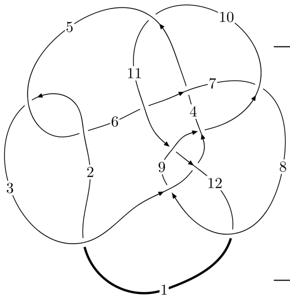
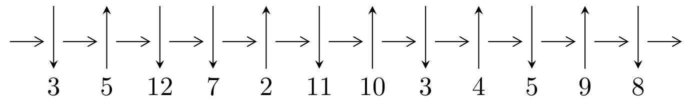
$12n_{0483}$ ($K12n_{0483}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle u^7 + u^4 + 2u^3 + 2u^2 + b,\ -u^5 - u^2 + a - 2u - 1,\\
&\quad u^{12} - u^{11} + u^{10} + 2u^9 + 2u^8 + 2u^7 + u^6 + 5u^5 + 6u^4 + 3u^3 + 2u^2 + u + 1\rangle\\
I_2^u &= \langle u^{17} + 7u^{16} + \cdots + b - 1,\ 6u^{17} + 47u^{16} + \cdots + a + 12,\ u^{18} + 8u^{17} + \cdots + 5u + 1\rangle\\
I_3^u &= \langle 15u^{13} - 39u^{12} + \cdots + b - 29,\ -49u^{13} + 118u^{12} + \cdots + a + 75,\\
&\quad u^{14} - 3u^{13} + 4u^{12} - 3u^{11} + 9u^{10} - 21u^9 + 22u^8 - 7u^7 + 7u^6 - 31u^5 + 48u^4 - 41u^3 + 22u^2 - 7u + 1\rangle\\
I_4^u &= \langle b,\ a + 1,\ u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 45 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.

$$\boldsymbol{I_1^u = \langle u^7 + u^4 + 2u^3 + 2u^2 + b,\ -u^5 - u^2 + a - 2u - 1,\ u^{12} - u^{11} + \cdots + u + 1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -4u^{11} + 6u^{10} - 6u^9 - 6u^8 - 6u^7 - 2u^6 - 2u^5 - 20u^4 - 14u^3 - 2u^2 - 2u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{12} + 36u^{11} + \cdots + 10212u + 784$
c_2, c_5	$u^{12} + 4u^{11} + \cdots + 34u + 28$
c_3, c_4	$u^{12} - u^{11} + u^{10} + 2u^9 + 2u^8 + 2u^7 + u^6 + 5u^5 + 6u^4 + 3u^3 + 2u^2 + u + 1$
c_6, c_{12}	$u^{12} - u^{11} + \cdots - 112u + 16$
c_7, c_{11}	$u^{12} + u^{11} + \cdots + 3u + 1$
c_8, c_{10}	$u^{12} - u^{11} + \cdots - u + 1$
c_9	$u^{12} + 8u^{11} + \cdots + 32u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{12} - 104y^{11} + \cdots - 27451376y + 614656$
c_2, c_5	$y^{12} + 36y^{11} + \cdots + 10212y + 784$
c_3, c_4	$y^{12} + y^{11} + \cdots + 3y + 1$
c_6, c_{12}	$y^{12} - 35y^{11} + \cdots + 1280y + 256$
c_7, c_{11}	$y^{12} + 11y^{11} + \cdots + 175y + 1$
c_8, c_{10}	$y^{12} - 25y^{11} + \cdots + 21y + 1$
c_9	$y^{12} - 6y^{11} + \cdots + 160y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.943494+0.203851I$ $a=-0.445140+0.755661I$ $b=-0.761544-0.427838I$	$-1.86414+1.86169I$	$-7.41273-3.81862I$
$u=-0.943494-0.203851I$ $a=-0.445140-0.755661I$ $b=-0.761544+0.427838I$	$-1.86414-1.86169I$	$-7.41273+3.81862I$
$u=-0.428222+0.989663I$ $a=-1.95175+0.47004I$ $b=-1.156050-0.432518I$	$2.66700+5.59294I$	$4.27657-7.89716I$
$u=-0.428222-0.989663I$ $a=-1.95175-0.47004I$ $b=-1.156050+0.432518I$	$2.66700-5.59294I$	$4.27657+7.89716I$
$u=-0.433065+0.576514I$ $a=0.004562+0.459402I$ $b=-0.083913+0.568146I$	$-0.34049+1.65634I$	$-1.46994-4.66889I$
$u=-0.433065-0.576514I$ $a=0.004562-0.459402I$ $b=-0.083913-0.568146I$	$-0.34049-1.65634I$	$-1.46994+4.66889I$
$u=0.308633+0.557970I$ $a=1.46204+1.37428I$ $b=1.005310-0.551014I$	$1.99940-1.87880I$	$2.68729+1.13887I$
$u=0.308633-0.557970I$ $a=1.46204-1.37428I$ $b=1.005310+0.551014I$	$1.99940+1.87880I$	$2.68729-1.13887I$
$u=0.96431+1.04939I$ $a=-0.436521-0.813671I$ $b=-1.55023-1.27982I$	$-18.7687-2.1933I$	$-2.97846+2.17261I$
$u=0.96431-1.04939I$ $a=-0.436521+0.813671I$ $b=-1.55023+1.27982I$	$-18.7687+2.1933I$	$-2.97846-2.17261I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.03184 + 1.04165I$ $a = -1.63319 - 0.67021I$ $b = -1.45358 + 1.34749I$	$-19.0592 - 12.8315I$	$-3.10274 + 5.68817I$
$u = 1.03184 - 1.04165I$ $a = -1.63319 + 0.67021I$ $b = -1.45358 - 1.34749I$	$-19.0592 + 12.8315I$	$-3.10274 - 5.68817I$

