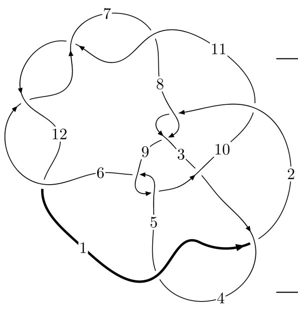
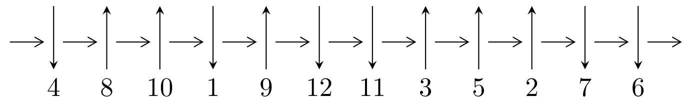
$12a_{1151}$ ($K12a_{1151}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -7.84155 \times 10^{139} u^{78} - 5.86060 \times 10^{140} u^{77} + \cdots + 3.54905 \times 10^{139} b + 7.76498 \times 10^{140}, \\
& - 3.04871 \times 10^{140} u^{78} - 2.59985 \times 10^{141} u^{77} + \cdots + 3.54905 \times 10^{139} a - 8.26678 \times 10^{141}, \\
& u^{79} + 9u^{78} + \cdots + 312u + 16 \rangle \\
I_2^u = \langle & 1422881983 u^{23} - 5915588584 u^{22} + \cdots + 1616424857 b - 14740278204, \\
& 629416068 u^{23} - 2394813871 u^{22} + \cdots + 1616424857 a + 1027469093,\ u^{24} - 2u^{23} + \cdots + 12u^2 + 1 \rangle \\
I_3^u = \langle & a^5 u - a^5 + a^4 - 6a^3 u + 5a^3 + a^2 u - 3a^2 + 5au + 3b - 6a + 4u - 4, \\
& a^6 - 6a^4 - 3a^3 u + 3a^2 u + 9a^2 + 9au + 3a + 3u - 2,\ u^2 - u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 115 representations.

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[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. $I^u_1 = \langle -7.84\times 10^{139}u^{78} - 5.86\times 10^{140}u^{77} + \cdots + 3.55\times 10^{139}b + 7.76\times 10^{140},\ -3.05\times 10^{140}u^{78} - 2.60\times 10^{141}u^{77} + \cdots + 3.55\times 10^{139}a - 8.27\times 10^{141},\ u^{79} + 9u^{78} + \cdots + 312u + 16\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}8.59020u^{78} + 73.2548u^{77} + \cdots + 4369.81u + 232.929\\2.20948u^{78} + 16.5132u^{77} + \cdots - 304.035u - 21.8790\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\u^3 + u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}4.41608u^{78} + 37.7333u^{77} + \cdots + 712.316u + 11.5442\\-0.115368u^{78} - 0.227832u^{77} + \cdots + 445.621u + 24.6192\end{pmatrix}$$
$$a_2 = \begin{pmatrix}6.63533u^{78} + 60.0366u^{77} + \cdots + 3925.20u + 195.258\\0.658120u^{78} + 11.9172u^{77} + \cdots + 3859.32u + 218.139\end{pmatrix}$$
$$a_3 = \begin{pmatrix}4.24499u^{78} + 36.9550u^{77} + \cdots + 1239.11u + 42.1422\\-0.673937u^{78} - 4.63249u^{77} + \cdots + 737.578u + 43.0337\end{pmatrix}$$
$$a_8 = \begin{pmatrix}2.82716u^{78} + 25.5853u^{77} + \cdots + 1757.24u + 112.506\\0.880297u^{78} + 11.7432u^{77} + \cdots + 3253.57u + 185.762\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}10.7997u^{78} + 89.7680u^{77} + \cdots + 4065.78u + 211.050\\2.20948u^{78} + 16.5132u^{77} + \cdots - 304.035u - 21.8790\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-1.59360u^{78} - 13.0102u^{77} + \cdots + 1119.31u + 87.6656\\-0.900530u^{78} - 8.93749u^{77} + \cdots - 1110.00u - 59.2587\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-5.22487u^{78} - 39.9580u^{77} + \cdots + 817.645u + 48.4343\\-1.91964u^{78} - 11.2753u^{77} + \cdots + 1557.11u + 85.8871\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 12.0387u^{78} + 103.817u^{77} + \cdots + 4299.97u + 226.784$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{79} - 5u^{78} + \cdots + 212u - 41$
