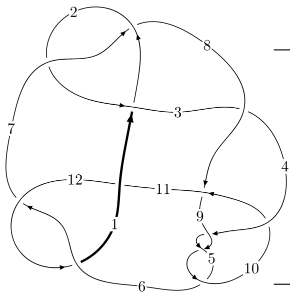
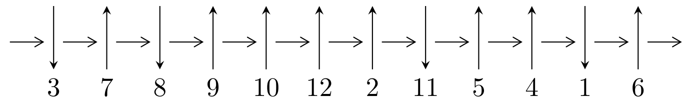
$12a_{0505}$ ($K12a_{0505}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{36} + u^{35} + \cdots + 8b + 1,\ -u^4 - u^2 + a - 1,\ u^{37} + 9u^{35} + \cdots + 2u + 1\rangle$$
$$I_2^u = \langle 3.27537 \times 10^{24}u^{59} - 2.69309 \times 10^{24}u^{58} + \cdots + 7.42634 \times 10^{24}b + 2.04518 \times 10^{25},$$
$$3.26602 \times 10^{25}u^{59} - 2.45564 \times 10^{25}u^{58} + \cdots + 3.71317 \times 10^{25}a - 4.48295 \times 10^{25},\ u^{60} - u^{59} + \cdots - 10u + 5$$
$$I_3^u = \langle b^3 - b^2u - u,\ a + 1,\ u^2 + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 103 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. $\boldsymbol{I_1^u = \langle u^{36} + u^{35} + \cdots + 8b + 1,\ -u^4 - u^2 + a - 1,\ u^{37} + 9u^{35} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^4 + u^2 + 1 \\ -\frac{1}{8}u^{36} - \frac{1}{8}u^{35} + \cdots - \frac{3}{8}u - \frac{1}{8} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{8}u^{36} + \frac{1}{8}u^{35} + \cdots + \frac{1}{8}u + \frac{1}{8} \\ \frac{9}{8}u^{36} - \frac{9}{8}u^{35} + \cdots - \frac{3}{8}u - \frac{11}{8} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -\frac{1}{8}u^{36} - \frac{1}{8}u^{35} + \cdots - \frac{3}{8}u - \frac{1}{8} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ \frac{1}{8}u^{36} - \frac{1}{8}u^{35} + \cdots + \frac{7}{8}u - \frac{1}{8} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{8}u^{36} + \frac{1}{8}u^{35} + \cdots + \frac{3}{8}u + \frac{9}{8} \\ -\frac{1}{8}u^{36} - \frac{1}{8}u^{35} + \cdots - \frac{3}{8}u - \frac{1}{8} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{1}{8}u^{36} + \frac{11}{8}u^{35} + \cdots + \frac{11}{8}u + \frac{17}{8} \\ \frac{5}{8}u^{36} - \frac{15}{8}u^{35} + \cdots - \frac{29}{8}u - \frac{27}{8} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3u^{36} - 2u^{35} + \cdots + \frac{1}{2}u + \frac{9}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{37} + 18u^{36} + \cdots - 4u - 1$
c_2, c_6, c_7 c_{12}	$u^{37} + 9u^{35} + \cdots + 2u - 1$
c_3	$u^{37} - 3u^{36} + \cdots + 192u - 128$
c_4, c_5, c_9	$u^{37} + 3u^{36} + \cdots + 5u - 2$
c_8	$u^{37} - 9u^{36} + \cdots + 839u - 136$
c_{10}	$u^{37} - 9u^{36} + \cdots - 11u + 6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{37} + 10y^{36} + \cdots - 28y^2 - 1$