II.

$\boldsymbol{I_2^u = \langle u^{17}+7u^{16}+\cdots+b-1,\ 6u^{17}+47u^{16}+\cdots+a+12,\ u^{18}+8u^{17}+\cdots+5u+1\rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix}-6u^{17} - 47u^{16} + \cdots - 50u - 12\\ -u^{17} - 7u^{16} + \cdots - u + 1\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-5u^{17} - 40u^{16} + \cdots - 49u - 13\\ -u^{17} - 7u^{16} + \cdots - u + 1\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-5u^{17} - 39u^{16} + \cdots - 45u - 12\\ u^{16} + 7u^{15} + \cdots + 4u + 2\end{pmatrix}$$

$$a_1 = \begin{pmatrix}13u^{17} + 99u^{16} + \cdots + 84u + 19\\ -2u^{17} - 16u^{16} + \cdots - 18u - 6\end{pmatrix}$$

$$a_7 = \begin{pmatrix}3u^{17} + 19u^{16} + \cdots - 11u - 8\\ -5u^{17} - 38u^{16} + \cdots - 29u - 6\end{pmatrix}$$

$$a_5 = \begin{pmatrix}21u^{17} + 156u^{16} + \cdots + 111u + 22\\ -6u^{17} - 48u^{16} + \cdots - 45u - 12\end{pmatrix}$$

$$a_2 = \begin{pmatrix}14u^{17} + 107u^{16} + \cdots + 90u + 20\\ -u^{17} - 9u^{16} + \cdots - 17u - 6\end{pmatrix}$$