c_2, c_8	$u^{79} - u^{78} + \cdots + 765u - 241$
c_3	$u^{79} + 9u^{78} + \cdots + 2805u - 271$
c_5, c_9	$u^{79} - 9u^{78} + \cdots + 312u - 16$
c_6, c_7, c_{11} c_{12}	$u^{79} + u^{78} + \cdots + 56u - 11$
c_{10}	$u^{79} - 15u^{78} + \cdots - 99261632u + 6792448$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{79} + 55y^{78} + \cdots - 61082y - 1681$
c_2, c_8	$y^{79} - 61y^{78} + \cdots + 942387y - 58081$
c_3	$y^{79} - 5y^{78} + \cdots + 2781355y - 73441$
c_5, c_9	$y^{79} + 39y^{78} + \cdots - 4928y - 256$
c_6, c_7, c_{11} c_{12}	$y^{79} + 101y^{78} + \cdots - 2100y - 121$
c_{10}	$y^{79} - 39y^{78} + \cdots + 546186244640768y - 46137349832704$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.023800 + 1.030940I$ $a = 1.144260 + 0.499043I$ $b = -0.343277 - 0.203755I$	$-3.36900 - 0.75920I$	0
$u = 0.023800 - 1.030940I$ $a = 1.144260 - 0.499043I$ $b = -0.343277 + 0.203755I$	$-3.36900 + 0.75920I$	0
$u = 0.470758 + 0.927302I$ $a = 1.398390 + 0.187507I$ $b = -0.555908 - 0.114573I$	$-0.31736 + 4.31539I$	0
$u = 0.470758 - 0.927302I$ $a = 1.398390 - 0.187507I$ $b = -0.555908 + 0.114573I$	$-0.31736 - 4.31539I$	0
$u = -0.266379 + 0.891409I$ $a = 1.70242 - 0.50761I$ $b = -0.195113 - 0.741709I$	$-1.86223 - 1.13419I$	0
$u = -0.266379 - 0.891409I$ $a = 1.70242 + 0.50761I$ $b = -0.195113 + 0.741709I$	$-1.86223 + 1.13419I$	0
$u = 0.354891 + 0.769340I$ $a = -1.071220 - 0.126911I$ $b = 0.494709 + 0.343759I$	$0.261328 - 0.631677I$	0
$u = 0.354891 - 0.769340I$ $a = -1.071220 + 0.126911I$ $b = 0.494709 - 0.343759I$	$0.261328 + 0.631677I$	0
$u = 1.151780 + 0.216696I$ $a = -0.095609 + 0.236404I$ $b = 0.02984 + 1.68336I$	$13.60590 - 3.08638I$	0
$u = 1.151780 - 0.216696I$ $a = -0.095609 - 0.236404I$ $b = 0.02984 - 1.68336I$	$13.60590 + 3.08638I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.630807 + 0.534227I$ $a = -1.59911 + 1.50283I$ $b = -0.06854 + 1.63478I$	$12.76480 + 4.44702I$	0
$u = -0.630807 - 0.534227I$ $a = -1.59911 - 1.50283I$ $b = -0.06854 - 1.63478I$	$12.76480 - 4.44702I$	0
$u = 0.143148 + 1.181990I$ $a = 0.533602 - 1.146280I$ $b = 0.026851 + 1.281330I$	$1.08946 + 1.81199I$	0
$u = 0.143148 - 1.181990I$ $a = 0.533602 + 1.146280I$ $b = 0.026851 - 1.281330I$	$1.08946 - 1.81199I$	0
$u = 0.467597 + 1.096360I$ $a = -1.217970 - 0.323265I$ $b = 0.435028 - 0.947042I$	$1.99976 + 7.20460I$	0
$u = 0.467597 - 1.096360I$ $a = -1.217970 + 0.323265I$ $b = 0.435028 + 0.947042I$	$1.99976 - 7.20460I$	0
$u = 0.009704 + 1.194850I$ $a = -0.704930 + 0.058295I$ $b = 0.498721 + 0.561666I$	$0.178271 + 0.057111I$	0
$u = 0.009704 - 1.194850I$ $a = -0.704930 - 0.058295I$ $b = 0.498721 - 0.561666I$	$0.178271 - 0.057111I$	0
