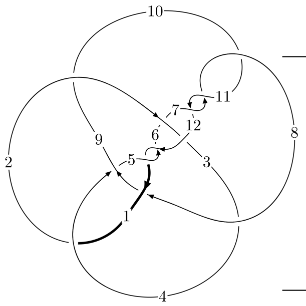
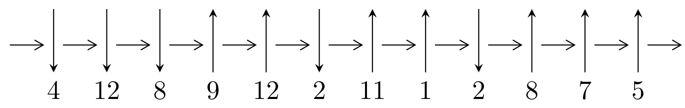
$12n_{0745}$ ($K12n_{0745}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -7.72392 \times 10^{20} u^{31} - 1.85563 \times 10^{20} u^{30} + \cdots + 1.12162 \times 10^{21} b + 1.59649 \times 10^{21},\ a - 1, \\
&\quad u^{32} - u^{30} + \cdots - 2u + 1 \rangle \\
I_2^u &= \langle -1.04878 \times 10^{64} u^{47} - 4.13535 \times 10^{64} u^{46} + \cdots + 4.36700 \times 10^{65} b + 2.54209 \times 10^{65}, \\
&\quad - 6.42157 \times 10^{113} u^{47} - 2.04396 \times 10^{114} u^{46} + \cdots + 2.06184 \times 10^{114} a - 4.26495 \times 10^{114}, \\
&\quad u^{48} + 3u^{47} + \cdots - 8u + 4 \rangle \\
I_3^u &= \langle -4169 u^{17} - 110 u^{16} + \cdots + 1711 b + 2133,\ a + 1,\ u^{18} + 4u^{16} + \cdots - u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 98 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. $I_1^u = \langle -7.72 \times 10^{20} u^{31} - 1.86 \times 10^{20} u^{30} + \cdots + 1.12 \times 10^{21} b + 1.60 \times 10^{21},\ a - 1,\ u^{32} - u^{30} + \cdots - 2u + 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 1 \\ 0.688642u^{31} + 0.165443u^{30} + \cdots + 2.18437u - 1.42339 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.688642u^{31} - 0.165443u^{30} + \cdots - 2.18437u + 2.42339 \\ 0.608785u^{31} + 0.235945u^{30} + \cdots + 2.54213u - 1.25794 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.678532u^{31} + 0.284449u^{30} + \cdots + 1.99493u - 1.92526 \\ -0.695736u^{31} - 0.103896u^{30} + \cdots - 2.15066u + 0.952167 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -0.165443u^{31} - 0.0798571u^{30} + \cdots + 1.04610u + 0.688642 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.0798571u^{31} + 0.0705021u^{30} + \cdots + 0.357757u + 1.16544 \\ 0.220463u^{31} - 0.127057u^{30} + \cdots - 0.347333u - 0.749034 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.688642u^{31} - 0.165443u^{30} + \cdots - 2.18437u + 2.42339 \\ 0.688642u^{31} + 0.165443u^{30} + \cdots + 2.18437u - 1.42339 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.07690u^{31} - 0.654094u^{30} + \cdots - 8.58223u + 0.101317 \\ 0.388260u^{31} + 0.488651u^{30} + \cdots + 6.39786u + 2.32207 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.390513u^{31} - 0.541351u^{30} + \cdots - 6.51468u - 1.02957 \\ 0.00795809u^{31} + 0.188677u^{30} + \cdots + 3.52208u + 2.59118 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.657110u^{31} + 0.487486u^{30} + \cdots + 2.71903u - 2.58761 \\ -1.04986u^{31} - 0.281223u^{30} + \cdots - 4.71166u + 1.64877 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{5229796107208695447003}{1121615042862392489704} u^{31} - \frac{7151842733165833295335}{1121615042862392489704} u^{30} + \cdots - \frac{8046640764422946709729}{1121615042862392489704} u + \frac{1349461904188813944858}{140201880357799061213}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 20u^{31} + \cdots - 30u + 4$
