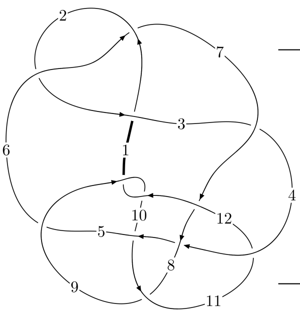
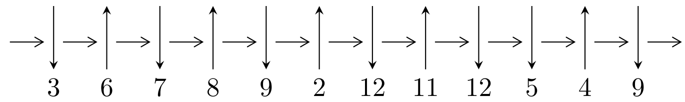
$12n_{0283}$ ($K12n_{0283}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle b-u,\ -3.85888\times10^{16}u^{31}+4.26003\times10^{16}u^{30}+\cdots+3.07647\times10^{15}a-2.04981\times10^{16},\\
&\quad u^{32}-u^{31}+\cdots+13u^2+1\rangle\\
I_2^u &= \langle b+u,\ 3u^{16}-3u^{15}+\cdots+a-1,\\
&\quad u^{17}-u^{16}-u^{15}+2u^{14}+4u^{13}-6u^{12}-3u^{11}+8u^{10}+5u^9-11u^8-2u^7+10u^6+2u^5-7u^4-u^3+4u^2-1\\
I_3^u &= \langle -1.04996\times10^{43}u^{31}+4.71287\times10^{42}u^{30}+\cdots+1.47931\times10^{44}b-3.76971\times10^{43},\\
&\quad 3.26424\times10^{44}u^{31}-3.75981\times10^{44}u^{30}+\cdots+2.51482\times10^{45}a+1.97058\times10^{44},\ u^{32}-2u^{31}+\cdots-3u+1\\
I_4^u &= \langle -u^3+u^2+b-3u+1,\ a,\ u^4-u^3+3u^2-u+1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}}=0$, with total 85 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. $\boldsymbol{I_1^u = \langle b - u,\ -3.86 \times 10^{16} u^{31} + 4.26 \times 10^{16} u^{30} + \cdots + 3.08 \times 10^{15} a - 2.05 \times 10^{16},\ u^{32} - u^{31} + \cdots + 13u^2 + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix}12.5432u^{31} - 13.8471u^{30} + \cdots + 13.5866u + 6.66287\\u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-16.8410u^{31} + 25.7996u^{30} + \cdots - 50.1828u + 26.0290\\-6.20203u^{31} + 7.81804u^{30} + \cdots - 11.5432u + 1.30392\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-14.3847u^{31} + 10.0771u^{30} + \cdots - 25.7395u - 5.74332\\-4.59634u^{31} + 4.24837u^{30} + \cdots - 16.7216u - 4.58421\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}12.5432u^{31} - 13.8471u^{30} + \cdots + 14.5866u + 6.66287\\u\end{pmatrix}$$

$$a_1 = \begin{pmatrix}16.0624u^{31} - 21.2113u^{30} + \cdots + 41.6901u - 20.5255\\2.18153u^{31} - 4.28474u^{30} + \cdots + 13.9678u - 8.31557\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-29.2451u^{31} + 41.4357u^{30} + \cdots - 75.2692u + 28.6368\\-6.20203u^{31} + 7.81804u^{30} + \cdots - 11.5432u + 1.30392\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-2.97045u^{31} - 12.5885u^{30} + \cdots + 19.9046u - 19.7914\\1.28508u^{31} - 4.38219u^{30} + \cdots + 9.58280u - 4.01243\end{pmatrix}$$

$$a_2 = \begin{pmatrix}4.67800u^{31} - 35.4901u^{30} + \cdots - 6.88392u - 73.8593\\5.30418u^{31} - 11.1266u^{30} + \cdots + 18.0833u - 20.0632\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}6.34118u^{31} - 6.02908u^{30} + \cdots + 2.04336u + 7.96679\\-2.32875u^{31} + 3.30173u^{30} + \cdots - 5.20203u + 1.61602\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= \frac{137669939372982157}{3076468870904633}u^{31} - \frac{10255547182342868}{3076468870904633}u^{30} + \cdots + \frac{105136250462441589}{3076468870904633}u + \frac{471315500834574952}{3076468870904633}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} + 19u^{31} + \cdots + 7u + 16$