$u = -0.772582 + 0.216203I$ $a = -0.358690 + 0.251842I$ $b = 0.131224 - 0.951947I$	$4.36734 + 2.49071I$	0
$u = -0.772582 - 0.216203I$ $a = -0.358690 - 0.251842I$ $b = 0.131224 + 0.951947I$	$4.36734 - 2.49071I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.291360 + 1.165960I$ $a = -0.887219 + 0.300056I$ $b = 0.631464 + 0.106906I$	$-1.21371 - 3.57365I$	0
$u = -0.291360 - 1.165960I$ $a = -0.887219 - 0.300056I$ $b = 0.631464 - 0.106906I$	$-1.21371 + 3.57365I$	0
$u = 0.425835 + 1.139080I$ $a = -0.433166 + 0.125823I$ $b = 0.07867 - 1.47146I$	$6.69360 + 2.18923I$	0
$u = 0.425835 - 1.139080I$ $a = -0.433166 - 0.125823I$ $b = 0.07867 + 1.47146I$	$6.69360 - 2.18923I$	0
$u = -0.620307 + 1.046960I$ $a = -1.41879 + 0.34275I$ $b = 0.12439 + 1.69908I$	$11.2380 - 9.4496I$	0
$u = -0.620307 - 1.046960I$ $a = -1.41879 - 0.34275I$ $b = 0.12439 - 1.69908I$	$11.2380 + 9.4496I$	0
$u = 1.136680 + 0.439324I$ $a = 0.090083 + 0.191845I$ $b = -0.429435 - 0.933174I$	$8.67853 - 6.47962I$	0
$u = 1.136680 - 0.439324I$ $a = 0.090083 - 0.191845I$ $b = -0.429435 + 0.933174I$	$8.67853 + 6.47962I$	0
$u = -0.589457 + 1.073090I$ $a = -1.244540 + 0.275008I$ $b = 0.961256 + 0.001853I$	$3.34417 - 7.71939I$	0
$u = -0.589457 - 1.073090I$ $a = -1.244540 - 0.275008I$ $b = 0.961256 - 0.001853I$	$3.34417 + 7.71939I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.549505 + 1.110860I$ $a = -1.83815 - 0.80102I$ $b = 0.00021 + 1.66667I$	$15.3513 - 1.9660I$	0
$u = -0.549505 - 1.110860I$ $a = -1.83815 + 0.80102I$ $b = 0.00021 - 1.66667I$	$15.3513 + 1.9660I$	0
$u = -0.531675 + 1.124370I$ $a = 1.60443 + 1.00348I$ $b = -0.22168 - 1.70090I$	$15.1502 - 5.8509I$	0
$u = -0.531675 - 1.124370I$ $a = 1.60443 - 1.00348I$ $b = -0.22168 + 1.70090I$	$15.1502 + 5.8509I$	0
$u = -0.659458 + 1.055530I$ $a = -1.084660 + 0.021855I$ $b = 0.511231 + 0.533981I$	$0.76357 - 2.89451I$	0
$u = -0.659458 - 1.055530I$ $a = -1.084660 - 0.021855I$ $b = 0.511231 - 0.533981I$	$0.76357 + 2.89451I$	0
$u = -0.768976 + 0.991373I$ $a = 0.538655 - 0.226066I$ $b = -0.338115 + 0.361457I$	$1.20575 - 3.22169I$	0
$u = -0.768976 - 0.991373I$ $a = 0.538655 + 0.226066I$ $b = -0.338115 - 0.361457I$	$1.20575 + 3.22169I$	0
$u = 0.515057 + 1.166160I$ $a = 0.335827 + 0.059039I$ $b = 0.051286 + 0.785007I$	$0.420526 + 1.222690I$	0
$u = 0.515057 - 1.166160I$ $a = 0.335827 - 0.059039I$ $b = 0.051286 - 0.785007I$	$0.420526 - 1.222690I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.589468+1.138130I$ $a=\ \ 1.40884+0.26786I$ $b=-0.393655-0.809318I$	$1.81506-7.57460I$	0
$u=-0.589468-1.138130I$ $a=\ \ 1.40884-0.26786I$ $b=-0.393655+0.809318I$	$1.81506+7.57460I$	0
$u=-0.506572+0.508924I$ $a=-0.051904+0.850237I$ $b=\ \ 0.03144+1.76394I$	$17.2962-2.4742I$	$11.19134+0.I$