$$a_6 = \begin{pmatrix}33u^{17} + 249u^{16} + \cdots + 195u + 43\\ -5u^{17} - 42u^{16} + \cdots - 54u - 16\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}18u^{17} + 137u^{16} + \cdots + 109u + 23\\ -3u^{17} - 26u^{16} + \cdots - 34u - 10\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= -36u^{17} - 268u^{16} - 1035u^{15} - 2527u^{14} - 4242u^{13} - 4893u^{12} - 3632u^{11} - 1032u^{10} + 1235u^9 + 2183u^8 + 1783u^7 + 724u^6 - 361u^5 - 832u^4 - 748u^3 - 435u^2 - 188u - 40$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^9 - 5u^8 + 11u^7 - 5u^6 - 6u^5 + 6u^4 + 3u^3 - 4u^2 + 1)^2$
c_2	$(u^9 - u^8 + 3u^7 - u^6 + 2u^5 - 2u^4 - u^3 + 1)^2$
c_3	$u^{18} + 8u^{17} + \cdots + 5u + 1$
c_4	$u^{18} - 8u^{17} + \cdots - 5u + 1$
c_5	$(u^9 + u^8 + 3u^7 + u^6 + 2u^5 + 2u^4 - u^3 - 1)^2$
c_6	$u^{18} + 4u^{17} + \cdots - 64u + 16$
c_7	$u^{18} + 5u^{17} + \cdots + 6u + 1$
c_8	$u^{18} + 2u^{17} + \cdots - u + 1$
c_9	$u^{18} - 6u^{16} + 18u^{14} - 32u^{12} + 36u^{10} - 21u^8 - u^6 + 13u^4 - 9u^2 + 2$
c_{10}	$u^{18} - 2u^{17} + \cdots + u + 1$
c_{11}	$u^{18} - 5u^{17} + \cdots - 6u + 1$
c_{12}	$u^{18} - 4u^{17} + \cdots + 64u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^9 - 3y^8 + 59y^7 - 91y^6 + 122y^5 - 102y^4 + 67y^3 - 28y^2 + 8y - 1)^2$
c_2, c_5	$(y^9 + 5y^8 + 11y^7 + 5y^6 - 6y^5 - 6y^4 + 3y^3 + 4y^2 - 1)^2$
c_3, c_4	$y^{18} + 2y^{17} + \cdots + 3y + 1$
c_6, c_{12}	$y^{18} - 22y^{17} + \cdots - 512y + 256$
c_7, c_{11}	$y^{18} - 9y^{17} + \cdots - 4y + 1$
c_8, c_{10}	$y^{18} - 8y^{17} + \cdots - y + 1$
c_9	$(y^9 - 6y^8 + 18y^7 - 32y^6 + 36y^5 - 21y^4 - y^3 + 13y^2 - 9y + 2)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.777312 + 0.486718I$ $a = -0.117694 - 0.428312I$ $b = 0.824936I$	-2.92265	$-6.32125 + 0.I$
$u = -0.777312 - 0.486718I$ $a = -0.117694 + 0.428312I$ $b = -0.824936I$	-2.92265	$-6.32125 + 0.I$
