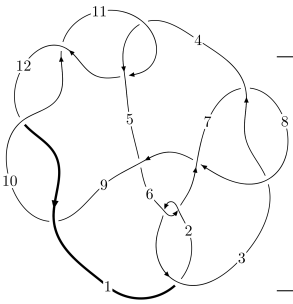
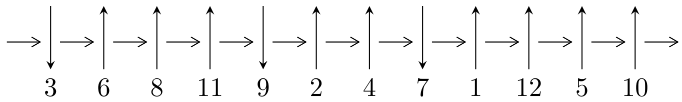
$12a_{0332}$ $(K12a_{0332})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{36} + 2u^{35} + \cdots + b + 1,\ u^{36} - 3u^{35} + \cdots + 2a - 3,\ u^{37} - 3u^{36} + \cdots + u + 2 \rangle$$
$$I_2^u = \langle -u^{26}a - 2u^{27} + \cdots - a + 2,\ 2u^{27}a + 2u^{26}a + \cdots + a^2 + 1,\ u^{28} + u^{27} + \cdots - u^2 + 1 \rangle$$
$$I_3^u = \langle u^7 - u^6 - u^5 + 3u^3 + b - u,\ -u^7 + 2u^6 + u^5 - 2u^4 - 3u^3 + 4u^2 + a + 2u - 2,\ u^8 - u^6 + 3u^4 - 2u^2 + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 101 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.

$$I_1^u = \langle -u^{36}+2u^{35}+\cdots+b+1,\ u^{36}-3u^{35}+\cdots+2a-3,\ u^{37}-3u^{36}+\cdots+u+2\rangle$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{1}{2}u^{36}+\frac{3}{2}u^{35}+\cdots+u+\frac{3}{2} \\ u^{36}-2u^{35}+\cdots-u-1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{5}{2}u^{36}+\frac{5}{2}u^{35}+\cdots-5u-\frac{1}{2} \\ -2u^{36}+9u^{35}+\cdots+13u+9 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{1}{2}u^{36}-\frac{3}{2}u^{35}+\cdots-u-\frac{1}{2} \\ -2u^{36}+3u^{35}+\cdots-u+1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2+1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4-u^2+1 \\ -u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6+u^4-2u^2+1 \\ u^6+u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{13}+2u^{11}-5u^9+6u^7-6u^5+4u^3-u \\ u^{13}-u^{11}+3u^9-2u^7+2u^5-u^3+u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{3}{2}u^{36}-\frac{3}{2}u^{35}+\cdots+3u+\frac{3}{2} \\ u^{36}-5u^{35}+\cdots-7u-5 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -2u^{36}+12u^{35}-2u^{34}-54u^{33}+30u^{32}+204u^{31}-162u^{30}-520u^{29}+510u^{28}+1120u^{27}-1224u^{26}-1954u^{25}+2294u^{24}+2956u^{23}-3538u^{22}-3846u^{21}+4422u^{20}+4450u^{19}-4544u^{18}-4538u^{17}+3660u^{16}+4144u^{15}-2156u^{14}-3248u^{13}+644u^{12}+2146u^{11}+292u^{10}-1052u^9-570u^8+292u^7+378u^6+46u^5-134u^4-70u^3+4u^2+26u+26$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{37} + 16u^{36} + \cdots - 5u - 1$
c_2, c_3, c_6 c_7	$u^{37} + 8u^{35} + \cdots + 3u - 1$
c_4, c_{11}	$u^{37} + 3u^{36} + \cdots + u - 2$
c_5	$u^{37} - 21u^{36} + \cdots + 11969u - 898$
c_9, c_{10}, c_{12}	$u^{37} - 9u^{36} + \cdots + 9u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{37} + 20y^{36} + \cdots + 83y - 1$
c_2, c_3, c_6 c_7	$y^{37} + 16y^{36} + \cdots - 5y - 1$
