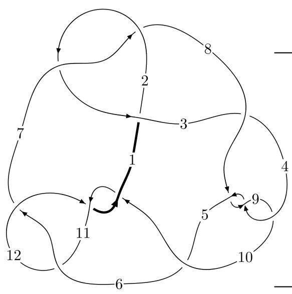
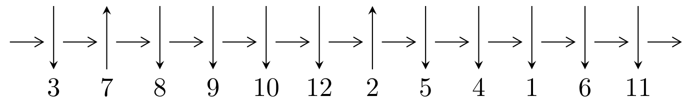
$12a_{0504}$ $(K12a_{0504})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -7.83895 \times 10^{14} u^{55} + 1.45886 \times 10^{14} u^{54} + \cdots + 3.67417 \times 10^{15} b - 1.23817 \times 10^{16},$$
$$9.64057 \times 10^{16} u^{55} - 1.02861 \times 10^{17} u^{54} + \cdots + 1.46967 \times 10^{16} a + 5.86299 \times 10^{17},\ u^{56} - u^{55} + \cdots + 12u + 1$$
$$I_2^u = \langle -u^8 - 2u^6 - 2u^4 + b,\ -u^6 - u^4 + a + 1,\ u^{24} + 8u^{22} + \cdots + 2u - 1 \rangle$$
$$I_3^u = \langle b + 1,\ a^2 - au - 2a + u,\ u^2 + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 84 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.

$\boldsymbol{I_1^u = \langle -7.84\times10^{14}u^{55}+1.46\times10^{14}u^{54}+\cdots+3.67\times10^{15}b-1.24\times10^{16},\ 9.64\times10^{16}u^{55}-1.03\times10^{17}u^{54}+\cdots+1.47\times10^{16}a+5.86\times10^{17},\ u^{56}-u^{55}+\cdots+12u+1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_1 = \begin{pmatrix}-6.55969u^{55}+6.99890u^{54}+\cdots-234.424u-39.8933\\0.213353u^{55}-0.0397057u^{54}+\cdots+14.8733u+3.36993\end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix}-7.30147u^{55}+8.14558u^{54}+\cdots-237.184u-48.1301\\-0.805092u^{55}+0.773921u^{54}+\cdots-22.7624u-4.24178\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}-u^4-u^2+1\\-u^6-2u^4-u^2\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-6.66140u^{55}+7.11337u^{54}+\cdots-239.072u-41.8370\\-0.0587147u^{55}-0.0808551u^{54}+\cdots+16.5555u+3.49674\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-2.86544u^{55}+2.88023u^{54}+\cdots-100.769u-25.4493\\-0.943701u^{55}+1.04541u^{54}+\cdots-36.4118u-6.67618\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-6.53973u^{55}+7.49680u^{54}+\cdots-215.901u-45.3003\\-1.08495u^{55}+0.999699u^{54}+\cdots-25.8687u-4.36852\end{pmatrix}$$

(ii) Obstruction class $=-1$

(iii) Cusp Shapes

$$= -\frac{14833210943177139}{3674173150903357}u^{55}+\frac{13598122062567921}{3674173150903357}u^{54}+\cdots-\frac{427855008730402692}{3674173150903357}u-\frac{136869864770758331}{3674173150903357}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{56} + 29u^{55} + \cdots + 6u + 1$
c_2, c_7	$u^{56} + u^{55} + \cdots - 2u + 1$
c_3, c_5	$u^{56} + 2u^{55} + \cdots - 464u + 32$
c_4, c_8, c_9	$u^{56} + u^{55} + \cdots - 12u + 1$
c_6, c_{11}	$u^{56} - 2u^{55} + \cdots - 3u + 2$
c_{10}, c_{12}	$u^{56} + 20u^{55} + \cdots - 19u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} + y^{55} + \cdots + 78y + 1$