$u=-0.506572-0.508924I$ $a=-0.051904-0.850237I$ $b=\ \ 0.03144-1.76394I$	$17.2962+2.4742I$	$11.19134+0.I$
$u=-0.581550+0.398663I$ $a=\ \ 1.14962-1.44411I$ $b=-0.673429+0.256729I$	$5.22564+2.91137I$	0
$u=-0.581550-0.398663I$ $a=\ \ 1.14962+1.44411I$ $b=-0.673429-0.256729I$	$5.22564-2.91137I$	0
$u=-0.702104$ $a=\ \ 0.0149403$ $b=-0.530668$	2.36953	2.18680
$u=-0.463096+0.517128I$ $a=\ \ 0.332312+0.276180I$ $b=\ \ 0.12648-1.81097I$	$17.1693+1.5821I$	$9.06677+0.I$
$u=-0.463096-0.517128I$ $a=\ \ 0.332312-0.276180I$ $b=\ \ 0.12648+1.81097I$	$17.1693-1.5821I$	$9.06677+0.I$
$u=-0.801464+1.091750I$ $a=\ \ 0.675727-0.239048I$ $b=\ \ 0.00436-1.65785I$	$9.04989-1.08392I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.801464 - 1.091750I$ $a = 0.675727 + 0.239048I$ $b = 0.00436 + 1.65785I$	$9.04989 + 1.08392I$	0
$u = 0.624243 + 0.143897I$ $a = -0.08781 - 1.43506I$ $b = -0.356900 - 0.747079I$	$4.58359 - 3.00778I$	$6.62264 + 3.57380I$
$u = 0.624243 - 0.143897I$ $a = -0.08781 + 1.43506I$ $b = -0.356900 + 0.747079I$	$4.58359 + 3.00778I$	$6.62264 - 3.57380I$
$u = 0.979074 + 0.954928I$ $a = 0.873271 + 0.389712I$ $b = -0.226664 + 0.654722I$	$1.98964 + 5.22706I$	0
$u = 0.979074 - 0.954928I$ $a = 0.873271 - 0.389712I$ $b = -0.226664 - 0.654722I$	$1.98964 - 5.22706I$	0
$u = -0.170217 + 0.587957I$ $a = 1.45135 - 1.04929I$ $b = -0.255308 + 1.266040I$	$3.88298 - 1.55898I$	$2.33887 - 0.69081I$
$u = -0.170217 - 0.587957I$ $a = 1.45135 + 1.04929I$ $b = -0.255308 - 1.266040I$	$3.88298 + 1.55898I$	$2.33887 + 0.69081I$
$u = 0.715900 + 1.193850I$ $a = -1.346340 + 0.033763I$ $b = 0.639205 - 0.960912I$	$6.2881 + 12.9738I$	0
$u = 0.715900 - 1.193850I$ $a = -1.346340 - 0.033763I$ $b = 0.639205 + 0.960912I$	$6.2881 - 12.9738I$	0
$u = 0.67679 + 1.27080I$ $a = 1.44713 - 0.52505I$ $b = -0.10486 + 1.66021I$	$10.40900 + 9.46041I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.67679 - 1.27080I$ $a = 1.44713 + 0.52505I$ $b = -0.10486 - 1.66021I$	$10.40900 - 9.46041I$	0
$u = -0.423191 + 0.323713I$ $a = 3.90741 - 1.30925I$ $b = -0.13775 - 1.60269I$	$12.29310 - 4.85069I$	$9.24802 - 1.64947I$
$u = -0.423191 - 0.323713I$ $a = 3.90741 + 1.30925I$ $b = -0.13775 + 1.60269I$	$12.29310 + 4.85069I$	$9.24802 + 1.64947I$
$u = -1.35319 + 0.57009I$ $a = -0.031654 + 0.202799I$ $b = -0.12478 + 1.68712I$	$17.7750 + 8.6970I$	0
$u = -1.35319 - 0.57009I$ $a = -0.031654 - 0.202799I$ $b = -0.12478 - 1.68712I$	$17.7750 - 8.6970I$	0
$u = -1.12186 + 1.01046I$ $a = 1.081980 - 0.402723I$ $b = -0.06024 - 1.62586I$	$9.99812 - 6.26694I$	0
$u = -1.12186 - 1.01046I$ $a = 1.081980 + 0.402723I$ $b = -0.06024 + 1.62586I$	$9.99812 + 6.26694I$	0
$u = -0.82772 + 1.26829I$ $a = -1.386850 - 0.218529I$ $b = 0.18650 + 1.70350I$	$15.4171 - 16.2612I$	0
$u = -0.82772 - 1.26829I$ $a = -1.386850 + 0.218529I$ $b = 0.18650 - 1.70350I$	$15.4171 + 16.2612I$	0