c_4, c_{11}	$y^{37} - 9y^{36} + \cdots + 9y - 4$
c_5	$y^{37} - 9y^{36} + \cdots + 9968617y - 806404$
c_9, c_{10}, c_{12}	$y^{37} + 39y^{36} + \cdots + 257y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.956735 + 0.301871I$ $a = 0.107211 + 0.253891I$ $b = -0.426927 - 0.834723I$	$4.07996 - 1.69437I$	$12.28632 + 1.79481I$
$u = -0.956735 - 0.301871I$ $a = 0.107211 - 0.253891I$ $b = -0.426927 + 0.834723I$	$4.07996 + 1.69437I$	$12.28632 - 1.79481I$
$u = 0.958389 + 0.235458I$ $a = -0.753757 + 0.244529I$ $b = 0.864634 + 0.110338I$	$4.44965 + 3.84432I$	$12.5649 - 6.9040I$
$u = 0.958389 - 0.235458I$ $a = -0.753757 - 0.244529I$ $b = 0.864634 - 0.110338I$	$4.44965 - 3.84432I$	$12.5649 + 6.9040I$
$u = 0.974044 + 0.110846I$ $a = 0.438179 + 0.800925I$ $b = -0.697177 + 1.212880I$	$1.78420 - 6.55614I$	$9.22168 + 4.71128I$
$u = 0.974044 - 0.110846I$ $a = 0.438179 - 0.800925I$ $b = -0.697177 - 1.212880I$	$1.78420 + 6.55614I$	$9.22168 - 4.71128I$
$u = -0.869494 + 0.549252I$ $a = 1.04527 + 1.02873I$ $b = 0.332238 - 0.481286I$	$-2.07404 + 1.88888I$	$3.74513 - 1.47237I$
$u = -0.869494 - 0.549252I$ $a = 1.04527 - 1.02873I$ $b = 0.332238 + 0.481286I$	$-2.07404 - 1.88888I$	$3.74513 + 1.47237I$
$u = -0.985335 + 0.388773I$ $a = -1.78941 - 1.15884I$ $b = 0.368742 + 0.784022I$	$0.19576 - 12.29670I$	$5.96416 + 10.82953I$
$u = -0.985335 - 0.388773I$ $a = -1.78941 + 1.15884I$ $b = 0.368742 - 0.784022I$	$0.19576 + 12.29670I$	$5.96416 - 10.82953I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.806001 + 0.770895I$ $a = 0.69552 + 1.27487I$ $b = 0.833243 - 1.116330I$	$-1.90734 + 2.28917I$	$4.88020 - 3.21889I$
$u = -0.806001 - 0.770895I$ $a = 0.69552 - 1.27487I$ $b = 0.833243 + 1.116330I$	$-1.90734 - 2.28917I$	$4.88020 + 3.21889I$
$u = 0.695248 + 0.472483I$ $a = 0.444025 - 1.024300I$ $b = -0.122253 + 0.573991I$	$-1.19445 + 1.82713I$	$4.12966 - 6.04101I$
$u = 0.695248 - 0.472483I$ $a = 0.444025 + 1.024300I$ $b = -0.122253 - 0.573991I$	$-1.19445 - 1.82713I$	$4.12966 + 6.04101I$
$u = 0.826193 + 0.842773I$ $a = -0.567500 - 0.335315I$ $b = 0.360895 - 0.189373I$	$-3.16743 + 0.36820I$	$6.31788 - 2.12826I$
$u = 0.826193 - 0.842773I$ $a = -0.567500 + 0.335315I$ $b = 0.360895 + 0.189373I$	$-3.16743 - 0.36820I$	$6.31788 + 2.12826I$
$u = -0.492238 + 0.655396I$ $a = 0.068505 + 1.209380I$ $b = -0.723783 - 1.213940I$	$-3.23955 - 6.28444I$	$0.23042 + 7.24447I$
$u = -0.492238 - 0.655396I$ $a = 0.068505 - 1.209380I$ $b = -0.723783 + 1.213940I$	$-3.23955 + 6.28444I$	$0.23042 - 7.24447I$
