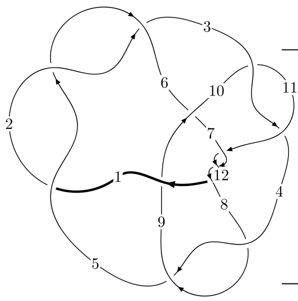
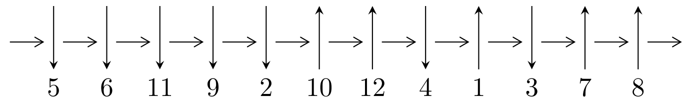
$12a_{1246}$ $(K12a_{1246})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -585818u^{22} + 2005165u^{21} + \cdots + 356583b - 681791, \\
& 1498861u^{22} - 5624519u^{21} + \cdots + 1069749a + 1574450,\ u^{23} - 4u^{22} + \cdots + 3u - 1\rangle \\
I_2^u = \langle & 9.48071 \times 10^{132}u^{59} + 7.49196 \times 10^{132}u^{58} + \cdots + 7.42425 \times 10^{133}b + 1.33608 \times 10^{135}, \\
& 1.27527 \times 10^{151}u^{59} + 2.38351 \times 10^{151}u^{58} + \cdots + 1.51769 \times 10^{151}a - 5.45451 \times 10^{153}, \\
& u^{60} + u^{59} + \cdots + 3878u + 547\rangle \\
I_3^u = \langle & u^{11} + 6u^{10} - 11u^9 - 40u^8 + 38u^7 + 99u^6 - 52u^5 - 146u^4 + 56u^3 + 125u^2 + 9b - 52u - 10, \\
& -8u^{11} + 9u^{10} + 49u^9 - 52u^8 - 109u^7 + 96u^6 + 158u^5 - 125u^4 - 133u^3 + 131u^2 + 3a - 16u - 1, \\
& u^{12} - 2u^{11} - 5u^{10} + 12u^9 + 7u^8 - 25u^7 - 7u^6 + 36u^5 - 35u^3 + 19u^2 + u - 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 95 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.
$\boldsymbol{I_1^u = \langle -5.86 \times 10^5 u^{22} + 2.01 \times 10^6 u^{21} + \cdots + 3.57 \times 10^5 b - 6.82 \times 10^5,\ 1.50 \times 10^6 u^{22} - 5.62 \times 10^6 u^{21} + \cdots + 1.07 \times 10^6 a + 1.57 \times 10^6,\ u^{23} - 4u^{22} + \cdots + 3u - 1 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1.40113u^{22} + 5.25779u^{21} + \cdots + 2.52143u - 1.47179 \\ 1.64287u^{22} - 5.62328u^{21} + \cdots - 3.97561u + 1.91201 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.241732u^{22} - 0.365484u^{21} + \cdots - 1.45418u + 0.440218 \\ 1.64287u^{22} - 5.62328u^{21} + \cdots - 3.97561u + 1.91201 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.172921u^{22} - 0.600708u^{21} + \cdots - 1.02124u - 0.0922385 \\ 0.539597u^{22} - 2.22583u^{21} + \cdots - 2.94596u + 1.93400 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ -1.23409u^{22} + 4.60184u^{21} + \cdots + 2.32068u - 2.46359 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1.40113u^{22} + 5.25779u^{21} + \cdots + 2.52143u - 1.47179 \\ 1.22478u^{22} - 4.59343u^{21} + \cdots - 2.37387u + 2.42254 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.172921u^{22} - 0.600708u^{21} + \cdots - 1.02124u - 0.0922385 \\ -0.910088u^{22} + 3.13290u^{21} + \cdots + 1.57607u - 1.05067 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -0.478935u^{22} + 2.36308u^{21} + \cdots + 0.499732u - 2.01626 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ 0.447338u^{22} - 1.03420u^{21} + \cdots + 0.420550u - 0.478935 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{6043223}{1069749}u^{22} + \frac{20837542}{1069749}u^{21} + \cdots + \frac{15394660}{1069749}u - \frac{16108082}{1069749}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5	$3(3u^{23} + 39u^{22} + \cdots + 48u - 32)$
c_3, c_4, c_8 c_{10}	$u^{23} - 4u^{22} + \cdots + 3u - 1$
c_6, c_9	$u^{23} + u^{22} + \cdots + 39u + 3$
