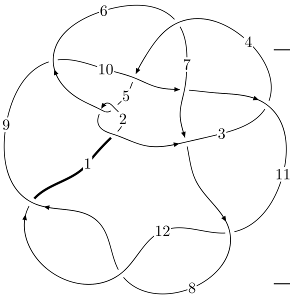
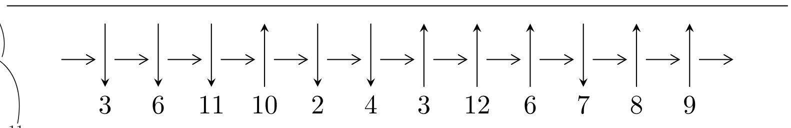
$12n_{0315}$ ($K12n_{0315}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.20606 \times 10^{53} u^{43} - 5.58942 \times 10^{53} u^{42} + \cdots + 5.03135 \times 10^{53} b + 2.95975 \times 10^{54}, \\
& - 3.18519 \times 10^{53} u^{43} - 8.78761 \times 10^{54} u^{42} + \cdots + 1.45909 \times 10^{55} a + 5.45810 \times 10^{56}, \\
& u^{44} - 5u^{43} + \cdots + 42u - 29 \rangle \\
I_2^u = \langle & -u^9 + u^8 - u^7 + u^4 + 2u^3 - u^2 + b + u,\ 3u^8 - 3u^7 + 5u^6 - 2u^5 + u^4 - 2u^3 - 7u^2 + a + u - 6, \\
& u^{10} - u^9 + 2u^8 - u^7 + u^6 - u^5 - 2u^4 - 3u^2 - 1 \rangle \\
I_3^u = \langle & u^2 + b + u,\ a,\ u^4 + u^3 + u^2 + u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 58 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. $\boldsymbol{I_1^u = \langle 1.21 \times 10^{53} u^{43} - 5.59 \times 10^{53} u^{42} + \cdots + 5.03 \times 10^{53} b + 2.96 \times 10^{54},\ -3.19 \times 10^{53} u^{43} - 8.79 \times 10^{54} u^{42} + \cdots + 1.46 \times 10^{55} a + 5.46 \times 10^{56},\ u^{44} - 5u^{43} + \cdots + 42u - 29 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0218300u^{43} + 0.602265u^{42} + \cdots + 35.6982u - 37.4075 \\ -0.239709u^{43} + 1.11092u^{42} + \cdots + 27.7492u - 5.88261 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.116480u^{43} - 0.214561u^{42} + \cdots + 34.2011u - 22.6591 \\ 0.196318u^{43} - 1.07204u^{42} + \cdots + 10.5743u + 4.08103 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.264193u^{43} + 0.881362u^{42} + \cdots - 44.3354u + 34.0722 \\ 0.396645u^{43} - 2.17462u^{42} + \cdots - 57.8387u + 23.3029 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.217879u^{43} + 1.71318u^{42} + \cdots + 63.4475u - 43.2901 \\ -0.239709u^{43} + 1.11092u^{42} + \cdots + 27.7492u - 5.88261 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.00263508u^{43} - 0.985931u^{42} + \cdots - 67.9139u + 53.2351 \\ 0.161780u^{43} - 1.07286u^{42} + \cdots - 34.3822u + 20.2044 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.00400046u^{43} - 0.634908u^{42} + \cdots - 61.3639u + 45.2296 \\ -0.0666468u^{43} + 0.211695u^{42} + \cdots - 20.8403u + 10.9869 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.136976u^{43} - 1.16465u^{42} + \cdots - 39.2384u + 65.9737 \\ -0.0834339u^{43} + 0.546656u^{42} + \cdots + 17.1001u - 4.86412 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1.27373u^{43} + 6.20997u^{42} + \cdots + 44.8550u + 10.4545 \\ -0.337820u^{43} + 1.39778u^{42} + \cdots - 9.87916u + 17.6646 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.157901u^{43} - 1.21230u^{42} + \cdots - 74.0140u + 41.4809 \\ 0.325629u^{43} - 1.96751u^{42} + \cdots - 60.8611u + 31.4254 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.287876u^{43} - 2.76272u^{42} + \cdots - 100.619u + 56.2787$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{44} + 61u^{43} + \cdots + 654834u + 3025$
c_2, c_5	$u^{44} + u^{43} + \cdots + 592u + 55$
c_3	$u^{44} + 5u^{43} + \cdots - 42u - 29$
c_4	$u^{44} + 2u^{43} + \cdots + 583u - 121$
c_6	$u^{44} - 6u^{43} + \cdots + 10u - 1$
c_7	$u^{44} - u^{43} + \cdots + 295u + 229$
c_8, c_{11}, c_{12}	$u^{44} - u^{43} + \cdots - 113u - 11$
c_9	$u^{44} + 52u^{42} + \cdots - 10437016u - 496609$
c_{10}	$u^{44} + 6u^{43} + \cdots + 248u + 80$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{44} - 157y^{43} + \cdots - 380470856606y + 9150625$
c_2, c_5	$y^{44} - 61y^{43} + \cdots - 654834y + 3025$
c_3	$y^{44} + 13y^{43} + \cdots + 12678y + 841$
c_4	$y^{44} + 52y^{43} + \cdots - 193721y + 14641$
c_6	$y^{44} + 4y^{43} + \cdots - 18y + 1$
c_7	$y^{44} - y^{43} + \cdots - 491439y + 52441$
c_8, c_{11}, c_{12}	$y^{44} - 33y^{43} + \cdots - 24187y + 121$
c_9	$y^{44} + 104y^{43} + \cdots - 91222464416576y + 246620498881$
c_{10}	$y^{44} - 12y^{43} + \cdots - 113984y + 6400$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.646694+0.709710I$ $a=-1.44530-0.26000I$ $b=\ \ 0.754661-1.033090I$	$-0.73884+3.57823I$	$-2.03363-1.23509I$
$u=-0.646694-0.709710I$ $a=-1.44530+0.26000I$ $b=\ \ 0.754661+1.033090I$	$-0.73884-3.57823I$	$-2.03363+1.23509I$
$u=\ \ 0.560756+0.906193I$ $a=\ \ 0.988565-0.382204I$ $b=-0.479339-0.355674I$	$-0.07583-2.23571I$	$0.15264+3.25000I$
$u=\ \ 0.560756-0.906193I$ $a=\ \ 0.988565+0.382204I$ $b=-0.479339+0.355674I$	$-0.07583+2.23571I$	$0.15264-3.25000I$
$u=-0.931877$ $a=\ \ 0.852980$ $b=-0.358962$	1.95891	7.69720
$u=-0.134801+1.060870I$ $a=\ \ 0.326691-0.405578I$ $b=-0.036301-1.377150I$	$8.47609+2.02964I$	$8.25034-3.54308I$
$u=-0.134801-1.060870I$ $a=\ \ 0.326691+0.405578I$ $b=-0.036301+1.377150I$	$8.47609-2.02964I$	$8.25034+3.54308I$
$u=\ \ 0.494156+0.966731I$ $a=-0.87020+1.18836I$ $b=\ \ 0.641372+0.824984I$	$0.09327-2.72034I$	$1.39183+2.41510I$