c_2, c_7	$y^{56} + 29y^{55} + \cdots + 6y + 1$
c_3, c_5	$y^{56} - 42y^{55} + \cdots - 81664y + 1024$
c_4, c_8, c_9	$y^{56} + 49y^{55} + \cdots - 90y + 1$
c_6, c_{11}	$y^{56} - 20y^{55} + \cdots + 19y + 4$
c_{10}, c_{12}	$y^{56} + 32y^{55} + \cdots - 33y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.889558 + 0.109792I$ $a = 0.480562 - 0.208021I$ $b = -1.39404 - 1.26418I$	$-5.62716 - 11.26020I$	$-12.2899 + 8.2594I$
$u = 0.889558 - 0.109792I$ $a = 0.480562 + 0.208021I$ $b = -1.39404 + 1.26418I$	$-5.62716 + 11.26020I$	$-12.2899 - 8.2594I$
$u = 0.185587 + 0.860066I$ $a = -1.024400 + 0.085895I$ $b = -0.0405782 + 0.0105793I$	$1.79150 - 2.20957I$	$-3.12470 + 4.68768I$
$u = 0.185587 - 0.860066I$ $a = -1.024400 - 0.085895I$ $b = -0.0405782 - 0.0105793I$	$1.79150 + 2.20957I$	$-3.12470 - 4.68768I$
$u = -0.861042 + 0.114062I$ $a = 0.614579 + 0.107443I$ $b = -1.091830 + 0.875986I$	$-4.20562 + 5.74688I$	$-10.33539 - 3.77278I$
$u = -0.861042 - 0.114062I$ $a = 0.614579 - 0.107443I$ $b = -1.091830 - 0.875986I$	$-4.20562 - 5.74688I$	$-10.33539 + 3.77278I$
$u = 0.860629 + 0.049985I$ $a = 0.413499 + 0.208652I$ $b = -1.88213 - 0.20431I$	$-10.13050 - 4.55338I$	$-16.9525 + 3.5771I$
$u = 0.860629 - 0.049985I$ $a = 0.413499 - 0.208652I$ $b = -1.88213 + 0.20431I$	$-10.13050 + 4.55338I$	$-16.9525 - 3.5771I$
$u = 0.805415 + 0.008477I$ $a = 0.690320 - 0.645957I$ $b = -1.58304 - 0.97985I$	$-6.37248 - 2.26636I$	$-13.85594 + 1.85600I$
$u = 0.805415 - 0.008477I$ $a = 0.690320 + 0.645957I$ $b = -1.58304 + 0.97985I$	$-6.37248 + 2.26636I$	$-13.85594 - 1.85600I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.348712 + 1.145540I$ $a = -1.46239 + 0.70535I$ $b = 0.639092 + 0.118002I$	$0.79022 - 2.20219I$	0
$u = -0.348712 - 1.145540I$ $a = -1.46239 - 0.70535I$ $b = 0.639092 - 0.118002I$	$0.79022 + 2.20219I$	0
$u = -0.787481 + 0.037354I$ $a = 0.799208 - 0.381112I$ $b = -1.144440 - 0.535672I$	$-4.76193 + 2.90653I$	$-11.38592 - 3.37449I$
$u = -0.787481 - 0.037354I$ $a = 0.799208 + 0.381112I$ $b = -1.144440 + 0.535672I$	$-4.76193 - 2.90653I$	$-11.38592 + 3.37449I$
$u = -0.020700 + 1.221230I$ $a = -0.733753 + 1.108360I$ $b = 0.060419 - 0.425354I$	$1.78925 - 1.40742I$	0
$u = -0.020700 - 1.221230I$ $a = -0.733753 - 1.108360I$ $b = 0.060419 + 0.425354I$	$1.78925 + 1.40742I$	0
$u = -0.638508 + 0.407850I$ $a = 0.739741 - 0.354164I$ $b = 0.589927 - 0.778722I$	$1.25611 + 6.62961I$	$-7.45851 - 9.59429I$
$u = -0.638508 - 0.407850I$ $a = 0.739741 + 0.354164I$ $b = 0.589927 + 0.778722I$	$1.25611 - 6.62961I$	$-7.45851 + 9.59429I$
$u = 0.273524 + 1.225730I$ $a = -0.725644 - 0.884759I$ $b = 0.356539 + 0.597946I$	$2.31046 - 2.56681I$	0