c_2, c_6	$u^{32} + 3u^{31} + \cdots + 4u + 1$
c_3, c_9	$u^{32} - u^{31} + \cdots - 4u + 1$
c_4, c_8	$u^{32} - u^{30} + \cdots - 2u + 1$
c_5, c_{12}	$u^{32} - 22u^{31} + \cdots - 65536u + 4096$
c_7, c_{10}, c_{11}	$u^{32} + 9u^{31} + \cdots + 84u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} + 6y^{31} + \cdots + 52y + 16$
c_2, c_6	$y^{32} + 31y^{31} + \cdots + 16y + 1$
c_3, c_9	$y^{32} + 3y^{31} + \cdots + 28y + 1$
c_4, c_8	$y^{32} - 2y^{31} + \cdots - 6y + 1$
c_5, c_{12}	$y^{32} + 20y^{31} + \cdots - 58720256y + 16777216$
c_7, c_{10}, c_{11}	$y^{32} + 29y^{31} + \cdots + 976y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.854141 + 0.589787I$ $a = 1.00000$ $b = 1.61917 - 0.24070I$	$1.65554 + 9.31216I$	$1.84214 - 8.38213I$
$u = 0.854141 - 0.589787I$ $a = 1.00000$ $b = 1.61917 + 0.24070I$	$1.65554 - 9.31216I$	$1.84214 + 8.38213I$
$u = -0.681898 + 0.783221I$ $a = 1.00000$ $b = 1.05126 - 1.11867I$	$-2.14431 - 0.79389I$	$-0.82722 + 2.16238I$
$u = -0.681898 - 0.783221I$ $a = 1.00000$ $b = 1.05126 + 1.11867I$	$-2.14431 + 0.79389I$	$-0.82722 - 2.16238I$
$u = -0.890039 + 0.585697I$ $a = 1.00000$ $b = 1.43226 + 0.19100I$	$6.67694 - 4.51179I$	$6.15098 + 5.45447I$
$u = -0.890039 - 0.585697I$ $a = 1.00000$ $b = 1.43226 - 0.19100I$	$6.67694 + 4.51179I$	$6.15098 - 5.45447I$
$u = 0.916035 + 0.550973I$ $a = 1.00000$ $b = 1.219860 - 0.165666I$	$3.73962 - 0.48491I$	$4.20188 - 0.50541I$
$u = 0.916035 - 0.550973I$ $a = 1.00000$ $b = 1.219860 + 0.165666I$	$3.73962 + 0.48491I$	$4.20188 + 0.50541I$
$u = 0.431637 + 0.743730I$ $a = 1.00000$ $b = 0.92824 + 1.35316I$	$1.65395 + 4.46956I$	$0.48829 - 7.44725I$
$u = 0.431637 - 0.743730I$ $a = 1.00000$ $b = 0.92824 - 1.35316I$	$1.65395 - 4.46956I$	$0.48829 + 7.44725I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.024610 + 0.504956I$ $a = 1.00000$ $b = 0.533957 + 0.881464I$	$-1.70935 + 1.94531I$	$-0.00275 - 3.34094I$
$u = 1.024610 - 0.504956I$ $a = 1.00000$ $b = 0.533957 - 0.881464I$	$-1.70935 - 1.94531I$	$-0.00275 + 3.34094I$
$u = -0.777247 + 0.867459I$ $a = 1.00000$ $b = 0.179266 - 0.950489I$	$-1.94782 - 2.84531I$	$-1.95741 + 3.32411I$
$u = -0.777247 - 0.867459I$ $a = 1.00000$ $b = 0.179266 + 0.950489I$	$-1.94782 + 2.84531I$	$-1.95741 - 3.32411I$
$u = -0.283223 + 0.764433I$ $a = 1.00000$ $b = 1.02191 - 1.47989I$	$-2.68020 - 8.65463I$	$-5.91760 + 9.44360I$
$u = -0.283223 - 0.764433I$ $a = 1.00000$ $b = 1.02191 + 1.47989I$	$-2.68020 + 8.65463I$	$-5.91760 - 9.44360I$