$u = 0.787271 + 0.193545I$ $a = -1.94391 + 0.62047I$ $b = 0.738756 - 0.073670I$	$-2.59122 - 4.23353I$	$-10.52461 + 5.89343I$
$u = 0.787271 - 0.193545I$ $a = -1.94391 - 0.62047I$ $b = 0.738756 + 0.073670I$	$-2.59122 + 4.23353I$	$-10.52461 - 5.89343I$
$u = 0.195408 + 0.775085I$ $a = 0.783024 + 0.052101I$ $b = 1.018860 - 0.510794I$	$0.08023 + 1.48591I$	$-1.59236 - 0.75430I$
$u = 0.195408 - 0.775085I$ $a = 0.783024 - 0.052101I$ $b = 1.018860 + 0.510794I$	$0.08023 - 1.48591I$	$-1.59236 + 0.75430I$
$u = -0.913089 + 0.817029I$ $a = -0.586719 + 0.636830I$ $b = -1.018860 + 0.510794I$	$0.08023 + 1.48591I$	$-1.59236 - 0.75430I$
$u = -0.913089 - 0.817029I$ $a = -0.586719 - 0.636830I$ $b = -1.018860 - 0.510794I$	$0.08023 - 1.48591I$	$-1.59236 + 0.75430I$
$u = 0.017456 + 0.678862I$ $a = 1.85849 - 0.76267I$ $b = 1.298400 - 0.418995I$	$1.04126 - 5.01228I$	$-1.26831 + 4.06630I$
$u = 0.017456 - 0.678862I$ $a = 1.85849 + 0.76267I$ $b = 1.298400 + 0.418995I$	$1.04126 + 5.01228I$	$-1.26831 - 4.06630I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.831665+1.107580I$ $a=-1.39851+0.58903I$ $b=-1.298400-0.418995I$	$1.04126+5.01228I$	$-1.26831-4.06630I$
$u=-0.831665-1.107580I$ $a=-1.39851-0.58903I$ $b=-1.298400+0.418995I$	$1.04126-5.01228I$	$-1.26831+4.06630I$
$u=-0.458886+0.399467I$ $a=\ \ 0.31142-2.76924I$ $b=\ \ 0.948371+0.622031I$	$-0.35881+6.46016I$	$3.04591-10.04151I$
$u=-0.458886-0.399467I$ $a=\ \ 0.31142+2.76924I$ $b=\ \ 0.948371-0.622031I$	$-0.35881-6.46016I$	$3.04591+10.04151I$
$u=-0.83752+1.26265I$ $a=-1.41028+0.27520I$ $b=-0.948371-0.622031I$	$-0.35881+6.46016I$	$3.04591-10.04151I$
$u=-0.83752-1.26265I$ $a=-1.41028-0.27520I$ $b=-0.948371+0.622031I$	$-0.35881-6.46016I$	$3.04591+10.04151I$
$u=-1.18166+1.05458I$ $a=-0.995814+0.295938I$ $b=-0.738756-0.073670I$	$-2.59122+4.23353I$	$-10.52461-5.89343I$
$u=-1.18166-1.05458I$ $a=-0.995814-0.295938I$ $b=-0.738756+0.073670I$	$-2.59122-4.23353I$	$-10.52461+5.89343I$