$u = -0.942981 + 0.761048I$ $a = 1.151510 + 0.744837I$ $b = -0.60571 - 2.01178I$	$-1.50596 - 8.08923I$	$6.07656 + 8.51523I$
$u = -0.942981 - 0.761048I$ $a = 1.151510 - 0.744837I$ $b = -0.60571 + 2.01178I$	$-1.50596 + 8.08923I$	$6.07656 - 8.51523I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.827155 + 0.889743I$ $a = 1.41124 - 2.73920I$ $b = 2.08237 + 4.08970I$	$-8.12556 - 10.18450I$	$0.37161 + 5.66795I$
$u = 0.827155 - 0.889743I$ $a = 1.41124 + 2.73920I$ $b = 2.08237 - 4.08970I$	$-8.12556 + 10.18450I$	$0.37161 - 5.66795I$
$u = 0.960937 + 0.799626I$ $a = 0.367828 + 0.480609I$ $b = -0.706212 - 0.437969I$	$-2.75006 + 5.76064I$	$7.04693 - 2.89668I$
$u = 0.960937 - 0.799626I$ $a = 0.367828 - 0.480609I$ $b = -0.706212 + 0.437969I$	$-2.75006 - 5.76064I$	$7.04693 + 2.89668I$
$u = 0.888234 + 0.886878I$ $a = -1.24637 + 2.29159I$ $b = -1.53871 - 3.88705I$	$-10.85650 + 5.89802I$	$-1.00813 - 7.72734I$
$u = 0.888234 - 0.886878I$ $a = -1.24637 - 2.29159I$ $b = -1.53871 + 3.88705I$	$-10.85650 - 5.89802I$	$-1.00813 + 7.72734I$
$u = -0.916359 + 0.865710I$ $a = -1.40408 - 1.51780I$ $b = -0.73441 + 3.20038I$	$-8.85573 - 3.20735I$	$5.22275 + 2.78415I$
$u = -0.916359 - 0.865710I$ $a = -1.40408 + 1.51780I$ $b = -0.73441 - 3.20038I$	$-8.85573 + 3.20735I$	$5.22275 - 2.78415I$
$u = 0.947451 + 0.860827I$ $a = -2.19419 + 1.40646I$ $b = -0.12980 - 3.94938I$	$-10.66820 + 0.56453I$	$-0.58196 + 3.04417I$
$u = 0.947451 - 0.860827I$ $a = -2.19419 - 1.40646I$ $b = -0.12980 + 3.94938I$	$-10.66820 - 0.56453I$	$-0.58196 - 3.04417I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.983458 + 0.824484I$ $a = 2.65593 - 1.57243I$ $b = -0.29611 + 5.01537I$	$-7.6317 + 16.5331I$	$1.29247 - 10.38801I$
$u = 0.983458 - 0.824484I$ $a = 2.65593 + 1.57243I$ $b = -0.29611 - 5.01537I$	$-7.6317 - 16.5331I$	$1.29247 + 10.38801I$
$u = -0.240182 + 0.666603I$ $a = -0.12252 - 1.87056I$ $b = 0.79192 + 1.32245I$	$-2.16954 + 8.48653I$	$0.54078 - 6.28516I$
$u = -0.240182 - 0.666603I$ $a = -0.12252 + 1.87056I$ $b = 0.79192 - 1.32245I$	$-2.16954 - 8.48653I$	$0.54078 + 6.28516I$
$u = -0.595207$ $a = 0.354844$ $b = 0.343586$	0.761151	13.8790
$u = -0.054179 + 0.561331I$ $a = 0.765177 + 0.865041I$ $b = 0.175261 - 0.166101I$	$1.44057 - 1.28380I$	$5.75923 + 3.39663I$
$u = -0.054179 - 0.561331I$ $a = 0.765177 - 0.865041I$ $b = 0.175261 + 0.166101I$	$1.44057 + 1.28380I$	$5.75923 - 3.39663I$