c_7, c_{11}, c_{12}	$3(3u^{23} + 42u^{22} + \cdots + 160u + 64)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$9(9y^{23} - 261y^{22} + \cdots - 256y - 1024)$
c_3, c_4, c_8 c_{10}	$y^{23} - 14y^{22} + \cdots + 3y - 1$
c_6, c_9	$y^{23} + 3y^{22} + \cdots + 1557y - 9$
c_7, c_{11}, c_{12}	$9(9y^{23} - 234y^{22} + \cdots + 54272y - 4096)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.002405 + 1.009230I$ $a = -2.10309 + 0.54054I$ $b = 1.44603 + 0.11464I$	$1.64475 + 3.69178I$	$-0.02857 - 2.86809I$
$u = -0.002405 - 1.009230I$ $a = -2.10309 - 0.54054I$ $b = 1.44603 - 0.11464I$	$1.64475 - 3.69178I$	$-0.02857 + 2.86809I$
$u = -1.02639$ $a = -0.734489$ $b = 2.36149$	-3.39545	14.6070
$u = 0.009683 + 0.858301I$ $a = 0.629661 + 0.211913I$ $b = -0.426574 + 0.480115I$	$-4.40513 - 1.65649I$	$-4.18188 + 3.97830I$
$u = 0.009683 - 0.858301I$ $a = 0.629661 - 0.211913I$ $b = -0.426574 - 0.480115I$	$-4.40513 + 1.65649I$	$-4.18188 - 3.97830I$
$u = -0.064630 + 0.840106I$ $a = -2.05534 - 0.19633I$ $b = 1.48214 - 0.04605I$	$7.60618 - 1.61468I$	$5.58840 + 3.35209I$
$u = -0.064630 - 0.840106I$ $a = -2.05534 + 0.19633I$ $b = 1.48214 + 0.04605I$	$7.60618 + 1.61468I$	$5.58840 - 3.35209I$
$u = 1.090900 + 0.454580I$ $a = -1.08976 - 1.11362I$ $b = 1.44888 - 0.45871I$	$1.69425 - 6.98980I$	$-2.46764 + 7.25888I$
$u = 1.090900 - 0.454580I$ $a = -1.08976 + 1.11362I$ $b = 1.44888 + 0.45871I$	$1.69425 + 6.98980I$	$-2.46764 - 7.25888I$
$u = 1.226010 + 0.358839I$ $a = 0.467670 + 0.349816I$ $b = -0.371119 + 1.025590I$	$-5.65901 - 7.48932I$	$-7.43506 + 8.54905I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.226010 - 0.358839I$ $a = 0.467670 - 0.349816I$ $b = -0.371119 - 1.025590I$	$-5.65901 + 7.48932I$	$-7.43506 - 8.54905I$
$u = 1.298790 + 0.244302I$ $a = 0.444127 - 0.222003I$ $b = -0.801483 - 0.900498I$	$-12.78890 - 5.46316I$	$-9.57232 + 3.33503I$
$u = 1.298790 - 0.244302I$ $a = 0.444127 + 0.222003I$ $b = -0.801483 + 0.900498I$	$-12.78890 + 5.46316I$	$-9.57232 - 3.33503I$
$u = -1.29721 + 0.58581I$ $a = -1.26120 + 0.99604I$ $b = 1.48832 + 0.38565I$	$0.26795 + 12.49270I$	$-3.25634 - 8.76270I$
$u = -1.29721 - 0.58581I$ $a = -1.26120 - 0.99604I$ $b = 1.48832 - 0.38565I$	$0.26795 - 12.49270I$	$-3.25634 + 8.76270I$
$u = -1.42314 + 0.44151I$ $a = 0.487234 - 0.317383I$ $b = -0.440971 - 0.938644I$	$-13.7809 + 11.5076I$	$-9.22167 - 6.83714I$
$u = -1.42314 - 0.44151I$ $a = 0.487234 + 0.317383I$ $b = -0.440971 + 0.938644I$	$-13.7809 - 11.5076I$	$-9.22167 + 6.83714I$
$u = 0.473594$ $a = -1.52002$ $b = 1.65788$	7.50154	-23.5170
$u = 0.164998 + 0.441187I$ $a = 0.641980 - 0.098310I$ $b = -0.521990 - 0.233072I$	$0.981568 + 0.658500I$	$5.66649 - 3.03192I$
$u = 0.164998 - 0.441187I$ $a = 0.641980 + 0.098310I$ $b = -0.521990 + 0.233072I$	$0.981568 - 0.658500I$	$5.66649 + 3.03192I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.46504 + 0.62403I$ $a = -1.31309 - 0.92775I$ $b = 1.50798 - 0.35891I$	$-7.5447 - 16.2015I$	$-5.54952 + 7.59036I$
