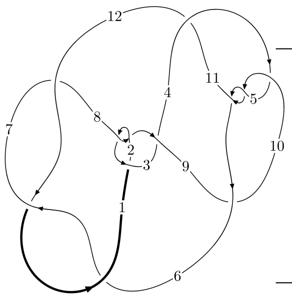
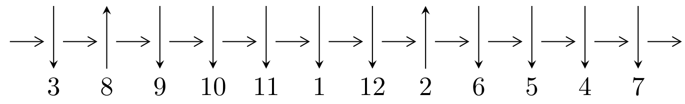
$12a_{0730}$ $(K12a_{0730})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{55} - 23u^{53} + \cdots + 4b + 2u,\ u^{53} - 22u^{51} + \cdots + 4a - 4,\ u^{58} + 2u^{57} + \cdots - u + 2\rangle$$

$$I_2^u = \langle 2093u^7a^2 - 394u^7a + \cdots + 1311a - 1282,\ 2u^7a^2 - 4u^7a + \cdots + 6a - 1,$$
$$u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1\rangle$$

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

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 88 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.

$$I_1^u = \langle u^{55} - 23u^{53} + \cdots + 4b + 2u,\ u^{53} - 22u^{51} + \cdots + 4a - 4,\ u^{58} + 2u^{57} + \cdots - u + 2 \rangle$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -\frac{1}{4}u^{53} + \frac{11}{2}u^{51} + \cdots + \frac{1}{4}u + 1 \\ -\frac{1}{4}u^{55} + \frac{23}{4}u^{53} + \cdots + \frac{5}{2}u^2 - \frac{1}{2}u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} \frac{1}{2}u^{57} + u^{56} + \cdots + \frac{1}{4}u + 1 \\ -u^{57} - u^{56} + \cdots + \frac{1}{2}u - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{4}u^{54} - \frac{23}{4}u^{52} + \cdots - \frac{5}{2}u + \frac{1}{2} \\ -\frac{1}{4}u^{54} + \frac{11}{2}u^{52} + \cdots + \frac{1}{4}u^2 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{12} + 5u^{10} - 9u^8 + 6u^6 - u^2 + 1 \\ -u^{14} + 6u^{12} - 13u^{10} + 10u^8 + 2u^6 - 4u^4 - u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{4}u^{51} + \frac{11}{2}u^{49} + \cdots - \frac{9}{4}u + 1 \\ \frac{1}{4}u^{51} - \frac{21}{4}u^{49} + \cdots - \frac{1}{2}u^2 + \frac{1}{2}u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{57} + 48u^{55} + \cdots + 10u^2 - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{58} + 27u^{57} + \cdots + 240u + 25$
c_2, c_8	$u^{58} - u^{57} + \cdots - 10u + 5$
c_3	$u^{58} - 2u^{57} + \cdots - 18880u + 3200$
c_4, c_5, c_{10}	$u^{58} + 2u^{57} + \cdots - u + 2$
c_6, c_7, c_{12}	$u^{58} - u^{57} + \cdots - 32u + 5$
c_9, c_{11}	$u^{58} - 6u^{57} + \cdots - 608u + 128$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{58} + 15y^{57} + \cdots + 14700y + 625$
c_2, c_8	$y^{58} + 27y^{57} + \cdots + 240y + 25$
c_3	$y^{58} - 18y^{57} + \cdots - 108646400y + 10240000$
c_4, c_5, c_{10}	$y^{58} - 48y^{57} + \cdots + 19y + 4$
c_6, c_7, c_{12}	$y^{58} + 55y^{57} + \cdots - 624y + 25$
c_9, c_{11}	$y^{58} + 32y^{57} + \cdots + 31744y + 16384$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.055470 + 0.361002I$ $a = 1.72697 - 1.44530I$ $b = -1.84334 - 1.14825I$	$2.13911 - 7.31160I$	0
$u = -1.055470 - 0.361002I$ $a = 1.72697 + 1.44530I$ $b = -1.84334 + 1.14825I$	$2.13911 + 7.31160I$	0