c_2, c_6, c_7 c_{12}	$y^{37} + 18y^{36} + \cdots - 4y - 1$
c_3	$y^{37} - 19y^{36} + \cdots - 241664y - 16384$
c_4, c_5, c_9	$y^{37} - 33y^{36} + \cdots + 5y - 4$
c_8	$y^{37} + 3y^{36} + \cdots - 309823y - 18496$
c_{10}	$y^{37} + 3y^{36} + \cdots + 2101y - 36$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.579757+0.811240I$ $a=-0.103123-0.334884I$ $b=\ 0.210307-0.793482I$	$1.63409-2.87409I$	$6.79965+3.00528I$
$u=-0.579757-0.811240I$ $a=-0.103123+0.334884I$ $b=\ 0.210307+0.793482I$	$1.63409+2.87409I$	$6.79965-3.00528I$
$u=\ 0.660932+0.777746I$ $a=-0.196752+0.682520I$ $b=\ 0.020008+0.830017I$	$7.59911+0.56066I$	$10.84916-2.82822I$
$u=\ 0.660932-0.777746I$ $a=-0.196752-0.682520I$ $b=\ 0.020008-0.830017I$	$7.59911-0.56066I$	$10.84916+2.82822I$
$u=\ 0.598857+0.895651I$ $a=-0.397571+0.121089I$ $b=\ 0.283942+0.517469I$	$1.06998+6.49521I$	$4.63176-9.74629I$
$u=\ 0.598857-0.895651I$ $a=-0.397571-0.121089I$ $b=\ 0.283942-0.517469I$	$1.06998-6.49521I$	$4.63176+9.74629I$
$u=-0.334683+0.831422I$ $a=\ 0.446559+0.088208I$ $b=\ 0.29700-1.64195I$	$0.64214-4.70900I$	$4.48227+9.00130I$
$u=-0.334683-0.831422I$ $a=\ 0.446559-0.088208I$ $b=\ 0.29700+1.64195I$	$0.64214+4.70900I$	$4.48227-9.00130I$
$u=-0.646478+0.915440I$ $a=-0.644580-0.189148I$ $b=\ 0.107909-0.368165I$	$6.75139-9.60723I$	$8.81725+9.07290I$
$u=-0.646478-0.915440I$ $a=-0.644580+0.189148I$ $b=\ 0.107909+0.368165I$	$6.75139+9.60723I$	$8.81725-9.07290I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.789213 + 0.256338I$ $a = 1.70385 - 0.85547I$ $b = 0.943538 - 0.763487I$	$5.01504 + 6.37659I$	$9.98575 - 3.65198I$
$u = -0.789213 - 0.256338I$ $a = 1.70385 + 0.85547I$ $b = 0.943538 + 0.763487I$	$5.01504 - 6.37659I$	$9.98575 + 3.65198I$
$u = 0.695008 + 0.436202I$ $a = 1.010840 + 0.961350I$ $b = 0.449960 + 0.949790I$	$6.84785 + 2.05532I$	$12.30177 - 3.15304I$
$u = 0.695008 - 0.436202I$ $a = 1.010840 - 0.961350I$ $b = 0.449960 - 0.949790I$	$6.84785 - 2.05532I$	$12.30177 + 3.15304I$
$u = 0.267265 + 0.757126I$ $a = 0.586216 - 0.001465I$ $b = -0.33049 + 1.55851I$	$-2.99869 + 1.29654I$	$0.41754 - 5.03416I$
$u = 0.267265 - 0.757126I$ $a = 0.586216 + 0.001465I$ $b = -0.33049 - 1.55851I$	$-2.99869 - 1.29654I$	$0.41754 + 5.03416I$
$u = 0.435576 + 1.141880I$ $a = 0.137669 - 1.221900I$ $b = 2.47959 - 0.23224I$	$-2.53196 + 0.72133I$	$1.56215 - 2.28769I$
