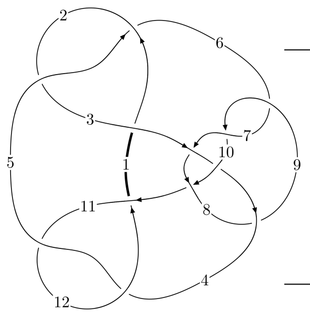
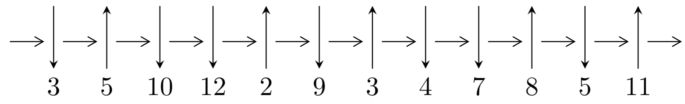
$12n_{0364}$ ($K12n_{0364}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.65018 \times 10^{76} u^{49} - 3.54268 \times 10^{76} u^{48} + \cdots + 4.05963 \times 10^{77} b - 6.66248 \times 10^{77}, \\
& - 6.81584 \times 10^{77} u^{49} + 7.40970 \times 10^{76} u^{48} + \cdots + 1.10422 \times 10^{80} a - 9.55385 \times 10^{79}, \\
& u^{50} - 2u^{49} + \cdots - 44u + 17 \rangle \\
I_2^u = \langle & -6839a^5 u - 100530a^4 u + \cdots - 679911a + 101996, \\
& a^6 - 5a^5 u - 6a^5 + 20a^4 u + 2a^4 - 16a^3 u + 22a^3 - 6a^2 u - 29a^2 + 8au + 7a - u,\ u^2 + 1 \rangle \\
I_3^u = \langle & 6u^{12} + 24u^{10} + 3u^9 + 36u^8 + 9u^7 + 62u^6 + 9u^5 + 82u^4 + 42u^3 + 38u^2 + 29b + 39u + 4, \\
& 4u^{13} - 22u^{12} + \cdots + 29a - 92, \\
& u^{15} + 5u^{13} - u^{12} + 10u^{11} - 4u^{10} + 18u^9 - 6u^8 + 29u^7 - 7u^6 + 25u^5 - 7u^4 + 11u^3 - 3u^2 + 3u - 1 \rangle \\
I_4^u = \langle & b,\ -3u^3 - 2u^2 + 4a - 7u - 7,\ u^4 - u^3 + 3u^2 - 2u + 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 81 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. $\boldsymbol{I_1^u = \langle 1.65 \times 10^{76}u^{49} - 3.54 \times 10^{76}u^{48} + \cdots + 4.06 \times 10^{77}b - 6.66 \times 10^{77},\ -6.82 \times 10^{77}u^{49} + 7.41 \times 10^{76}u^{48} + \cdots + 1.10 \times 10^{80}a - 9.55 \times 10^{79},\ u^{50} - 2u^{49} + \cdots - 44u + 17\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} 0.00617254u^{49} - 0.000671034u^{48} + \cdots - 2.01092u + 0.865212 \\ -0.0406485u^{49} + 0.0872659u^{48} + \cdots - 5.79426u + 1.64115 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0282098u^{49} + 0.0868361u^{48} + \cdots - 8.88364u + 0.883519 \\ -0.0345582u^{49} + 0.0421933u^{48} + \cdots + 0.600393u - 0.0303720 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0506811u^{49} - 0.0563455u^{48} + \cdots + 2.97171u - 2.07332 \\ 0.0131686u^{49} - 0.0624266u^{48} + \cdots + 4.05011u - 1.14409 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0506811u^{49} - 0.0563455u^{48} + \cdots + 2.97171u - 2.07332 \\ 0.0188729u^{49} - 0.0895465u^{48} + \cdots + 5.16927u - 1.90937 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0138068u^{49} - 0.0333179u^{48} + \cdots + 11.0786u - 1.72666 \\ 0.0968175u^{49} - 0.183692u^{48} + \cdots + 0.235614u - 0.540740 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0145850u^{49} + 0.0659148u^{48} + \cdots - 7.07269u + 2.34119 \\ -0.00275585u^{49} - 0.0265966u^{48} + \cdots + 6.09637u - 1.52987 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0367912u^{49} - 0.0525595u^{48} + \cdots - 2.24087u + 0.402118 \\ -0.0284670u^{49} + 0.0549091u^{48} + \cdots - 6.13338u + 1.01913 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.692160u^{49} - 1.33300u^{48} + \cdots + 22.8194u - 11.6257$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{50} + 62u^{49} + \cdots - 11952u + 289$
