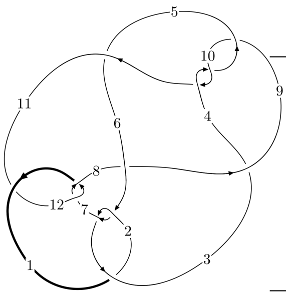
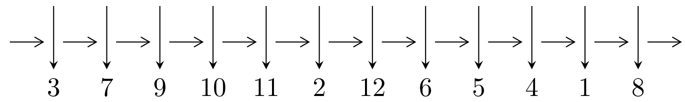
$12a_{0575}$ $(K12a_{0575})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle -2u^{37} + 3u^{36} + \cdots + b - 3,\ -3u^{39} + 9u^{38} + \cdots + 2a - 10,\ u^{40} - 3u^{39} + \cdots + 6u - 2\rangle \\
I_2^u &= \langle 5150u^{29}a - 9644u^{29} + \cdots - 4195a - 8440,\ 2u^{29}a + u^{28} + \cdots + a + 2,\ u^{30} + u^{29} + \cdots + u + 1\rangle \\
I_3^u &= \langle b - 1,\ -2u^3 + 3u^2 + 3a - 3u + 3,\ u^4 + 3u^2 + 3\rangle \\
I_4^u &= \langle b + 1,\ u^2 + a - u + 1,\ u^4 + u^2 - 1\rangle
\end{aligned}
$$

$$
I_1^v = \langle a,\ b - 1,\ v + 1\rangle
$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 109 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. $I_1^u =$
$$\langle -2u^{37}+3u^{36}+\cdots+b-3,\ -3u^{39}+9u^{38}+\cdots+2a-10,\ u^{40}-3u^{39}+\cdots+6u-2\rangle$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2+1 \\ u^4+2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{3}{2}u^{39}-\frac{9}{2}u^{38}+\cdots-\frac{17}{2}u+5 \\ 2u^{37}-3u^{36}+\cdots-3u+3 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^5-2u^3-u \\ -u^7-3u^5-2u^3+u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -\frac{3}{2}u^{39}+\frac{5}{2}u^{38}+\cdots+\frac{5}{2}u-2 \\ -u^{39}+2u^{38}+\cdots+3u-1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^3+2u \\ u^3+u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{5}{2}u^{39}-\frac{15}{2}u^{38}+\cdots-\frac{33}{2}u+9 \\ 3u^{37}-5u^{36}+\cdots-6u+5 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{12}-5u^{10}-9u^8-6u^6+u^2+1 \\ -u^{14}-6u^{12}-13u^{10}-10u^8+2u^6+4u^4-u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{3}{2}u^{39}+\frac{9}{2}u^{38}+\cdots+\frac{21}{2}u-4 \\ -2u^{37}+3u^{36}+\cdots+4u-3 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 8u^{39}-14u^{38}+\cdots-20u-8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{40} + 17u^{39} + \cdots + 19u + 1$
c_2, c_6, c_7 c_{12}	$u^{40} - u^{39} + \cdots - u - 1$
c_3, c_5	$u^{40} - 3u^{39} + \cdots + 10u - 2$
c_4, c_9, c_{10}	$u^{40} + 3u^{39} + \cdots - 6u - 2$
c_8	$u^{40} - 21u^{39} + \cdots - 6214u + 562$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{40} + 23y^{39} + \cdots - 67y + 1$
c_2, c_6, c_7 c_{12}	$y^{40} - 17y^{39} + \cdots - 19y + 1$
c_3, c_5	$y^{40} - 27y^{39} + \cdots + 64y + 4$
c_4, c_9, c_{10}	$y^{40} + 33y^{39} + \cdots - 32y + 4$