$u = 0.99647 + 1.17539I$ $a = -1.077440 - 0.029336I$ $b = 0.13006 - 1.53156I$	$7.61147 + 5.15881I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.99647 - 1.17539I$ $a = -1.077440 + 0.029336I$ $b = 0.13006 + 1.53156I$	$7.61147 - 5.15881I$	0
$u = -0.31946 + 1.54507I$ $a = -0.290904 - 0.491644I$ $b = 0.169497 + 0.576494I$	$-0.45796 - 2.24296I$	0
$u = -0.31946 - 1.54507I$ $a = -0.290904 + 0.491644I$ $b = 0.169497 - 0.576494I$	$-0.45796 + 2.24296I$	0
$u = -0.094450 + 0.347629I$ $a = -1.083060 + 0.027982I$ $b = 0.238061 + 0.385513I$	$0.057577 - 0.845749I$	$1.55782 + 7.91922I$
$u = -0.094450 - 0.347629I$ $a = -1.083060 - 0.027982I$ $b = 0.238061 - 0.385513I$	$0.057577 + 0.845749I$	$1.55782 - 7.91922I$
$u = -0.223590 + 0.185780I$ $a = -5.03850 + 2.68271I$ $b = -0.298899 - 0.397572I$	$4.99353 - 2.88874I$	$8.80025 + 0.08168I$
$u = -0.223590 - 0.185780I$ $a = -5.03850 - 2.68271I$ $b = -0.298899 + 0.397572I$	$4.99353 + 2.88874I$	$8.80025 - 0.08168I$
$u = 0.31568 + 1.73340I$ $a = -0.334268 + 0.795016I$ $b = 0.04940 - 1.61951I$	$7.34037 + 3.05784I$	0
$u = 0.31568 - 1.73340I$ $a = -0.334268 - 0.795016I$ $b = 0.04940 + 1.61951I$	$7.34037 - 3.05784I$	0

II.

$\boldsymbol{I_2^u = \langle 1.42\times 10^9u^{23} - 5.92\times 10^9u^{22} + \cdots + 1.62\times 10^9 b - 1.47\times 10^{10},\ 6.29\times 10^8u^{23} - 2.39\times 10^9u^{22} + \cdots + 1.62\times 10^9 a + 1.03\times 10^9,\ u^{24} - 2u^{23} + \cdots + 12u^2 + 1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -0.389388u^{23} + 1.48155u^{22} + \cdots - 8.36240u - 0.635643 \\ -0.880265u^{23} + 3.65967u^{22} + \cdots - 10.7223u + 9.11906 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.11029u^{23} - 8.99250u^{22} + \cdots + 24.0625u - 15.9479 \\ 1.70130u^{23} - 2.71489u^{22} + \cdots + 12.0591u + 6.90850 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.353192u^{23} + 1.58262u^{22} + \cdots - 4.71894u - 6.32017 \\ 0.765620u^{23} - 5.19111u^{22} + \cdots + 18.5226u - 12.7397 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.39273u^{23} - 7.92747u^{22} + \cdots + 24.2810u - 10.6853 \\ 1.90068u^{23} - 1.92430u^{22} + \cdots + 11.9952u + 10.5412 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 5.67983u^{23} - 11.0065u^{22} + \cdots + 26.9581u + 9.71894 \\ 9.11906u^{23} - 17.3579u^{22} + \cdots + 26.2790u + 10.7223 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.26965u^{23} + 5.14122u^{22} + \cdots - 19.0847u + 8.48342 \\ -0.880265u^{23} + 3.65967u^{22} + \cdots - 10.7223u + 9.11906 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -4.58438u^{23} + 11.7095u^{22} + \cdots - 30.7654u + 6.86722 \\ -2.80359u^{23} + 4.69072u^{22} + \cdots - 10.2783u - 10.3657 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2.43201u^{23} + 2.14260u^{22} + \cdots + 2.81556u - 20.2898 \\ 1.88026u^{23} - 5.65967u^{22} + \cdots + 22.7223u - 9.11906 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{4436334991}{1616424857}u^{23} + \frac{15330129255}{1616424857}u^{22} + \cdots + \frac{4498778865}{1616424857}u - \frac{12543205522}{1616424857}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 4u^{23} + \cdots - 4u + 1$