$u = -0.809344 + 0.018130I$ $a = 1.00000$ $b = 0.415210 + 0.522569I$	$-1.03206 + 2.11233I$	$2.04339 - 4.47982I$
$u = -0.809344 - 0.018130I$ $a = 1.00000$ $b = 0.415210 - 0.522569I$	$-1.03206 - 2.11233I$	$2.04339 + 4.47982I$
$u = 0.659843 + 0.411748I$ $a = 1.00000$ $b = 0.448371 + 0.082927I$	$1.117840 + 0.605282I$	$7.12622 - 1.99848I$
$u = 0.659843 - 0.411748I$ $a = 1.00000$ $b = 0.448371 - 0.082927I$	$1.117840 - 0.605282I$	$7.12622 + 1.99848I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.561882 + 0.315219I$ $a = 1.00000$ $b = 0.234400 - 1.066140I$	$-1.17379 - 1.66385I$	$-1.34708 + 4.23096I$
$u = -0.561882 - 0.315219I$ $a = 1.00000$ $b = 0.234400 + 1.066140I$	$-1.17379 + 1.66385I$	$-1.34708 - 4.23096I$
$u = 0.92006 + 1.19321I$ $a = 1.00000$ $b = 0.11932 + 1.69118I$	$-11.89360 + 4.45420I$	$10.94466 + 4.53535I$
$u = 0.92006 - 1.19321I$ $a = 1.00000$ $b = 0.11932 - 1.69118I$	$-11.89360 - 4.45420I$	$10.94466 - 4.53535I$
$u = -1.06882 + 1.12604I$ $a = 1.00000$ $b = 0.64807 - 1.43272I$	$-0.30085 - 6.14505I$	$2.00000 + 4.65224I$
$u = -1.06882 - 1.12604I$ $a = 1.00000$ $b = 0.64807 + 1.43272I$	$-0.30085 + 6.14505I$	$2.00000 - 4.65224I$
$u = 1.08392 + 1.16200I$ $a = 1.00000$ $b = 0.74928 + 1.40670I$	$2.88862 + 11.98220I$	$2.00000 - 7.44446I$
$u = 1.08392 - 1.16200I$ $a = 1.00000$ $b = 0.74928 - 1.40670I$	$2.88862 - 11.98220I$	$2.00000 + 7.44446I$
$u = -1.07590 + 1.18845I$ $a = 1.00000$ $b = 0.80706 - 1.39926I$	$-1.9477 - 17.3570I$	$0. + 9.21229I$
$u = -1.07590 - 1.18845I$ $a = 1.00000$ $b = 0.80706 + 1.39926I$	$-1.9477 + 17.3570I$	$0. - 9.21229I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.258111 + 0.252796I$ $a = \quad 1.00000$ $b = -0.40763 + 2.09525I$	$-7.70724 + 1.01308I$	$5.62144 - 11.03014I$
$u = \quad 0.258111 - 0.252796I$ $a = \quad 1.00000$ $b = -0.40763 - 2.09525I$	$-7.70724 - 1.01308I$	$5.62144 + 11.03014I$

II. $\boldsymbol{I_2^u = \langle -1.05\times 10^{64}u^{47} - 4.14\times 10^{64}u^{46} + \cdots + 4.37\times 10^{65}b + 2.54\times 10^{65},\ -6.42\times 10^{113}u^{47} - 2.04\times 10^{114}u^{46} + \cdots + 2.06\times 10^{114}a - 4.26\times 10^{114},\ u^{48} + 3u^{47} + \cdots - 8u + 4\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 0.311449u^{47} + 0.991329u^{46} + \cdots + 0.847152u + 2.06852 \\ 0.0240161u^{47} + 0.0946955u^{46} + \cdots - 0.639391u - 0.582113 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.278120u^{47} + 0.883581u^{46} + \cdots + 0.696600u + 2.42270 \\ 0.0496330u^{47} + 0.175946u^{46} + \cdots - 0.568159u - 0.551070 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.735175u^{47} - 1.98945u^{46} + \cdots + 26.4077u - 1.01077 \\ 0.198693u^{47} + 0.565009u^{46} + \cdots + 0.667493u - 0.561155 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.516499u^{47} - 