c_8	$y^{40} - 3y^{39} + \cdots - 5405216y + 315844$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.033946 + 1.113580I$ $a = -0.443213 + 0.659546I$ $b = -0.529000 - 0.069966I$	$2.62973 - 1.45530I$	$-8.41133 + 4.63856I$
$u = 0.033946 - 1.113580I$ $a = -0.443213 - 0.659546I$ $b = -0.529000 + 0.069966I$	$2.62973 + 1.45530I$	$-8.41133 - 4.63856I$
$u = 0.833882 + 0.049861I$ $a = 0.866824 + 0.530873I$ $b = 0.179877 + 0.772910I$	$-7.70738 + 2.92668I$	$-18.8392 - 4.9556I$
$u = 0.833882 - 0.049861I$ $a = 0.866824 - 0.530873I$ $b = 0.179877 - 0.772910I$	$-7.70738 - 2.92668I$	$-18.8392 + 4.9556I$
$u = 0.366756 + 1.108260I$ $a = 1.59722 + 0.00494I$ $b = 1.77944 + 1.15129I$	$-1.99390 + 8.37642I$	$-14.1780 - 5.1626I$
$u = 0.366756 - 1.108260I$ $a = 1.59722 - 0.00494I$ $b = 1.77944 - 1.15129I$	$-1.99390 - 8.37642I$	$-14.1780 + 5.1626I$
$u = 0.817179 + 0.133455I$ $a = -2.11445 + 2.81732I$ $b = -2.01736 + 1.18808I$	$-4.96679 - 12.67870I$	$-17.0433 + 8.8234I$
$u = 0.817179 - 0.133455I$ $a = -2.11445 - 2.81732I$ $b = -2.01736 - 1.18808I$	$-4.96679 + 12.67870I$	$-17.0433 - 8.8234I$
$u = 0.218298 + 1.152810I$ $a = -0.690017 + 0.431742I$ $b = -0.822252 - 0.487537I$	$2.56813 - 1.57777I$	$-7.38729 + 3.27205I$
$u = 0.218298 - 1.152810I$ $a = -0.690017 - 0.431742I$ $b = -0.822252 + 0.487537I$	$2.56813 + 1.57777I$	$-7.38729 - 3.27205I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.813800$ $a = -1.17657$ $b = -0.516311$	-5.88324	-14.0450
$u = 0.753305 + 0.134603I$ $a = 1.75806 - 1.14597I$ $b = 1.39356 - 0.37494I$	$-0.35694 - 2.08784I$	$-11.36506 + 1.10964I$
$u = 0.753305 - 0.134603I$ $a = 1.75806 + 1.14597I$ $b = 1.39356 + 0.37494I$	$-0.35694 + 2.08784I$	$-11.36506 - 1.10964I$
$u = 0.381450 + 1.215900I$ $a = -0.154097 + 0.151781I$ $b = -0.323421 + 0.861671I$	$-4.11653 - 7.29632I$	$-12.0000 + 8.2173I$
$u = 0.381450 - 1.215900I$ $a = -0.154097 - 0.151781I$ $b = -0.323421 - 0.861671I$	$-4.11653 + 7.29632I$	$-12.0000 - 8.2173I$
$u = -0.686189 + 0.170880I$ $a = 0.15715 + 2.12370I$ $b = 0.432447 + 0.716843I$	$0.50362 + 4.50911I$	$-12.14030 - 7.25109I$
$u = -0.686189 - 0.170880I$ $a = 0.15715 - 2.12370I$ $b = 0.432447 - 0.716843I$	$0.50362 - 4.50911I$	$-12.14030 + 7.25109I$
$u = -0.129451 + 0.688064I$ $a = -0.409921 + 0.548317I$ $b = -0.825583 + 0.231072I$	$2.57797 - 1.26521I$	$-7.12510 + 2.47533I$
$u = -0.129451 - 0.688064I$ $a = -0.409921 - 0.548317I$ $b = -0.825583 - 0.231072I$	$2.57797 + 1.26521I$	$-7.12510 - 2.47533I$