III. $I_3^u = \langle 15u^{13} - 39u^{12} + \cdots + b - 29,\ -49u^{13} + 118u^{12} + \cdots + a + 75,\ u^{14} - 3u^{13} + \cdots - 7u + 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 49u^{13} - 118u^{12} + \cdots + 423u - 75 \\ -15u^{13} + 39u^{12} + \cdots - 154u + 29 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 64u^{13} - 157u^{12} + \cdots + 577u - 104 \\ -15u^{13} + 39u^{12} + \cdots - 154u + 29 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 65u^{13} - 161u^{12} + \cdots + 604u - 110 \\ -14u^{13} + 36u^{12} + \cdots - 146u + 28 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -126u^{13} + 308u^{12} + \cdots - 1138u + 209 \\ 36u^{13} - 93u^{12} + \cdots + 373u - 71 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 31u^{13} - 81u^{12} + \cdots + 326u - 60 \\ -u^{13} + 2u^{12} + \cdots - 7u + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -5u^{13} + 22u^{12} + \cdots - 156u + 37 \\ 9u^{13} - 19u^{12} + \cdots + 59u - 10 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -127u^{13} + 311u^{12} + \cdots - 1147u + 210 \\ 35u^{13} - 91u^{12} + \cdots + 372u - 71 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 17u^{13} - 28u^{12} + \cdots - 38u + 25 \\ 28u^{13} - 60u^{12} + \cdots + 186u - 32 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -129u^{13} + 315u^{12} + \cdots - 1155u + 211 \\ 37u^{13} - 96u^{12} + \cdots + 385u - 73 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 53u^{13} - 121u^{12} + 127u^{11} - 73u^{10} + 429u^9 - 807u^8 + 601u^7 + 26u^6 + 409u^5 - 1340u^4 + 1590u^3 - 1091u^2 + 442u - 85$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^7+14u^6+45u^5-237u^4+432u^3-394u^2+180u-25)^2$
c_2, c_5	$(u^7-2u^6+9u^5-u^4-16u^3+8u^2+10u-5)^2$
c_3, c_4	$u^{14}-3u^{13}+\cdots-7u+1$
c_6, c_{12}	$u^{14}+4u^{13}+\cdots-5685u+12167$
c_7, c_{11}	$u^{14}+6u^{13}+\cdots+168u+361$
c_8, c_{10}	$u^{14}-u^{13}+\cdots-u+1$
c_9	$(u^7+5u^6+11u^5+10u^4-u^3-11u^2-10u-4)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^7 - 106y^6 + \cdots + 12700y - 625)^2$
c_2, c_5	$(y^7 + 14y^6 + 45y^5 - 237y^4 + 432y^3 - 394y^2 + 180y - 25)^2$
c_3, c_4	$y^{14} - y^{13} + \cdots - 5y + 1$
c_6, c_{12}	$y^{14} - 56y^{13} + \cdots + 40244763y + 148035889$
c_7, c_{11}	$y^{14} + 14y^{13} + \cdots + 169604y + 130321$
c_8, c_{10}	$y^{14} - 33y^{13} + \cdots - 19y + 1$
c_9	$(y^7 - 3y^6 + 19y^5 - 32y^4 + 41y^3 - 21y^2 + 12y - 16)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.032790 + 0.667853I$ $a = -0.440984 + 0.090406I$ $b = -0.471661 + 0.715058I$	$-2.57696 + 1.21057I$	$-5.12278 - 3.79229I$
$u = -1.032790 - 0.667853I$ $a = -0.440984 - 0.090406I$ $b = -0.471661 - 0.715058I$	$-2.57696 - 1.21057I$	$-5.12278 + 3.79229I$
$u = 0.637347 + 0.231640I$ $a = -0.05338 - 2.45178I$ $b = -1.057670 + 0.584877I$	$-0.84974 - 6.19083I$	$-9.29875 + 3.50078I$
$u = 0.637347 - 0.231640I$ $a = -0.05338 + 2.45178I$ $b = -1.057670 - 0.584877I$	$-0.84974 + 6.19083I$	$-9.29875 - 3.50078I$
$u = 0.198510 + 0.598009I$ $a = 0.99736 + 1.49028I$ $b = 0.989402$	2.30231	$4.53226 + 0.I$
$u = 0.198510 - 0.598009I$ $a = 0.99736 - 1.49028I$ $b = 0.989402$	2.30231	$4.53226 + 0.I$
$u = 1.04789 + 0.96312I$ $a = -1.56610 - 0.77379I$ $b = -1.46537 + 1.27456I$	$-19.1086 - 5.1850I$	$-3.34460 + 2.00744I$
$u = 1.04789 - 0.96312I$ $a = -1.56610 + 0.77379I$ $b = -1.46537 - 1.27456I$	$-19.1086 + 5.1850I$	$-3.34460 - 2.00744I$
$u = 0.555992 + 0.145874I$ $a = 1.30613 + 1.18459I$ $b = -0.471661 - 0.715058I$	$-2.57696 - 1.21057I$	$-5.12278 + 3.79229I$
$u = 0.555992 - 0.145874I$ $a = 1.30613 - 1.18459I$ $b = -0.471661 + 0.715058I$	$-2.57696 + 1.21057I$	$-5.12278 - 3.79229I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.05150 + 1.03574I$ $a = -0.404815 - 0.663769I$ $b = -1.46537 - 1.27456I$	$-19.1086 + 5.1850I$	$-3.34460 - 2.00744I$
$u = \quad 1.05150 - 1.03574I$ $a = -0.404815 + 0.663769I$ $b = -1.46537 + 1.27456I$	$-19.1086 - 5.1850I$	$-3.34460 + 2.00744I$
$u = -0.95844 + 1.25093I$ $a = -1.338220 + 0.349939I$ $b = -1.057670 - 0.584877I$	$-0.84974 + 6.19083I$	$-9.29875 - 3.50078I$
$u = -0.95844 - 1.25093I$ $a = -1.338220 - 0.349939I$ $b = -1.057670 + 0.584877I$	$-0.84974 - 6.19083I$	$-9.29875 + 3.50078I$