1.38596u^{46} + \cdots + 19.5082u - 1.01728 \\ 0.217962u^{47} + 0.585339u^{46} + \cdots + 2.47664u - 0.963807 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.307444u^{47} + 1.10182u^{46} + \cdots - 6.60757u - 0.540466 \\ -0.0564039u^{47} - 0.210594u^{46} + \cdots + 1.90700u - 1.45060 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.287433u^{47} + 0.896634u^{46} + \cdots + 1.48654u + 2.65063 \\ 0.0240161u^{47} + 0.0946955u^{46} + \cdots - 0.639391u - 0.582113 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.216936u^{47} + 0.846122u^{46} + \cdots - 10.5723u + 0.131137 \\ 0.0240161u^{47} + 0.0946955u^{46} + \cdots - 0.639391u + 0.417887 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.374374u^{47} + 1.21541u^{46} + \cdots - 3.68521u + 8.14264 \\ -0.0673151u^{47} - 0.193492u^{46} + \cdots - 0.803336u - 0.737240 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0696329u^{47} - 0.0589159u^{46} + \cdots + 6.42131u - 3.80302 \\ 0.118786u^{47} + 0.364650u^{46} + \cdots - 1.74055u + 0.186064 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.487275u^{47} - 1.61319u^{46} + \cdots + 30.2781u - 4.18524$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{12}+5u^{11}+\cdots+3u^2+1)^4$
c_2, c_6	$u^{48}-u^{47}+\cdots+188u+304$
c_3, c_9	$u^{48}+u^{47}+\cdots-972u+432$
c_4, c_8	$u^{48}+3u^{47}+\cdots-8u+4$
c_5, c_{12}	$(u^2+u+1)^{24}$
c_7, c_{10}, c_{11}	$(u^{12}-3u^{11}+\cdots+2u+1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{12}+y^{11}+\cdots+6y+1)^4$
c_2, c_6	$y^{48}+15y^{47}+\cdots+4909520y+92416$
c_3, c_9	$y^{48}+3y^{47}+\cdots+2702160y+186624$
c_4, c_8	$y^{48}+15y^{47}+\cdots+264y+16$
c_5, c_{12}	$(y^2+y+1)^{24}$
c_7, c_{10}, c_{11}	$(y^{12}+9y^{11}+\cdots-6y+1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.466251 + 0.940882I$ $a = -1.53047 + 0.34796I$ $b = -0.500000 - 0.866025I$	$-6.16619 + 4.56735I$	$-8.43865 - 5.17685I$
$u = 0.466251 - 0.940882I$ $a = -1.53047 - 0.34796I$ $b = -0.500000 + 0.866025I$	$-6.16619 - 4.56735I$	$-8.43865 + 5.17685I$
$u = -0.934419 + 0.170095I$ $a = -1.07506 + 1.58682I$ $b = -0.500000 + 0.866025I$	$0.55801 - 6.49071I$	$5.64801 + 8.19237I$
$u = -0.934419 - 0.170095I$ $a = -1.07506 - 1.58682I$ $b = -0.500000 - 0.866025I$	$0.55801 + 6.49071I$	$5.64801 - 8.19237I$
$u = 0.442095 + 0.991323I$ $a = -0.505636 - 0.363702I$ $b = -0.500000 - 0.866025I$	$-6.16619 - 0.50759I$	$-8.43865 - 1.75135I$
$u = 0.442095 - 0.991323I$ $a = -0.505636 + 0.363702I$ $b = -0.500000 + 0.866025I$	$-6.16619 + 0.50759I$	$-8.43865 + 1.75135I$
$u = -0.924979 + 0.574553I$ $a = 0.624586 - 1.242220I$ $b = -0.500000 - 0.866025I$	$-1.25303 - 4.19921I$	$-2.04009 + 7.81755I$
$u = -0.924979 - 0.574553I$ $a = 0.624586 + 1.242220I$ $b = -0.500000 + 0.866025I$	$-1.25303 + 4.19921I$	$-2.04009 - 7.81755I$