$u = 1.46504 - 0.62403I$ $a = -1.31309 + 0.92775I$ $b = 1.50798 + 0.35891I$	$-7.5447 + 16.2015I$	$-5.54952 - 7.59036I$
$u = -0.383297$ $a = 1.55813$ $b = 0.358207$	-1.00078	-13.8410

II. $\boldsymbol{I_2^u = \langle 9.48 \times 10^{132} u^{59} + 7.49 \times 10^{132} u^{58} + \cdots + 7.42 \times 10^{133} b + 1.34 \times 10^{135},\ 1.28 \times 10^{151} u^{59} + 2.38 \times 10^{151} u^{58} + \cdots + 1.52 \times 10^{151} a - 5.45 \times 10^{153},\ u^{60} + u^{59} + \cdots + 3878u + 547 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.840267u^{59} - 1.57048u^{58} + \cdots + 2940.26u + 359.394 \\ -0.127699u^{59} - 0.100912u^{58} + \cdots - 65.0761u - 17.9961 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.967967u^{59} - 1.67139u^{58} + \cdots + 2875.18u + 341.398 \\ -0.127699u^{59} - 0.100912u^{58} + \cdots - 65.0761u - 17.9961 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.918075u^{59} - 1.76510u^{58} + \cdots + 3363.75u + 412.637 \\ -0.104523u^{59} - 0.0906565u^{58} + \cdots - 24.0762u - 10.6894 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1.70374u^{59} - 3.43508u^{58} + \cdots + 6797.59u + 836.982 \\ 1.05872u^{59} + 2.27370u^{58} + \cdots - 4904.73u - 619.679 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.925260u^{59} + 2.03609u^{58} + \cdots - 4447.53u - 559.148 \\ 0.259425u^{59} + 0.496942u^{58} + \cdots - 972.189u - 117.868 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1.43148u^{59} - 2.78713u^{58} + \cdots + 5519.38u + 680.124 \\ -0.157674u^{59} - 0.275409u^{58} + \cdots + 484.781u + 59.3485 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.386613u^{59} + 0.815067u^{58} + \cdots - 1623.39u - 198.882 \\ 0.449788u^{59} + 0.874364u^{58} + \cdots - 1511.47u - 173.851 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1.14111u^{59} - 2.35744u^{58} + \cdots + 4758.06u + 589.099 \\ -0.151779u^{59} - 0.155968u^{58} + \cdots - 150.729u - 40.2437 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.32061u^{59} - 2.83972u^{58} + \cdots + 5862.79u + 729.940$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5	$(u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1)^{10}$
c_3, c_4, c_8 c_{10}	$u^{60} + u^{59} + \cdots + 3878u + 547$
c_6, c_9	$u^{60} - 7u^{59} + \cdots + 54036u - 6079$
c_7, c_{11}, c_{12}	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^{12}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$(y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1)^{10}$
c_3, c_4, c_8 c_{10}	$y^{60} - 49y^{59} + \cdots + 5849952y + 299209$
c_6, c_9	$y^{60} + 27y^{59} + \cdots - 1424649824y + 36954241$
c_7, c_{11}, c_{12}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^{12}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.974583 + 0.092136I$ $a = 0.157749 - 0.672406I$ $b = 0.309916 - 0.549911I$	$-1.64546 + 0.44183I$	0
$u = -0.974583 - 0.092136I$ $a = 0.157749 + 0.672406I$ $b = 0.309916 + 0.549911I$	$-1.64546 - 0.44183I$	0
$u = -0.985032 + 0.280490I$ $a = 1.90504 - 1.43106I$ $b = -1.41878 - 0.21917I$	$0.19891 + 4.40083I$	0