c_2, c_5	$u^{50} + 2u^{49} + \cdots + 152u + 17$
c_3	$u^{50} - 7u^{49} + \cdots - 8u + 4$
c_4, c_{11}	$u^{50} + 2u^{49} + \cdots + 44u + 17$
c_6, c_9	$u^{50} - 4u^{49} + \cdots + 127u + 16$
c_7	$2(2u^{50} - 3u^{49} + \cdots - 2699u + 3982)$
c_8	$2(2u^{50} + 5u^{49} + \cdots + 2584919u + 1407026)$
c_{10}	$u^{50} + 8u^{49} + \cdots - 2976u + 256$
c_{12}	$u^{50} - 14u^{49} + \cdots - 5136u + 289$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{50} - 134y^{49} + \cdots - 132056732y + 83521$
c_2, c_5	$y^{50} + 62y^{49} + \cdots - 11952y + 289$
c_3	$y^{50} + y^{49} + \cdots + 152y + 16$
c_4, c_{11}	$y^{50} + 14y^{49} + \cdots + 5136y + 289$
c_6, c_9	$y^{50} - 40y^{49} + \cdots + 17759y + 256$
c_7	$4(4y^{50} + 275y^{49} + \cdots + 6.39567 \times 10^{8}y + 1.58563 \times 10^{7})$
c_8	$4(4y^{50} + 115y^{49} + \cdots + 2.59259 \times 10^{12}y + 1.97972 \times 10^{12})$
c_{10}	$y^{50} + 12y^{49} + \cdots - 1020928y + 65536$
c_{12}	$y^{50} + 58y^{49} + \cdots + 8224052y + 83521$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.068272 + 1.028420I$ $a = -0.309956 + 0.515004I$ $b = 1.003440 - 0.398879I$	$3.59031 - 0.96879I$	$7.50173 + 1.09095I$
$u = -0.068272 - 1.028420I$ $a = -0.309956 - 0.515004I$ $b = 1.003440 + 0.398879I$	$3.59031 + 0.96879I$	$7.50173 - 1.09095I$
$u = 0.480788 + 0.815784I$ $a = 1.12478 + 0.91870I$ $b = -0.158097 + 0.480865I$	$0.01643 - 1.94498I$	$-0.87974 + 3.02972I$
$u = 0.480788 - 0.815784I$ $a = 1.12478 - 0.91870I$ $b = -0.158097 - 0.480865I$	$0.01643 + 1.94498I$	$-0.87974 - 3.02972I$
$u = -0.636460 + 0.850925I$ $a = -0.41580 + 1.74505I$ $b = 0.83688 + 1.30980I$	$0.03524 + 5.80828I$	$-1.80389 - 9.34928I$
$u = -0.636460 - 0.850925I$ $a = -0.41580 - 1.74505I$ $b = 0.83688 - 1.30980I$	$0.03524 - 5.80828I$	$-1.80389 + 9.34928I$
$u = 0.039464 + 1.141930I$ $a = 0.518130 - 0.112235I$ $b = -0.960838 + 0.591042I$	$1.43606 - 5.46886I$	$3.64987 + 5.42308I$
$u = 0.039464 - 1.141930I$ $a = 0.518130 + 0.112235I$ $b = -0.960838 - 0.591042I$	$1.43606 + 5.46886I$	$3.64987 - 5.42308I$
$u = -0.591483 + 0.619229I$ $a = -0.901275 + 0.820990I$ $b = -1.25745 + 0.91387I$	$-3.72647 + 3.16916I$	$-9.86538 - 6.96751I$
$u = -0.591483 - 0.619229I$ $a = -0.901275 - 0.820990I$ $b = -1.25745 - 0.91387I$	$-3.72647 - 3.16916I$	$-9.86538 + 6.96751I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.914944 + 0.798812I$ $a = -0.044773 + 0.967248I$ $b = -0.187772 + 0.921101I$	$-7.51460 + 1.56660I$	$0. - 4.59872I$
$u = -0.914944 - 0.798812I$ $a = -0.044773 - 0.967248I$ $b = -0.187772 - 0.921101I$	$-7.51460 - 1.56660I$	$0. + 4.59872I$
$u = 0.114923 + 0.775485I$ $a = 1.67601 - 1.41606I$ $b = -0.095714 - 0.666726I$	$-0.522597 - 1.281740I$	$-1.45542 + 3.17634I$