$u = 0.241577 + 1.064520I$ $a = -0.508209 + 0.077004I$ $b = -0.500000 + 0.866025I$	$-4.65197 + 3.37411I$	$-4.52298 - 5.09926I$
$u = 0.241577 - 1.064520I$ $a = -0.508209 - 0.077004I$ $b = -0.500000 - 0.866025I$	$-4.65197 - 3.37411I$	$-4.52298 + 5.09926I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.859240 + 0.201681I$ $a = -0.00624 + 2.08104I$ $b = -0.500000 + 0.866025I$	$3.58098 - 1.11020I$	$9.53074 - 3.71786I$
$u = 0.859240 - 0.201681I$ $a = -0.00624 - 2.08104I$ $b = -0.500000 - 0.866025I$	$3.58098 + 1.11020I$	$9.53074 + 3.71786I$
$u = -0.839585 + 0.875884I$ $a = -1.252350 + 0.217188I$ $b = -0.500000 + 0.866025I$	$-1.93740 - 5.36645I$	0
$u = -0.839585 - 0.875884I$ $a = -1.252350 - 0.217188I$ $b = -0.500000 - 0.866025I$	$-1.93740 + 5.36645I$	0
$u = -0.284359 + 0.711335I$ $a = -0.603734 + 0.347904I$ $b = -0.500000 - 0.866025I$	$-1.93740 - 1.30669I$	$3.82297 - 1.53987I$
$u = -0.284359 - 0.711335I$ $a = -0.603734 - 0.347904I$ $b = -0.500000 + 0.866025I$	$-1.93740 + 1.30669I$	$3.82297 + 1.53987I$
$u = 0.137007 + 0.662039I$ $a = -1.30336 - 0.93751I$ $b = -0.500000 + 0.866025I$	$-6.16619 + 0.50759I$	$-8.43865 + 1.75135I$
$u = 0.137007 - 0.662039I$ $a = -1.30336 + 0.93751I$ $b = -0.500000 - 0.866025I$	$-6.16619 - 0.50759I$	$-8.43865 - 1.75135I$
$u = -0.204744 + 0.522394I$ $a = -1.92353 + 0.29146I$ $b = -0.500000 - 0.866025I$	$-4.65197 - 3.37411I$	$-4.52298 + 5.09926I$
$u = -0.204744 - 0.522394I$ $a = -1.92353 - 0.29146I$ $b = -0.500000 + 0.866025I$	$-4.65197 + 3.37411I$	$-4.52298 - 5.09926I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.66481+1.27906I$ $a=-0.957832-0.374579I$ $b=-0.500000+0.866025I$	$-4.65197-7.43387I$	0
$u=-0.66481-1.27906I$ $a=-0.957832+0.374579I$ $b=-0.500000-0.866025I$	$-4.65197+7.43387I$	0
$u=-0.075799+0.528387I$ $a=-1.24345+0.71654I$ $b=-0.500000+0.866025I$	$-1.93740+1.30669I$	$3.82297+1.53987I$
$u=-0.075799-0.528387I$ $a=-1.24345-0.71654I$ $b=-0.500000-0.866025I$	$-1.93740-1.30669I$	$3.82297-1.53987I$
$u=\quad 1.11589+0.97610I$ $a=-0.905536-0.354128I$ $b=-0.500000-0.866025I$	$-4.65197+7.43387I$	0
$u=\quad 1.11589-0.97610I$ $a=-0.905536+0.354128I$ $b=-0.500000+0.866025I$	$-4.65197-7.43387I$	0
$u=\quad 0.254089+0.445251I$ $a=\quad 0.55945+4.05431I$ $b=-0.500000-0.866025I$	$-1.25303+8.25898I$	$-2.0401-14.7458I$
$u=\quad 0.254089-0.445251I$ $a=\quad 0.55945-4.05431I$ $b=-0.500000+0.866025I$	$-1.25303-8.25898I$	$-2.0401+14.7458I$
$u=\quad 0.13599+1.50788I$ $a=\quad 0.323082+0.642567I$ $b=-0.500000-0.866025I$	$-1.25303-4.19921I$	0
$u=\quad 0.13599-1.50788I$ $a=\quad 0.323082-0.642567I$ $b=-0.500000+0.866025I$	$-1.25303+4.19921I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.86123 + 1.27926I$ $a = -0.775182 + 0.134435I$ $b = -0.500000 - 0.866025I$	$-1.93740 + 5.36645I$	0