IV. $I_4^u = \langle b,\ a+1,\ u+1 \rangle$

(i) Arc colorings

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

(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_3 c_{10}, c_{11}	$u + 1$
c_4, c_5, c_7 c_8	$u - 1$
c_6	$u - 2$
c_9	u
c_{12}	$u + 2$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = 0$	-3.28987	-12.0000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u+1)(u^7+14u^6+45u^5-237u^4+432u^3-394u^2+180u-25)^2$ $\cdot(u^9-5u^8+11u^7-5u^6-6u^5+6u^4+3u^3-4u^2+1)^2$ $\cdot(u^{12}+36u^{11}+\cdots+10212u+784)$
c_2	$(u+1)(u^7-2u^6+9u^5-u^4-16u^3+8u^2+10u-5)^2$ $\cdot((u^9-u^8+\cdots-u^3+1)^2)(u^{12}+4u^{11}+\cdots+34u+28)$
c_3	$(u+1)$ $\cdot(u^{12}-u^{11}+u^{10}+2u^9+2u^8+2u^7+u^6+5u^5+6u^4+3u^3+2u^2+u+1)$ $\cdot(u^{14}-3u^{13}+\cdots-7u+1)(u^{18}+8u^{17}+\cdots+5u+1)$
c_4	$(u-1)$ $\cdot(u^{12}-u^{11}+u^{10}+2u^9+2u^8+2u^7+u^6+5u^5+6u^4+3u^3+2u^2+u+1)$ $\cdot(u^{14}-3u^{13}+\cdots-7u+1)(u^{18}-8u^{17}+\cdots-5u+1)$
c_5	$(u-1)(u^7-2u^6+9u^5-u^4-16u^3+8u^2+10u-5)^2$ $\cdot((u^9+u^8+\cdots-u^3-1)^2)(u^{12}+4u^{11}+\cdots+34u+28)$
c_6	$(u-2)(u^{12}-u^{11}+\cdots-112u+16)(u^{14}+4u^{13}+\cdots-5685u+12167)$ $\cdot(u^{18}+4u^{17}+\cdots-64u+16)$
c_7	$(u-1)(u^{12}+u^{11}+\cdots+3u+1)(u^{14}+6u^{13}+\cdots+168u+361)$ $\cdot(u^{18}+5u^{17}+\cdots+6u+1)$
c_8	$(u-1)(u^{12}-u^{11}+\cdots-u+1)(u^{14}-u^{13}+\cdots-u+1)$ $\cdot(u^{18}+2u^{17}+\cdots-u+1)$
c_9	$u(u^7+5u^6+11u^5+10u^4-u^3-11u^2-10u-4)^2$ $\cdot(u^{12}+8u^{11}+\cdots+32u+8)$ $\cdot(u^{18}-6u^{16}+18u^{14}-32u^{12}+36u^{10}-21u^8-u^6+13u^4-9u^2+2)$
c_{10}	$(u+1)(u^{12}-u^{11}+\cdots-u+1)(u^{14}-u^{13}+\cdots-u+1)$ $\cdot(u^{18}-2u^{17}+\cdots+u+1)$
c_{11}	$(u+1)(u^{12}+u^{11}+\cdots+3u+1)(u^{14}+6u^{13}+\cdots+168u+361)$ $\cdot(u^{18}-5u^{17}+\cdots-6u+1)$
c_{12}	$(u+2)(u^{12}-u^{11}+\cdots-112u+16)(u^{14}+4u^{13}+\cdots-5685u+12167)$ $\cdot(u^{18}-4u^{17}+\cdots+64u+16)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)(y^7-106y^6+\cdots+12700y-625)^2$ $\cdot(y^9-3y^8+59y^7-91y^6+122y^5-102y^4+67y^3-28y^2+8y-1)^2$ $\cdot(y^{12}-104y^{11}+\cdots-27451376y+614656)$
c_2, c_5	$(y-1)(y^7+14y^6+45y^5-237y^4+432y^3-394y^2+180y-25)^2$ $\cdot(y^9+5y^8+11y^7+5y^6-6y^5-6y^4+3y^3+4y^2-1)^2$ $\cdot(y^{12}+36y^{11}+\cdots+10212y+784)$
c_3, c_4	$(y-1)(y^{12}+y^{11}+\cdots+3y+1)(y^{14}-y^{13}+\cdots-5y+1)$ $\cdot(y^{18}+2y^{17}+\cdots+3y+1)$
c_6, c_{12}	$(y-4)(y^{12}-35y^{11}+\cdots+1280y+256)$ $\cdot(y^{14}-56y^{13}+\cdots+40244763y+148035889)$ $\cdot(y^{18}-22y^{17}+\cdots-512y+256)$
c_7, c_{11}	$(y-1)(y^{12}+11y^{11}+\cdots+175y+1)$ $\cdot(y^{14}+14y^{13}+\cdots+169604y+130321)(y^{18}-9y^{17}+\cdots-4y+1)$
c_8, c_{10}	$(y-1)(y^{12}-25y^{11}+\cdots+21y+1)(y^{14}-33y^{13}+\cdots-19y+1)$ $\cdot(y^{18}-8y^{17}+\cdots-y+1)$
c_9	$y(y^7-3y^6+19y^5-32y^4+41y^3-21y^2+12y-16)^2$ $\cdot(y^9-6y^8+18y^7-32y^6+36y^5-21y^4-y^3+13y^2-9y+2)^2$ $\cdot(y^{12}-6y^{11}+\cdots+160y+64)$