c_2, c_6	$u^{32} - 5u^{31} + \cdots - 7u + 4$
c_3	$u^{32} + 5u^{31} + \cdots + 89u + 4$
c_4, c_{11}	$u^{32} - u^{31} + \cdots + 13u^2 + 1$
c_5	$u^{32} - 32u^{30} + \cdots + u + 1$
c_7	$u^{32} + 35u^{31} + \cdots + 147456u + 16384$
c_8	$u^{32} + 22u^{31} + \cdots + 21u + 2$
c_9, c_{12}	$u^{32} + 2u^{31} + \cdots - 17u + 1$
c_{10}	$u^{32} - 12u^{30} + \cdots - 17u + 17$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} - 9y^{31} + \cdots - 1425y + 256$
c_2, c_6	$y^{32} + 19y^{31} + \cdots + 7y + 16$
c_3	$y^{32} - 37y^{31} + \cdots - 3673y + 16$
c_4, c_{11}	$y^{32} + 13y^{31} + \cdots + 26y + 1$
c_5	$y^{32} - 64y^{31} + \cdots + 3y + 1$
c_7	$y^{32} - 17y^{31} + \cdots + 3623878656y + 268435456$
c_8	$y^{32} + 60y^{30} + \cdots + 19y + 4$
c_9, c_{12}	$y^{32} - 60y^{31} + \cdots - 9y + 1$
c_{10}	$y^{32} - 24y^{31} + \cdots - 5117y + 289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.800209 + 0.679293I$ $a = -0.512896 - 0.056292I$ $b = 0.800209 + 0.679293I$	$1.24992 + 2.03308I$	$-1.46651 - 1.63420I$
$u = 0.800209 - 0.679293I$ $a = -0.512896 + 0.056292I$ $b = 0.800209 - 0.679293I$	$1.24992 - 2.03308I$	$-1.46651 + 1.63420I$
$u = -0.855632 + 0.391807I$ $a = 0.459557 - 0.032989I$ $b = -0.855632 + 0.391807I$	$0.16119 + 2.51789I$	$-0.56583 - 5.72451I$
$u = -0.855632 - 0.391807I$ $a = 0.459557 + 0.032989I$ $b = -0.855632 - 0.391807I$	$0.16119 - 2.51789I$	$-0.56583 + 5.72451I$
$u = 0.152358 + 1.111590I$ $a = -0.201254 - 0.208299I$ $b = 0.152358 + 1.111590I$	$-3.34829 - 0.12486I$	$-9.98571 - 0.34747I$
$u = 0.152358 - 1.111590I$ $a = -0.201254 + 0.208299I$ $b = 0.152358 - 1.111590I$	$-3.34829 + 0.12486I$	$-9.98571 + 0.34747I$
$u = -0.092710 + 0.862384I$ $a = -0.384305 + 0.955600I$ $b = -0.092710 + 0.862384I$	$-3.61750 + 1.08846I$	$-11.50895 - 1.14763I$
$u = -0.092710 - 0.862384I$ $a = -0.384305 - 0.955600I$ $b = -0.092710 - 0.862384I$	$-3.61750 - 1.08846I$	$-11.50895 + 1.14763I$
$u = 0.428817 + 0.727273I$ $a = -0.07660 + 2.49273I$ $b = 0.428817 + 0.727273I$	$-11.71580 - 3.61170I$	$-9.63478 - 2.16413I$
$u = 0.428817 - 0.727273I$ $a = -0.07660 - 2.49273I$ $b = 0.428817 - 0.727273I$	$-11.71580 + 3.61170I$	$-9.63478 + 2.16413I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.386380+0.705787I$ $a=-0.23876+2.54670I$ $b=-0.386380+0.705787I$	$-7.99069-1.31704I$	$-7.26287+5.35092I$
$u=-0.386380-0.705787I$ $a=-0.23876-2.54670I$ $b=-0.386380-0.705787I$	$-7.99069+1.31704I$	$-7.26287-5.35092I$
$u=0.391478+0.659853I$ $a=0.32637+2.90203I$ $b=0.391478+0.659853I$	$-11.93460+6.10252I$	$-10.79983-9.08073I$
