18135I$	$-1.03613 - 7.25005I$	0
$u = 0.529898 + 1.132100I$ $a = -0.10898 + 1.63343I$ $b = 0.97595 + 1.32102I$	$-4.54724 + 9.60660I$	0
$u = 0.529898 - 1.132100I$ $a = -0.10898 - 1.63343I$ $b = 0.97595 - 1.32102I$	$-4.54724 - 9.60660I$	0
$u = -0.564571 + 1.118020I$ $a = 2.15905 + 2.17034I$ $b = 0.21148 + 4.45037I$	$-3.16535 - 9.21460I$	0
$u = -0.564571 - 1.118020I$ $a = 2.15905 - 2.17034I$ $b = 0.21148 - 4.45037I$	$-3.16535 + 9.21460I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.568633 + 1.120910I$ $a = -1.72962 - 0.38857I$ $b = -1.68973 + 0.77827I$	$-2.14484 + 11.77480I$	0
$u = 0.568633 - 1.120910I$ $a = -1.72962 + 0.38857I$ $b = -1.68973 - 0.77827I$	$-2.14484 - 11.77480I$	0
$u = 0.550329 + 1.131450I$ $a = -0.732352 - 1.021390I$ $b = -1.234400 - 0.348833I$	$-3.80504 + 6.62461I$	0
$u = 0.550329 - 1.131450I$ $a = -0.732352 + 1.021390I$ $b = -1.234400 + 0.348833I$	$-3.80504 - 6.62461I$	0
$u = -0.574280 + 1.122500I$ $a = -1.85412 - 2.51219I$ $b = 0.25455 - 4.23615I$	$2.75092 - 12.36380I$	0
$u = -0.574280 - 1.122500I$ $a = -1.85412 + 2.51219I$ $b = 0.25455 + 4.23615I$	$2.75092 + 12.36380I$	0
$u = -0.573842 + 1.127650I$ $a = 1.94322 + 2.63754I$ $b = -0.34594 + 4.31971I$	$0.4616 - 18.0934I$	0
$u = -0.573842 - 1.127650I$ $a = 1.94322 - 2.63754I$ $b = -0.34594 - 4.31971I$	$0.4616 + 18.0934I$	0
$u = 0.660170 + 0.316088I$ $a = -0.732772 - 0.193117I$ $b = -0.215520 + 0.967082I$	$0.10486 - 2.11384I$	$2.75851 + 4.42684I$
$u = 0.660170 - 0.316088I$ $a = -0.732772 + 0.193117I$ $b = -0.215520 - 0.967082I$	$0.10486 + 2.11384I$	$2.75851 - 4.42684I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.502135 + 0.520497I$ $a = -0.843249 - 0.145577I$ $b = -0.377248 - 0.103982I$	$0.921687 - 0.967284I$	$5.88815 + 4.44516I$
$u = -0.502135 - 0.520497I$ $a = -0.843249 + 0.145577I$ $b = -0.377248 + 0.103982I$	$0.921687 + 0.967284I$	$5.88815 - 4.44516I$
$u = -0.667655 + 0.125853I$ $a = 0.803991 + 0.367385I$ $b = 0.748284 - 0.621145I$	$0.08889 - 6.49361I$	$0.00970 + 5.09244I$
$u = -0.667655 - 0.125853I$ $a = 0.803991 - 0.367385I$ $b = 0.748284 + 0.621145I$	$0.08889 + 6.49361I$	$0.00970 - 5.09244I$
$u = -0.623496 + 0.254190I$ $a = 1.36029 + 0.77185I$ $b = -0.007159 - 0.321290I$	$-2.60730 + 1.09949I$	$-2.12650 + 0.94003I$
$u = -0.623496 - 0.254190I$ $a = 1.36029 - 0.77185I$ $b = -0.007159 + 0.321290I$	$-2.60730 - 1.09949I$	$-2.12650 - 0.94003I$
$u = -0.619769 + 0.095267I$ $a = -0.968869 - 0.258640I$ $b = -0.712902 + 0.333354I$	$2.07800 - 1.29731I$	$3.26116 + 0.74944I$
$u = -0.619769 - 0.095267I$ $a = -0.968869 + 0.258640I$ $b = -0.712902 - 0.333354I$	$2.07800 + 1.29731I$	$3.26116 - 0.74944I$
$u = 0.592035 + 0.190430I$ $a = 0.510361 + 0.710669I$ $b = 0.450440 - 1.161470I$	$-2.14348 + 1.10867I$	$-2.68663 - 1.45232I$
$u = 0.592035 - 0.190430I$ $a = 0.510361 - 0.710669I$ $b = 0.450440 + 1.161470I$	$-2.14348 - 1.10867I$	$-2.68663 + 1.45232I$

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.191047+0.515704I$		
$a=$	$0.83394+1.44078I$	$-1.87815+0.80870I$	$-4.98554+0.10240I$
$b=$	$0.862620-0.391075I$		
$u=$	$0.191047-0.515704I$		
$a=$	$0.83394-1.44078I$	$-1.87815-0.80870I$	$-4.98554-0.10240I$
$b=$	$0.862620+0.391075I$		