$u = 0.435576 - 1.141880I$ $a = 0.137669 + 1.221900I$ $b = 2.47959 + 0.23224I$	$-2.53196 - 0.72133I$	$1.56215 + 2.28769I$
$u = 0.735650 + 0.223048I$ $a = 1.62524 + 0.65072I$ $b = 0.854743 + 0.603989I$	$-0.28750 - 2.94833I$	$5.40294 + 3.57703I$
$u = 0.735650 - 0.223048I$ $a = 1.62524 - 0.65072I$ $b = 0.854743 - 0.603989I$	$-0.28750 + 2.94833I$	$5.40294 - 3.57703I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.457950 + 1.157540I$ $a = 0.023122 + 1.336210I$ $b = 2.38148 + 0.53796I$	$-7.34230 - 4.54614I$	$-2.96628 + 3.53654I$
$u = -0.457950 - 1.157540I$ $a = 0.023122 - 1.336210I$ $b = 2.38148 - 0.53796I$	$-7.34230 + 4.54614I$	$-2.96628 - 3.53654I$
$u = -0.175543 + 0.729050I$ $a = 0.684486 + 0.000358I$ $b = -0.98683 - 1.36977I$	$1.05378 + 2.11841I$	$6.68673 + 1.35034I$
$u = -0.175543 - 0.729050I$ $a = 0.684486 - 0.000358I$ $b = -0.98683 + 1.36977I$	$1.05378 - 2.11841I$	$6.68673 - 1.35034I$
$u = 0.488487 + 1.174270I$ $a = -0.15617 - 1.46909I$ $b = 2.19414 - 0.89867I$	$-4.81962 + 8.45799I$	$0.56436 - 7.63985I$
$u = 0.488487 - 1.174270I$ $a = -0.15617 + 1.46909I$ $b = 2.19414 + 0.89867I$	$-4.81962 - 8.45799I$	$0.56436 + 7.63985I$
$u = -0.555532 + 1.145930I$ $a = -0.61648 + 1.28475I$ $b = 1.39365 + 0.98713I$	$2.49474 - 7.72914I$	$6.13298 + 6.04219I$
$u = -0.555532 - 1.145930I$ $a = -0.61648 - 1.28475I$ $b = 1.39365 - 0.98713I$	$2.49474 + 7.72914I$	$6.13298 - 6.04219I$
$u = 0.525269 + 1.184470I$ $a = -0.40515 - 1.56057I$ $b = 1.88435 - 1.21421I$	$-4.34811 + 8.74768I$	$1.47209 - 5.09609I$
$u = 0.525269 - 1.184470I$ $a = -0.40515 + 1.56057I$ $b = 1.88435 + 1.21421I$	$-4.34811 - 8.74768I$	$1.47209 + 5.09609I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.541417+1.203980I$ $a=-0.51875+1.71160I$ $b=\ \ 1.81915+1.50300I$	$-6.0591-12.8093I$	$-1.04768+9.71238I$
$u=-0.541417-1.203980I$ $a=-0.51875-1.71160I$ $b=\ \ 1.81915-1.50300I$	$-6.0591+12.8093I$	$-1.04768-9.71238I$
$u=\ \ 0.554572+1.210400I$ $a=-0.62000-1.76542I$ $b=\ \ 1.70993-1.63840I$	$-0.7099+16.6004I$	$3.43252-10.27286I$
$u=\ \ 0.554572-1.210400I$ $a=-0.62000+1.76542I$ $b=\ \ 1.70993+1.63840I$	$-0.7099-16.6004I$	$3.43252+10.27286I$
$u=-0.651494$ $a=\ \ 1.60460$ $b=\ \ 0.776097$	1.43047	7.69190
$u=-0.555298+0.310287I$ $a=\ \ 1.138300-0.490768I$ $b=\ \ 0.399568-0.580206I$	$1.031120-0.352879I$	$9.62908+3.43873I$
$u=-0.555298-0.310287I$ $a=\ \ 1.138300+0.490768I$ $b=\ \ 0.399568+0.580206I$	$1.031120+0.352879I$	$9.62908-3.43873I$

II.