$u=0.391478-0.659853I$ $a=0.32637-2.90203I$ $b=0.391478-0.659853I$	$-11.93460-6.10252I$	$-10.79983+9.08073I$
$u=-0.699668+1.103420I$ $a=0.639142-0.193517I$ $b=-0.699668+1.103420I$	$-5.32466-1.51971I$	$-9.09663+1.51246I$
$u=-0.699668-1.103420I$ $a=0.639142+0.193517I$ $b=-0.699668-1.103420I$	$-5.32466+1.51971I$	$-9.09663-1.51246I$
$u=0.008513+0.657799I$ $a=1.162970+0.228615I$ $b=0.008513+0.657799I$	$-0.99449+1.29399I$	$-3.54121-4.20952I$
$u=0.008513-0.657799I$ $a=1.162970-0.228615I$ $b=0.008513-0.657799I$	$-0.99449-1.29399I$	$-3.54121+4.20952I$
$u=0.868024+1.029180I$ $a=-0.658984-0.058816I$ $b=0.868024+1.029180I$	$-0.05539+4.40246I$	$-4.33829-3.27958I$
$u=0.868024-1.029180I$ $a=-0.658984+0.058816I$ $b=0.868024-1.029180I$	$-0.05539-4.40246I$	$-4.33829+3.27958I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.125746+0.622773I$ $a=-1.88454+0.92438I$ $b=-0.125746+0.622773I$	$-3.33065-4.80034I$	$-9.65737+7.89620I$
$u=-0.125746-0.622773I$ $a=-1.88454-0.92438I$ $b=-0.125746-0.622773I$	$-3.33065+4.80034I$	$-9.65737-7.89620I$
$u=-0.91505+1.10566I$ $a=\ \ 0.731772-0.024127I$ $b=-0.91505+1.10566I$	$-2.06182-9.69561I$	$0.+8.25119I$
$u=-0.91505-1.10566I$ $a=\ \ 0.731772+0.024127I$ $b=-0.91505-1.10566I$	$-2.06182+9.69561I$	$0.-8.25119I$
$u=-0.034652+0.486523I$ $a=\ \ 0.705466-0.923628I$ $b=-0.034652+0.486523I$	$-0.06748+1.56172I$	$0.05355-4.52111I$
$u=-0.034652-0.486523I$ $a=\ \ 0.705466+0.923628I$ $b=-0.034652-0.486523I$	$-0.06748-1.56172I$	$0.05355+4.52111I$
$u=-0.95977+1.23861I$ $a=\ \ 1.033700-0.023141I$ $b=-0.95977+1.23861I$	$-9.7261-10.4089I$	0
$u=-0.95977-1.23861I$ $a=\ \ 1.033700+0.023141I$ $b=-0.95977-1.23861I$	$-9.7261+10.4089I$	0
$u=\ \ 0.94787+1.25221I$ $a=-1.027830-0.077389I$ $b=\ \ 0.94787+1.25221I$	$-14.1870+5.4411I$	0
$u=\ \ 0.94787-1.25221I$ $a=-1.027830+0.077389I$ $b=\ \ 0.94787-1.25221I$	$-14.1870-5.4411I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.97234 + 1.24005I$ $a = -1.073810 - 0.004329I$ $b = 0.97234 + 1.24005I$	$-13.4156 + 15.8053I$	0
$u = 0.97234 - 1.24005I$ $a = -1.073810 + 0.004329I$ $b = 0.97234 - 1.24005I$	$-13.4156 - 15.8053I$	0

II. $\boldsymbol{I_2^u = \langle b+u,\ 3u^{16}-3u^{15}+\cdots+a-1,\ u^{17}-u^{16}+\cdots+4u^2-1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -3u^{16}+3u^{15}+\cdots-5u+1 \\ -u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{16}-3u^{15}+\cdots+5u-4 \\ u^{16}-u^{15}+\cdots-u^2+4u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -6u^{16}+11u^{15}+\cdots-13u+15 \\ -u^{16}+4u^{15}+\cdots-5u+6 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -3u^{16}+3u^{15}+\cdots-6u+1 \\ -u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -8u^{16}+12u^{15}+\cdots-23u+10 \\ -4u^{16}+4u^{15}+\cdots-10u+1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 4u^{16}-5u^{15}+\cdots+11u-4 \\ u^{16}-u^{15}+\cdots-u^2+4u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 4u^{16}-9u^{15}+\cdots+12u-12 \\ -u^{15}+u^{14}+\cdots+u-4 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 14u^{16}-22u^{15}+\cdots+26u-17 \\ 6u^{16}-10u^{15}+\cdots+12u-11 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -4u^{16}+4u^{15}+\cdots-9u+1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^{16}+4u^{15}-4u^{14}-4u^{13}+3u^{12}+17u^{11}-25u^{10}-11u^9+23u^8+23u^7-48u^6-5u^5+30u^4+11u^3-33u^2-3u+8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{17} - 10u^{16} + \cdots - 4u + 1$
c_2	$u^{17} - 2u^{16} + \cdots + 2u - 1$
c_3	$u^{17} + 2u^{16} + \cdots - 6u^2 - 1$
c_4, c_{11}	$u^{17} - u^{16} + \cdots + 4u^2 - 1$
c_5	$u^{17} + 2u^{16} + \cdots + 3u - 1$
c_6	$u^{17} + 2u^{16} + \cdots + 2u + 1$
c_7	$u^{17} + 6u^{16} + \cdots - 3u - 1$
c_8	$u^{17} + 9u^{16} + \cdots - 118u - 21$
c_9	$u^{17} - 8u^{16} + \cdots + 3u - 1$
c_{10}	$u^{17} - 4u^{15} + \cdots + u - 1$
c_{12}	$u^{17} + 8u^{16} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{17} - 2y^{16} + \cdots + 74y^3 - 1$
c_2, c_6	$y^{17} + 10y^{16} + \cdots - 4y - 1$
c_3	$y^{17} - 14y^{16} + \cdots - 12y - 1$
c_4, c_{11}	$y^{17} - 3y^{16} + \cdots + 8y - 1$
c_5	$y^{17} - 8y^{16} + \cdots - y - 1$
c_7	$y^{17} - 16y^{16} + \cdots - 5y - 1$
c_8	$y^{17} - 5y^{16} + \cdots + 946y - 441$
c_9, c_{12}	$y^{17} - 4y^{16} + \cdots - 17y - 1$
c_{10}	$y^{17} - 8y^{16} + \cdots + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.621825 + 0.705881I$ $a = -1.69701 - 0.12364I$ $b = 0.621825 - 0.705881I$	$0.16835 - 3.69444I$	$-3.43345 + 6.20569I$
$u = -0.621825 - 0.705881I$ $a = -1.69701 + 0.12364I$ $b = 0.621825 + 0.705881I$	$0.16835 + 3.69444I$	$-3.43345 - 6.20569I$
$u = 0.985112 + 0.472102I$ $a = 0.650559 + 0.351279I$ $b = -0.985112 - 0.472102I$	$0.03052 - 1.55891I$	$-2.18552 - 2.08462I$
$u = 0.985112 - 0.472102I$ $a = 0.650559 - 0.351279I$ $b = -0.985112 + 0.472102I$	$0.03052 + 1.55891I$	$-2.18552 + 2.08462I$
$u = -0.924919 + 0.614200I$ $a = -0.886710 + 0.219548I$ $b = 0.924919 - 0.614200I$	$1.80526 - 3.09805I$	$2.71378 + 6.00667I$
$u = -0.924919 - 0.614200I$ $a = -0.886710 - 0.219548I$ $b = 0.924919 + 0.614200I$	$1.80526 + 3.09805I$	$2.71378 - 6.00667I$
$u = 0.700967 + 0.501936I$ $a = 1.39448 + 0.81847I$ $b = -0.700967 - 0.501936I$	$-1.94678 + 5.32379I$	$-4.18293 - 7.79972I$
$u = 0.700967 - 0.501936I$ $a = 1.39448 - 0.81847I$ $b = -0.700967 + 0.501936I$	$-1.94678 - 5.32379I$	$-4.18293 + 7.79972I$
$u = 0.677004 + 0.917206I$ $a = 1.157990 - 0.482730I$ $b = -0.677004 - 0.917206I$	$-1.93385 + 1.63299I$	$-5.94728 - 2.28105I$