$u = 0.273524 - 1.225730I$ $a = -0.725644 + 0.884759I$ $b = 0.356539 - 0.597946I$	$2.31046 + 2.56681I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.577497 + 0.456433I$ $a = 0.431719 + 0.400148I$ $b = 0.359836 + 0.827641I$	$1.72923 - 1.31419I$	$-5.78155 + 3.99484I$
$u = 0.577497 - 0.456433I$ $a = 0.431719 - 0.400148I$ $b = 0.359836 - 0.827641I$	$1.72923 + 1.31419I$	$-5.78155 - 3.99484I$
$u = -0.142801 + 1.272040I$ $a = 0.036090 + 1.373970I$ $b = 0.474215 - 0.667513I$	$0.98358 + 4.96048I$	0
$u = -0.142801 - 1.272040I$ $a = 0.036090 - 1.373970I$ $b = 0.474215 + 0.667513I$	$0.98358 - 4.96048I$	0
$u = 0.354849 + 1.262830I$ $a = 1.64828 + 0.90921I$ $b = -0.868433 - 0.073319I$	$-2.48382 - 1.91013I$	0
$u = 0.354849 - 1.262830I$ $a = 1.64828 - 0.90921I$ $b = -0.868433 + 0.073319I$	$-2.48382 + 1.91013I$	0
$u = 0.058481 + 1.310540I$ $a = -0.153203 - 1.271200I$ $b = 0.086213 + 0.977970I$	$4.34759 - 2.11198I$	0
$u = 0.058481 - 1.310540I$ $a = -0.153203 + 1.271200I$ $b = 0.086213 - 0.977970I$	$4.34759 + 2.11198I$	0
$u = -0.366060 + 1.267250I$ $a = -1.13826 + 1.74843I$ $b = 1.48110 - 0.89517I$	$-2.57041 + 4.26504I$	0
$u = -0.366060 - 1.267250I$ $a = -1.13826 - 1.74843I$ $b = 1.48110 + 0.89517I$	$-2.57041 - 4.26504I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.346195 + 1.296780I$ $a = 0.98892 - 1.05718I$ $b = -0.612467 + 0.642893I$	$-0.59522 + 6.99644I$	0
$u = -0.346195 - 1.296780I$ $a = 0.98892 + 1.05718I$ $b = -0.612467 - 0.642893I$	$-0.59522 - 6.99644I$	0
$u = 0.390452 + 1.308290I$ $a = 1.15405 + 1.99315I$ $b = -1.52261 - 1.10872I$	$-5.88872 - 9.04102I$	0
$u = 0.390452 - 1.308290I$ $a = 1.15405 - 1.99315I$ $b = -1.52261 + 1.10872I$	$-5.88872 + 9.04102I$	0
$u = 0.335008 + 1.329430I$ $a = -0.32616 - 2.08418I$ $b = 1.05385 + 2.07205I$	$3.44326 - 5.11122I$	0
$u = 0.335008 - 1.329430I$ $a = -0.32616 + 2.08418I$ $b = 1.05385 - 2.07205I$	$3.44326 + 5.11122I$	0
$u = -0.359700 + 1.337340I$ $a = -0.49062 + 2.42131I$ $b = 1.59665 - 2.26221I$	$2.15359 + 10.68620I$	0
$u = -0.359700 - 1.337340I$ $a = -0.49062 - 2.42131I$ $b = 1.59665 + 2.26221I$	$2.15359 - 10.68620I$	0
$u = 0.102530 + 1.394500I$ $a = 0.964979 + 0.507457I$ $b = -1.93891 - 0.37473I$	$8.29178 - 4.25641I$	0
$u = 0.102530 - 1.394500I$ $a = 0.964979 - 0.507457I$ $b = -1.93891 + 0.37473I$	$8.29178 + 4.25641I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.066007+1.396890I$ $a=\ \ 0.810504-0.885178I$ $b=-1.69144+0.97965I$	$8.59831-1.41502I$	0
$u=-0.066007-1.396890I$ $a=\ \ 0.810504+0.885178I$ $b=-1.69144-0.97965I$	$8.59831+1.41502I$	0