$\boldsymbol{I_2^u = \langle 3.28 \times 10^{24} u^{59} - 2.69 \times 10^{24} u^{58} + \cdots + 7.43 \times 10^{24} b + 2.05 \times 10^{25},\ 3.27 \times 10^{25} u^{59} - 2.46 \times 10^{25} u^{58} + \cdots + 3.71 \times 10^{25} a - 4.48 \times 10^{25},\ u^{60} - u^{59} + \cdots - 10u + 5 \rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.879576u^{59} + 0.661333u^{58} + \cdots - 2.95523u + 1.20731 \\ -0.441048u^{59} + 0.362640u^{58} + \cdots + 0.517628u - 2.75396 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.75591u^{59} + 0.844749u^{58} + \cdots - 9.22135u + 14.3286 \\ -0.537990u^{59} - 0.114698u^{58} + \cdots + 0.0765766u + 4.03754 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -1.03659u^{59} + 0.545959u^{58} + \cdots - 3.19620u + 6.41441 \\ -1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.690628u^{59} + 0.0925694u^{58} + \cdots - 5.75146u + 7.18294 \\ -0.490628u^{59} - 0.107431u^{58} + \cdots - 2.95146u + 5.18294 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.43090u^{59} + 0.814450u^{58} + \cdots - 4.72528u + 9.20320 \\ -0.548015u^{59} + 0.468963u^{58} + \cdots - 0.700607u + 0.552623 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -2.21790u^{59} + 0.477834u^{58} + \cdots - 12.9388u + 20.4700 \\ -0.790742u^{59} + 0.147862u^{58} + \cdots - 6.12592u + 7.76486 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{2961607917619819290206 28}{742633753252319871940 1443} u^{59} - \frac{555168087182533723687843 2}{742633753252319871940 1443} u^{58} + \cdots + \frac{9878271516311726649843506 0}{742633753252319871940 1443} u - \frac{698116446313142252544212 70}{742633753252319871940 1443}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{60} + 35u^{59} + \cdots + 40u + 25$
c_2, c_6, c_7 c_{12}	$u^{60} + u^{59} + \cdots + 10u + 5$
c_3	$(u^{30} + u^{29} + \cdots + 5u + 5)^2$
c_4, c_5, c_9	$(u^{30} - u^{29} + \cdots + u + 1)^2$
c_8	$(u^{30} - 7u^{29} + \cdots - 39u + 7)^2$
c_{10}	$(u^{30} + 3u^{29} + \cdots + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{60} - 21y^{59} + \cdots - 20300y + 625$
c_2, c_6, c_7 c_{12}	$y^{60} + 35y^{59} + \cdots + 40y + 25$
c_3	$(y^{30} - 19y^{29} + \cdots + 115y + 25)^2$
c_4, c_5, c_9	$(y^{30} - 27y^{29} + \cdots + 3y + 1)^2$
c_8	$(y^{30} + 5y^{29} + \cdots + 383y + 49)^2$
c_{10}	$(y^{30} + y^{29} + \cdots - y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_2	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.654719 + 0.775857I$ $a = 1.000080 + 0.319639I$ $b = -0.132709 + 0.268622I$	$7.60322 + 4.47665I$	$11.02629 - 3.57345I$
$u = 0.654719 - 0.775857I$ $a = 1.000080 - 0.319639I$ $b = -0.132709 - 0.268622I$	$7.60322 - 4.47665I$	$11.02629 + 3.57345I$
$u = -0.705833 + 0.618685I$ $a = 0.714300 + 0.203149I$ $b = -0.132709 + 0.268622I$	$7.60322 + 4.47665I$	$11.02629 - 3.57345I$