$u = -0.985032 - 0.280490I$ $a = 1.90504 + 1.43106I$ $b = -1.41878 + 0.21917I$	$0.19891 - 4.40083I$	0
$u = 1.052290 + 0.003589I$ $a = 1.67828 - 1.88799I$ $b = -1.41878 - 0.21917I$	$-6.72233 + 4.40083I$	0
$u = 1.052290 - 0.003589I$ $a = 1.67828 + 1.88799I$ $b = -1.41878 + 0.21917I$	$-6.72233 - 4.40083I$	0
$u = 0.942202 + 0.055227I$ $a = 0.36140 + 2.10364I$ $b = 1.21774$	$-6.22930 - 4.59213I$	$-7.09999 + 3.20482I$
$u = 0.942202 - 0.055227I$ $a = 0.36140 - 2.10364I$ $b = 1.21774$	$-6.22930 + 4.59213I$	$-7.09999 - 3.20482I$
$u = -0.898064 + 0.266660I$ $a = -0.82093 + 2.07297I$ $b = 1.21774$	$0.42652 - 1.97241I$	$-2.00000 + 3.68478I$
$u = -0.898064 - 0.266660I$ $a = -0.82093 - 2.07297I$ $b = 1.21774$	$0.42652 + 1.97241I$	$-2.00000 - 3.68478I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.072370+0.111026I$ $a=\ \ 0.745241+0.170119I$ $b=-1.41878+0.21917I$	$-2.75782+0.19129I$	0
$u=-1.072370-0.111026I$ $a=\ \ 0.745241-0.170119I$ $b=-1.41878-0.21917I$	$-2.75782-0.19129I$	0
$u=\ \ 1.095370+0.259211I$ $a=-0.233077-0.935984I$ $b=\ \ 0.309916-0.549911I$	$-1.64546-3.50299I$	0
$u=\ \ 1.095370-0.259211I$ $a=-0.233077+0.935984I$ $b=\ \ 0.309916+0.549911I$	$-1.64546+3.50299I$	0
$u=\ \ 0.384883+0.772449I$ $a=\ \ 1.64885+0.61278I$ $b=-1.41878-0.21917I$	$3.89801+2.42842I$	0
$u=\ \ 0.384883-0.772449I$ $a=\ \ 1.64885-0.61278I$ $b=-1.41878+0.21917I$	$3.89801-2.42842I$	0
$u=-0.127271+0.791997I$ $a=-0.011294-0.622453I$ $b=\ \ 0.309916+0.549911I$	$-1.64546+3.50299I$	$-4.06061-8.11543I$
$u=-0.127271-0.791997I$ $a=-0.011294+0.622453I$ $b=\ \ 0.309916-0.549911I$	$-1.64546-3.50299I$	$-4.06061+8.11543I$
$u=-0.151080+1.188450I$ $a=\ \ 1.84107-0.17810I$ $b=-1.41878+0.21917I$	$3.89801-6.37324I$	0
$u=-0.151080-1.188450I$ $a=\ \ 1.84107+0.17810I$ $b=-1.41878-0.21917I$	$3.89801+6.37324I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.209430 + 0.057378I$ $a = -0.807569 - 0.455475I$ $b = 0.309916 - 0.549911I$	$-5.34455 - 1.53058I$	0
$u = 1.209430 - 0.057378I$ $a = -0.807569 + 0.455475I$ $b = 0.309916 + 0.549911I$	$-5.34455 + 1.53058I$	0
$u = 1.004530 + 0.679945I$ $a = -1.50731 - 1.23644I$ $b = 1.21774$	$0.42652 - 1.97241I$	0
$u = 1.004530 - 0.679945I$ $a = -1.50731 + 1.23644I$ $b = 1.21774$	$0.42652 + 1.97241I$	0
$u = 0.346940 + 1.164010I$ $a = -0.152569 + 0.333032I$ $b = 0.309916 - 0.549911I$	$-8.30128 - 6.12271I$	0
$u = 0.346940 - 1.164010I$ $a = -0.152569 - 0.333032I$ $b = 0.309916 + 0.549911I$	$-8.30128 + 6.12271I$	0
$u = 1.159910 + 0.376539I$ $a = 0.735375 + 0.972190I$ $b = -1.41878 + 0.21917I$	$3.89801 - 2.42842I$	0
$u = 1.159910 - 0.376539I$ $a = 0.735375 - 0.972190I$ $b = -1.41878 - 0.21917I$	$3.89801 + 2.42842I$	0
$u = -1.257970 + 0.394985I$ $a = -0.442688 + 0.963617I$ $b = 0.309916 + 0.549911I$	$-8.30128 + 6.12271I$	0
$u = -1.257970 - 0.394985I$ $a = -0.442688 - 0.963617I$ $b = 0.309916 - 0.549911I$	$-8.30128 - 6.12271I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.316720 + 0.132375I$ $a = -0.900231 - 0.667605I$ $b = 0.309916 - 0.549911I$	$-12.26580 - 1.53058I$	0