$u = -0.361326 + 1.266880I$ $a = 0.659360 + 0.462083I$ $b = 0.516491 - 0.026454I$	$-1.95240 + 4.22783I$	$-12.00000 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.361326 - 1.266880I$ $a = \quad 0.659360 - 0.462083I$ $b = \quad 0.516491 + 0.026454I$	$-1.95240 - 4.22783I$	$-12.00000 + 0.I$
$u = -0.391716 + 0.557095I$ $a = \quad 0.438882 + 0.839532I$ $b = \quad 1.51444 + 0.60899I$	$-0.63986 + 8.65751I$	$-12.8507 - 9.2010I$
$u = -0.391716 - 0.557095I$ $a = \quad 0.438882 - 0.839532I$ $b = \quad 1.51444 - 0.60899I$	$-0.63986 - 8.65751I$	$-12.8507 + 9.2010I$
$u = \quad 0.373696 + 1.301330I$ $a = -0.998383 + 0.344441I$ $b = -0.072953 - 0.689963I$	$-3.49133 - 1.41285I$	0
$u = \quad 0.373696 - 1.301330I$ $a = -0.998383 - 0.344441I$ $b = -0.072953 + 0.689963I$	$-3.49133 + 1.41285I$	0
$u = -0.212237 + 1.347650I$ $a = -0.30613 + 1.72945I$ $b = \quad 1.070540 + 0.223660I$	$3.73398 - 2.59581I$	0
$u = -0.212237 - 1.347650I$ $a = -0.30613 - 1.72945I$ $b = \quad 1.070540 - 0.223660I$	$3.73398 + 2.59581I$	0
$u = -0.542858 + 0.319373I$ $a = -1.52946 - 1.40938I$ $b = -1.067890 + 0.349863I$	$-1.40399 - 5.26208I$	$-14.5220 + 2.7158I$
$u = -0.542858 - 0.319373I$ $a = -1.52946 + 1.40938I$ $b = -1.067890 - 0.349863I$	$-1.40399 + 5.26208I$	$-14.5220 - 2.7158I$
$u = -0.289068 + 1.350620I$ $a = \quad 0.94267 - 1.37582I$ $b = -0.525974 - 1.055320I$	$5.28661 + 8.06862I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.289068 - 1.350620I$ $a = 0.94267 + 1.37582I$ $b = -0.525974 + 1.055320I$	$5.28661 - 8.06862I$	0
$u = 0.322258 + 1.346450I$ $a = -0.02734 + 1.57117I$ $b = -1.65332 + 0.31762I$	$4.30721 - 5.98911I$	0
$u = 0.322258 - 1.346450I$ $a = -0.02734 - 1.57117I$ $b = -1.65332 - 0.31762I$	$4.30721 + 5.98911I$	0
$u = -0.018698 + 1.394080I$ $a = -0.777700 - 0.023034I$ $b = 1.34120 - 0.55017I$	$8.78475 - 0.92619I$	0
$u = -0.018698 - 1.394080I$ $a = -0.777700 + 0.023034I$ $b = 1.34120 + 0.55017I$	$8.78475 + 0.92619I$	0
$u = 0.353485 + 1.352330I$ $a = -0.60310 - 2.64696I$ $b = 2.18251 - 1.17429I$	$-0.2892 - 16.8986I$	0
$u = 0.353485 - 1.352330I$ $a = -0.60310 + 2.64696I$ $b = 2.18251 + 1.17429I$	$-0.2892 + 16.8986I$	0
$u = -0.075124 + 1.399150I$ $a = 1.270610 - 0.109417I$ $b = -1.96624 - 0.40727I$	$5.50017 + 10.01410I$	0
$u = -0.075124 - 1.399150I$ $a = 1.270610 + 0.109417I$ $b = -1.96624 + 0.40727I$	$5.50017 - 10.01410I$	0
$u = 0.318625$ $a = 0.902652$ $b = 0.303261$	-0.549970	-17.8990