$u = 0.114923 - 0.775485I$ $a = 1.67601 + 1.41606I$ $b = -0.095714 + 0.666726I$	$-0.522597 + 1.281740I$	$-1.45542 - 3.17634I$
$u = 0.391145 + 0.663226I$ $a = -5.02638 + 0.41948I$ $b = 0.290024 + 0.026703I$	$-1.64557 - 1.46182I$	$49.4938 - 3.8392I$
$u = 0.391145 - 0.663226I$ $a = -5.02638 - 0.41948I$ $b = 0.290024 - 0.026703I$	$-1.64557 + 1.46182I$	$49.4938 + 3.8392I$
$u = 1.016150 + 0.749484I$ $a = 0.920704 + 0.734457I$ $b = 0.91099 + 1.89793I$	$-8.27324 + 2.71933I$	0
$u = 1.016150 - 0.749484I$ $a = 0.920704 - 0.734457I$ $b = 0.91099 - 1.89793I$	$-8.27324 - 2.71933I$	0
$u = -0.914753 + 0.943767I$ $a = -1.186270 - 0.030672I$ $b = 0.806454 - 0.159713I$	$-9.24524 + 3.37020I$	0
$u = -0.914753 - 0.943767I$ $a = -1.186270 + 0.030672I$ $b = 0.806454 + 0.159713I$	$-9.24524 - 3.37020I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.814625 + 1.036590I$ $a = 0.774534 - 0.946809I$ $b = -0.507417 - 0.813843I$	$-6.75526 + 4.85770I$	0
$u = -0.814625 - 1.036590I$ $a = 0.774534 + 0.946809I$ $b = -0.507417 + 0.813843I$	$-6.75526 - 4.85770I$	0
$u = -0.870996 + 1.028870I$ $a = 0.45821 - 1.35144I$ $b = -0.89846 - 1.26634I$	$-5.33295 + 11.18530I$	0
$u = -0.870996 - 1.028870I$ $a = 0.45821 + 1.35144I$ $b = -0.89846 + 1.26634I$	$-5.33295 - 11.18530I$	0
$u = 1.009310 + 0.913920I$ $a = 0.34174 + 1.43865I$ $b = -1.96655 + 1.31397I$	$-12.29170 - 1.16111I$	0
$u = 1.009310 - 0.913920I$ $a = 0.34174 - 1.43865I$ $b = -1.96655 - 1.31397I$	$-12.29170 + 1.16111I$	0
$u = 1.258650 + 0.560245I$ $a = -0.518042 - 0.849518I$ $b = -0.98522 - 1.50703I$	$-14.6583 + 9.1791I$	0
$u = 1.258650 - 0.560245I$ $a = -0.518042 + 0.849518I$ $b = -0.98522 + 1.50703I$	$-14.6583 - 9.1791I$	0
$u = 0.952955 + 1.024640I$ $a = -0.865928 - 0.017593I$ $b = -1.61238 - 1.73076I$	$-11.93760 - 5.99162I$	0
$u = 0.952955 - 1.024640I$ $a = -0.865928 + 0.017593I$ $b = -1.61238 + 1.73076I$	$-11.93760 + 5.99162I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.851045 + 1.112060I$ $a = -0.80295 - 1.35413I$ $b = 1.33521 - 1.66319I$	$-7.12550 - 9.55838I$	0
$u = 0.851045 - 1.112060I$ $a = -0.80295 + 1.35413I$ $b = 1.33521 + 1.66319I$	$-7.12550 + 9.55838I$	0
$u = -1.309460 + 0.524121I$ $a = 0.222301 - 0.788694I$ $b = 0.262227 - 1.380400I$	$-14.2488 - 0.8615I$	0
$u = -1.309460 - 0.524121I$ $a = 0.222301 + 0.788694I$ $b = 0.262227 + 1.380400I$	$-14.2488 + 0.8615I$	0
$u = -0.404137 + 0.399130I$ $a = -0.80482 - 2.22372I$ $b = -0.855653 - 0.987594I$	$-3.45702 - 0.25001I$	$-11.35059 + 0.24450I$
$u = -0.404137 - 0.399130I$ $a = -0.80482 + 2.22372I$ $b = -0.855653 + 0.987594I$	$-3.45702 + 0.25001I$	$-11.35059 - 0.24450I$
$u = 0.90070 + 1.11853I$ $a = -0.589704 - 0.573106I$ $b = 0.089569 - 1.060610I$	$-4.77019 - 2.61015I$	0
$u = 0.90070 - 1.11853I$ $a = -0.589704 + 0.573106I$ $b = 0.089569 + 1.060610I$	$-4.77019 + 2.61015I$	0