c_2	$u^{24} - 8u^{22} + \cdots - u + 1$
c_3	$u^{24} + 2u^{22} + \cdots + u + 1$
c_4	$u^{24} + 4u^{23} + \cdots + 4u + 1$
c_5	$u^{24} - 2u^{23} + \cdots + 12u^2 + 1$
c_6, c_7	$u^{24} + 17u^{22} + \cdots - 4u + 1$
c_8	$u^{24} - 8u^{22} + \cdots + u + 1$
c_9	$u^{24} + 2u^{23} + \cdots + 12u^2 + 1$
c_{10}	$u^{24} - 4u^{23} + \cdots + 4u + 5$
c_{11}, c_{12}	$u^{24} + 17u^{22} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{24} + 16y^{23} + \cdots + 16y + 1$
c_2, c_8	$y^{24} - 16y^{23} + \cdots - 13y + 1$
c_3	$y^{24} + 4y^{23} + \cdots + 19y + 1$
c_5, c_9	$y^{24} + 18y^{23} + \cdots + 24y + 1$
c_6, c_7, c_{11} c_{12}	$y^{24} + 34y^{23} + \cdots + 26y + 1$
c_{10}	$y^{24} - 6y^{23} + \cdots - 346y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.160272 + 0.928469I$ $a = -1.48454 + 0.01654I$ $b = 0.187858 + 0.598400I$	$-2.18760 - 0.64012I$	$-1.24511 - 1.80764I$
$u = -0.160272 - 0.928469I$ $a = -1.48454 - 0.01654I$ $b = 0.187858 - 0.598400I$	$-2.18760 + 0.64012I$	$-1.24511 + 1.80764I$
$u = 0.449040 + 0.963265I$ $a = -1.374540 - 0.019153I$ $b = 0.07046 - 1.59657I$	$5.47588 + 1.65777I$	$-0.454623 - 0.548546I$
$u = 0.449040 - 0.963265I$ $a = -1.374540 + 0.019153I$ $b = 0.07046 + 1.59657I$	$5.47588 - 1.65777I$	$-0.454623 + 0.548546I$
$u = -0.570467 + 0.684424I$ $a = 2.89524 - 0.16670I$ $b = -0.12530 - 1.60732I$	$12.16410 - 5.54266I$	$6.98587 + 8.56567I$
$u = -0.570467 - 0.684424I$ $a = 2.89524 + 0.16670I$ $b = -0.12530 + 1.60732I$	$12.16410 + 5.54266I$	$6.98587 - 8.56567I$
$u = 0.479555 + 0.732326I$ $a = -0.374615 - 0.620422I$ $b = 0.279898 + 1.199200I$	$4.19925 + 2.43243I$	$5.43635 - 6.12529I$
$u = 0.479555 - 0.732326I$ $a = -0.374615 + 0.620422I$ $b = 0.279898 - 1.199200I$	$4.19925 - 2.43243I$	$5.43635 + 6.12529I$
$u = 0.350221 + 0.650854I$ $a = 3.00312 - 0.00735I$ $b = -0.448895 + 0.507705I$	$4.69789 + 3.44732I$	$2.06092 - 10.54280I$
$u = 0.350221 - 0.650854I$ $a = 3.00312 + 0.00735I$ $b = -0.448895 - 0.507705I$	$4.69789 - 3.44732I$	$2.06092 + 10.54280I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.822122 + 0.970775I$ $a = -0.912075 + 0.262087I$ $b = 0.275719 + 0.278983I$	$1.15532 - 4.50171I$	$2.54279 + 5.83668I$
$u = -0.822122 - 0.970775I$ $a = -0.912075 - 0.262087I$ $b = 0.275719 - 0.278983I$	$1.15532 + 4.50171I$	$2.54279 - 5.83668I$
$u = 0.294306 + 1.281330I$ $a = 0.416939 - 1.037610I$ $b = 0.078720 + 1.178880I$	$1.85656 + 1.20382I$	$8.09771 + 0.42923I$