II. $I_2^u = \langle 5150u^{29}a - 9644u^{29} + \cdots - 4195a - 8440,\ 2u^{29}a + u^{28} + \cdots + a + 2,\ u^{30} + u^{29} + \cdots + u + 1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a \\ -0.524066au^{29} + 0.981378u^{29} + \cdots + 0.426885a + 0.858858 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^5 - 2u^3 - u \\ -u^7 - 3u^5 - 2u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.524066au^{29} + 0.981378u^{29} + \cdots - 0.573115a + 0.858858 \\ -0.153658au^{29} - 0.0850717u^{29} + \cdots + 0.387300a + 0.950850 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.223873au^{29} + 0.289508u^{29} + \cdots + 0.866185a + 0.429226 \\ -0.701537au^{29} + 1.67915u^{29} + \cdots + 0.223873a + 1.28951 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{12} - 5u^{10} - 9u^8 - 6u^6 + u^2 + 1 \\ -u^{14} - 6u^{12} - 13u^{10} - 10u^8 + 2u^6 + 4u^4 - u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.00142465au^{29} + 0.311794u^{29} + \cdots + 0.896306a + 1.12272 \\ -0.0934161au^{29} + 1.30192u^{29} + \cdots - 0.0850717a + 1.18999 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{29} - 4u^{28} - 48u^{27} - 44u^{26} - 248u^{25} - 208u^{24} - 700u^{23} - 536u^{22} - 1096u^{21} - 768u^{20} - 712u^{19} - 480u^{18} + 464u^{17} + 180u^{16} + 1092u^{15} + 464u^{14} + 380u^{13} + 196u^{12} - 444u^{11} - 40u^{10} - 308u^9 - 48u^8 + 80u^7 - 44u^6 + 76u^5 - 20u^4 - 8u^3 + 12u^2 - 8u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{60} + 33u^{59} + \cdots + 4u + 1$
c_2, c_6, c_7 c_{12}	$u^{60} - u^{59} + \cdots - 2u^2 + 1$
c_3, c_5	$(u^{30} + u^{29} + \cdots + 5u + 5)^2$
c_4, c_9, c_{10}	$(u^{30} - u^{29} + \cdots - u + 1)^2$
c_8	$(u^{30} + 7u^{29} + \cdots + 39u + 7)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{60} - 13y^{59} + \cdots + 28y + 1$
c_2, c_6, c_7 c_{12}	$y^{60} - 33y^{59} + \cdots - 4y + 1$
c_3, c_5	$(y^{30} - 19y^{29} + \cdots + 115y + 25)^2$
c_4, c_9, c_{10}	$(y^{30} + 25y^{29} + \cdots + 3y + 1)^2$
c_8	$(y^{30} + 5y^{29} + \cdots + 383y + 49)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.325991 + 1.102660I$ $a = 0.808944 + 0.617632I$ $b = 1.110360 - 0.539869I$	$0.60611 - 3.12979I$	$-11.08128 + 1.86186I$
$u = -0.325991 + 1.102660I$ $a = -1.50190 + 0.34099I$ $b = -1.38771 + 1.17054I$	$0.60611 - 3.12979I$	$-11.08128 + 1.86186I$
$u = -0.325991 - 1.102660I$ $a = 0.808944 - 0.617632I$ $b = 1.110360 + 0.539869I$	$0.60611 + 3.12979I$	$-11.08128 - 1.86186I$
$u = -0.325991 - 1.102660I$ $a = -1.50190 - 0.34099I$ $b = -1.38771 - 1.17054I$	$0.60611 + 3.12979I$	$-11.08128 - 1.86186I$