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle -u^{26}a - 2u^{27} + \cdots - a + 2,\ 2u^{27}a + 2u^{26}a + \cdots + a^2 + 1,\ u^{28} + u^{27} + \cdots - u^2 + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ u^{26}a + 2u^{27} + \cdots + a - 2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -2u^{27} - 3u^{26} + \cdots - 2a + 1 \\ 2u^{25}a + 2u^{24}a + \cdots + 2au - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -2u^{27}a - 4u^{26}a + \cdots + 2a + 2u \\ 2u^{27}a + 4u^{27} + \cdots + 2a - 4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ u^6 + u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{13} + 2u^{11} - 5u^9 + 6u^7 - 6u^5 + 4u^3 - u \\ u^{13} - u^{11} + 3u^9 - 2u^7 + 2u^5 - u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -2u^{27} - 2u^{26} + \cdots - 2a + 2 \\ -2u^{27}a - 4u^{26}a + \cdots + 2a - 2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{26} - 4u^{25} + 12u^{24} + 16u^{23} - 44u^{22} - 52u^{21} + 88u^{20} + 116u^{19} - 168u^{18} - 204u^{17} + 236u^{16} + 284u^{15} - 288u^{14} - 312u^{13} + 280u^{12} + 256u^{11} - 224u^{10} - 152u^9 + 136u^8 + 40u^7 - 64u^6 + 16u^5 + 16u^4 - 16u^3 + 4u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{56} + 31u^{55} + \cdots + 27u + 4$
c_2, c_3, c_6 c_7	$u^{56} - u^{55} + \cdots + u + 2$
c_4, c_{11}	$(u^{28} - u^{27} + \cdots - u^2 + 1)^2$
c_5	$(u^{28} + 7u^{27} + \cdots + 8u + 1)^2$
c_9, c_{10}, c_{12}	$(u^{28} - 7u^{27} + \cdots - 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{56} - 13y^{55} + \cdots + 927y + 16$
c_2, c_3, c_6 c_7	$y^{56} + 31y^{55} + \cdots + 27y + 4$
c_4, c_{11}	$(y^{28} - 7y^{27} + \cdots - 2y + 1)^2$
c_5	$(y^{28} + y^{27} + \cdots + 62y + 1)^2$
c_9, c_{10}, c_{12}	$(y^{28} + 29y^{27} + \cdots + 14y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.899770 + 0.359295I$ $a = 1.02424 + 1.44935I$ $b = 0.317596 + 0.143962I$	$-2.76021 - 3.76187I$	$4.54869 + 7.99757I$
$u = -0.899770 + 0.359295I$ $a = -2.28758 - 0.15491I$ $b = 1.40296 + 0.75227I$	$-2.76021 - 3.76187I$	$4.54869 + 7.99757I$
$u = -0.899770 - 0.359295I$ $a = 1.02424 - 1.44935I$ $b = 0.317596 - 0.143962I$	$-2.76021 + 3.76187I$	$4.54869 - 7.99757I$
$u = -0.899770 - 0.359295I$ $a = -2.28758 + 0.15491I$ $b = 1.40296 - 0.75227I$	$-2.76021 + 3.76187I$	$4.54869 - 7.99757I$
$u = -0.954301 + 0.165131I$ $a = 0.453330 - 0.469903I$ $b = -0.670608 - 1.151640I$	$3.64668 + 1.29573I$	$12.16340 + 0.19021I$
$u = -0.954301 + 0.165131I$ $a = -0.381153 - 0.148423I$ $b = 0.877426 - 0.189403I$	$3.64668 + 1.29573I$	$12.16340 + 0.19021I$