$u = -1.316720 - 0.132375I$ $a = -0.900231 + 0.667605I$ $b = 0.309916 + 0.549911I$	$-12.26580 + 1.53058I$	0
$u = -1.267180 + 0.459289I$ $a = 0.87588 - 1.23608I$ $b = -1.41878 - 0.21917I$	$3.89801 + 6.37324I$	0
$u = -1.267180 - 0.459289I$ $a = 0.87588 + 1.23608I$ $b = -1.41878 + 0.21917I$	$3.89801 - 6.37324I$	0
$u = -0.645770 + 0.020009I$ $a = -0.173886 + 0.107924I$ $b = -1.41878 - 0.21917I$	$-2.75782 - 0.19129I$	$-3.83682 - 0.29377I$
$u = -0.645770 - 0.020009I$ $a = -0.173886 - 0.107924I$ $b = -1.41878 + 0.21917I$	$-2.75782 + 0.19129I$	$-3.83682 + 0.29377I$
$u = 1.287540 + 0.440046I$ $a = 0.049673 + 0.291469I$ $b = 0.309916 + 0.549911I$	$-8.30128 - 3.06155I$	0
$u = 1.287540 - 0.440046I$ $a = 0.049673 - 0.291469I$ $b = 0.309916 - 0.549911I$	$-8.30128 + 3.06155I$	0
$u = -1.349540 + 0.397143I$ $a = -0.479182 + 0.151695I$ $b = 0.309916 + 0.549911I$	$-5.34455 + 1.53058I$	0
$u = -1.349540 - 0.397143I$ $a = -0.479182 - 0.151695I$ $b = 0.309916 - 0.549911I$	$-5.34455 - 1.53058I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.173300 + 0.776333I$ $a = 1.75422 + 0.67540I$ $b = -1.41878 + 0.21917I$	$0.19891 - 4.40083I$	0
$u = 1.173300 - 0.776333I$ $a = 1.75422 - 0.67540I$ $b = -1.41878 - 0.21917I$	$0.19891 + 4.40083I$	0
$u = 1.37357 + 0.47414I$ $a = 0.93811 + 1.41351I$ $b = -1.41878 + 0.21917I$	$-2.75782 - 8.99296I$	0
$u = 1.37357 - 0.47414I$ $a = 0.93811 - 1.41351I$ $b = -1.41878 - 0.21917I$	$-2.75782 + 8.99296I$	0
$u = -1.51007$ $a = -0.0164319$ $b = 1.21774$	-3.27257	0
$u = 1.52601$ $a = 0.457789$ $b = 1.21774$	-10.1938	0
$u = -0.02802 + 1.54640I$ $a = 1.79489 - 0.01521I$ $b = -1.41878 - 0.21917I$	$-2.75782 + 8.99296I$	0
$u = -0.02802 - 1.54640I$ $a = 1.79489 + 0.01521I$ $b = -1.41878 + 0.21917I$	$-2.75782 - 8.99296I$	0
$u = -1.25568 + 1.03399I$ $a = -1.55111 + 0.70824I$ $b = 1.21774$	$-6.22930 + 4.59213I$	0
$u = -1.25568 - 1.03399I$ $a = -1.55111 - 0.70824I$ $b = 1.21774$	$-6.22930 - 4.59213I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.099250+0.343403I$ $a=-2.23337-2.40988I$ $b=\ 0.309916-0.549911I$	$-8.30128+3.06155I$	$-8.06602+1.22583I$
$u=-0.099250-0.343403I$ $a=-2.23337+2.40988I$ $b=\ 0.309916+0.549911I$	$-8.30128-3.06155I$	$-8.06602-1.22583I$
$u=\ 1.61284+0.58574I$ $a=-0.342297-0.081885I$ $b=\ 0.309916-0.549911I$	$-12.26580-1.53058I$	0
$u=\ 1.61284-0.58574I$ $a=-0.342297+0.081885I$ $b=\ 0.309916+0.549911I$	$-12.26580+1.53058I$	0
$u=-0.087674+0.212302I$ $a=\ 2.46392+1.97194I$ $b=\ 0.309916-0.549911I$	$-1.64546+0.44183I$	$-4.06061+0.74587I$
$u=-0.087674-0.212302I$ $a=\ 2.46392-1.97194I$ $b=\ 0.309916+0.549911I$	$-1.64546-0.44183I$	$-4.06061-0.74587I$
$u=-1.45021+1.04440I$ $a=\ 1.65442-0.48085I$ $b=-1.41878-0.21917I$	$-6.72233+4.40083I$	0
$u=-1.45021-1.04440I$ $a=\ 1.65442+0.48085I$ $b=-1.41878+0.21917I$	$-6.72233-4.40083I$	0
$u=\ 1.82688$ $a=-0.810042$ $b=\ 1.21774$	-3.27257	0
$u=-2.19561$ $a=-1.08248$ $b=\ 1.21774$	-10.1938	0

III.