$u = -0.795029 + 0.135105I$ $a = -1.69100 - 1.06948I$ $b = -1.45876 - 0.45086I$	$-2.32727 + 7.24749I$	$-14.0714 - 5.6345I$
$u = -0.795029 + 0.135105I$ $a = 1.66235 + 2.98194I$ $b = 1.66006 + 1.29480I$	$-2.32727 + 7.24749I$	$-14.0714 - 5.6345I$
$u = -0.795029 - 0.135105I$ $a = -1.69100 + 1.06948I$ $b = -1.45876 + 0.45086I$	$-2.32727 - 7.24749I$	$-14.0714 + 5.6345I$
$u = -0.795029 - 0.135105I$ $a = 1.66235 - 2.98194I$ $b = 1.66006 - 1.29480I$	$-2.32727 - 7.24749I$	$-14.0714 + 5.6345I$
$u = 0.783573 + 0.097897I$ $a = 0.529648 + 0.504852I$ $b = -0.375462 + 0.767460I$	$-7.47443 - 3.64220I$	$-19.1043 + 4.7217I$
$u = 0.783573 + 0.097897I$ $a = -1.52847 + 4.09603I$ $b = -1.54437 + 2.11232I$	$-7.47443 - 3.64220I$	$-19.1043 + 4.7217I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.783573 - 0.097897I$ $a = 0.529648 - 0.504852I$ $b = -0.375462 - 0.767460I$	$-7.47443 + 3.64220I$	$-19.1043 - 4.7217I$
$u = 0.783573 - 0.097897I$ $a = -1.52847 - 4.09603I$ $b = -1.54437 - 2.11232I$	$-7.47443 + 3.64220I$	$-19.1043 - 4.7217I$
$u = 0.319385 + 1.167960I$ $a = -0.260474 - 0.287792I$ $b = 0.228296 + 1.005900I$	$-4.22892 - 0.37332I$	$-16.2067 - 0.5347I$
$u = 0.319385 + 1.167960I$ $a = 2.13507 + 0.77166I$ $b = 1.19273 + 2.00676I$	$-4.22892 - 0.37332I$	$-16.2067 - 0.5347I$
$u = 0.319385 - 1.167960I$ $a = -0.260474 + 0.287792I$ $b = 0.228296 - 1.005900I$	$-4.22892 + 0.37332I$	$-16.2067 + 0.5347I$
$u = 0.319385 - 1.167960I$ $a = 2.13507 - 0.77166I$ $b = 1.19273 - 2.00676I$	$-4.22892 + 0.37332I$	$-16.2067 + 0.5347I$
$u = -0.754564 + 0.022245I$ $a = -0.565229 + 0.120861I$ $b = 0.319648 + 0.177361I$	$-5.49797 + 0.02948I$	$-16.3720 + 0.4707I$
$u = -0.754564 + 0.022245I$ $a = -2.54490 - 0.69654I$ $b = -1.53986 - 0.33820I$	$-5.49797 + 0.02948I$	$-16.3720 + 0.4707I$
$u = -0.754564 - 0.022245I$ $a = -0.565229 - 0.120861I$ $b = 0.319648 - 0.177361I$	$-5.49797 - 0.02948I$	$-16.3720 - 0.4707I$
$u = -0.754564 - 0.022245I$ $a = -2.54490 + 0.69654I$ $b = -1.53986 + 0.33820I$	$-5.49797 - 0.02948I$	$-16.3720 - 0.4707I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.327133 + 1.241840I$ $a = 1.081960 + 0.620280I$ $b = 1.075050 - 0.682255I$	$-1.72825 + 3.89629I$	$-12.45772 - 4.15365I$
$u = -0.327133 + 1.241840I$ $a = 0.564290 + 0.021783I$ $b = -0.121679 + 0.416377I$	$-1.72825 + 3.89629I$	$-12.45772 - 4.15365I$
$u = -0.327133 - 1.241840I$ $a = 1.081960 - 0.620280I$ $b = 1.075050 + 0.682255I$	$-1.72825 - 3.89629I$	$-12.45772 + 4.15365I$
$u = -0.327133 - 1.241840I$ $a = 0.564290 - 0.021783I$ $b = -0.121679 - 0.416377I$	$-1.72825 - 3.89629I$	$-12.45772 + 4.15365I$