$u = 1.079220 + 0.287984I$ $a = -0.543736 - 0.144608I$ $b = 0.874982 - 0.215155I$	$-3.05587 + 3.30062I$	0
$u = 1.079220 - 0.287984I$ $a = -0.543736 + 0.144608I$ $b = 0.874982 + 0.215155I$	$-3.05587 - 3.30062I$	0
$u = 1.113240 + 0.346536I$ $a = 1.83136 + 1.57124I$ $b = -2.11612 + 1.33467I$	$4.49527 + 1.92718I$	0
$u = 1.113240 - 0.346536I$ $a = 1.83136 - 1.57124I$ $b = -2.11612 - 1.33467I$	$4.49527 - 1.92718I$	0
$u = -0.160239 + 0.809860I$ $a = -3.28036 + 1.61495I$ $b = 2.76593 - 0.91652I$	$4.87856 + 11.59130I$	$-4.05373 - 7.92500I$
$u = -0.160239 - 0.809860I$ $a = -3.28036 - 1.61495I$ $b = 2.76593 + 0.91652I$	$4.87856 - 11.59130I$	$-4.05373 + 7.92500I$
$u = 0.022956 + 0.824654I$ $a = -4.22626 - 0.30258I$ $b = 3.31540 + 0.17209I$	$10.56110 - 2.82315I$	$0.41076 + 3.01430I$
$u = 0.022956 - 0.824654I$ $a = -4.22626 + 0.30258I$ $b = 3.31540 - 0.17209I$	$10.56110 + 2.82315I$	$0.41076 - 3.01430I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=\ 0.128868+0.804285I$ $a=-3.63497-1.53514I$ $b=\ 2.97126+0.87331I$	$7.48930-6.12555I$	$-0.79979+4.12406I$
$u=\ 0.128868-0.804285I$ $a=-3.63497+1.53514I$ $b=\ 2.97126-0.87331I$	$7.48930+6.12555I$	$-0.79979-4.12406I$
$u=\ 0.147502+0.778831I$ $a=\ 1.128860+0.689994I$ $b=-0.932523-0.020123I$	$-0.24972-7.28256I$	$-7.79026+7.04615I$
$u=\ 0.147502-0.778831I$ $a=\ 1.128860-0.689994I$ $b=-0.932523+0.020123I$	$-0.24972+7.28256I$	$-7.79026-7.04615I$
$u=-0.672408+0.378683I$ $a=\ 0.49133+1.34433I$ $b=-0.425204+0.224307I$	$1.18428+7.12571I$	$-7.47098-7.52133I$
$u=-0.672408-0.378683I$ $a=\ 0.49133-1.34433I$ $b=-0.425204-0.224307I$	$1.18428-7.12571I$	$-7.47098+7.52133I$
$u=\ 0.013221+0.738470I$ $a=\ 0.751533-0.518009I$ $b=-0.817557+0.051451I$	$3.40366+1.43308I$	$-1.61750-4.02310I$
$u=\ 0.013221-0.738470I$ $a=\ 0.751533+0.518009I$ $b=-0.817557-0.051451I$	$3.40366-1.43308I$	$-1.61750+4.02310I$
$u=-0.280682+0.663131I$ $a=\ 0.264754+0.958031I$ $b=-0.667970-0.059101I$	$2.50446-3.37914I$	$-4.75082+2.18121I$
$u=-0.280682-0.663131I$ $a=\ 0.264754-0.958031I$ $b=-0.667970+0.059101I$	$2.50446+3.37914I$	$-4.75082-2.18121I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.236100 + 0.370704I$ $a = 1.56436 + 2.14598I$ $b = -3.06777 + 0.90490I$	$6.81501 - 1.47559I$	0
$u = 1.236100 - 0.370704I$ $a = 1.56436 - 2.14598I$ $b = -3.06777 - 0.90490I$	$6.81501 + 1.47559I$	0
$u = 1.254450 + 0.308524I$ $a = 0.014085 - 0.736150I$ $b = 0.658157 - 0.385748I$	$-0.43433 - 5.22268I$	0
$u = 1.254450 - 0.308524I$ $a = 0.014085 + 0.736150I$ $b = 0.658157 + 0.385748I$	$-0.43433 + 5.22268I$	0
$u = 1.287890 + 0.180041I$ $a = -0.733143 - 0.305909I$ $b = 0.596300 - 0.730533I$	$-4.90932 - 2.79468I$	0