$u = 0.86123 - 1.27926I$ $a = -0.775182 - 0.134435I$ $b = -0.500000 + 0.866025I$	$-1.93740 - 5.36645I$	0
$u = -1.40081 + 0.77138I$ $a = -0.067526 - 0.143827I$ $b = -0.500000 - 0.866025I$	$0.55801 - 2.43094I$	0
$u = -1.40081 - 0.77138I$ $a = -0.067526 + 0.143827I$ $b = -0.500000 + 0.866025I$	$0.55801 + 2.43094I$	0
$u = -0.231026 + 0.304516I$ $a = -0.52387 - 5.30363I$ $b = -0.500000 + 0.866025I$	$3.58098 - 2.94957I$	$9.5307 + 10.6461I$
$u = -0.231026 - 0.304516I$ $a = -0.52387 + 5.30363I$ $b = -0.500000 - 0.866025I$	$3.58098 + 2.94957I$	$9.5307 - 10.6461I$
$u = -1.04097 + 1.27776I$ $a = -0.621280 + 0.141250I$ $b = -0.500000 + 0.866025I$	$-6.16619 - 4.56735I$	0
$u = -1.04097 - 1.27776I$ $a = -0.621280 - 0.141250I$ $b = -0.500000 - 0.866025I$	$-6.16619 + 4.56735I$	0
$u = 0.205537 + 0.149385I$ $a = -2.67472 + 5.69702I$ $b = -0.500000 - 0.866025I$	$0.55801 - 2.43094I$	$5.64801 + 1.26417I$
$u = 0.205537 - 0.149385I$ $a = -2.67472 - 5.69702I$ $b = -0.500000 + 0.866025I$	$0.55801 + 2.43094I$	$5.64801 - 1.26417I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.73464 + 1.66561I$ $a = -0.292633 + 0.431936I$ $b = -0.500000 - 0.866025I$	$0.55801 + 6.49071I$	0
$u = 0.73464 - 1.66561I$ $a = -0.292633 - 0.431936I$ $b = -0.500000 + 0.866025I$	$0.55801 - 6.49071I$	0
$u = -0.42507 + 1.78686I$ $a = -0.001442 - 0.480524I$ $b = -0.500000 + 0.866025I$	$3.58098 - 1.11020I$	0
$u = -0.42507 - 1.78686I$ $a = -0.001442 + 0.480524I$ $b = -0.500000 - 0.866025I$	$3.58098 + 1.11020I$	0
$u = 1.73607 + 1.06575I$ $a = -0.018444 + 0.186728I$ $b = -0.500000 + 0.866025I$	$3.58098 - 2.94957I$	0
$u = 1.73607 - 1.06575I$ $a = -0.018444 - 0.186728I$ $b = -0.500000 - 0.866025I$	$3.58098 + 2.94957I$	0
$u = -1.66304 + 1.27925I$ $a = 0.033399 - 0.242042I$ $b = -0.500000 - 0.866025I$	$-1.25303 + 8.25898I$	0
$u = -1.66304 - 1.27925I$ $a = 0.033399 + 0.242042I$ $b = -0.500000 + 0.866025I$	$-1.25303 - 8.25898I$	0

III.

$$\boldsymbol{I^u_3 = \langle -4169u^{17} - 110u^{16} + \cdots + 1711b + 2133,\ a+1,\ u^{18} + 4u^{16} + \cdots - u + 1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -1 \\ 2.43659u^{17} + 0.0642899u^{16} + \cdots + 11.6990u - 1.24664 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2.43659u^{17} - 0.0642899u^{16} + \cdots - 11.6990u + 0.246639 \\ 2.96259u^{17} + 0.0333139u^{16} + \cdots + 14.0713u - 1.18235 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.904734u^{17} + 0.506721u^{16} + \cdots + 7.40035u + 0.910579 \\ -0.842198u^{17} - 0.109293u^{16} + \cdots - 8.98831u + 1.01929 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ 0.0642899u^{17} - 0.526008u^{16} + \cdots + 2.18995u - 2.43659 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.526008u^{17} + 