$u = -0.954301 - 0.165131I$ $a = 0.453330 + 0.469903I$ $b = -0.670608 + 1.151640I$	$3.64668 - 1.29573I$	$12.16340 - 0.19021I$
$u = -0.954301 - 0.165131I$ $a = -0.381153 + 0.148423I$ $b = 0.877426 + 0.189403I$	$3.64668 - 1.29573I$	$12.16340 - 0.19021I$
$u = 0.971170 + 0.356128I$ $a = -0.056263 - 0.455331I$ $b = -0.331645 + 0.653502I$	$2.55576 + 6.87695I$	$9.38448 - 7.29150I$
$u = 0.971170 + 0.356128I$ $a = -1.66109 + 0.82974I$ $b = 0.635990 - 0.561304I$	$2.55576 + 6.87695I$	$9.38448 - 7.29150I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.971170 - 0.356128I$ $a = -0.056263 + 0.455331I$ $b = -0.331645 - 0.653502I$	$2.55576 - 6.87695I$	$9.38448 + 7.29150I$
$u = 0.971170 - 0.356128I$ $a = -1.66109 - 0.82974I$ $b = 0.635990 + 0.561304I$	$2.55576 - 6.87695I$	$9.38448 + 7.29150I$
$u = 0.816311 + 0.219669I$ $a = 1.44748 - 0.37350I$ $b = -0.48686 + 1.64839I$	$-1.87609 + 0.68499I$	$8.66956 - 0.56233I$
$u = 0.816311 + 0.219669I$ $a = 0.89236 - 1.56400I$ $b = -0.222133 - 0.418971I$	$-1.87609 + 0.68499I$	$8.66956 - 0.56233I$
$u = 0.816311 - 0.219669I$ $a = 1.44748 + 0.37350I$ $b = -0.48686 - 1.64839I$	$-1.87609 - 0.68499I$	$8.66956 + 0.56233I$
$u = 0.816311 - 0.219669I$ $a = 0.89236 + 1.56400I$ $b = -0.222133 + 0.418971I$	$-1.87609 - 0.68499I$	$8.66956 + 0.56233I$
$u = 0.894569 + 0.739690I$ $a = 0.546052 - 0.607895I$ $b = -0.438838 + 1.131330I$	$-1.35470 + 2.81005I$	$6.61718 - 2.93426I$
$u = 0.894569 + 0.739690I$ $a = 0.522067 - 0.615995I$ $b = 0.467816 + 0.278002I$	$-1.35470 + 2.81005I$	$6.61718 - 2.93426I$
$u = 0.894569 - 0.739690I$ $a = 0.546052 + 0.607895I$ $b = -0.438838 - 1.131330I$	$-1.35470 - 2.81005I$	$6.61718 + 2.93426I$
$u = 0.894569 - 0.739690I$ $a = 0.522067 + 0.615995I$ $b = 0.467816 - 0.278002I$	$-1.35470 - 2.81005I$	$6.61718 + 2.93426I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.594944 + 0.540484I$ $a = 0.796189 - 0.763146I$ $b = -0.123628 + 0.489316I$	$-1.33499 + 1.97473I$	$3.44037 - 3.90307I$
$u = 0.594944 + 0.540484I$ $a = 0.187055 - 1.218540I$ $b = -0.446420 + 0.779097I$	$-1.33499 + 1.97473I$	$3.44037 - 3.90307I$
$u = 0.594944 - 0.540484I$ $a = 0.796189 + 0.763146I$ $b = -0.123628 - 0.489316I$	$-1.33499 - 1.97473I$	$3.44037 + 3.90307I$
$u = 0.594944 - 0.540484I$ $a = 0.187055 + 1.218540I$ $b = -0.446420 - 0.779097I$	$-1.33499 - 1.97473I$	$3.44037 + 3.90307I$
$u = -0.824272 + 0.873080I$ $a = -0.868359 + 0.410750I$ $b = 0.860810 + 0.419716I$	$-5.36393 + 4.77850I$	$3.36601 - 2.38985I$
$u = -0.824272 + 0.873080I$ $a = 1.10511 + 2.56923I$ $b = 2.16209 - 3.37931I$	$-5.36393 + 4.77850I$	$3.36601 - 2.38985I$