$u = 1.287890 - 0.180041I$ $a = -0.733143 + 0.305909I$ $b = 0.596300 + 0.730533I$	$-4.90932 + 2.79468I$	0
$u = 0.175184 + 0.669008I$ $a = 1.32336 + 0.54960I$ $b = -0.906192 + 0.070742I$	$-1.76183 + 0.33500I$	$-10.67327 + 0.51437I$
$u = 0.175184 - 0.669008I$ $a = 1.32336 - 0.54960I$ $b = -0.906192 - 0.070742I$	$-1.76183 - 0.33500I$	$-10.67327 - 0.51437I$
$u = 0.650108 + 0.232781I$ $a = -0.150677 - 0.390107I$ $b = 0.732516 + 0.177916I$	$-3.55630 - 3.54967I$	$-13.4561 + 5.7470I$
$u = 0.650108 - 0.232781I$ $a = -0.150677 + 0.390107I$ $b = 0.732516 - 0.177916I$	$-3.55630 + 3.54967I$	$-13.4561 - 5.7470I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.283030+0.296425I$ $a=-0.368173+0.033928I$ $b=\ \ 0.946623+0.546835I$	$-0.62219+2.29529I$	0
$u=-1.283030-0.296425I$ $a=-0.368173-0.033928I$ $b=\ \ 0.946623-0.546835I$	$-0.62219-2.29529I$	0
$u=-1.275740+0.370203I$ $a=\ \ 1.29830-2.30847I$ $b=-3.30928-0.54212I$	$6.52568+7.11793I$	0
$u=-1.275740-0.370203I$ $a=\ \ 1.29830+2.30847I$ $b=-3.30928+0.54212I$	$6.52568-7.11793I$	0
$u=\ \ 0.535752+0.365918I$ $a=\ \ 0.36495-1.47581I$ $b=-0.553992-0.181156I$	$3.29520-2.38278I$	$-4.28188+3.63346I$
$u=\ \ 0.535752-0.365918I$ $a=\ \ 0.36495+1.47581I$ $b=-0.553992+0.181156I$	$3.29520+2.38278I$	$-4.28188-3.63346I$
$u=\ \ 0.322023+0.539515I$ $a=\ \ 0.085417-1.114740I$ $b=-0.650618-0.010802I$	$4.03344-0.91043I$	$-2.12378+4.36430I$
$u=\ \ 0.322023-0.539515I$ $a=\ \ 0.085417+1.114740I$ $b=-0.650618+0.010802I$	$4.03344+0.91043I$	$-2.12378-4.36430I$
$u=-1.381860+0.067257I$ $a=\ \ 0.298361-0.582536I$ $b=\ \ 1.14365+1.03316I$	$-2.65450+3.62930I$	0
$u=-1.381860-0.067257I$ $a=\ \ 0.298361+0.582536I$ $b=\ \ 1.14365-1.03316I$	$-2.65450-3.62930I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.354170 + 0.284240I$ $a = -0.282971 + 0.964369I$ $b = \quad 1.050160 + 0.253647I$	$-6.57455 + 3.16360I$	0
$u = -1.354170 - 0.284240I$ $a = -0.282971 - 0.964369I$ $b = \quad 1.050160 - 0.253647I$	$-6.57455 - 3.16360I$	0
$u = -1.370230 + 0.194123I$ $a = -0.013281 - 0.259852I$ $b = \quad 1.010250 + 0.806222I$	$-1.25158 + 3.51548I$	0
$u = -1.370230 - 0.194123I$ $a = -0.013281 + 0.259852I$ $b = \quad 1.010250 - 0.806222I$	$-1.25158 - 3.51548I$	0
$u = -1.347860 + 0.346662I$ $a = \quad 0.54429 - 2.41322I$ $b = -3.45164 + 0.39084I$	$2.84200 + 10.27730I$	0
$u = -1.347860 - 0.346662I$ $a = \quad 0.54429 + 2.41322I$ $b = -3.45164 - 0.39084I$	$2.84200 - 10.27730I$	0
$u = -1.355220 + 0.332018I$ $a = -0.151021 + 0.986947I$ $b = \quad 0.899192 + 0.120955I$	$-4.98693 + 11.30040I$	0
$u = -1.355220 - 0.332018I$ $a = -0.151021 - 0.986947I$ $b = \quad 0.899192 - 0.120955I$	$-4.98693 - 11.30040I$	0
$u = -1.402640 + 0.030948I$ $a = -0.621414 - 0.054979I$ $b = -0.624989 + 0.196548I$	$-9.84382 + 4.17376I$	0