$u = 0.677004 - 0.917206I$ $a = 1.157990 + 0.482730I$ $b = -0.677004 + 0.917206I$	$-1.93385 - 1.63299I$	$-5.94728 + 2.28105I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.856536 + 0.852054I$ $a = -0.984611 - 0.179626I$ $b = 0.856536 - 0.852054I$	$1.50462 - 4.39558I$	$2.29329 + 4.97306I$
$u = -0.856536 - 0.852054I$ $a = -0.984611 + 0.179626I$ $b = 0.856536 + 0.852054I$	$1.50462 + 4.39558I$	$2.29329 - 4.97306I$
$u = 0.707184$ $a = -1.41344$ $b = -0.707184$	-7.59564	-3.54960
$u = 0.863394 + 0.964445I$ $a = 0.890585 - 0.307806I$ $b = -0.863394 - 0.964445I$	$-0.71548 + 8.94334I$	$-2.29262 - 7.34583I$
$u = 0.863394 - 0.964445I$ $a = 0.890585 + 0.307806I$ $b = -0.863394 + 0.964445I$	$-0.71548 - 8.94334I$	$-2.29262 + 7.34583I$
$u = -0.676789 + 0.041582I$ $a = 1.68144 + 0.49673I$ $b = 0.676789 - 0.041582I$	$-11.56420 - 5.02914I$	$-6.69047 + 2.68447I$
$u = -0.676789 - 0.041582I$ $a = 1.68144 - 0.49673I$ $b = 0.676789 + 0.041582I$	$-11.56420 + 5.02914I$	$-6.69047 - 2.68447I$

III. $I_3^u = \langle -1.05\times10^{43}u^{31} + 4.71\times10^{42}u^{30} + \cdots + 1.48\times10^{44}b - 3.77\times10^{43},\ 3.26\times10^{44}u^{31} - 3.76\times10^{44}u^{30} + \cdots + 2.51\times10^{45}a + 1.97\times10^{44},\ u^{32} - 2u^{31} + \cdots - 3u + 17\rangle$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix}-0.129800u^{31} + 0.149506u^{30} + \cdots - 7.89817u - 0.0783584\\0.0709764u^{31} - 0.0318586u^{30} + \cdots + 0.0746396u + 0.254829\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-0.112910u^{31} + 0.209924u^{30} + \cdots - 2.19568u + 1.23577\\-0.0168898u^{31} - 0.0604187u^{30} + \cdots - 4.70249u - 1.31413\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.00441307u^{31} - 0.108854u^{30} + \cdots - 2.15238u - 2.06675\\0.143271u^{31} - 0.0431300u^{30} + \cdots + 3.60055u + 2.54054\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-0.0588235u^{31} + 0.117647u^{30} + \cdots - 7.82353u + 0.176471\\0.0709764u^{31} - 0.0318586u^{30} + \cdots + 0.0746396u + 0.254829\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.0706474u^{31} + 0.301908u^{30} + \cdots - 1.93782u + 2.98528\\-0.0346426u^{31} + 0.271751u^{30} + \cdots + 2.53465u + 3.05041\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.0588235u^{31} + 0.117647u^{30} + \cdots - 7.82353u + 0.176471\\0.0709764u^{31} - 0.0318586u^{30} + \cdots + 1.07464u + 0.254829\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.0149899u^{31} - 0.100956u^{30} + \cdots - 5.35030u - 0.119609\\-0.127897u^{31} + 0.0824258u^{30} + \cdots - 7.92285u - 3.64080\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.182759u^{31} - 0.207627u^{30} + \cdots + 5.96598u + 4.51980\\-0.230768u^{31} + 0.589230u^{30} + \cdots - 6.71849u + 4.83964\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-0.101574u^{31} + 0.282734u^{30} + \cdots - 5.94721u + 2.04807\\-0.0632789u^{31} + 0.328608u^{30} + \cdots - 0.0145611u + 3.47938\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.112903u^{31} - 0.364793u^{30} + \cdots - 1.27394u - 15.4783$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{16}+10u^{15}+\cdots+4u+1)^2$