$u=\ \ 0.494156-0.966731I$ $a=-0.87020-1.18836I$ $b=\ \ 0.641372-0.824984I$	$0.09327+2.72034I$	$1.39183-2.41510I$
$u=\ \ 0.229114+0.882547I$ $a=\ \ 2.27817+0.13416I$ $b=-1.118850-0.022452I$	$-4.56670+1.09587I$	$-0.21127+1.60051I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.229114 - 0.882547I$ $a = 2.27817 - 0.13416I$ $b = -1.118850 + 0.022452I$	$-4.56670 - 1.09587I$	$-0.21127 - 1.60051I$
$u = 0.715929 + 0.820156I$ $a = 1.31822 - 0.95604I$ $b = -0.82920 - 1.28038I$	$-7.86621 - 0.05476I$	$-0.99221 + 1.86582I$
$u = 0.715929 - 0.820156I$ $a = 1.31822 + 0.95604I$ $b = -0.82920 + 1.28038I$	$-7.86621 + 0.05476I$	$-0.99221 - 1.86582I$
$u = 0.499429 + 0.740618I$ $a = -1.013390 + 0.171593I$ $b = 1.145160 - 0.547724I$	$-0.68618 - 1.34446I$	$1.50024 + 5.16811I$
$u = 0.499429 - 0.740618I$ $a = -1.013390 - 0.171593I$ $b = 1.145160 + 0.547724I$	$-0.68618 + 1.34446I$	$1.50024 - 5.16811I$
$u = 0.689773 + 0.925188I$ $a = 0.426003 - 0.482177I$ $b = -1.30573 + 1.09475I$	$-7.53216 - 5.34120I$	$-0.67544 + 3.86207I$
$u = 0.689773 - 0.925188I$ $a = 0.426003 + 0.482177I$ $b = -1.30573 - 1.09475I$	$-7.53216 + 5.34120I$	$-0.67544 - 3.86207I$
$u = 0.148274 + 0.828216I$ $a = -2.47783 - 1.74623I$ $b = -0.277976 + 0.017995I$	$-4.75567 - 2.81209I$	$2.57862 + 7.29704I$
$u = 0.148274 - 0.828216I$ $a = -2.47783 + 1.74623I$ $b = -0.277976 - 0.017995I$	$-4.75567 + 2.81209I$	$2.57862 - 7.29704I$
$u = -0.973154 + 0.747396I$ $a = 0.544042 + 0.618644I$ $b = -1.19354 - 0.90568I$	$-12.93820 - 0.76342I$	$-3.80369 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.973154 - 0.747396I$ $a = 0.544042 - 0.618644I$ $b = -1.19354 + 0.90568I$	$-12.93820 + 0.76342I$	$-3.80369 + 0.I$
$u = -0.519846 + 1.144310I$ $a = -1.36543 - 0.79561I$ $b = 0.887391 - 0.816016I$	$0.76786 + 6.70478I$	$0. - 7.25034I$
$u = -0.519846 - 1.144310I$ $a = -1.36543 + 0.79561I$ $b = 0.887391 + 0.816016I$	$0.76786 - 6.70478I$	$0. + 7.25034I$
$u = -0.676167 + 0.306109I$ $a = -1.147500 - 0.672697I$ $b = 0.803888 + 0.651455I$	$-1.75012 - 2.06472I$	$-2.87061 + 3.92303I$
$u = -0.676167 - 0.306109I$ $a = -1.147500 + 0.672697I$ $b = 0.803888 - 0.651455I$	$-1.75012 + 2.06472I$	$-2.87061 - 3.92303I$
$u = 1.191210 + 0.490115I$ $a = 0.654463 - 0.667822I$ $b = -1.082710 + 0.775736I$	$-9.49734 + 7.11306I$	0
$u = 1.191210 - 0.490115I$ $a = 0.654463 + 0.667822I$ $b = -1.082710 - 0.775736I$	$-9.49734 - 7.11306I$	0