$u = -0.311870 + 1.296280I$ $a = 0.908117 + 0.037740I$ $b = -0.472487 - 0.133427I$	$-1.37739 + 3.85600I$	$-11.22500 - 2.05029I$
$u = -0.311870 + 1.296280I$ $a = 0.61787 + 2.03259I$ $b = 2.01782 + 0.26010I$	$-1.37739 + 3.85600I$	$-11.22500 - 2.05029I$
$u = -0.311870 - 1.296280I$ $a = 0.908117 - 0.037740I$ $b = -0.472487 + 0.133427I$	$-1.37739 - 3.85600I$	$-11.22500 + 2.05029I$
$u = -0.311870 - 1.296280I$ $a = 0.61787 - 2.03259I$ $b = 2.01782 - 0.26010I$	$-1.37739 - 3.85600I$	$-11.22500 + 2.05029I$
$u = 0.303367 + 0.581370I$ $a = -0.455082 + 0.808828I$ $b = -1.36467 + 0.55806I$	$1.48330 - 3.51597I$	$-9.20488 + 5.12276I$
$u = 0.303367 + 0.581370I$ $a = 0.244487 + 0.473840I$ $b = 0.651369 + 0.018555I$	$1.48330 - 3.51597I$	$-9.20488 + 5.12276I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.303367 - 0.581370I$ $a = -0.455082 - 0.808828I$ $b = -1.36467 - 0.55806I$	$1.48330 + 3.51597I$	$-9.20488 - 5.12276I$
$u = 0.303367 - 0.581370I$ $a = 0.244487 - 0.473840I$ $b = 0.651369 - 0.018555I$	$1.48330 + 3.51597I$	$-9.20488 - 5.12276I$
$u = -0.035215 + 1.346940I$ $a = 1.331800 + 0.361268I$ $b = -2.13172 - 1.05581I$	$1.86136 + 1.73295I$	$-8.68819 - 4.09879I$
$u = -0.035215 + 1.346940I$ $a = -0.08388 + 1.50364I$ $b = 0.147617 - 0.212500I$	$1.86136 + 1.73295I$	$-8.68819 - 4.09879I$
$u = -0.035215 - 1.346940I$ $a = 1.331800 - 0.361268I$ $b = -2.13172 + 1.05581I$	$1.86136 - 1.73295I$	$-8.68819 + 4.09879I$
$u = -0.035215 - 1.346940I$ $a = -0.08388 - 1.50364I$ $b = 0.147617 + 0.212500I$	$1.86136 - 1.73295I$	$-8.68819 + 4.09879I$
$u = 0.255107 + 1.342090I$ $a = -0.772435 - 0.887903I$ $b = 0.045216 - 0.822216I$	$5.03529 - 2.69486I$	$-6.58656 + 2.42783I$
$u = 0.255107 + 1.342090I$ $a = 0.21904 + 1.80021I$ $b = -1.358140 + 0.357342I$	$5.03529 - 2.69486I$	$-6.58656 + 2.42783I$
$u = 0.255107 - 1.342090I$ $a = -0.772435 + 0.887903I$ $b = 0.045216 + 0.822216I$	$5.03529 + 2.69486I$	$-6.58656 - 2.42783I$
$u = 0.255107 - 1.342090I$ $a = 0.21904 - 1.80021I$ $b = -1.358140 - 0.357342I$	$5.03529 + 2.69486I$	$-6.58656 - 2.42783I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.337934 + 1.329700I$ $a = -1.059820 + 0.153001I$ $b = 0.458705 - 0.598884I$	$-2.99171 - 7.69168I$	$-14.0304 + 6.9029I$
$u = 0.337934 + 1.329700I$ $a = -1.48086 - 2.73805I$ $b = 1.79750 - 2.17416I$	$-2.99171 - 7.69168I$	$-14.0304 + 6.9029I$
$u = 0.337934 - 1.329700I$ $a = -1.059820 - 0.153001I$ $b = 0.458705 + 0.598884I$	$-2.99171 + 7.69168I$	$-14.0304 - 6.9029I$