$u = 0.294306 - 1.281330I$ $a = 0.416939 + 1.037610I$ $b = 0.078720 - 1.178880I$	$1.85656 - 1.20382I$	$8.09771 - 0.42923I$
$u = -0.105806 + 0.578997I$ $a = 2.63514 - 0.23656I$ $b = -0.470964 + 0.978144I$	$6.19126 - 0.16242I$	$5.95278 - 0.65654I$
$u = -0.105806 - 0.578997I$ $a = 2.63514 + 0.23656I$ $b = -0.470964 - 0.978144I$	$6.19126 + 0.16242I$	$5.95278 + 0.65654I$
$u = -0.39847 + 1.46021I$ $a = -0.019571 + 0.179554I$ $b = 0.103475 + 0.331589I$	$-0.91882 - 1.89712I$	$-5.02429 - 0.65918I$
$u = -0.39847 - 1.46021I$ $a = -0.019571 - 0.179554I$ $b = 0.103475 - 0.331589I$	$-0.91882 + 1.89712I$	$-5.02429 + 0.65918I$
$u = -0.106329 + 0.426026I$ $a = 1.48004 - 0.33083I$ $b = -0.07142 - 1.80067I$	$16.6857 - 2.1538I$	$0.41567 + 2.69228I$
$u = -0.106329 - 0.426026I$ $a = 1.48004 + 0.33083I$ $b = -0.07142 + 1.80067I$	$16.6857 + 2.1538I$	$0.41567 - 2.69228I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.09903 + 1.18765I$ $a = -0.987243 - 0.118597I$ $b = 0.08478 - 1.52295I$	$7.48218 + 5.77748I$	$3.90381 - 10.03254I$
$u = 1.09903 - 1.18765I$ $a = -0.987243 + 0.118597I$ $b = 0.08478 + 1.52295I$	$7.48218 - 5.77748I$	$3.90381 + 10.03254I$
$u = 0.49131 + 1.56091I$ $a = -0.277906 + 0.238179I$ $b = 0.03567 - 1.54322I$	$5.70577 + 2.41144I$	$-1.17187 - 2.39550I$
$u = 0.49131 - 1.56091I$ $a = -0.277906 - 0.238179I$ $b = 0.03567 + 1.54322I$	$5.70577 - 2.41144I$	$-1.17187 + 2.39550I$

III. $\boldsymbol{I_3^u = \langle a^5u - 6a^3u + \cdots - 6a - 4,\ -3a^3u + 3a^2u + \cdots + 3a - 2,\ u^2 - u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{12} + 4u^{10} + \cdots - 10u + 7$
c_2, c_8	$u^{12} - 4u^{10} + \cdots + 20u + 7$
c_3	$u^{12} - 8u^{11} + \cdots - 8u^2 + 1$
c_5, c_9	$(u^2 + u + 1)^6$
c_6, c_7, c_{11} c_{12}	$u^{12} + 8u^{10} + \cdots - 6u + 13$
c_{10}	$(u + 1)^{12}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{12} + 8y^{11} + \cdots + 292y + 49$
c_2, c_8	$y^{12} - 8y^{11} + \cdots - 120y + 49$
c_3	$y^{12} - 8y^{11} + \cdots - 16y + 1$
c_5, c_9	$(y^2 + y + 1)^6$
c_6, c_7, c_{11} c_{12}	$y^{12} + 16y^{11} + \cdots + 1108y + 169$
c_{10}	$(y-1)^{12}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.724321 - 0.650848I$ $b = 0.719959 + 1.112490I$	$6.57974 + 2.02988I$	$8.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -1.032580 + 0.148538I$ $b = 0.07514 - 1.53325I$	$6.57974 + 2.02988I$	$8.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -0.110864 - 0.292048I$ $b = 0.030499 - 1.218920I$	$6.57974 + 2.02988I$	$8.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 1.84992 + 0.64143I$ $b = -0.04911 + 1.65057I$	$6.57974 + 2.02988I$	$8.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 2.03582 - 0.30303I$ $b = -0.744942 + 0.795979I$	$6.57974 + 2.02988I$	$8.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -2.01797 + 0.45596I$ $b = -0.031549 - 0.806876I$	$6.57974 + 2.02988I$	$8.