c_2, c_6	$(u^{16}+2u^{15}+\cdots+2u^2+1)^2$
c_3	$(u^{16}-2u^{15}+\cdots-4u+1)^2$
c_4, c_{11}	$u^{32}-2u^{31}+\cdots-3u+17$
c_5	$u^{32}-20u^{30}+\cdots+147u+11483$
c_7	$(u-1)^{32}$
c_8	$(u^{16}-5u^{15}+\cdots-10u+4)^2$
c_9, c_{12}	$u^{32}+5u^{31}+\cdots-40346u+7837$
c_{10}	$u^{32}-10u^{30}+\cdots-52147u+13057$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{16} - 6y^{15} + \cdots + 52y^2 + 1)^2$
c_2, c_6	$(y^{16} + 10y^{15} + \cdots + 4y + 1)^2$
c_3	$(y^{16} - 22y^{15} + \cdots + 4y + 1)^2$
c_4, c_{11}	$y^{32} + 46y^{30} + \cdots + 4513y + 289$
c_5	$y^{32} - 40y^{31} + \cdots + 4819370525y + 131859289$
c_7	$(y - 1)^{32}$
c_8	$(y^{16} + 5y^{15} + \cdots + 84y + 16)^2$
c_9, c_{12}	$y^{32} - 37y^{31} + \cdots - 3847924y + 61418569$
c_{10}	$y^{32} - 20y^{31} + \cdots - 1430609823y + 170485249$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.595671 + 0.842379I$ $a = -1.48043 - 0.22659I$ $b = 0.920809 - 0.564799I$	$-0.08555 - 5.00887I$	$-2.04817 + 9.54125I$
$u = -0.595671 - 0.842379I$ $a = -1.48043 + 0.22659I$ $b = 0.920809 + 0.564799I$	$-0.08555 + 5.00887I$	$-2.04817 - 9.54125I$
$u = 0.445704 + 0.827008I$ $a = -1.006630 + 0.127867I$ $b = 1.51162 - 1.06489I$	$-12.05440 + 7.15239I$	$-8.17635 - 6.88764I$
$u = 0.445704 - 0.827008I$ $a = -1.006630 - 0.127867I$ $b = 1.51162 + 1.06489I$	$-12.05440 - 7.15239I$	$-8.17635 + 6.88764I$
$u = 0.920809 + 0.564799I$ $a = 1.38479 + 0.35836I$ $b = -0.595671 - 0.842379I$	$-0.08555 + 5.00887I$	$-2.04817 - 9.54125I$
$u = 0.920809 - 0.564799I$ $a = 1.38479 - 0.35836I$ $b = -0.595671 + 0.842379I$	$-0.08555 - 5.00887I$	$-2.04817 + 9.54125I$
$u = 0.304893 + 0.861352I$ $a = -1.122090 + 0.066210I$ $b = 1.48728 - 1.09791I$	$-12.74750 - 3.22124I$	$-9.99417 + 0.06529I$
$u = 0.304893 - 0.861352I$ $a = -1.122090 - 0.066210I$ $b = 1.48728 + 1.09791I$	$-12.74750 + 3.22124I$	$-9.99417 - 0.06529I$
$u = -0.371450 + 0.797625I$ $a = 1.037300 + 0.063551I$ $b = -1.51710 - 1.09383I$	$-8.33008 - 1.76073I$	$-6.56613 + 3.85252I$
$u = -0.371450 - 0.797625I$ $a = 1.037300 - 0.063551I$ $b = -1.51710 + 1.09383I$	$-8.33008 + 1.76073I$	$-6.56613 - 3.85252I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.702474 + 0.876922I$ $a = 1.195520 - 0.248497I$ $b = -0.639086 - 0.446115I$	$0.59866 + 2.73963I$	$0.340477 + 0.446917I$
$u = 0.702474 - 0.876922I$ $a = 1.195520 + 0.248497I$ $b = -0.639086 + 0.446115I$	$0.59866 - 2.73963I$	$0.340477 - 0.446917I$
$u = 0.275864 + 0.794362I$ $a = 1.52812 - 0.20094I$ $b = -1.13799 - 0.92245I$	$-3.72434 + 5.60445I$	$-9.51726 - 7.00610I$