$u = 0.337934 - 1.329700I$ $a = -1.48086 + 2.73805I$ $b = 1.79750 + 2.17416I$	$-2.99171 + 7.69168I$	$-14.0304 - 6.9029I$
$u = 0.575326 + 0.209070I$ $a = 0.214276 + 1.370120I$ $b = -0.024140 + 0.286200I$	$0.241291 + 0.398317I$	$-12.06522 + 1.62643I$
$u = 0.575326 + 0.209070I$ $a = 1.63714 - 1.36894I$ $b = 1.045760 + 0.036819I$	$0.241291 + 0.398317I$	$-12.06522 + 1.62643I$
$u = 0.575326 - 0.209070I$ $a = 0.214276 - 1.370120I$ $b = -0.024140 - 0.286200I$	$0.241291 - 0.398317I$	$-12.06522 - 1.62643I$
$u = 0.575326 - 0.209070I$ $a = 1.63714 + 1.36894I$ $b = 1.045760 - 0.036819I$	$0.241291 - 0.398317I$	$-12.06522 - 1.62643I$
$u = -0.341616 + 1.350480I$ $a = 0.00663 + 1.44057I$ $b = 1.66219 + 0.34651I$	$2.35082 + 11.35200I$	$-9.44655 - 7.31316I$
$u = -0.341616 + 1.350480I$ $a = 0.83289 - 2.47231I$ $b = -1.84709 - 1.33663I$	$2.35082 + 11.35200I$	$-9.44655 - 7.31316I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.341616 - 1.350480I$ $a = 0.00663 - 1.44057I$ $b = 1.66219 - 0.34651I$	$2.35082 - 11.35200I$	$-9.44655 + 7.31316I$
$u = -0.341616 - 1.350480I$ $a = 0.83289 + 2.47231I$ $b = -1.84709 + 1.33663I$	$2.35082 - 11.35200I$	$-9.44655 + 7.31316I$
$u = 0.051114 + 1.394540I$ $a = -1.201200 - 0.037073I$ $b = 1.89724 - 0.50837I$	$7.60322 - 4.47665I$	$-4.97371 + 3.57345I$
$u = 0.051114 + 1.394540I$ $a = 0.588507 - 0.124880I$ $b = -1.096760 - 0.435170I$	$7.60322 - 4.47665I$	$-4.97371 + 3.57345I$
$u = 0.051114 - 1.394540I$ $a = -1.201200 + 0.037073I$ $b = 1.89724 + 0.50837I$	$7.60322 + 4.47665I$	$-4.97371 - 3.57345I$
$u = 0.051114 - 1.394540I$ $a = 0.588507 + 0.124880I$ $b = -1.096760 + 0.435170I$	$7.60322 + 4.47665I$	$-4.97371 - 3.57345I$
$u = -0.234389 + 0.375701I$ $a = 0.457879 + 0.838104I$ $b = 1.32986 + 0.99443I$	$-3.42503 + 0.99510I$	$-14.4861 - 6.8230I$
$u = -0.234389 + 0.375701I$ $a = -1.19564 - 2.21012I$ $b = -0.416589 + 0.588948I$	$-3.42503 + 0.99510I$	$-14.4861 - 6.8230I$
$u = -0.234389 - 0.375701I$ $a = 0.457879 - 0.838104I$ $b = 1.32986 - 0.99443I$	$-3.42503 - 0.99510I$	$-14.4861 + 6.8230I$
$u = -0.234389 - 0.375701I$ $a = -1.19564 + 2.21012I$ $b = -0.416589 - 0.588948I$	$-3.42503 - 0.99510I$	$-14.4861 + 6.8230I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.340625 + 1.271230I$ $a = -0.233945 - 0.669365I$ $b = 1.00000$	$-3.28987 - 4.05977I$	$-18.0000 + 3.4641I$
$u = 0.340625 - 1.271230I$ $a = -0.233945 + 0.669365I$ $b = 1.00000$	$-3.28987 + 4.05977I$	$-18.0000 - 3.4641I$