$u = -0.824272 - 0.873080I$ $a = -0.868359 - 0.410750I$ $b = 0.860810 - 0.419716I$	$-5.36393 - 4.77850I$	$3.36601 + 2.38985I$
$u = -0.824272 - 0.873080I$ $a = 1.10511 - 2.56923I$ $b = 2.16209 + 3.37931I$	$-5.36393 - 4.77850I$	$3.36601 + 2.38985I$
$u = 0.848977 + 0.862822I$ $a = -1.61944 + 2.47231I$ $b = -1.04855 - 4.31824I$	$-10.42220 - 0.98573I$	$-1.20004 + 1.21736I$
$u = 0.848977 + 0.862822I$ $a = 0.52453 - 2.98229I$ $b = 3.47400 + 2.91986I$	$-10.42220 - 0.98573I$	$-1.20004 + 1.21736I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.848977 - 0.862822I$ $a = -1.61944 - 2.47231I$ $b = -1.04855 + 4.31824I$	$-10.42220 + 0.98573I$	$-1.20004 - 1.21736I$
$u = 0.848977 - 0.862822I$ $a = 0.52453 + 2.98229I$ $b = 3.47400 - 2.91986I$	$-10.42220 + 0.98573I$	$-1.20004 - 1.21736I$
$u = -0.883885 + 0.841772I$ $a = -0.579421 - 0.504600I$ $b = -0.614694 + 1.257450I$	$-8.24265 - 2.93440I$	$1.90343 + 3.53352I$
$u = -0.883885 + 0.841772I$ $a = -1.73296 - 2.18260I$ $b = -0.90166 + 3.97609I$	$-8.24265 - 2.93440I$	$1.90343 + 3.53352I$
$u = -0.883885 - 0.841772I$ $a = -0.579421 + 0.504600I$ $b = -0.614694 - 1.257450I$	$-8.24265 + 2.93440I$	$1.90343 - 3.53352I$
$u = -0.883885 - 0.841772I$ $a = -1.73296 + 2.18260I$ $b = -0.90166 - 3.97609I$	$-8.24265 + 2.93440I$	$1.90343 - 3.53352I$
$u = -0.921489 + 0.824235I$ $a = -0.547487 - 0.474537I$ $b = -0.21718 + 1.66408I$	$-8.12146 - 3.27187I$	$2.26749 + 1.59380I$
$u = -0.921489 + 0.824235I$ $a = -2.04938 - 1.94889I$ $b = -0.66887 + 3.95674I$	$-8.12146 - 3.27187I$	$2.26749 + 1.59380I$
$u = -0.921489 - 0.824235I$ $a = -0.547487 + 0.474537I$ $b = -0.21718 - 1.66408I$	$-8.12146 + 3.27187I$	$2.26749 - 1.59380I$
$u = -0.921489 - 0.824235I$ $a = -2.04938 + 1.94889I$ $b = -0.66887 - 3.95674I$	$-8.12146 + 3.27187I$	$2.26749 - 1.59380I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.956709 + 0.821698I$ $a = 2.87664 - 0.62418I$ $b = -2.04478 + 4.61109I$	$-10.08390 + 7.24627I$	$-0.35343 - 6.30493I$
$u = 0.956709 + 0.821698I$ $a = -2.34992 + 1.84192I$ $b = -0.59666 - 4.17927I$	$-10.08390 + 7.24627I$	$-0.35343 - 6.30493I$
$u = 0.956709 - 0.821698I$ $a = 2.87664 + 0.62418I$ $b = -2.04478 - 4.61109I$	$-10.08390 - 7.24627I$	$-0.35343 + 6.30493I$
$u = 0.956709 - 0.821698I$ $a = -2.34992 - 1.84192I$ $b = -0.59666 + 4.17927I$	$-10.08390 - 7.24627I$	$-0.35343 + 6.30493I$
$u = -0.975960 + 0.814541I$ $a = 0.461489 - 0.788364I$ $b = -1.176520 + 0.452581I$	$-4.88826 - 11.04430I$	$4.28365 + 7.20583I$