$u = 0.250161 + 0.501573I$ $a = 1.39564 - 0.73889I$ $b = 0.239643 - 0.306301I$	$-0.235392 - 1.266680I$	$-2.17934 + 5.51042I$
$u = 0.250161 - 0.501573I$ $a = 1.39564 + 0.73889I$ $b = 0.239643 + 0.306301I$	$-0.235392 + 1.266680I$	$-2.17934 - 5.51042I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.176902+0.505057I$ $a=1.72876-0.17664I$ $b=-1.194380-0.508201I$	$-1.33404+5.95631I$	$-8.20112-6.23089I$
$u=-0.176902-0.505057I$ $a=1.72876+0.17664I$ $b=-1.194380+0.508201I$	$-1.33404-5.95631I$	$-8.20112+6.23089I$
$u=0.82735+1.27724I$ $a=0.84861+1.21665I$ $b=-1.22043+1.35112I$	$-12.3391-16.5813I$	0
$u=0.82735-1.27724I$ $a=0.84861-1.21665I$ $b=-1.22043-1.35112I$	$-12.3391+16.5813I$	0
$u=0.14425+1.53138I$ $a=0.0056819-0.0217967I$ $b=0.336796+0.195309I$	$5.21341-3.02399I$	0
$u=0.14425-1.53138I$ $a=0.0056819+0.0217967I$ $b=0.336796-0.195309I$	$5.21341+3.02399I$	0
$u=-0.84092+1.31844I$ $a=-0.628284+0.707391I$ $b=0.639430+1.133170I$	$-11.7068+8.4623I$	0
$u=-0.84092-1.31844I$ $a=-0.628284-0.707391I$ $b=0.639430-1.133170I$	$-11.7068-8.4623I$	0
$u=0.306063+0.264763I$ $a=-0.67826-2.24848I$ $b=1.149680+0.120400I$	$0.168989+0.748778I$	$-4.44695+0.25975I$
$u=0.306063-0.264763I$ $a=-0.67826+2.24848I$ $b=1.149680-0.120400I$	$0.168989-0.748778I$	$-4.44695-0.25975I$

II. $\boldsymbol{I_2^u = \langle -6839a^5u - 1.01\times 10^5a^4u + \cdots - 6.80\times 10^5a + 1.02\times 10^5,\ -5a^5u + 20a^4u + \cdots - 29a^2 + 7a,\ u^2+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ 0.163327a^5u + 2.40083a^4u + \cdots + 16.2375a - 2.43584 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0197263a^5u + 0.856399a^4u + \cdots + 3.63150a + 0.836673 \\ 0.0806247a^5u - 0.463927a^4u + \cdots - 1.15007a + 0.616698 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 0.320947a^5u - 3.11277a^4u + \cdots - 7.63413a + 2.20818 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 0.320947a^5u - 3.11277a^4u + \cdots - 7.63413a + 1.20818 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ 0.283094a^5u - 0.227306a^4u + \cdots + 5.61761a - 1.94421 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0650539a^5u - 2.95016a^4u + \cdots - 12.4434a + 2.11490 \\ 0.186540a^5u - 2.61663a^4u + \cdots - 7.68727a + 0.569914 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.163327a^5u + 2.40083a^4u + \cdots + 17.2375a - 2.43584 \\ 0.163327a^5u + 2.40083a^4u + \cdots + 16.2375a - 2.43584 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{6556}{41873}a^5u + \frac{362488}{41873}a^4u + \cdots + \frac{1586112}{41873}a - \frac{146544}{41873}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 1.217590 - 0.251449I$ $b = -1.073950 + 0.558752I$	$-5.69302I$	$-2.00000 + 5.51057I$
$u = 1.000000I$ $a = -1.010760 + 0.965580I$ $b = 1.002190 - 0.295542I$	$1.89061 - 0.92430I$	$1.71672 + 0.79423I$