$$\boldsymbol{I^u_3 = \langle u^{11}+6u^{10}+\cdots+9b-10,\ -8u^{11}+9u^{10}+\cdots+3a-1,\ u^{12}-2u^{11}+\cdots+u-1\rangle}$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{8}{3}u^{11} - 3u^{10} + \cdots + \frac{16}{3}u + \frac{1}{3} \\ -\frac{1}{9}u^{11} - \frac{2}{3}u^{10} + \cdots + \frac{52}{9}u + \frac{10}{9} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{23}{9}u^{11} - \frac{11}{3}u^{10} + \cdots + \frac{100}{9}u + \frac{13}{9} \\ -\frac{1}{9}u^{11} - \frac{2}{3}u^{10} + \cdots + \frac{52}{9}u + \frac{10}{9} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{5}{3}u^{11} - 2u^{10} + \cdots + \frac{31}{3}u + \frac{1}{3} \\ \frac{17}{9}u^{11} - \frac{5}{3}u^{10} + \cdots + \frac{52}{9}u + \frac{19}{9} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2 - 1 \\ -u^{11} + 2u^{10} + \cdots - 5u - 3 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{8}{3}u^{11} + 3u^{10} + \cdots - \frac{16}{3}u - \frac{1}{3} \\ \frac{5}{3}u^{11} - \frac{4}{3}u^{10} + \cdots + \frac{13}{3}u + \frac{8}{3} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{5}{3}u^{11} + 2u^{10} + \cdots - \frac{31}{3}u - \frac{1}{3} \\ \frac{2}{3}u^{11} - \frac{1}{3}u^{10} + \cdots - \frac{14}{3}u - \frac{1}{3} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1 \\ -0.370370u^{11} + 1.11111u^{10} + \cdots - 5.74074u - 2.62963 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ -0.370370u^{11} + 0.111111u^{10} + \cdots + 3.25926u + 0.370370 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{1394}{81}u^{11} - \frac{467}{27}u^{10} - \frac{8377}{81}u^9 + \frac{8419}{81}u^8 + \frac{18214}{81}u^7 - \frac{1840}{9}u^6 - \frac{26111}{81}u^5 + \frac{23240}{81}u^4 + \frac{22255}{81}u^3 - \frac{25469}{81}u^2 + \frac{2491}{81}u + \frac{2278}{81}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$9(9y^{12} - 138y^{11} + \cdots - 10y + 1)$
c_3, c_4, c_8 c_{10}	$y^{12} - 14y^{11} + \cdots - 39y + 1$
c_6, c_9	$y^{12} + 3y^{11} + \cdots - 165y + 9$
c_7, c_{11}, c_{12}	$9(9y^{12} - 129y^{11} + \cdots - 5y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.932006 + 0.551595I$ $a = 1.94798 + 1.16375I$ $b = -1.378330 + 0.226018I$	$1.23298 - 4.56667I$	$0.57839 + 5.34211I$
$u = 0.932006 - 0.551595I$ $a = 1.94798 - 1.16375I$ $b = -1.378330 - 0.226018I$	$1.23298 + 4.56667I$	$0.57839 - 5.34211I$
$u = 1.012880 + 0.538063I$ $a = -0.913750 - 0.403762I$ $b = -0.084384 - 0.404586I$	$-8.91282 - 4.41756I$	$-11.80744 + 3.92940I$