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.724321 + 0.650848I$ $b = 0.719959 - 1.112490I$	$6.57974 - 2.02988I$	$8.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -1.032580 - 0.148538I$ $b = 0.07514 + 1.53325I$	$6.57974 - 2.02988I$	$8.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.110864 + 0.292048I$ $b = 0.030499 + 1.218920I$	$6.57974 - 2.02988I$	$8.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 1.84992 - 0.64143I$ $b = -0.04911 - 1.65057I$	$6.57974 - 2.02988I$	$8.00000 + 3.46410I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 - 0.866025I$ $a = 2.03582 + 0.30303I$ $b = -0.744942 - 0.795979I$	$6.57974 - 2.02988I$	$8.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -2.01797 - 0.45596I$ $b = -0.031549 + 0.806876I$	$6.57974 - 2.02988I$	$8.00000 + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{12}+4u^{10}+\cdots-10u+7)(u^{24}-4u^{23}+\cdots-4u+1)$ $\cdot(u^{79}-5u^{78}+\cdots+212u-41)$
c_2	$(u^{12}-4u^{10}+\cdots+20u+7)(u^{24}-8u^{22}+\cdots-u+1)$ $\cdot(u^{79}-u^{78}+\cdots+765u-241)$
c_3	$(u^{12}-8u^{11}+\cdots-8u^2+1)(u^{24}+2u^{22}+\cdots+u+1)$ $\cdot(u^{79}+9u^{78}+\cdots+2805u-271)$
c_4	$(u^{12}+4u^{10}+\cdots-10u+7)(u^{24}+4u^{23}+\cdots+4u+1)$ $\cdot(u^{79}-5u^{78}+\cdots+212u-41)$
c_5	$((u^2+u+1)^6)(u^{24}-2u^{23}+\cdots+12u^2+1)$ $\cdot(u^{79}-9u^{78}+\cdots+312u-16)$
c_6, c_7	$(u^{12}+8u^{10}+\cdots-6u+13)(u^{24}+17u^{22}+\cdots-4u+1)$ $\cdot(u^{79}+u^{78}+\cdots+56u-11)$
c_8	$(u^{12}-4u^{10}+\cdots+20u+7)(u^{24}-8u^{22}+\cdots+u+1)$ $\cdot(u^{79}-u^{78}+\cdots+765u-241)$
c_9	$((u^2+u+1)^6)(u^{24}+2u^{23}+\cdots+12u^2+1)$ $\cdot(u^{79}-9u^{78}+\cdots+312u-16)$
c_{10}	$((u+1)^{12})(u^{24}-4u^{23}+\cdots+4u+5)$ $\cdot(u^{79}-15u^{78}+\cdots-99261632u+6792448)$
c_{11}, c_{12}	$(u^{12}+8u^{10}+\cdots-6u+13)(u^{24}+17u^{22}+\cdots+4u+1)$ $\cdot(u^{79}+u^{78}+\cdots+56u-11)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{12} + 8y^{11} + \cdots + 292y + 49)(y^{24} + 16y^{23} + \cdots + 16y + 1)$ $\cdot (y^{79} + 55y^{78} + \cdots - 61082y - 1681)$
c_2, c_8	$(y^{12} - 8y^{11} + \cdots - 120y + 49)(y^{24} - 16y^{23} + \cdots - 13y + 1)$ $\cdot (y^{79} - 61y^{78} + \cdots + 942387y - 58081)$
c_3	$(y^{12} - 8y^{11} + \cdots - 16y + 1)(y^{24} + 4y^{23} + \cdots + 19y + 1)$ $\cdot (y^{79} - 5y^{78} + \cdots + 2781355y - 73441)$
c_5, c_9	$((y^2 + y + 1)^6)(y^{24} + 18y^{23} + \cdots + 24y + 1)$ $\cdot (y^{79} + 39y^{78} + \cdots - 4928y - 256)$
c_6, c_7, c_{11} c_{12}	$(y^{12} + 16y^{11} + \cdots + 1108y + 169)(y^{24} + 34y^{23} + \cdots + 26y + 1)$ $\cdot (y^{79} + 101y^{78} + \cdots - 2100y - 121)$
c_{10}	$((y-1)^{12})(y^{24} - 6y^{23} + \cdots - 346y + 25)$ $\cdot (y^{79} - 39y^{78} + \cdots + 546186244640768y - 46137349832704)$