$u = 0.275864 - 0.794362I$ $a = 1.52812 + 0.20094I$ $b = -1.13799 + 0.92245I$	$-3.72434 - 5.60445I$	$-9.51726 + 7.00610I$
$u = -0.639086 + 0.446115I$ $a = -1.75455 + 0.14252I$ $b = 0.702474 - 0.876922I$	$0.59866 - 2.73963I$	$0.340477 - 0.446917I$
$u = -0.639086 - 0.446115I$ $a = -1.75455 - 0.14252I$ $b = 0.702474 + 0.876922I$	$0.59866 + 2.73963I$	$0.340477 + 0.446917I$
$u = 0.865485 + 1.019380I$ $a = 0.834505 - 0.032645I$ $b = -0.350507 - 0.537414I$	$0.10305 + 2.86220I$	$-3.06555 - 3.98366I$
$u = 0.865485 - 1.019380I$ $a = 0.834505 + 0.032645I$ $b = -0.350507 + 0.537414I$	$0.10305 - 2.86220I$	$-3.06555 + 3.98366I$
$u = -0.350507 + 0.537414I$ $a = -1.71691 - 0.28607I$ $b = 0.865485 - 1.019380I$	$0.10305 - 2.86220I$	$-3.06555 + 3.98366I$
$u = -0.350507 - 0.537414I$ $a = -1.71691 + 0.28607I$ $b = 0.865485 + 1.019380I$	$0.10305 + 2.86220I$	$-3.06555 - 3.98366I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.13799 + 0.92245I$ $a = -0.806166 + 0.364503I$ $b = \quad 0.275864 - 0.794362I$	$-3.72434 - 5.60445I$	$-9.51726 + 7.00610I$
$u = -1.13799 - 0.92245I$ $a = -0.806166 - 0.364503I$ $b = \quad 0.275864 + 0.794362I$	$-3.72434 + 5.60445I$	$-9.51726 - 7.00610I$
$u = \quad 0.086773 + 0.477663I$ $a = \quad 1.35727 - 0.63772I$ $b = -0.98910 - 1.38893I$	$-1.59332 - 1.36627I$	$-7.47286 - 3.74224I$
$u = \quad 0.086773 - 0.477663I$ $a = \quad 1.35727 + 0.63772I$ $b = -0.98910 + 1.38893I$	$-1.59332 + 1.36627I$	$-7.47286 + 3.74224I$
$u = -0.98910 + 1.38893I$ $a = -0.426970 - 0.000051I$ $b = \quad 0.086773 - 0.477663I$	$-1.59332 + 1.36627I$	$-7.47286 + 3.74224I$
$u = -0.98910 - 1.38893I$ $a = -0.426970 + 0.000051I$ $b = \quad 0.086773 + 0.477663I$	$-1.59332 - 1.36627I$	$-7.47286 - 3.74224I$
$u = \quad 1.48728 + 1.09791I$ $a = \quad 0.130314 + 0.540083I$ $b = \quad 0.304893 - 0.861352I$	$-12.74750 + 3.22124I$	0
$u = \quad 1.48728 - 1.09791I$ $a = \quad 0.130314 - 0.540083I$ $b = \quad 0.304893 + 0.861352I$	$-12.74750 - 3.22124I$	0
$u = \quad 1.51162 + 1.06489I$ $a = -0.003578 + 0.515545I$ $b = \quad 0.445704 - 0.827008I$	$-12.05440 - 7.15239I$	0
$u = \quad 1.51162 - 1.06489I$ $a = -0.003578 - 0.515545I$ $b = \quad 0.445704 + 0.827008I$	$-12.05440 + 7.15239I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.51710 + 1.09383I$ $a = -0.062247 + 0.484928I$ $b = -0.371450 - 0.797625I$	$-8.33008 + 1.76073I$	0
$u = -1.51710 - 1.09383I$ $a = -0.062247 - 0.484928I$ $b = -0.371450 + 0.797625I$	$-8.33008 - 1.76073I$	0

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -9u^3 + 9u^2 - 18u - 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.148403 + 0.632502I$ $a = 0$ $b = -0.35160 + 1.49853I$	$-1.64493 + 2.02988I$	$-7.50000 - 7.79423I$
$u = 0.148403 - 0.632502I$ $a = 0$ $b = -0.35160 - 1.49853I$	$-1.64493 - 2.02988I$	$-7.50000 + 7.79423I$