$u = -0.705833 - 0.618685I$ $a = 0.714300 - 0.203149I$ $b = -0.132709 - 0.268622I$	$7.60322 - 4.47665I$	$11.02629 + 3.57345I$
$u = -0.585091 + 0.732497I$ $a = 0.758383 - 0.318002I$ $b = -0.348006 - 0.154253I$	$1.86136 - 1.73295I$	$7.31181 + 4.09879I$
$u = -0.585091 - 0.732497I$ $a = 0.758383 + 0.318002I$ $b = -0.348006 + 0.154253I$	$1.86136 + 1.73295I$	$7.31181 - 4.09879I$
$u = -0.369267 + 1.000960I$ $a = -0.81969 + 1.69178I$ $b = 0.599243 + 0.619360I$	$0.241291 + 0.398317I$	$4.00000 + 1.62643I$
$u = -0.369267 - 1.000960I$ $a = -0.81969 - 1.69178I$ $b = 0.599243 - 0.619360I$	$0.241291 - 0.398317I$	$4.00000 - 1.62643I$
$u = 0.887386 + 0.192378I$ $a = -1.71190 - 1.19516I$ $b = -1.35137 - 1.30488I$	$2.35082 - 11.35200I$	$6.55345 + 7.31316I$
$u = 0.887386 - 0.192378I$ $a = -1.71190 + 1.19516I$ $b = -1.35137 + 1.30488I$	$2.35082 + 11.35200I$	$6.55345 - 7.31316I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.860363 + 0.177411I$ $a = -1.75246 + 0.97453I$ $b = -1.38007 + 1.17534I$	$-2.99171 + 7.69168I$	$1.96957 - 6.90287I$
$u = -0.860363 - 0.177411I$ $a = -1.75246 - 0.97453I$ $b = -1.38007 - 1.17534I$	$-2.99171 - 7.69168I$	$1.96957 + 6.90287I$
$u = 0.620306 + 0.614446I$ $a = 0.572088 + 0.056222I$ $b = -0.348006 - 0.154253I$	$1.86136 - 1.73295I$	$7.31181 + 4.09879I$
$u = 0.620306 - 0.614446I$ $a = 0.572088 - 0.056222I$ $b = -0.348006 + 0.154253I$	$1.86136 + 1.73295I$	$7.31181 - 4.09879I$
$u = -0.797594 + 0.287809I$ $a = -0.923998 + 0.765282I$ $b = -0.927020 + 1.008110I$	$5.03529 + 2.69486I$	$9.41344 - 2.42783I$
$u = -0.797594 - 0.287809I$ $a = -0.923998 - 0.765282I$ $b = -0.927020 - 1.008110I$	$5.03529 - 2.69486I$	$9.41344 + 2.42783I$
$u = 0.049074 + 1.157380I$ $a = -0.440083 - 0.156255I$ $b = -0.196012 + 0.321873I$	$-3.42503 - 0.99510I$	$4.00000 + 6.82295I$
$u = 0.049074 - 1.157380I$ $a = -0.440083 + 0.156255I$ $b = -0.196012 - 0.321873I$	$-3.42503 + 0.99510I$	$4.00000 - 6.82295I$
$u = 0.797025 + 0.175191I$ $a = -1.62095 - 0.56131I$ $b = -1.31375 - 0.94290I$	$-1.37739 - 3.85600I$	$4.77500 + 2.05029I$
$u = 0.797025 - 0.175191I$ $a = -1.62095 + 0.56131I$ $b = -1.31375 + 0.94290I$	$-1.37739 + 3.85600I$	$4.77500 - 2.05029I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.542487 + 1.054280I$ $a = 0.534358 + 1.258220I$ $b = -0.927020 + 1.008110I$	$5.03529 + 2.69486I$	0
$u = 0.542487 - 1.054280I$ $a = 0.534358 - 1.258220I$ $b = -0.927020 - 1.008110I$	$5.03529 - 2.69486I$	0
$u = 0.344630 + 1.138730I$ $a = -0.185985 + 0.893612I$ $b = -1.48789 + 0.39113I$	$-4.22892 + 0.37332I$	0
$u = 0.344630 - 1.138730I$ $a = -0.185985 - 0.893612I$ $b = -1.48789 - 0.39113I$	$-4.22892 - 0.37332I$	0
$u = -0.282474 + 1.156520I$ $a = -0.302716 - 0.708874I$ $b = -1.50483 - 0.15757I$	$0.60611 + 3.12979I$	0
$u = -0.282474 - 1.156520I$ $a = -0.302716 + 0.708874I$ $b = -1.50483 + 0.15757I$	$0.60611 - 3.12979I$	0