$u = 1.000000I$ $a = 0.318306 + 0.177934I$ $b = 1.002190 + 0.295542I$	$1.89061 + 0.92430I$	$1.71672 - 0.79423I$
$u = 1.000000I$ $a = 0.100084 + 0.103550I$ $b = -1.073950 - 0.558752I$	$5.69302I$	$-2.00000 - 5.51057I$
$u = 1.000000I$ $a = 2.39185 + 1.23447I$ $b = -0.428243 - 0.664531I$	$-1.89061 - 0.92430I$	$-5.71672 + 0.79423I$
$u = 1.000000I$ $a = 2.98293 + 2.76991I$ $b = -0.428243 + 0.664531I$	$-1.89061 + 0.92430I$	$-5.71672 - 0.79423I$
$u = -1.000000I$ $a = 1.217590 + 0.251449I$ $b = -1.073950 - 0.558752I$	$5.69302I$	$-2.00000 - 5.51057I$
$u = -1.000000I$ $a = -1.010760 - 0.965580I$ $b = 1.002190 + 0.295542I$	$1.89061 + 0.92430I$	$1.71672 - 0.79423I$
$u = -1.000000I$ $a = 0.318306 - 0.177934I$ $b = 1.002190 - 0.295542I$	$1.89061 - 0.92430I$	$1.71672 + 0.79423I$
$u = -1.000000I$ $a = 0.100084 - 0.103550I$ $b = -1.073950 + 0.558752I$	$-5.69302I$	$-2.00000 + 5.51057I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad - 1.000000I$ $a = \quad 2.39185 - 1.23447I$ $b = -0.428243 + 0.664531I$	$-1.89061 + 0.92430I$	$-5.71672 - 0.79423I$
$u = \quad - 1.000000I$ $a = \quad 2.98293 - 2.76991I$ $b = -0.428243 - 0.664531I$	$-1.89061 - 0.92430I$	$-5.71672 + 0.79423I$

III. $\boldsymbol{I^u_3 =}$
$\boldsymbol{\langle 6u^{12}+24u^{10}+\cdots+29b+4,\ 4u^{13}-22u^{12}+\cdots+29a-92,\ u^{15}+5u^{13}+\cdots+3u-1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.137931u^{13}+0.758621u^{12}+\cdots-2.82759u+3.17241\\-0.206897u^{12}-0.827586u^{10}+\cdots-1.34483u-0.137931\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.586207u^{13}-0.586207u^{12}+\cdots-0.586207u-0.724138\\0.379310u^{12}+1.51724u^{10}+\cdots-1.03448u+0.586207\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.137931u^{13}+0.965517u^{12}+\cdots-1.48276u+3.31034\\-0.206897u^{12}-0.827586u^{10}+\cdots-1.34483u-0.137931\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.758621u^{12}+3.03448u^{10}+\cdots-2.06897u+3.17241\\-u^3-u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$-\frac{28}{29}u^{12}-\frac{112}{29}u^{10}+\frac{44}{29}u^9-\frac{168}{29}u^8+\frac{132}{29}u^7-\frac{328}{29}u^6+\frac{132}{29}u^5-\frac{460}{29}u^4+\frac{268}{29}u^3-\frac{216}{29}u^2+\frac{224}{29}u-\frac{154}{29}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15}+10u^{14}+\cdots+3u-1$
c_2, c_4, c_5 c_{11}	$u^{15}+5u^{13}+\cdots+3u+1$
c_3	$(u^5+3u^4+4u^3+u^2-u-1)^3$
c_6, c_8, c_9	$(u^5-u^4-2u^3+u^2+u+1)^3$
c_7, c_{10}	$(u^5+u^4+2u^3+u^2+u+1)^3$
c_{12}	$u^{15}-10u^{14}+\cdots+3u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^{15} - 10y^{14} + \cdots + 95y - 1$
c_2, c_4, c_5 c_{11}	$y^{15} + 10y^{14} + \cdots + 3y - 1$
c_3	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^3$
c_6, c_8, c_9	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^3$
c_7, c_{10}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.157313 + 1.036460I$ $a = 3.87069 - 2.29859I$ $b = -0.766826$	-2.40108	$-3.48114 + 0.I$