$u = 1.012880 - 0.538063I$ $a = -0.913750 + 0.403762I$ $b = -0.084384 + 0.404586I$	$-8.91282 + 4.41756I$	$-11.80744 - 3.92940I$
$u = -0.982710 + 0.822426I$ $a = 2.32770 - 0.87516I$ $b = -1.376400 - 0.141519I$	$-4.45821 + 6.27261I$	$-4.06543 - 5.44516I$
$u = -0.982710 - 0.822426I$ $a = 2.32770 + 0.87516I$ $b = -1.376400 + 0.141519I$	$-4.45821 - 6.27261I$	$-4.06543 + 5.44516I$
$u = -1.38593$ $a = -0.540766$ $b = 0.849230$	-4.82166	-10.3490
$u = 1.59916$ $a = -0.745784$ $b = 0.340870$	-12.3887	-13.0030
$u = 1.66692$ $a = -0.445586$ $b = 1.24424$	-2.73363	6.28030
$u = 0.267125$ $a = -0.380081$ $b = 1.63102$	7.68547	20.1110

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215477$ $a = -3.17648$ $b = -0.685186$	-0.526513	4.89240
$u = -1.85614$ $a = -0.435151$ $b = 1.29805$	-8.99699	-2.34230

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$9(u^6 - u^5 + \cdots + u - 1)^{10}(3u^{12} + 6u^{11} + \cdots + 2u + 1)$ $\cdot (3u^{23} + 39u^{22} + \cdots + 48u - 32)$
c_3, c_8	$(u^{12} - 2u^{11} + \cdots + u - 1)(u^{23} - 4u^{22} + \cdots + 3u - 1)$ $\cdot (u^{60} + u^{59} + \cdots + 3878u + 547)$
c_4, c_{10}	$(u^{12} + 2u^{11} + \cdots - u - 1)(u^{23} - 4u^{22} + \cdots + 3u - 1)$ $\cdot (u^{60} + u^{59} + \cdots + 3878u + 547)$
c_5	$9(u^6 - u^5 + \cdots + u - 1)^{10}(3u^{12} - 6u^{11} + \cdots - 2u + 1)$ $\cdot (3u^{23} + 39u^{22} + \cdots + 48u - 32)$
c_6, c_9	$(u^{12} + u^{11} + \cdots + 3u - 3)(u^{23} + u^{22} + \cdots + 39u + 3)$ $\cdot (u^{60} - 7u^{59} + \cdots + 54036u - 6079)$
c_7	$9(u^5 - u^4 + \cdots + u + 1)^{12}(3u^{12} + 3u^{11} + \cdots + u - 1)$ $\cdot (3u^{23} + 42u^{22} + \cdots + 160u + 64)$
c_{11}, c_{12}	$9(u^5 - u^4 + \cdots + u + 1)^{12}(3u^{12} - 3u^{11} + \cdots - u - 1)$ $\cdot (3u^{23} + 42u^{22} + \cdots + 160u + 64)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$81(y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1)^{10}$ $\cdot (9y^{12} - 138y^{11} + \cdots - 10y + 1)(9y^{23} - 261y^{22} + \cdots - 256y - 1024)$
c_3, c_4, c_8 c_{10}	$(y^{12} - 14y^{11} + \cdots - 39y + 1)(y^{23} - 14y^{22} + \cdots + 3y - 1)$ $\cdot (y^{60} - 49y^{59} + \cdots + 5849952y + 299209)$
c_6, c_9	$(y^{12} + 3y^{11} + \cdots - 165y + 9)(y^{23} + 3y^{22} + \cdots + 1557y - 9)$ $\cdot (y^{60} + 27y^{59} + \cdots - 1424649824y + 36954241)$
c_7, c_{11}, c_{12}	$81(y^5 - 5y^4 + \cdots - y - 1)^{12}(9y^{12} - 129y^{11} + \cdots - 5y + 1)$ $\cdot (9y^{23} - 234y^{22} + \cdots + 54272y - 4096)$