$u = 0.185316 + 0.781676I$ $a = -1.92088 - 0.82725I$ $b = -0.196012 - 0.321873I$	$-3.42503 + 0.99510I$	$1.51394 - 6.82295I$
$u = 0.185316 - 0.781676I$ $a = -1.92088 + 0.82725I$ $b = -0.196012 + 0.321873I$	$-3.42503 - 0.99510I$	$1.51394 + 6.82295I$
$u = -0.007052 + 1.205260I$ $a = -0.373467 + 0.086652I$ $b = -0.555846 - 0.531956I$	$1.48330 + 3.51597I$	0
$u = -0.007052 - 1.205260I$ $a = -0.373467 - 0.086652I$ $b = -0.555846 + 0.531956I$	$1.48330 - 3.51597I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.424008 + 1.139460I$ $a = -0.053611 - 1.161700I$ $b = -1.47079 - 0.70709I$	$-1.72825 - 3.89629I$	0
$u = -0.424008 - 1.139460I$ $a = -0.053611 + 1.161700I$ $b = -1.47079 + 0.70709I$	$-1.72825 + 3.89629I$	0
$u = -0.485155 + 1.121090I$ $a = 0.163291 - 1.319390I$ $b = -1.31375 - 0.94290I$	$-1.37739 - 3.85600I$	0
$u = -0.485155 - 1.121090I$ $a = 0.163291 + 1.319390I$ $b = -1.31375 + 0.94290I$	$-1.37739 + 3.85600I$	0
$u = -0.206059 + 1.210030I$ $a = -0.019729 + 0.553355I$ $b = 0.599243 - 0.619360I$	$0.241291 - 0.398317I$	0
$u = -0.206059 - 1.210030I$ $a = -0.019729 - 0.553355I$ $b = 0.599243 + 0.619360I$	$0.241291 + 0.398317I$	0
$u = 0.464076 + 1.142730I$ $a = 0.17596 - 2.17762I$ $b = 1.55826 - 0.69337I$	$-2.32727 + 7.24749I$	0
$u = 0.464076 - 1.142730I$ $a = 0.17596 + 2.17762I$ $b = 1.55826 + 0.69337I$	$-2.32727 - 7.24749I$	0
$u = -0.439473 + 1.157520I$ $a = 0.24361 + 1.97599I$ $b = 1.55057 + 0.49229I$	$-7.47443 - 3.64220I$	0
$u = -0.439473 - 1.157520I$ $a = 0.24361 - 1.97599I$ $b = 1.55057 - 0.49229I$	$-7.47443 + 3.64220I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.751141 + 0.102372I$ $a = -1.94060 - 0.10853I$ $b = -1.47079 - 0.70709I$	$-1.72825 - 3.89629I$	$3.54228 + 4.15365I$
$u = 0.751141 - 0.102372I$ $a = -1.94060 + 0.10853I$ $b = -1.47079 + 0.70709I$	$-1.72825 + 3.89629I$	$3.54228 - 4.15365I$
$u = 0.387822 + 1.183350I$ $a = 0.31301 - 1.57099I$ $b = 1.46023 - 0.10534I$	$-5.49797 + 0.02948I$	0
$u = 0.387822 - 1.183350I$ $a = 0.31301 + 1.57099I$ $b = 1.46023 + 0.10534I$	$-5.49797 - 0.02948I$	0
$u = 0.366743 + 1.205600I$ $a = 0.40148 - 1.38026I$ $b = 1.46023 + 0.10534I$	$-5.49797 - 0.02948I$	0
$u = 0.366743 - 1.205600I$ $a = 0.40148 + 1.38026I$ $b = 1.46023 - 0.10534I$	$-5.49797 + 0.02948I$	0
$u = 0.522428 + 1.152290I$ $a = 0.17559 + 1.54731I$ $b = -1.38007 + 1.17534I$	$-2.99171 + 7.69168I$	0
$u = 0.522428 - 1.152290I$ $a = 0.17559 - 1.54731I$ $b = -1.38007 - 1.17534I$	$-2.99171 - 7.69168I$	0
$u = -0.545771 + 1.158110I$ $a = 0.23953 - 1.65450I$ $b = -1.35137 - 1.30488I$	$2.35082 - 11.35200I$	0
$u = -0.545771 - 1.158110I$ $a = 0.23953 + 1.65450I$ $b = -1.35137 + 1.30488I$	$2.35082 + 11.35200I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.344101 + 1.255420I$ $a = 0.635497 + 1.085770I$ $b = 1.55057 - 0.49229I$	$-7.47443 + 3.64220I$	0
$u = -0.344101 - 1.255420I$ $a = 0.635497 - 1.085770I$ $b = 1.55057 + 0.49229I$	$-7.47443 - 3.64220I$	0