$u = -0.605021 + 1.146520I$ $a = 1.059940 + 0.253544I$ $b = -0.731247 + 0.441154I$	$4.82729 + 5.41905I$	0
$u = -0.605021 - 1.146520I$ $a = 1.059940 - 0.253544I$ $b = -0.731247 - 0.441154I$	$4.82729 - 5.41905I$	0
$u = -0.103748 + 0.684443I$ $a = 1.224370 + 0.560955I$ $b = -0.043528 + 0.580499I$	$1.21862 - 0.91087I$	$6.00533 + 4.55629I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.103748 - 0.684443I$ $a = 1.224370 - 0.560955I$ $b = -0.043528 - 0.580499I$	$1.21862 + 0.91087I$	$6.00533 - 4.55629I$
$u = 0.679096$ $a = -0.424824$ $b = 0.727825$	-1.43381	-8.35220
$u = -0.806563 + 1.049120I$ $a = 1.29333 + 0.62058I$ $b = -1.01794 + 1.20383I$	$-11.95870 + 7.26271I$	0
$u = -0.806563 - 1.049120I$ $a = 1.29333 - 0.62058I$ $b = -1.01794 - 1.20383I$	$-11.95870 - 7.26271I$	0
$u = -0.042706 + 0.623007I$ $a = -0.75781 + 1.69326I$ $b = 0.35910 + 1.52836I$	$6.53095 - 1.24141I$	$1.101277 + 0.846650I$
$u = -0.042706 - 0.623007I$ $a = -0.75781 - 1.69326I$ $b = 0.35910 - 1.52836I$	$6.53095 + 1.24141I$	$1.101277 - 0.846650I$
$u = 0.827601 + 1.122030I$ $a = -1.017800 + 0.089758I$ $b = 0.781744 + 1.041420I$	$0.99079 - 7.76049I$	0
$u = 0.827601 - 1.122030I$ $a = -1.017800 - 0.089758I$ $b = 0.781744 - 1.041420I$	$0.99079 + 7.76049I$	0
$u = -0.69348 + 1.23762I$ $a = -0.128890 - 0.232242I$ $b = 0.593220 + 0.522980I$	$0.81092 + 1.60255I$	0
$u = -0.69348 - 1.23762I$ $a = -0.128890 + 0.232242I$ $b = 0.593220 - 0.522980I$	$0.81092 - 1.60255I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.76866 + 1.22958I$ $a = 1.209600 - 0.452753I$ $b = -1.12581 - 1.15829I$	$-7.1426 - 14.0288I$	0
$u = 0.76866 - 1.22958I$ $a = 1.209600 + 0.452753I$ $b = -1.12581 + 1.15829I$	$-7.1426 + 14.0288I$	0
$u = 1.70367 + 1.24530I$ $a = 0.0487407 + 0.1311720I$ $b = 0.091200 - 0.327127I$	$-0.527893 + 0.187966I$	0
$u = 1.70367 - 1.24530I$ $a = 0.0487407 - 0.1311720I$ $b = 0.091200 + 0.327127I$	$-0.527893 - 0.187966I$	0

II. $\boldsymbol{I_2^u = \langle -u^9 + u^8 - u^7 + u^4 + 2u^3 - u^2 + b + u,\ 3u^8 - 3u^7 + \cdots + a - 6,\ u^{10} - u^9 + 2u^8 - u^7 + u^6 - u^5 - 2u^4 - 3u^2 - 1\rangle}$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix} -3u^8 + 3u^7 - 5u^6 + 2u^5 - u^4 + 2u^3 + 7u^2 - u + 6 \\ u^9 - u^8 + u^7 - u^4 - 2u^3 + u^2 - u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^9 - 3u^8 + 3u^7 - 3u^6 + u^5 - u^4 - u^3 + 5u^2 - 2u + 3 \\ 2u^9 - 2u^8 + 2u^7 - u^4 - 4u^3 + u^2 - 2u - 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^7 - u^6 + u^5 - u^2 - 2u + 1 \\ u^9 + u^7 + u^6 - 3u^3 - 3u^2 - 3u - 3 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^9 - 4u^8 + 4u^7 - 5u^6 + 2u^5 - 2u^4 + 8u^2 - 2u + 6 \\ u^9 - u^8 + u^7 - u^4 - 2u^3 + u^2 - u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^9 - 8u^8 + 9u^7 - 10u^6 + 4u^5 - 3u^4 + 14u^2 - 6u + 11 \\ u^9 - u^8 + u^7 - u^4 - 2u^3 - u - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2u^9 - 5u^8 + 6u^7 - 5u^6 + 2u^5 - 2u^4 - 2u^3 + 7u^2 - 5u + 4 \\ u^9 + 2u^6 - u^5 - 3u^3 - 2u^2 - u - 4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -5u^9 + 13u^8 - 17u^7 + 15u^6 - 6u^5 + 5u^4 + 5u^3 - 17u^2 + 16u - 13 \\ -u^8 + u^7 - 2u^6 + u^5 - u^4 + u^3 + 2u^2 + 3 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -8u^9 + 7u^8 - 10u^7 + u^6 + 5u^4 + 17u^3 - u^2 + 14u + 5 \\ u^9 - u^8 + 2u^7 - u^6 + u^5 - u^4 - 2u^3 - 3u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^9 + 2u^7 + u^6 - u^4 - 6u^3 - 4u^2 - 5u - 3 \\ -u^9 + 3u^8 - 3u^7 + 3u^6 - u^5 + u^4 + u^3 - 5u^2 + 2u - 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^9 - u^8 + u^7 + 3u^6 - 2u^5 - 5u^4 - 11u^3 - 2u^2 - 4u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{10} - 10u^9 + 37u^8 - 58u^7 + 70u^6 - 51u^5 + 29u^4 - 27u^3 + 4u^2 - u + 1$
c_2	$u^{10} + 6u^9 + 13u^8 + 10u^7 - 6u^6 - 19u^5 - 15u^4 - 3u^3 + 4u^2 + 3u + 1$
c_3	$u^{10} - u^9 + 2u^8 - u^7 + u^6 - u^5 - 2u^4 - 3u^2 - 1$
c_4	$u^{10} + 3u^8 + 2u^6 + u^5 - u^4 + u^3 - 2u^2 + u - 1$
c_5	$u^{10} - 6u^9 + 13u^8 - 10u^7 - 6u^6 + 19u^5 - 15u^4 + 3u^3 + 4u^2 - 3u + 1$
c_6	$u^{10} + 3u^9 + 6u^8 + 7u^7 + 4u^6 - 3u^5 - 6u^4 - 2u^3 + 4u^2 + 4u + 1$
c_7	$u^{10} - 7u^8 - 12u^7 + 16u^6 + 40u^5 + 27u^4 - u^3 + u - 1$
c_8	$u^{10} - 6u^8 + 2u^7 + 13u^6 - 8u^5 - 11u^4 + 9u^3 + 2u^2 - 2u + 1$
c_9	$u^{10} + u^9 + 15u^8 + 37u^6 + 16u^4 - 9u^3 - 8u^2 - u + 1$
c_{10}	$u^{10} - u^9 + 2u^8 - 11u^7 + 16u^6 + 6u^5 - 17u^4 - 51u^3 + 104u^2 - 53u + 5$
c_{11}, c_{12}	$u^{10} - 6u^8 - 2u^7 + 13u^6 + 8u^5 - 11u^4 - 9u^3 + 2u^2 + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{10} - 26y^9 + \cdots + 7y + 1$
c_2, c_5	$y^{10} - 10y^9 + 37y^8 - 58y^7 + 70y^6 - 51y^5 + 29y^4 - 27y^3 + 4y^2 - y + 1$
c_3	$y^{10} + 3y^9 + 4y^8 - 3y^7 - 15y^6 - 19y^5 - 6y^4 + 10y^3 + 13y^2 + 6y + 1$