$u = -1.402640 - 0.030948I$ $a = -0.621414 + 0.054979I$ $b = -0.624989 - 0.196548I$	$-9.84382 - 4.17376I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.365450 + 0.346164I$ $a = 0.39863 + 2.28058I$ $b = -3.29230 - 0.55110I$	$0.0648 - 15.7631I$	0
$u = 1.365450 - 0.346164I$ $a = 0.39863 - 2.28058I$ $b = -3.29230 + 0.55110I$	$0.0648 + 15.7631I$	0
$u = 1.387300 + 0.259107I$ $a = -0.215334 + 0.244520I$ $b = 1.053360 - 0.706502I$	$-2.76639 + 0.04256I$	0
$u = 1.387300 - 0.259107I$ $a = -0.215334 - 0.244520I$ $b = 1.053360 + 0.706502I$	$-2.76639 - 0.04256I$	0
$u = 1.42580 + 0.05543I$ $a = 0.187121 + 0.701410I$ $b = 1.22349 - 0.96601I$	$-5.43020 - 8.23971I$	0
$u = 1.42580 - 0.05543I$ $a = 0.187121 - 0.701410I$ $b = 1.22349 + 0.96601I$	$-5.43020 + 8.23971I$	0
$u = -0.205515 + 0.291758I$ $a = 1.197660 + 0.567196I$ $b = -0.081785 - 0.431720I$	$-0.619748 + 0.918576I$	$-10.20880 - 7.11535I$
$u = -0.205515 - 0.291758I$ $a = 1.197660 - 0.567196I$ $b = -0.081785 + 0.431720I$	$-0.619748 - 0.918576I$	$-10.20880 + 7.11535I$

II. $\boldsymbol{I^u_2 = \langle 2093u^7a^2 - 394u^7a + \cdots + 1311a - 1282,\ 2u^7a^2 - 4u^7a + \cdots + 6a - 1,\ u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} a \\ -0.699298a^2u^7 + 0.131640au^7 + \cdots - 0.438022a + 0.428333 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.188774a^2u^7 + 0.106248au^7 + \cdots + 0.991647a - 1.14668 \\ -0.358503a^2u^7 + 0.214166au^7 + \cdots - 0.334447a + 1.04711 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.193451a^2u^7 + 0.438022au^7 + \cdots - 0.911794a + 0.668894 \\ au \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.374206a^2u^7 - 0.458403au^7 + \cdots - 0.611761a - 0.222519 \\ 0.558637a^2u^7 + 0.715670au^7 + \cdots - 0.320414a + 0.653525 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^6 + 12u^4 + 4u^3 - 8u^2 - 8u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} + 16u^{23} + \cdots - 4u + 1$
c_2, c_6, c_7 c_8, c_{12}	$u^{24} + 8u^{22} + \cdots - 2u - 1$
c_3	$(u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1)^3$
c_4, c_5, c_{10}	$(u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1)^3$
c_9, c_{11}	$(u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} - 16y^{23} + \cdots - 20y + 1$
c_2, c_6, c_7 c_8, c_{12}	$y^{24} + 16y^{23} + \cdots - 4y + 1$
c_3	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)^3$
c_4, c_5, c_{10}	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)^3$
c_9, c_{11}	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.180120 + 0.268597I$ $a = 0.283758 + 0.634812I$ $b = 0.459071 + 0.556325I$	$-1.04066 + 1.13123I$	$-7.41522 - 0.51079I$