$u = -0.296315 + 0.623891I$ $a = -2.58035 + 1.30683I$ $b = -0.555846 + 0.531956I$	$1.48330 - 3.51597I$	$6.79512 + 5.12276I$
$u = -0.296315 - 0.623891I$ $a = -2.58035 - 1.30683I$ $b = -0.555846 - 0.531956I$	$1.48330 + 3.51597I$	$6.79512 - 5.12276I$
$u = 0.330952 + 1.277840I$ $a = 0.717873 - 0.924652I$ $b = 1.55826 + 0.69337I$	$-2.32727 - 7.24749I$	0
$u = 0.330952 - 1.277840I$ $a = 0.717873 + 0.924652I$ $b = 1.55826 - 0.69337I$	$-2.32727 + 7.24749I$	0
$u = -0.664015 + 0.029232I$ $a = -2.10848 - 0.55839I$ $b = -1.48789 + 0.39113I$	$-4.22892 + 0.37332I$	$-0.206745 + 0.534714I$
$u = -0.664015 - 0.029232I$ $a = -2.10848 + 0.55839I$ $b = -1.48789 - 0.39113I$	$-4.22892 - 0.37332I$	$-0.206745 - 0.534714I$
$u = 0.608465 + 0.053859I$ $a = -2.39014 - 1.03423I$ $b = -1.50483 + 0.15757I$	$0.60611 - 3.12979I$	$4.91872 + 1.86186I$
$u = 0.608465 - 0.053859I$ $a = -2.39014 + 1.03423I$ $b = -1.50483 - 0.15757I$	$0.60611 + 3.12979I$	$4.91872 - 1.86186I$

III. $I^u_3 = \langle b^3 - b^2u - u,\ a+1,\ u^2+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4bu - 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -1.00000$ $b = 0.744862 + 0.877439I$	$-0.26574 + 2.82812I$	$-0.49024 - 2.97945I$
$u = 1.000000I$ $a = -1.00000$ $b = -0.744862 + 0.877439I$	$-0.26574 - 2.82812I$	$-0.49024 + 2.97945I$
$u = 1.000000I$ $a = -1.00000$ $b = -0.754878I$	-4.40332	-7.01950
$u = -1.000000I$ $a = -1.00000$ $b = 0.744862 - 0.877439I$	$-0.26574 - 2.82812I$	$-0.49024 + 2.97945I$
$u = -1.000000I$ $a = -1.00000$ $b = -0.744862 - 0.877439I$	$-0.26574 + 2.82812I$	$-0.49024 - 2.97945I$
$u = -1.000000I$ $a = -1.00000$ $b = 0.754878I$	-4.40332	-7.01950

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$((u-1)^6)(u^{37}+18u^{36}+\cdots-4u-1)(u^{60}+35u^{59}+\cdots+40u+25)$
c_2, c_6, c_7 c_{12}	$((u^2+1)^3)(u^{37}+9u^{35}+\cdots+2u-1)(u^{60}+u^{59}+\cdots+10u+5)$
c_3	$u^6(u^{30}+u^{29}+\cdots+5u+5)^2(u^{37}-3u^{36}+\cdots+192u-128)$
c_4, c_5, c_9	$(u^6-3u^4+2u^2+1)(u^{30}-u^{29}+\cdots+u+1)^2(u^{37}+3u^{36}+\cdots+5u-2)$
c_8	$((u^3+u^2-1)^2)(u^{30}-7u^{29}+\cdots-39u+7)^2$ $\cdot(u^{37}-9u^{36}+\cdots+839u-136)$
c_{10}	$(u^6+u^4+2u^2+1)(u^{30}+3u^{29}+\cdots+u+1)^2$ $\cdot(u^{37}-9u^{36}+\cdots-11u+6)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$((y-1)^6)(y^{37}+10y^{36}+\cdots-28y^2-1)$ $\cdot(y^{60}-21y^{59}+\cdots-20300y+625)$
c_2, c_6, c_7 c_{12}	$((y+1)^6)(y^{37}+18y^{36}+\cdots-4y-1)(y^{60}+35y^{59}+\cdots+40y+25)$
c_3	$y^6(y^{30}-19y^{29}+\cdots+115y+25)^2$ $\cdot(y^{37}-19y^{36}+\cdots-241664y-16384)$
c_4, c_5, c_9	$((y^3-3y^2+2y+1)^2)(y^{30}-27y^{29}+\cdots+3y+1)^2$ $\cdot(y^{37}-33y^{36}+\cdots+5y-4)$
c_8	$((y^3-y^2+2y-1)^2)(y^{30}+5y^{29}+\cdots+383y+49)^2$ $\cdot(y^{37}+3y^{36}+\cdots-309823y-18496)$
c_{10}	$((y^3+y^2+2y+1)^2)(y^{30}+y^{29}+\cdots-y+1)^2$ $\cdot(y^{37}+3y^{36}+\cdots+2101y-36)$