c_4	$y^{10} + 6y^9 + 13y^8 + 10y^7 - 6y^6 - 19y^5 - 15y^4 - 3y^3 + 4y^2 + 3y + 1$
c_6	$y^{10} + 3y^9 + 2y^8 + 5y^7 + 6y^6 - 3y^5 + 12y^4 - 20y^3 + 20y^2 - 8y + 1$
c_7	$y^{10} - 14y^9 + \cdots - y + 1$
c_8, c_{11}, c_{12}	$y^{10} - 12y^9 + \cdots + 18y^2 + 1$
c_9	$y^{10} + 29y^9 + \cdots - 17y + 1$
c_{10}	$y^{10} + 3y^9 + \cdots - 1769y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.970948$ $a = 0.125163$ $b = 0.485263$	-0.629142	4.19170
$u = 0.275604 + 0.891818I$ $a = -0.521340 + 1.227210I$ $b = 0.12415 + 1.53429I$	$6.96867 - 2.45082I$	$2.80943 + 5.14150I$
$u = 0.275604 - 0.891818I$ $a = -0.521340 - 1.227210I$ $b = 0.12415 - 1.53429I$	$6.96867 + 2.45082I$	$2.80943 - 5.14150I$
$u = -0.488238 + 0.958609I$ $a = -1.23025 - 0.71023I$ $b = 0.673452 - 0.956870I$	$0.20069 + 4.40188I$	$3.38083 - 6.40382I$
$u = -0.488238 - 0.958609I$ $a = -1.23025 + 0.71023I$ $b = 0.673452 + 0.956870I$	$0.20069 - 4.40188I$	$3.38083 + 6.40382I$
$u = 1.26392$ $a = -0.608152$ $b = 0.615015$	1.41391	-8.87500
$u = 0.634722 + 1.144960I$ $a = -1.149300 + 0.305987I$ $b = 0.956654 + 0.685271I$	$4.21151 - 6.16726I$	$1.23716 + 7.09016I$
$u = 0.634722 - 1.144960I$ $a = -1.149300 - 0.305987I$ $b = 0.956654 - 0.685271I$	$4.21151 + 6.16726I$	$1.23716 - 7.09016I$
$u = -0.068575 + 0.683246I$ $a = 3.14239 - 1.75200I$ $b = -0.804393 - 0.314356I$	$-5.19351 + 2.25286I$	$-4.08574 - 0.02786I$
$u = -0.068575 - 0.683246I$ $a = 3.14239 + 1.75200I$ $b = -0.804393 + 0.314356I$	$-5.19351 - 2.25286I$	$-4.08574 + 0.02786I$

III. $I_3^u = \langle u^2 + b + u,\ a,\ u^4 + u^3 + u^2 + u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^3 + u + 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.309017+0.951057I$		
$a=$	0	7.23771	$2.92705+2.12663I$
$b=$	$0.50000-1.53884I$		
$u=$	$0.309017-0.951057I$		
$a=$	0	7.23771	$2.92705-2.12663I$
$b=$	$0.50000+1.53884I$		
$u=$	$-0.809017+0.587785I$		
$a=$	0	-0.657974	$-0.427051-1.314328I$
$b=$	$0.500000+0.363271I$		
$u=$	$-0.809017-0.587785I$		
$a=$	0	-0.657974	$-0.427051+1.314328I$
$b=$	$0.500000-0.363271I$		

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^4$ $\cdot (u^{10} - 10u^9 + 37u^8 - 58u^7 + 70u^6 - 51u^5 + 29u^4 - 27u^3 + 4u^2 - u + 1)$ $\cdot (u^{44} + 61u^{43} + \cdots + 654834u + 3025)$
c_2	$(u-1)^4$ $\cdot (u^{10} + 6u^9 + 13u^8 + 10u^7 - 6u^6 - 19u^5 - 15u^4 - 3u^3 + 4u^2 + 3u + 1)$ $\cdot (u^{44} + u^{43} + \cdots + 592u + 55)$