$u = -1.180120 + 0.268597I$ $a = -0.519143 + 0.133347I$ $b = 0.839838 + 0.369976I$	$-1.04066 + 1.13123I$	$-7.41522 - 0.51079I$
$u = -1.180120 + 0.268597I$ $a = 2.48773 - 1.66933I$ $b = -2.44064 - 2.38764I$	$-1.04066 + 1.13123I$	$-7.41522 - 0.51079I$
$u = -1.180120 - 0.268597I$ $a = 0.283758 - 0.634812I$ $b = 0.459071 - 0.556325I$	$-1.04066 - 1.13123I$	$-7.41522 + 0.51079I$
$u = -1.180120 - 0.268597I$ $a = -0.519143 - 0.133347I$ $b = 0.839838 - 0.369976I$	$-1.04066 - 1.13123I$	$-7.41522 + 0.51079I$
$u = -1.180120 - 0.268597I$ $a = 2.48773 + 1.66933I$ $b = -2.44064 + 2.38764I$	$-1.04066 - 1.13123I$	$-7.41522 + 0.51079I$
$u = -0.108090 + 0.747508I$ $a = 0.536114 + 0.684251I$ $b = -0.769284 - 0.082442I$	$2.15941 + 2.57849I$	$-4.27708 - 3.56796I$
$u = -0.108090 + 0.747508I$ $a = 1.086910 - 0.593279I$ $b = -0.893968 + 0.013597I$	$2.15941 + 2.57849I$	$-4.27708 - 3.56796I$
$u = -0.108090 + 0.747508I$ $a = -4.33823 + 2.20659I$ $b = 3.37373 - 1.26294I$	$2.15941 + 2.57849I$	$-4.27708 - 3.56796I$
$u = -0.108090 - 0.747508I$ $a = 0.536114 - 0.684251I$ $b = -0.769284 + 0.082442I$	$2.15941 - 2.57849I$	$-4.27708 + 3.56796I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.108090 - 0.747508I$ $a = 1.086910 + 0.593279I$ $b = -0.893968 - 0.013597I$	$2.15941 - 2.57849I$	$-4.27708 + 3.56796I$
$u = -0.108090 - 0.747508I$ $a = -4.33823 - 2.20659I$ $b = 3.37373 + 1.26294I$	$2.15941 - 2.57849I$	$-4.27708 + 3.56796I$
$u = 1.37100$ $a = 0.478541 + 0.816744I$ $b = 1.31000 - 1.17794I$	-6.50273	-13.8640
$u = 1.37100$ $a = 0.478541 - 0.816744I$ $b = 1.31000 + 1.17794I$	-6.50273	-13.8640
$u = 1.37100$ $a = -0.656575$ $b = -0.423632$	-6.50273	-13.8640
$u = 1.334530 + 0.318930I$ $a = -0.162462 - 0.927232I$ $b = 0.882181 - 0.209095I$	$-2.37968 - 6.44354I$	$-9.42845 + 5.29417I$
$u = 1.334530 + 0.318930I$ $a = -0.367019 + 0.108941I$ $b = 1.033880 - 0.589591I$	$-2.37968 - 6.44354I$	$-9.42845 + 5.29417I$
$u = 1.334530 + 0.318930I$ $a = 0.47028 + 2.85958I$ $b = -3.97967 - 0.51225I$	$-2.37968 - 6.44354I$	$-9.42845 + 5.29417I$
$u = 1.334530 - 0.318930I$ $a = -0.162462 + 0.927232I$ $b = 0.882181 + 0.209095I$	$-2.37968 + 6.44354I$	$-9.42845 - 5.29417I$
$u = 1.334530 - 0.318930I$ $a = -0.367019 - 0.108941I$ $b = 1.033880 + 0.589591I$	$-2.37968 + 6.44354I$	$-9.42845 - 5.29417I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.334530 - 0.318930I$ $a = 0.47028 - 2.85958I$ $b = -3.97967 + 0.51225I$	$-2.37968 + 6.44354I$	$-9.42845 - 5.29417I$
$u = -0.463640$ $a = 0.308333$ $b = 0.453402$	-0.845036	-11.8940
$u = -0.463640$ $a = 1.21764 + 2.13829I$ $b = -0.830005 + 0.371154I$	-0.845036	-11.8940
$u = -0.463640$ $a = 1.21764 - 2.13829I$ $b = -0.830005 - 0.371154I$	-0.845036	-11.8940

III.