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^3 + u + 1 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^3 + u + 1 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^3 + u^2 + 1 \\ u^3 + u^2 + u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 - u^2 - u - 1 \\ -u^2 - u - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^3 + u^2 + u + 1 \\ u^2 + u + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^2 \\ -u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^3 - 4u^2 - u - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^4$
c_3, c_8	y^4
c_5, c_7, c_9 c_{11}	$y^4 + 2y^3 + 3y^2 + y + 1$
c_6	$y^4 - y^3 + 2y^2 + 7y + 4$
c_{10}, c_{12}	$y^4 + 2y^3 + 7y^2 + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = 0.851808 + 0.911292I$ $b = -0.547424 + 0.585652I$	$-0.66484 - 1.39709I$	$-0.08162 + 2.95607I$
$u = -0.547424 - 0.585652I$ $a = 0.851808 - 0.911292I$ $b = -0.547424 - 0.585652I$	$-0.66484 + 1.39709I$	$-0.08162 - 2.95607I$
$u = 0.547424 + 1.120870I$ $a = -0.351808 + 0.720342I$ $b = 0.547424 + 1.120870I$	$-4.26996 + 7.64338I$	$-4.41838 - 7.23121I$
$u = 0.547424 - 1.120870I$ $a = -0.351808 - 0.720342I$ $b = 0.547424 - 1.120870I$	$-4.26996 - 7.64338I$	$-4.41838 + 7.23121I$

III. $I_3^u =$
$\langle u^5-u^4+2u^3-2u^2+b+2u-1,\ -u^4-u^2+a,\ u^6-u^5+2u^4-2u^3+2u^2-2u+1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 + u^2 \\ -u^5 + u^4 - 2u^3 + 2u^2 - 2u + 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^4 + u^2 \\ -u^5 + u^4 - 2u^3 + 2u^2 - 2u + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^5 + u^4 - 2u^3 + 2u^2 - 2u + 2 \\ -u^5 - 2u^3 + u^2 - 2u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^4 - u^2 + u - 1 \\ 2u^5 - u^4 + 3u^3 - 2u^2 + 3u - 2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 + u^2 - u + 1 \\ -2u^5 + u^4 - 3u^3 + 2u^2 - 3u + 2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u - 1 \\ u^5 + u^3 + u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^4 + 3u^3 + u^2 + 4u - 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^6$
c_3, c_8	y^6
c_5, c_7, c_9 c_{11}	$y^6 + 3y^5 + 4y^4 + 2y^3 + 1$
c_6	$(y^3 - y^2 + 2y - 1)^2$
c_{10}, c_{12}	$y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.498832 + 1.001300I$ $a = -1.183530 + 0.507021I$ $b = -1.39861 - 0.80012I$	$-1.91067 - 2.82812I$	$-4.05004 + 3.74291I$
$u = -0.498832 - 1.001300I$ $a = -1.183530 - 0.507021I$ $b = -1.39861 + 0.80012I$	$-1.91067 + 2.82812I$	$-4.05004 - 3.74291I$
$u = 0.284920 + 1.115140I$ $a = -0.215080 - 0.841795I$ $b = -0.784920 - 0.841795I$	-6.04826	$-7.19479 + 0.27335I$
$u = 0.284920 - 1.115140I$ $a = -0.215080 + 0.841795I$ $b = -0.784920 + 0.841795I$	-6.04826	$-7.19479 - 0.27335I$
$u = 0.713912 + 0.305839I$ $a = 0.398606 + 0.800120I$ $b = 0.183526 - 0.507021I$	$-1.91067 - 2.82812I$	$-1.25517 + 3.34054I$
$u = 0.713912 - 0.305839I$ $a = 0.398606 - 0.800120I$ $b = 0.183526 + 0.507021I$	$-1.91067 + 2.82812I$	$-1.25517 - 3.34054I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{10})(u^{122}+57u^{121}+\cdots-6u+1)$
c_2	$((u-1)^{10})(u^{122}-11u^{121}+\cdots-10u+1)$
c_3, c_8	$u^{10}(u^{122}+u^{121}+\cdots+3072u+1024)$
c_4	$((u+1)^{10})(u^{122}-11u^{121}+\cdots-10u+1)$
c_5	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{122}-2u^{121}+\cdots-8688533u+4045417)$
c_6	$(u^3-u^2+1)^2(u^4+3u^3+4u^2+3u+2)$ $\cdot(u^{122}+2u^{121}+\cdots+45832u+4360)$
c_7	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{122}-2u^{121}+\cdots-3u+1)$
c_9	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{122}+14u^{121}+\cdots+8849u+409)$
c_{10}	$(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{122}+58u^{121}+\cdots+5u+1)$
c_{11}	$(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{122}-2u^{121}+\cdots-3u+1)$
c_{12}	$(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(u^{122}-10u^{121}+\cdots-24512u+5824)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^{122}+27y^{121}+\cdots-66y+1)$
c_2, c_4	$((y-1)^{10})(y^{122}-57y^{121}+\cdots+6y+1)$
c_3, c_8	$y^{10}(y^{122}-63y^{121}+\cdots-3.09330\times 10^7 y+1048576)$
c_5	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{122}-38y^{121}+\cdots-180991027544255y+16365398703889)$
c_6	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^{122}-30y^{121}+\cdots-1148670864y+19009600)$
c_7, c_{11}	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{122}+58y^{121}+\cdots+5y+1)$
c_9	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{122}+22y^{121}+\cdots+25546025y+167281)$
c_{10}	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{122}+14y^{121}+\cdots+13y+1)$
c_{12}	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{122}+26y^{121}+\cdots+3082177920y+33918976)$