c_3	$(u^4 + u^3 + u^2 + u + 1)(u^{10} - u^9 + 2u^8 - u^7 + u^6 - u^5 - 2u^4 - 3u^2 - 1)$ $\cdot (u^{44} + 5u^{43} + \cdots - 42u - 29)$
c_4	$(u^4 + u^3 + u^2 + u + 1)(u^{10} + 3u^8 + 2u^6 + u^5 - u^4 + u^3 - 2u^2 + u - 1)$ $\cdot (u^{44} + 2u^{43} + \cdots + 583u - 121)$
c_5	$(u+1)^4$ $\cdot (u^{10} - 6u^9 + 13u^8 - 10u^7 - 6u^6 + 19u^5 - 15u^4 + 3u^3 + 4u^2 - 3u + 1)$ $\cdot (u^{44} + u^{43} + \cdots + 592u + 55)$
c_6	$(u^4 + 2u^3 + 4u^2 + 3u + 1)$ $\cdot (u^{10} + 3u^9 + 6u^8 + 7u^7 + 4u^6 - 3u^5 - 6u^4 - 2u^3 + 4u^2 + 4u + 1)$ $\cdot (u^{44} - 6u^{43} + \cdots + 10u - 1)$
c_7	$(u^4 + 2u^3 + 4u^2 + 3u + 1)$ $\cdot (u^{10} - 7u^8 - 12u^7 + 16u^6 + 40u^5 + 27u^4 - u^3 + u - 1)$ $\cdot (u^{44} - u^{43} + \cdots + 295u + 229)$
c_8	$(u^2 - u - 1)^2$ $\cdot (u^{10} - 6u^8 + 2u^7 + 13u^6 - 8u^5 - 11u^4 + 9u^3 + 2u^2 - 2u + 1)$ $\cdot (u^{44} - u^{43} + \cdots - 113u - 11)$
c_9	$(u^2 + u - 1)^2(u^{10} + u^9 + 15u^8 + 37u^6 + 16u^4 - 9u^3 - 8u^2 - u + 1)$ $\cdot (u^{44} + 52u^{42} + \cdots - 10437016u - 496609)$
c_{10}	u^4 $\cdot (u^{10} - u^9 + 2u^8 - 11u^7 + 16u^6 + 6u^5 - 17u^4 - 51u^3 + 104u^2 - 53u + 5)$ $\cdot (u^{44} + 6u^{43} + \cdots + 248u + 80)$
c_{11}, c_{12}	$(u^2 + u - 1)^2$ $\cdot (u^{10} - 6u^8 - 2u^7 + 13u^6 + 8u^5 - 11u^4 - 9u^3 + 2u^2 + 2u + 1)$ $\cdot (u^{44} - u^{43} + \cdots - 113u - 11)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^4)(y^{10}-26y^9+\cdots+7y+1)$ $\cdot(y^{44}-157y^{43}+\cdots-380470856606y+9150625)$
c_2, c_5	$(y-1)^4$ $\cdot(y^{10}-10y^9+37y^8-58y^7+70y^6-51y^5+29y^4-27y^3+4y^2-y+1)$ $\cdot(y^{44}-61y^{43}+\cdots-654834y+3025)$
c_3	$(y^4+y^3+y^2+y+1)$ $\cdot(y^{10}+3y^9+4y^8-3y^7-15y^6-19y^5-6y^4+10y^3+13y^2+6y+1)$ $\cdot(y^{44}+13y^{43}+\cdots+12678y+841)$
c_4	$(y^4+y^3+y^2+y+1)$ $\cdot(y^{10}+6y^9+13y^8+10y^7-6y^6-19y^5-15y^4-3y^3+4y^2+3y+1)$ $\cdot(y^{44}+52y^{43}+\cdots-193721y+14641)$
c_6	$(y^4+4y^3+6y^2-y+1)$ $\cdot(y^{10}+3y^9+2y^8+5y^7+6y^6-3y^5+12y^4-20y^3+20y^2-8y+1)$ $\cdot(y^{44}+4y^{43}+\cdots-18y+1)$
c_7	$(y^4+4y^3+6y^2-y+1)(y^{10}-14y^9+\cdots-y+1)$ $\cdot(y^{44}-y^{43}+\cdots-491439y+52441)$
c_8, c_{11}, c_{12}	$((y^2-3y+1)^2)(y^{10}-12y^9+\cdots+18y^2+1)$ $\cdot(y^{44}-33y^{43}+\cdots-24187y+121)$
c_9	$((y^2-3y+1)^2)(y^{10}+29y^9+\cdots-17y+1)$ $\cdot(y^{44}+104y^{43}+\cdots-91222464416576y+246620498881)$
c_{10}	$y^4(y^{10}+3y^9+\cdots-1769y+25)$ $\cdot(y^{44}-12y^{43}+\cdots-113984y+6400)$