0.0309760u^{16} + \cdots - 2.37230u + 0.935710 \\ 0.526008u^{17} - 0.0309760u^{16} + \cdots + 2.37230u - 0.935710 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -2.43659u^{17} - 0.0642899u^{16} + \cdots - 11.6990u + 0.246639 \\ 2.43659u^{17} + 0.0642899u^{16} + \cdots + 11.6990u - 1.24664 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.473992u^{17} - 1.03098u^{16} + \cdots - 0.627703u - 6.93571 \\ 2.91058u^{17} + 1.09527u^{16} + \cdots + 12.3267u + 6.68907 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.45587u^{17} - 1.09351u^{16} + \cdots + 9.25599u - 6.27762 \\ 0.0572764u^{17} + 1.16774u^{16} + \cdots - 1.92168u + 7.02922 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.830508u^{17} + 0.932203u^{16} + \cdots + 6.13559u + 2.42373 \\ -1.92577u^{17} - 0.425482u^{16} + \cdots - 14.7352u + 0.486850 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{420}{1711}u^{17} - \frac{3903}{1711}u^{16} + \cdots + \frac{16951}{1711}u - \frac{58693}{1711}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} - 11u^{17} + \cdots + 2u^2 + 1$
c_2, c_6	$u^{18} + 3u^{17} + \cdots - 3u + 1$
c_3, c_9	$u^{18} - u^{17} + \cdots + 3u + 5$
c_4, c_8	$u^{18} + 4u^{16} + \cdots - u + 1$
c_5	$u^{18} + 3u^{17} + \cdots + 16u + 5$
c_7	$u^{18} + 4u^{17} + \cdots + 8u + 1$
c_{10}, c_{11}	$u^{18} - 4u^{17} + \cdots - 8u + 1$
c_{12}	$u^{18} - 3u^{17} + \cdots - 16u + 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} + 5y^{17} + \cdots + 4y + 1$
c_2, c_6	$y^{18} + y^{17} + \cdots - 15y + 1$
c_3, c_9	$y^{18} + y^{17} + \cdots - 139y + 25$
c_4, c_8	$y^{18} + 8y^{17} + \cdots + 19y + 1$
c_5, c_{12}	$y^{18} + 19y^{17} + \cdots + 104y + 25$
c_7, c_{10}, c_{11}	$y^{18} + 20y^{17} + \cdots + 16y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_3	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.227222 + 0.933002I$ $a = -1.00000$ $b = -0.570402 + 0.267582I$	$-5.91735 + 2.24114I$	$-9.01697 - 3.26604I$
$u = 0.227222 - 0.933002I$ $a = -1.00000$ $b = -0.570402 - 0.267582I$	$-5.91735 - 2.24114I$	$-9.01697 + 3.26604I$
$u = 0.636335 + 0.689593I$ $a = -1.00000$ $b = 0.563137 - 0.791150I$	$-1.04432 - 7.37218I$	$-0.40617 + 4.21110I$
$u = 0.636335 - 0.689593I$ $a = -1.00000$ $b = 0.563137 + 0.791150I$	$-1.04432 + 7.37218I$	$-0.40617 - 4.21110I$
$u = -0.664732 + 0.842154I$ $a = -1.00000$ $b = 0.462994 + 0.821976I$	$3.31445 + 2.16551I$	$4.00255 - 1.37120I$
$u = -0.664732 - 0.842154I$ $a = -1.00000$ $b = 0.462994 - 0.821976I$	$3.31445 - 2.16551I$	$4.00255 + 1.37120I$
$u = 0.718055 + 1.007170I$ $a = -1.00000$ $b = 0.358244 - 0.932951I$	$-0.42782 + 3.41794I$	$3.16879 - 3.77825I$
$u = 0.718055 - 1.007170I$ $a = -1.00000$ $b = 0.358244 + 0.932951I$	$-0.42782 - 3.41794I$	$3.16879 + 3.77825I$