$u=-0.381595+1.347340I$ $a=\ \ 0.25782-2.13685I$ $b=-0.98568+2.09120I$	$0.38459+10.21060I$	0
$u=-0.381595-1.347340I$ $a=\ \ 0.25782+2.13685I$ $b=-0.98568-2.09120I$	$0.38459-10.21060I$	0
$u=\ \ 0.149156+1.399160I$ $a=-0.56575-1.37488I$ $b=\ \ 1.40497+1.43686I$	$7.66294-3.69333I$	0
$u=\ \ 0.149156-1.399160I$ $a=-0.56575+1.37488I$ $b=\ \ 1.40497-1.43686I$	$7.66294+3.69333I$	0
$u=\ \ 0.397706+1.350820I$ $a=\ \ 0.30333+2.52636I$ $b=-1.42412-2.37758I$	$-1.0399-15.8746I$	0
$u=\ \ 0.397706-1.350820I$ $a=\ \ 0.30333-2.52636I$ $b=-1.42412+2.37758I$	$-1.0399+15.8746I$	0
$u=-0.181217+1.400850I$ $a=-0.752908+1.133180I$ $b=\ \ 1.76932-0.99764I$	$7.06490+9.40242I$	0
$u=-0.181217-1.400850I$ $a=-0.752908-1.133180I$ $b=\ \ 1.76932+0.99764I$	$7.06490-9.40242I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.502604 + 0.150960I$ $a = 1.119810 + 0.498449I$ $b = 0.406755 - 0.670085I$	$-3.33096 + 2.74558I$	$-16.7867 - 5.9807I$
$u = -0.502604 - 0.150960I$ $a = 1.119810 - 0.498449I$ $b = 0.406755 + 0.670085I$	$-3.33096 - 2.74558I$	$-16.7867 + 5.9807I$
$u = 0.268159 + 0.343396I$ $a = -0.410785 - 0.686556I$ $b = 0.387300 + 0.356715I$	$-0.578536 - 1.108330I$	$-7.65763 + 5.69104I$
$u = 0.268159 - 0.343396I$ $a = -0.410785 + 0.686556I$ $b = 0.387300 - 0.356715I$	$-0.578536 + 1.108330I$	$-7.65763 - 5.69104I$
$u = -0.145927 + 0.017514I$ $a = 3.33046 - 6.22037I$ $b = 1.013530 + 0.299730I$	$-1.72221 + 2.04047I$	$-15.8987 - 3.0752I$
$u = -0.145927 - 0.017514I$ $a = 3.33046 + 6.22037I$ $b = 1.013530 - 0.299730I$	$-1.72221 - 2.04047I$	$-15.8987 + 3.0752I$

II. $\boldsymbol{I_2^u = \langle -u^8 - 2u^6 - 2u^4 + b,\ -u^6 - u^4 + a + 1,\ u^{24} + 8u^{22} + \cdots + 2u - 1 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^6 + u^4 - 1 \\ u^8 + 2u^6 + 2u^4 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{15} - 4u^{13} - 6u^{11} - 2u^9 + 4u^7 + 4u^5 - 2u \\ -u^{17} - 5u^{15} - 11u^{13} - 12u^{11} - 5u^9 + 2u^7 + 2u^5 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^4 - u^2 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^2 - 1 \\ u^4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{22} - u^{21} + \cdots - 2u^2 - 2u \\ -u^{23} + u^{22} + \cdots - 2u^3 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{18} - 24u^{16} - 60u^{14} - 68u^{12} - 12u^{10} - 4u^9 + 48u^8 - 12u^7 + 36u^6 - 12u^5 - 4u^4 + 4u^3 - 8u^2 + 8u - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} - 16y^{23} + \cdots - 44y + 1$
c_2, c_4, c_7 c_8, c_9	$y^{24} + 16y^{23} + \cdots - 4y + 1$
c_3, c_5	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)^3$
c_6, c_{11}	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)^3$