$u = -0.157313 - 1.036460I$ $a = 3.87069 + 2.29859I$ $b = -0.766826$	-2.40108	$-3.48114 + 0.I$
$u = -0.001127 + 1.228660I$ $a = 0.207187 - 1.120700I$ $b = 0.339110 + 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = -0.001127 - 1.228660I$ $a = 0.207187 + 1.120700I$ $b = 0.339110 - 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = 1.021430 + 0.758717I$ $a = 0.119200 + 1.050670I$ $b = -0.455697 + 1.200150I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = 1.021430 - 0.758717I$ $a = 0.119200 - 1.050670I$ $b = -0.455697 - 1.200150I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$
$u = -0.363053 + 0.617188I$ $a = 1.69633 - 1.09818I$ $b = 0.339110 - 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = -0.363053 - 0.617188I$ $a = 1.69633 + 1.09818I$ $b = 0.339110 + 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = 0.364180 + 0.611475I$ $a = 0.74058 - 1.49061I$ $b = 0.339110 - 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = 0.364180 - 0.611475I$ $a = 0.74058 + 1.49061I$ $b = 0.339110 + 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.975116+0.872207I$ $a=-0.741792+0.660626I$ $b=-0.455697+1.200150I$	$-5.87256-4.40083I$	$-6.74431+3.49859I$
$u=-0.975116-0.872207I$ $a=-0.741792-0.660626I$ $b=-0.455697-1.200150I$	$-5.87256+4.40083I$	$-6.74431-3.49859I$
$u=-0.04631+1.63092I$ $a=\ \ 0.195775+0.184082I$ $b=-0.455697-1.200150I$	$-5.87256+4.40083I$	$-6.74431-3.49859I$
$u=-0.04631-1.63092I$ $a=\ \ 0.195775-0.184082I$ $b=-0.455697+1.200150I$	$-5.87256-4.40083I$	$-6.74431+3.49859I$
$u=\ \ 0.314625$ $a=\ \ 2.82406$ $b=-0.766826$	-2.40108	-3.48110

IV. $\boldsymbol{I_4^u = \langle b,\ -3u^3 - 2u^2 + 4a - 7u - 7,\ u^4 - u^3 + 3u^2 - 2u + 1\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} \frac{3}{4}u^3 + \frac{1}{2}u^2 + \frac{7}{4}u + \frac{7}{4} \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} u^3+2u \\ u^3-u^2+2u-1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{5}{4}u^3 - \frac{1}{2}u^2 + \frac{13}{4}u - \frac{3}{4} \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{5}{4}u^3 - \frac{1}{2}u^2 + \frac{13}{4}u + \frac{1}{4} \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{113}{16}u^3 + \frac{21}{8}u^2 - \frac{13}{16}u - \frac{169}{16}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{11}	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_2, c_5	$y^4 + y^3 + 3y^2 + 2y + 1$
c_3	$y^4 + 9y^3 + 31y^2 + 19y + 4$
c_6, c_9	$(y-1)^4$
c_7, c_8	$4(4y^4 + 19y^3 + 31y^2 + 9y + 1)$
c_{10}	y^4
c_{12}	$y^4 - 11y^3 + 31y^2 + 10y + 1$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.395123 + 0.506844I$		
$a =$	$2.20896 + 1.16763I$	$-1.85594 - 1.41510I$	$-9.43312 - 0.11741I$
$b =$	0		
$u =$	$0.395123 - 0.506844I$		
$a =$	$2.20896 - 1.16763I$	$-1.85594 + 1.41510I$	$-9.43312 + 0.11741I$