$u = -0.340625 + 1.271230I$ $a = 1.23394 + 1.06269I$ $b = 1.00000$	$-3.28987 + 4.05977I$	$-18.0000 - 3.4641I$
$u = -0.340625 - 1.271230I$ $a = 1.23394 - 1.06269I$ $b = 1.00000$	$-3.28987 - 4.05977I$	$-18.0000 + 3.4641I$

IV. $\boldsymbol{I_4^u = \langle b+1,\ u^2+a-u+1,\ u^4+u^2-1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^2+1 \\ u^2+1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -u^3-2u \\ -u^3-u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^3-u^2-u-1 \\ -u^3-u-1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^3+2u \\ u^3+u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^3-u^2-u-1 \\ -u^3-u-1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -u^3-u \\ -u^3+u^2-u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2-20$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.786151$ $a = -0.831883$ $b = -1.00000$	-7.23771	-22.4720
$u = -0.786151$ $a = -2.40419$ $b = -1.00000$	-7.23771	-22.4720
$u = 1.272020I$ $a = 0.618030 + 1.272020I$ $b = -1.00000$	0.657974	-13.5280
$u = -1.272020I$ $a = 0.618030 - 1.272020I$ $b = -1.00000$	0.657974	-13.5280

V. $I_1^v = \langle a,\ b-1,\ v+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_7, c_{11}, c_{12}	$y-1$
c_3, c_4, c_5 c_8, c_9, c_{10}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = 1.00000$	-3.28987	-12.0000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$((u-1)^9)(u^{40}+17u^{39}+\cdots+19u+1)(u^{60}+33u^{59}+\cdots+4u+1)$
c_2, c_7	$((u-1)^5)(u+1)^4(u^{40}-u^{39}+\cdots-u-1)(u^{60}-u^{59}+\cdots-2u^2+1)$
c_3, c_5	$u(u^4-3u^2+3)(u^4-u^2-1)(u^{30}+u^{29}+\cdots+5u+5)^2$ $\cdot(u^{40}-3u^{39}+\cdots+10u-2)$
c_4, c_9, c_{10}	$u(u^4+u^2-1)(u^4+3u^2+3)(u^{30}-u^{29}+\cdots-u+1)^2$ $\cdot(u^{40}+3u^{39}+\cdots-6u-2)$
c_6, c_{12}	$((u-1)^4)(u+1)^5(u^{40}-u^{39}+\cdots-u-1)(u^{60}-u^{59}+\cdots-2u^2+1)$
c_8	$u(u^4-3u^2+3)(u^4-u^2-1)(u^{30}+7u^{29}+\cdots+39u+7)^2$ $\cdot(u^{40}-21u^{39}+\cdots-6214u+562)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$((y-1)^9)(y^{40}+23y^{39}+\cdots-67y+1)(y^{60}-13y^{59}+\cdots+28y+1)$
c_2, c_6, c_7 c_{12}	$((y-1)^9)(y^{40}-17y^{39}+\cdots-19y+1)(y^{60}-33y^{59}+\cdots-4y+1)$
c_3, c_5	$y(y^2-3y+3)^2(y^2-y-1)^2(y^{30}-19y^{29}+\cdots+115y+25)^2$ $\cdot(y^{40}-27y^{39}+\cdots+64y+4)$
c_4, c_9, c_{10}	$y(y^2+y-1)^2(y^2+3y+3)^2(y^{30}+25y^{29}+\cdots+3y+1)^2$ $\cdot(y^{40}+33y^{39}+\cdots-32y+4)$
c_8	$y(y^2-3y+3)^2(y^2-y-1)^2(y^{30}+5y^{29}+\cdots+383y+49)^2$ $\cdot(y^{40}-3y^{39}+\cdots-5405216y+315844)$