c_{10}, c_{12}	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.199878 + 1.058230I$ $a = -0.692366 - 0.490639I$ $b = 0.755093 + 0.822738I$	-0.845036	$-11.89446 + 0.I$
$u = -0.199878 - 1.058230I$ $a = -0.692366 + 0.490639I$ $b = 0.755093 - 0.822738I$	-0.845036	$-11.89446 + 0.I$
$u = -0.817018 + 0.106623I$ $a = -0.377081 - 0.448378I$ $b = 1.35371 - 1.07975I$	$-2.37968 + 6.44354I$	$-9.42845 - 5.29417I$
$u = -0.817018 - 0.106623I$ $a = -0.377081 + 0.448378I$ $b = 1.35371 + 1.07975I$	$-2.37968 - 6.44354I$	$-9.42845 + 5.29417I$
$u = -0.819879$ $a = -0.244409$ $b = 1.71535$	-6.50273	-13.8640
$u = -0.431691 + 0.692037I$ $a = -0.983121 + 0.409487I$ $b = -0.014801 + 0.629205I$	$2.15941 - 2.57849I$	$-4.27708 + 3.56796I$
$u = -0.431691 - 0.692037I$ $a = -0.983121 - 0.409487I$ $b = -0.014801 - 0.629205I$	$2.15941 + 2.57849I$	$-4.27708 - 3.56796I$
$u = -0.427601 + 1.146400I$ $a = 1.133070 - 0.604082I$ $b = -0.553659 + 0.206534I$	$-1.04066 - 1.13123I$	$-7.41522 + 0.51079I$
$u = -0.427601 - 1.146400I$ $a = 1.133070 + 0.604082I$ $b = -0.553659 - 0.206534I$	$-1.04066 + 1.13123I$	$-7.41522 - 0.51079I$
$u = 0.761196 + 0.098439I$ $a = -0.551326 + 0.313328I$ $b = 0.959472 + 0.729841I$	$-1.04066 - 1.13123I$	$-7.41522 + 0.51079I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.761196 - 0.098439I$ $a = -0.551326 - 0.313328I$ $b = 0.959472 - 0.729841I$	$-1.04066 + 1.13123I$	$-7.41522 - 0.51079I$
$u = 0.461944 + 1.169380I$ $a = 1.66867 + 0.56200I$ $b = -0.853651 + 0.302978I$	$-2.37968 + 6.44354I$	$-9.42845 - 5.29417I$
$u = 0.461944 - 1.169380I$ $a = 1.66867 - 0.56200I$ $b = -0.853651 - 0.302978I$	$-2.37968 - 6.44354I$	$-9.42845 + 5.29417I$
$u = -0.028576 + 1.262710I$ $a = -2.48788 - 0.31944I$ $b = 3.39460 + 0.52702I$	$2.15941 + 2.57849I$	$-4.27708 - 3.56796I$
$u = -0.028576 - 1.262710I$ $a = -2.48788 + 0.31944I$ $b = 3.39460 - 0.52702I$	$2.15941 - 2.57849I$	$-4.27708 + 3.56796I$
$u = 0.460267 + 0.570674I$ $a = -1.170250 - 0.244142I$ $b = -0.285631 - 0.425378I$	$2.15941 - 2.57849I$	$-4.27708 + 3.56796I$
$u = 0.460267 - 0.570674I$ $a = -1.170250 + 0.244142I$ $b = -0.285631 + 0.425378I$	$2.15941 + 2.57849I$	$-4.27708 - 3.56796I$
$u = -0.333594 + 1.244840I$ $a = 0.37985 - 2.19261I$ $b = -1.04688 + 2.20428I$	$-1.04066 + 1.13123I$	$-7.41522 - 0.51079I$
$u = -0.333594 - 1.244840I$ $a = 0.37985 + 2.19261I$ $b = -1.04688 - 2.20428I$	$-1.04066 - 1.13123I$	$-7.41522 + 0.51079I$
$u = 0.409939 + 1.226440I$ $a = 1.44167 + 1.68145I$ $b = -1.73732 - 0.79694I$	-6.50273	$-13.86404 + 0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.409939 - 1.226440I$ $a = 1.44167 - 1.68145I$ $b = -1.73732 + 0.79694I$	-6.50273	$-13.86404 + 0.I$