$$\boldsymbol{I_3^u = \langle -u^5 + u^4 + 2u^3 - 2u^2 + b - u,\ u^5 - 3u^3 + a + 2u,\ u^6 - 3u^4 + 2u^2 + 1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^4 - 8u^2 - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.307140 + 0.215080I$ $a = 0.744862 - 0.122561I$ $b = 0.877439 + 0.255138I$	$-3.02413 - 2.82812I$	$-11.50976 + 2.97945I$
$u = 1.307140 - 0.215080I$ $a = 0.744862 + 0.122561I$ $b = 0.877439 - 0.255138I$	$-3.02413 + 2.82812I$	$-11.50976 - 2.97945I$
$u = -1.307140 + 0.215080I$ $a = -0.744862 - 0.122561I$ $b = 0.87744 + 1.74486I$	$-3.02413 + 2.82812I$	$-11.50976 - 2.97945I$
$u = -1.307140 - 0.215080I$ $a = -0.744862 + 0.122561I$ $b = 0.87744 - 1.74486I$	$-3.02413 - 2.82812I$	$-11.50976 + 2.97945I$
$u = 0.569840I$ $a = -1.75488I$ $b = -0.754878 + 1.000000I$	1.11345	-4.98050
$u = -0.569840I$ $a = 1.75488I$ $b = -0.754878 - 1.000000I$	1.11345	-4.98050

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{24}+16u^{23}+\cdots-4u+1)(u^{58}+27u^{57}+\cdots+240u+25)$
c_2, c_8	$((u^2+1)^3)(u^{24}+8u^{22}+\cdots-2u-1)(u^{58}-u^{57}+\cdots-10u+5)$
c_3	$u^6(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)^3$ $\cdot(u^{58}-2u^{57}+\cdots-18880u+3200)$
c_4, c_5, c_{10}	$(u^6-3u^4+2u^2+1)(u^8-u^7-3u^6+2u^5+3u^4-2u-1)^3$ $\cdot(u^{58}+2u^{57}+\cdots-u+2)$
c_6, c_7, c_{12}	$((u^2+1)^3)(u^{24}+8u^{22}+\cdots-2u-1)(u^{58}-u^{57}+\cdots-32u+5)$
c_9, c_{11}	$(u^6+u^4+2u^2+1)$ $\cdot(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^3$ $\cdot(u^{58}-6u^{57}+\cdots-608u+128)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^{24}-16y^{23}+\cdots-20y+1)$ $\cdot(y^{58}+15y^{57}+\cdots+14700y+625)$
c_2, c_8	$((y+1)^6)(y^{24}+16y^{23}+\cdots-4y+1)(y^{58}+27y^{57}+\cdots+240y+25)$
c_3	$y^6(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)^3$ $\cdot(y^{58}-18y^{57}+\cdots-108646400y+10240000)$
c_4, c_5, c_{10}	$(y^3-3y^2+2y+1)^2$ $\cdot(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)^3$ $\cdot(y^{58}-48y^{57}+\cdots+19y+4)$
c_6, c_7, c_{12}	$((y+1)^6)(y^{24}+16y^{23}+\cdots-4y+1)(y^{58}+55y^{57}+\cdots-624y+25)$
c_9, c_{11}	$(y^3+y^2+2y+1)^2$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^3$ $\cdot(y^{58}+32y^{57}+\cdots+31744y+16384)$