$b =$	0		
$u =$	$0.10488 + 1.55249I$		
$a =$	$0.166035 + 0.111704I$	$5.14581 - 3.16396I$	$-11.5981 + 25.6585I$
$b =$	0		
$u =$	$0.10488 - 1.55249I$		
$a =$	$0.166035 - 0.111704I$	$5.14581 + 3.16396I$	$-11.5981 - 25.6585I$
$b =$	0		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{12})(u^4-u^3+3u^2-2u+1)(u^{15}+10u^{14}+\cdots+3u-1)$ $\cdot(u^{50}+62u^{49}+\cdots-11952u+289)$
c_2	$((u^2+1)^6)(u^4-u^3+u^2+1)(u^{15}+5u^{13}+\cdots+3u+1)$ $\cdot(u^{50}+2u^{49}+\cdots+152u+17)$
c_3	$(u^4-u^3+5u^2+u+2)(u^5+3u^4+4u^3+u^2-u-1)^3$ $\cdot(u^{12}-u^{10}+5u^8+6u^4-3u^2+1)(u^{50}-7u^{49}+\cdots-8u+4)$
c_4	$((u^2+1)^6)(u^4+u^3+3u^2+2u+1)(u^{15}+5u^{13}+\cdots+3u+1)$ $\cdot(u^{50}+2u^{49}+\cdots+44u+17)$
c_5	$((u^2+1)^6)(u^4+u^3+u^2+1)(u^{15}+5u^{13}+\cdots+3u+1)$ $\cdot(u^{50}+2u^{49}+\cdots+152u+17)$
c_6	$(u-1)^4(u^5-u^4-2u^3+u^2+u+1)^3(u^6+u^5-u^4-2u^3+u+1)^2$ $\cdot(u^{50}-4u^{49}+\cdots+127u+16)$
c_7	$4(2u^4+u^3+5u^2-u+1)(u^5+u^4+2u^3+u^2+u+1)^3$ $\cdot(u^{12}-u^{10}+5u^8+6u^4-3u^2+1)(2u^{50}-3u^{49}+\cdots-2699u+3982)$
c_8	$4(2u^4+u^3+5u^2-u+1)(u^5-u^4-2u^3+u^2+u+1)^3$ $\cdot(u^{12}+3u^{10}+5u^8+4u^6+2u^4+u^2+1)$ $\cdot(2u^{50}+5u^{49}+\cdots+2584919u+1407026)$
c_9	$(u+1)^4(u^5-u^4-2u^3+u^2+u+1)^3(u^6-u^5-u^4+2u^3-u+1)^2$ $\cdot(u^{50}-4u^{49}+\cdots+127u+16)$
c_{10}	$u^4(u^5+u^4+2u^3+u^2+u+1)^3(u^6+u^5-u^4-2u^3+u+1)^2$ $\cdot(u^{50}+8u^{49}+\cdots-2976u+256)$
c_{11}	$((u^2+1)^6)(u^4-u^3+3u^2-2u+1)(u^{15}+5u^{13}+\cdots+3u+1)$ $\cdot(u^{50}+2u^{49}+\cdots+44u+17)$
c_{12}	$((u-1)^{12})(u^4-5u^3+\cdots-2u+1)(u^{15}-10u^{14}+\cdots+3u+1)$ $\cdot(u^{50}-14u^{49}+\cdots-5136u+289)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{12})(y^4+5y^3+\cdots+2y+1)(y^{15}-10y^{14}+\cdots+95y-1)$ $\cdot(y^{50}-134y^{49}+\cdots-132056732y+83521)$
c_2, c_5	$((y+1)^{12})(y^4+y^3+3y^2+2y+1)(y^{15}+10y^{14}+\cdots+3y-1)$ $\cdot(y^{50}+62y^{49}+\cdots-11952y+289)$
c_3	$(y^4+9y^3+31y^2+19y+4)(y^5-y^4+8y^3-3y^2+3y-1)^3$ $\cdot((y^6-y^5+5y^4+6y^2-3y+1)^2)(y^{50}+y^{49}+\cdots+152y+16)$
c_4, c_{11}	$((y+1)^{12})(y^4+5y^3+\cdots+2y+1)(y^{15}+10y^{14}+\cdots+3y-1)$ $\cdot(y^{50}+14y^{49}+\cdots+5136y+289)$
c_6, c_9	$(y-1)^4(y^5-5y^4+8y^3-3y^2-y-1)^3$ $\cdot(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot(y^{50}-40y^{49}+\cdots+17759y+256)$
c_7	$16(4y^4+19y^3+31y^2+9y+1)(y^5+3y^4+4y^3+y^2-y-1)^3$ $\cdot(y^6-y^5+5y^4+6y^2-3y+1)^2$ $\cdot(4y^{50}+275y^{49}+\cdots+639567407y+15856324)$
c_8	$16(4y^4+19y^3+31y^2+9y+1)(y^5-5y^4+8y^3-3y^2-y-1)^3$ $\cdot(y^6+3y^5+5y^4+4y^3+2y^2+y+1)^2$ $\cdot(4y^{50}+115y^{49}+\cdots+2592594386231y+1979722164676)$
c_{10}	$y^4(y^5+3y^4+\cdots-y-1)^3(y^6-3y^5+\cdots-y+1)^2$ $\cdot(y^{50}+12y^{49}+\cdots-1020928y+65536)$
c_{12}	$((y-1)^{12})(y^4-11y^3+\cdots+10y+1)(y^{15}-10y^{14}+\cdots+95y-1)$ $\cdot(y^{50}+58y^{49}+\cdots+8224052y+83521)$