$u = 0.355074 + 1.276000I$ $a = 0.74615 + 2.66734I$ $b = -1.85855 - 2.47925I$	$-2.37968 - 6.44354I$	$-9.42845 + 5.29417I$
$u = 0.355074 - 1.276000I$ $a = 0.74615 - 2.66734I$ $b = -1.85855 + 2.47925I$	$-2.37968 + 6.44354I$	$-9.42845 - 5.29417I$
$u = 0.399757$ $a = -0.970381$ $b = 0.0598901$	-0.845036	-11.8940

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

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} a \\ -1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -au + a - u - 1 \\ au \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} a+1 \\ -1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -au \\ u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -au \\ au + a - u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4au + 4u - 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 0.133975 + 0.500000I$ $b = -1.00000$	$-2.02988I$	$-10.00000 + 3.46410I$
$u = 1.000000I$ $a = 1.86603 + 0.50000I$ $b = -1.00000$	$2.02988I$	$-10.00000 - 3.46410I$
$u = -1.000000I$ $a = 0.133975 - 0.500000I$ $b = -1.00000$	$2.02988I$	$-10.00000 - 3.46410I$
$u = -1.000000I$ $a = 1.86603 - 0.50000I$ $b = -1.00000$	$-2.02988I$	$-10.00000 + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{24}+16u^{23}+\cdots-4u+1)(u^{56}+29u^{55}+\cdots+6u+1)$
c_2, c_7	$((u^2+1)^2)(u^{24}+8u^{22}+\cdots-2u-1)(u^{56}+u^{55}+\cdots-2u+1)$
c_3, c_5	$u^4(u^8-u^7+\cdots-2u-1)^3(u^{56}+2u^{55}+\cdots-464u+32)$
c_4, c_8, c_9	$((u^2+1)^2)(u^{24}+8u^{22}+\cdots-2u-1)(u^{56}+u^{55}+\cdots-12u+1)$
c_6, c_{11}	$(u^4-u^2+1)(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)^3$ $\cdot(u^{56}-2u^{55}+\cdots-3u+2)$
c_{10}	$(u^2-u+1)^2(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^3$ $\cdot(u^{56}+20u^{55}+\cdots-19u+4)$
c_{12}	$(u^2+u+1)^2(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^3$ $\cdot(u^{56}+20u^{55}+\cdots-19u+4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^4)(y^{24}-16y^{23}+\cdots-44y+1)(y^{56}+y^{55}+\cdots+78y+1)$
c_2, c_7	$((y+1)^4)(y^{24}+16y^{23}+\cdots-4y+1)(y^{56}+29y^{55}+\cdots+6y+1)$
c_3, c_5	$y^4(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)^3$ $\cdot(y^{56}-42y^{55}+\cdots-81664y+1024)$
c_4, c_8, c_9	$((y+1)^4)(y^{24}+16y^{23}+\cdots-4y+1)(y^{56}+49y^{55}+\cdots-90y+1)$
c_6, c_{11}	$(y^2-y+1)^2(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)^3$ $\cdot(y^{56}-20y^{55}+\cdots+19y+4)$
c_{10}, c_{12}	$(y^2+y+1)^2$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^3$ $\cdot(y^{56}+32y^{55}+\cdots-33y+16)$