$u = 0.35160 + 1.49853I$ $a = 0$ $b = -0.148403 + 0.632502I$	$-1.64493 - 2.02988I$	$-7.50000 + 7.79423I$
$u = 0.35160 - 1.49853I$ $a = 0$ $b = -0.148403 - 0.632502I$	$-1.64493 + 2.02988I$	$-7.50000 - 7.79423I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^2)(u^{16}+10u^{15}+\cdots+4u+1)^2$ $\cdot(u^{17}-10u^{16}+\cdots-4u+1)(u^{32}+19u^{31}+\cdots+7u+16)$
c_2	$((u^2+u+1)^2)(u^{16}+2u^{15}+\cdots+2u^2+1)^2(u^{17}-2u^{16}+\cdots+2u-1)$ $\cdot(u^{32}-5u^{31}+\cdots-7u+4)$
c_3	$((u^2-u+1)^2)(u^{16}-2u^{15}+\cdots-4u+1)^2(u^{17}+2u^{16}+\cdots-6u^2-1)$ $\cdot(u^{32}+5u^{31}+\cdots+89u+4)$
c_4, c_{11}	$(u^4-u^3+3u^2-u+1)(u^{17}-u^{16}+\cdots+4u^2-1)$ $\cdot(u^{32}-2u^{31}+\cdots-3u+17)(u^{32}-u^{31}+\cdots+13u^2+1)$
c_5	$(u^4-u^3+3u^2-u+1)(u^{17}+2u^{16}+\cdots+3u-1)$ $\cdot(u^{32}-32u^{30}+\cdots+u+1)(u^{32}-20u^{30}+\cdots+147u+11483)$
c_6	$((u^2-u+1)^2)(u^{16}+2u^{15}+\cdots+2u^2+1)^2(u^{17}+2u^{16}+\cdots+2u+1)$ $\cdot(u^{32}-5u^{31}+\cdots-7u+4)$
c_7	$((u-1)^{36})(u^{17}+6u^{16}+\cdots-3u-1)$ $\cdot(u^{32}+35u^{31}+\cdots+147456u+16384)$
c_8	$u^4(u^{16}-5u^{15}+\cdots-10u+4)^2(u^{17}+9u^{16}+\cdots-118u-21)$ $\cdot(u^{32}+22u^{31}+\cdots+21u+2)$
c_9	$((u-1)^4)(u^{17}-8u^{16}+\cdots+3u-1)(u^{32}+2u^{31}+\cdots-17u+1)$ $\cdot(u^{32}+5u^{31}+\cdots-40346u+7837)$
c_{10}	$(u^4-u^3+3u^2-u+1)(u^{17}-4u^{15}+\cdots+u-1)$ $\cdot(u^{32}-12u^{30}+\cdots-17u+17)(u^{32}-10u^{30}+\cdots-52147u+13057)$
c_{12}	$((u+1)^4)(u^{17}+8u^{16}+\cdots+3u+1)(u^{32}+2u^{31}+\cdots-17u+1)$ $\cdot(u^{32}+5u^{31}+\cdots-40346u+7837)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^2)(y^{16}-6y^{15}+\cdots+52y^2+1)^2$ $\cdot(y^{17}-2y^{16}+\cdots+74y^3-1)(y^{32}-9y^{31}+\cdots-1425y+256)$
c_2, c_6	$((y^2+y+1)^2)(y^{16}+10y^{15}+\cdots+4y+1)^2$ $\cdot(y^{17}+10y^{16}+\cdots-4y-1)(y^{32}+19y^{31}+\cdots+7y+16)$
c_3	$((y^2+y+1)^2)(y^{16}-22y^{15}+\cdots+4y+1)^2$ $\cdot(y^{17}-14y^{16}+\cdots-12y-1)(y^{32}-37y^{31}+\cdots-3673y+16)$
c_4, c_{11}	$(y^4+5y^3+9y^2+5y+1)(y^{17}-3y^{16}+\cdots+8y-1)$ $\cdot(y^{32}+46y^{30}+\cdots+4513y+289)(y^{32}+13y^{31}+\cdots+26y+1)$
c_5	$(y^4+5y^3+9y^2+5y+1)(y^{17}-8y^{16}+\cdots-y-1)$ $\cdot(y^{32}-64y^{31}+\cdots+3y+1)$ $\cdot(y^{32}-40y^{31}+\cdots+4819370525y+131859289)$
c_7	$((y-1)^{36})(y^{17}-16y^{16}+\cdots-5y-1)$ $\cdot(y^{32}-17y^{31}+\cdots+3623878656y+268435456)$
c_8	$y^4(y^{16}+5y^{15}+\cdots+84y+16)^2(y^{17}-5y^{16}+\cdots+946y-441)$ $\cdot(y^{32}+60y^{30}+\cdots+19y+4)$
c_9, c_{12}	$((y-1)^4)(y^{17}-4y^{16}+\cdots-17y-1)(y^{32}-60y^{31}+\cdots-9y+1)$ $\cdot(y^{32}-37y^{31}+\cdots-3847924y+61418569)$
c_{10}	$(y^4+5y^3+9y^2+5y+1)(y^{17}-8y^{16}+\cdots+3y-1)$ $\cdot(y^{32}-24y^{31}+\cdots-5117y+289)$ $\cdot(y^{32}-20y^{31}+\cdots-1430609823y+170485249)$