$u = -0.975960 + 0.814541I$ $a = 2.47158 + 1.26067I$ $b = -0.68026 - 4.45661I$	$-4.88826 - 11.04430I$	$4.28365 + 7.20583I$
$u = -0.975960 - 0.814541I$ $a = 0.461489 + 0.788364I$ $b = -1.176520 - 0.452581I$	$-4.88826 + 11.04430I$	$4.28365 - 7.20583I$
$u = -0.975960 - 0.814541I$ $a = 2.47158 - 1.26067I$ $b = -0.68026 + 4.45661I$	$-4.88826 + 11.04430I$	$4.28365 - 7.20583I$
$u = 0.190095 + 0.611771I$ $a = 0.740553 - 0.573961I$ $b = 0.0110804 - 0.0583490I$	$0.14328 - 3.38176I$	$3.65042 + 2.75424I$
$u = 0.190095 + 0.611771I$ $a = 0.25617 + 1.77312I$ $b = 0.491611 - 1.016080I$	$0.14328 - 3.38176I$	$3.65042 + 2.75424I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.190095 - 0.611771I$ $a = 0.740553 + 0.573961I$ $b = 0.0110804 + 0.0583490I$	$0.14328 + 3.38176I$	$3.65042 - 2.75424I$
$u = 0.190095 - 0.611771I$ $a = 0.25617 - 1.77312I$ $b = 0.491611 + 1.016080I$	$0.14328 + 3.38176I$	$3.65042 - 2.75424I$
$u = -0.313097 + 0.488114I$ $a = -0.290579 + 1.243310I$ $b = -1.211500 - 0.586102I$	$-4.53523 + 0.50746I$	$-2.74123 - 1.23953I$
$u = -0.313097 + 0.488114I$ $a = 0.61878 - 2.72822I$ $b = -0.32060 + 1.46145I$	$-4.53523 + 0.50746I$	$-2.74123 - 1.23953I$
$u = -0.313097 - 0.488114I$ $a = -0.290579 - 1.243310I$ $b = -1.211500 + 0.586102I$	$-4.53523 - 0.50746I$	$-2.74123 + 1.23953I$
$u = -0.313097 - 0.488114I$ $a = 0.61878 + 2.72822I$ $b = -0.32060 - 1.46145I$	$-4.53523 - 0.50746I$	$-2.74123 + 1.23953I$

III.
$$\boldsymbol{I^u_3 = \langle u^7-u^6-u^5+3u^3+b-u,\ -u^7+2u^6+\cdots+a-2,\ u^8-u^6+3u^4-2u^2+1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^7-2u^6-u^5+2u^4+3u^3-4u^2-2u+2\\-u^7+u^6+u^5-3u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^6-2u^2+u\\-u^7+u^5+u^4-2u^3+u+1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u^7-u^6-u^5+u^4+3u^3-2u^2-2u+1\\-u^7+u^5-3u^3-u^2+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^2+1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^4-u^2+1\\-u^4\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^6+u^4-2u^2+1\\u^6+u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u^3\\u^5-u^3+u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u^6+u^4-3u^2+u+1\\-u^7+u^5-2u^3+u+1\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^6+4u^4-12u^2+4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^8$
c_2, c_3, c_6 c_7	$(u^2+1)^4$
c_4, c_{11}	$u^8 - u^6 + 3u^4 - 2u^2 + 1$
c_5	$u^8 - 5u^6 + 7u^4 - 2u^2 + 1$
c_8	$(u+1)^8$
c_9, c_{10}	$(u^4 + u^3 + 3u^2 + 2u + 1)^2$