$u = -0.112765 + 0.658981I$ $a = -1.00000$ $b = -0.617520 - 0.993221I$	$-2.48715 - 1.52476I$	$-12.11698 + 4.46390I$
$u = -0.112765 - 0.658981I$ $a = -1.00000$ $b = -0.617520 + 0.993221I$	$-2.48715 + 1.52476I$	$-12.11698 - 4.46390I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.821490+1.131200I$ $a=-1.00000$ $b=-0.460000+0.702000I$	$-4.72724-6.31712I$	$-4.50945+3.68152I$
$u=-0.821490-1.131200I$ $a=-1.00000$ $b=-0.460000-0.702000I$	$-4.72724+6.31712I$	$-4.50945-3.68152I$
$u=\ \ 0.868208+1.108810I$ $a=-1.00000$ $b=-0.415489-1.012400I$	$-3.17492+5.22960I$	$-4.69895-4.30954I$
$u=\ \ 0.868208-1.108810I$ $a=-1.00000$ $b=-0.415489+1.012400I$	$-3.17492-5.22960I$	$-4.69895+4.30954I$
$u=-0.89808+1.21515I$ $a=-1.00000$ $b=-0.11100+1.63460I$	$-12.12290-4.59015I$	$-15.2185+10.6507I$
$u=-0.89808-1.21515I$ $a=-1.00000$ $b=-0.11100-1.63460I$	$-12.12290+4.59015I$	$-15.2185-10.6507I$
$u=\ \ 0.047242+0.417816I$ $a=-1.00000$ $b=-0.70996+2.08504I$	$-7.95638+0.90560I$	$-22.2043+0.5995I$
$u=\ \ 0.047242-0.417816I$ $a=-1.00000$ $b=-0.70996-2.08504I$	$-7.95638-0.90560I$	$-22.2043-0.5995I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^{12}+5u^{11}+\cdots+3u^2+1)^4)(u^{18}-11u^{17}+\cdots+2u^2+1)$ $\cdot(u^{32}-20u^{31}+\cdots-30u+4)$
c_2, c_6	$(u^{18}+3u^{17}+\cdots-3u+1)(u^{32}+3u^{31}+\cdots+4u+1)$ $\cdot(u^{48}-u^{47}+\cdots+188u+304)$
c_3, c_9	$(u^{18}-u^{17}+\cdots+3u+5)(u^{32}-u^{31}+\cdots-4u+1)$ $\cdot(u^{48}+u^{47}+\cdots-972u+432)$
c_4, c_8	$(u^{18}+4u^{16}+\cdots-u+1)(u^{32}-u^{30}+\cdots-2u+1)$ $\cdot(u^{48}+3u^{47}+\cdots-8u+4)$
c_5	$((u^2+u+1)^{24})(u^{18}+3u^{17}+\cdots+16u+5)$ $\cdot(u^{32}-22u^{31}+\cdots-65536u+4096)$
c_7	$((u^{12}-3u^{11}+\cdots+2u+1)^4)(u^{18}+4u^{17}+\cdots+8u+1)$ $\cdot(u^{32}+9u^{31}+\cdots+84u+16)$
c_{10}, c_{11}	$((u^{12}-3u^{11}+\cdots+2u+1)^4)(u^{18}-4u^{17}+\cdots-8u+1)$ $\cdot(u^{32}+9u^{31}+\cdots+84u+16)$
c_{12}	$((u^2+u+1)^{24})(u^{18}-3u^{17}+\cdots-16u+5)$ $\cdot(u^{32}-22u^{31}+\cdots-65536u+4096)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^{12}+y^{11}+\cdots+6y+1)^4)(y^{18}+5y^{17}+\cdots+4y+1)$ $\cdot(y^{32}+6y^{31}+\cdots+52y+16)$
c_2, c_6	$(y^{18}+y^{17}+\cdots-15y+1)(y^{32}+31y^{31}+\cdots+16y+1)$ $\cdot(y^{48}+15y^{47}+\cdots+4909520y+92416)$
c_3, c_9	$(y^{18}+y^{17}+\cdots-139y+25)(y^{32}+3y^{31}+\cdots+28y+1)$ $\cdot(y^{48}+3y^{47}+\cdots+2702160y+186624)$
c_4, c_8	$(y^{18}+8y^{17}+\cdots+19y+1)(y^{32}-2y^{31}+\cdots-6y+1)$ $\cdot(y^{48}+15y^{47}+\cdots+264y+16)$
c_5, c_{12}	$((y^2+y+1)^{24})(y^{18}+19y^{17}+\cdots+104y+25)$ $\cdot(y^{32}+20y^{31}+\cdots-58720256y+16777216)$
c_7, c_{10}, c_{11}	$((y^{12}+9y^{11}+\cdots-6y+1)^4)(y^{18}+20y^{17}+\cdots+16y+1)$ $\cdot(y^{32}+29y^{31}+\cdots+976y+256)$