c_{12}	$(u^4 - u^3 + 3u^2 - 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y-1)^8$
c_2, c_3, c_6 c_7	$(y+1)^8$
c_4, c_{11}	$(y^4 - y^3 + 3y^2 - 2y + 1)^2$
c_5	$(y^4 - 5y^3 + 7y^2 - 2y + 1)^2$
c_9, c_{10}, c_{12}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.720342 + 0.351808I$ $a = -0.417258 - 0.893260I$ $b = 0.157709 - 0.792046I$	$-3.07886 + 1.41510I$	$-0.17326 - 4.90874I$
$u = 0.720342 - 0.351808I$ $a = -0.417258 + 0.893260I$ $b = 0.157709 + 0.792046I$	$-3.07886 - 1.41510I$	$-0.17326 + 4.90874I$
$u = -0.720342 + 0.351808I$ $a = 1.82449 + 1.98811I$ $b = -0.643355 - 1.006420I$	$-3.07886 - 1.41510I$	$-0.17326 + 4.90874I$
$u = -0.720342 - 0.351808I$ $a = 1.82449 - 1.98811I$ $b = -0.643355 + 1.006420I$	$-3.07886 + 1.41510I$	$-0.17326 - 4.90874I$
$u = 0.911292 + 0.851808I$ $a = -2.28927 + 2.37001I$ $b = -1.08282 - 5.08987I$	$-10.08060 + 3.16396I$	$-3.82674 - 2.56480I$
$u = 0.911292 - 0.851808I$ $a = -2.28927 - 2.37001I$ $b = -1.08282 + 5.08987I$	$-10.08060 - 3.16396I$	$-3.82674 + 2.56480I$
$u = -0.911292 + 0.851808I$ $a = -1.11796 - 1.27516I$ $b = -0.43154 + 2.29140I$	$-10.08060 - 3.16396I$	$-3.82674 + 2.56480I$
$u = -0.911292 - 0.851808I$ $a = -1.11796 + 1.27516I$ $b = -0.43154 - 2.29140I$	$-10.08060 + 3.16396I$	$-3.82674 - 2.56480I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^8)(u^{37}+16u^{36}+\cdots-5u-1)(u^{56}+31u^{55}+\cdots+27u+4)$
c_2, c_3, c_6 c_7	$((u^2+1)^4)(u^{37}+8u^{35}+\cdots+3u-1)(u^{56}-u^{55}+\cdots+u+2)$
c_4, c_{11}	$(u^8-u^6+3u^4-2u^2+1)(u^{28}-u^{27}+\cdots-u^2+1)^2$ $\cdot(u^{37}+3u^{36}+\cdots+u-2)$
c_5	$(u^8-5u^6+7u^4-2u^2+1)(u^{28}+7u^{27}+\cdots+8u+1)^2$ $\cdot(u^{37}-21u^{36}+\cdots+11969u-898)$
c_8	$((u+1)^8)(u^{37}+16u^{36}+\cdots-5u-1)(u^{56}+31u^{55}+\cdots+27u+4)$
c_9, c_{10}	$((u^4+u^3+3u^2+2u+1)^2)(u^{28}-7u^{27}+\cdots-2u+1)^2$ $\cdot(u^{37}-9u^{36}+\cdots+9u-4)$
c_{12}	$((u^4-u^3+3u^2-2u+1)^2)(u^{28}-7u^{27}+\cdots-2u+1)^2$ $\cdot(u^{37}-9u^{36}+\cdots+9u-4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$((y-1)^8)(y^{37}+20y^{36}+\cdots+83y-1)(y^{56}-13y^{55}+\cdots+927y+16)$
c_2, c_3, c_6 c_7	$((y+1)^8)(y^{37}+16y^{36}+\cdots-5y-1)(y^{56}+31y^{55}+\cdots+27y+4)$
c_4, c_{11}	$((y^4-y^3+3y^2-2y+1)^2)(y^{28}-7y^{27}+\cdots-2y+1)^2$ $\cdot(y^{37}-9y^{36}+\cdots+9y-4)$
c_5	$((y^4-5y^3+7y^2-2y+1)^2)(y^{28}+y^{27}+\cdots+62y+1)^2$ $\cdot(y^{37}-9y^{36}+\cdots+9968617y-806404)$
c_9, c_{10}, c_{12}	$((y^4+5y^3+7y^2+2y+1)^2)(y^{28}+29y^{27}+\cdots+14y+1)^2$ $\cdot(y^{37}+39y^{36}+\cdots+257y-16)$