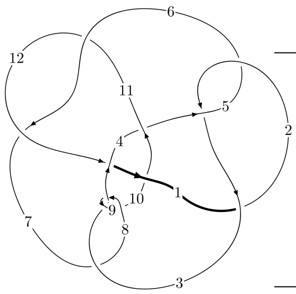
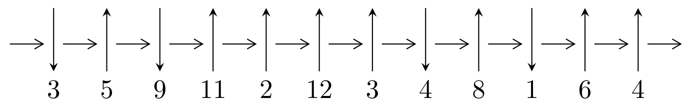
$12n_{0363}$ ($K12n_{0363}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.18536 \times 10^{82} u^{64} + 1.17821 \times 10^{82} u^{63} + \cdots + 4.44686 \times 10^{81} b + 5.58068 \times 10^{82}, \\
& -3.67200 \times 10^{85} u^{64} - 4.79998 \times 10^{85} u^{63} + \cdots + 2.88601 \times 10^{84} a - 5.33132 \times 10^{86}, \\
& u^{65} + u^{64} + \cdots + 32u + 11 \rangle \\
I_2^u = \langle & u^{16} + u^{15} + \cdots + b + 2, \\
& -u^{16} - u^{15} - 3u^{14} - 3u^{13} - 7u^{12} - 7u^{11} - 9u^{10} - 11u^9 - 9u^8 - 15u^7 - 2u^6 - 14u^5 - 10u^3 + a - 4u - 2, \\
& u^{18} + 4u^{16} + \cdots - u + 1 \rangle \\
I_3^u = \langle & b - u,\ u^2 + a + 1,\ u^4 + u^2 + u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 87 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. $\boldsymbol{I_1^u = \langle 1.19 \times 10^{82}u^{64} + 1.18 \times 10^{82}u^{63} + \cdots + 4.45 \times 10^{81}b + 5.58 \times 10^{82},\ -3.67 \times 10^{85}u^{64} - 4.80 \times 10^{85}u^{63} + \cdots + 2.89 \times 10^{84}a - 5.33 \times 10^{86},\ u^{65} + u^{64} + \cdots + 32u + 11\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}12.7234u^{64} + 16.6319u^{63} + \cdots + 952.459u + 184.730\\-2.66560u^{64} - 2.64952u^{63} + \cdots - 136.076u - 12.5497\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-4.71664u^{64} + 3.37825u^{63} + \cdots + 545.587u + 271.508\\0.928296u^{64} - 2.05851u^{63} + \cdots - 225.100u - 104.728\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-3.78835u^{64} + 1.31974u^{63} + \cdots + 320.487u + 166.781\\0.928296u^{64} - 2.05851u^{63} + \cdots - 225.100u - 104.728\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\u^3 + u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^3\\u^5 + u^3 + u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}6.96248u^{64} + 13.4113u^{63} + \cdots + 961.700u + 259.286\\-2.60048u^{64} - 3.57741u^{63} + \cdots - 231.000u - 51.3320\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^3\\u^3 + u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-3.79507u^{64} + 2.51346u^{63} + \cdots + 423.800u + 215.319\\0.628384u^{64} - 2.58932u^{63} + \cdots - 263.440u - 117.933\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1.94949u^{64} + 5.30850u^{63} + \cdots + 457.040u + 133.508\\3.65785u^{64} + 4.57938u^{63} + \cdots + 244.609u + 51.0970\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -9.85489u^{64} - 0.506938u^{63} + \cdots + 295.659u + 281.817$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{65} + 36u^{64} + \cdots - 31u - 1$
c_2, c_5	$u^{65} + 18u^{63} + \cdots + u - 1$
c_3, c_8	$u^{65} - u^{64} + \cdots + 32u - 11$
c_4	$u^{65} - u^{64} + \cdots + 170u - 99$
c_6, c_{11}	$u^{65} - u^{64} + \cdots - 290u - 374$
c_7	$u^{65} + u^{64} + \cdots - 146235740u - 28512220$
c_9	$u^{65} - 17u^{64} + \cdots - 3200u + 121$
c_{10}	$u^{65} - 5u^{64} + \cdots + 404554u - 19583$
c_{12}	$u^{65} + 3u^{64} + \cdots + 761476u + 2099$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{65} + 48y^{63} + \cdots + 185y - 1$
c_2, c_5	$y^{65} + 36y^{64} + \cdots - 31y - 1$
c_3, c_8	$y^{65} + 17y^{64} + \cdots - 3200y - 121$
c_4	$y^{65} - 23y^{64} + \cdots - 12086y - 9801$
c_6, c_{11}	$y^{65} - 27y^{64} + \cdots + 1737928y - 139876$
c_7	$y^{65} + 129y^{64} + \cdots - 36644682510257400y - 812946689328400$
c_9	$y^{65} + 73y^{64} + \cdots + 504824y - 14641$
c_{10}	$y^{65} - 77y^{64} + \cdots + 2489974016y - 383493889$
c_{12}	$y^{65} + 75y^{64} + \cdots + 597043930640y - 4405801$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.680009 + 0.713106I$ $a = 1.41460 + 0.20948I$ $b = -0.829559 + 0.897240I$	$1.19074 - 3.17057I$	$4.00000 + 2.82300I$
$u = 0.680009 - 0.713106I$ $a = 1.41460 - 0.20948I$ $b = -0.829559 - 0.897240I$	$1.19074 + 3.17057I$	$4.00000 - 2.82300I$
$u = -0.130389 + 1.036020I$ $a = 2.29843 + 0.93843I$ $b = -0.322430 - 0.884795I$	$-1.18726 + 1.38317I$	0
$u = -0.130389 - 1.036020I$ $a = 2.29843 - 0.93843I$ $b = -0.322430 + 0.884795I$	$-1.18726 - 1.38317I$	0
$u = 0.686817 + 0.660938I$ $a = 0.484110 + 0.485186I$ $b = -0.417093 + 1.257930I$	$0.11513 - 5.57520I$	$1.42711 + 8.53371I$
$u = 0.686817 - 0.660938I$ $a = 0.484110 - 0.485186I$ $b = -0.417093 - 1.257930I$	$0.11513 + 5.57520I$	$1.42711 - 8.53371I$
$u = -0.600257 + 0.736464I$ $a = -2.35238 + 0.68378I$ $b = 0.696793 + 0.978880I$	$0.90319 + 6.82193I$	$4.00000 - 10.20078I$
$u = -0.600257 - 0.736464I$ $a = -2.35238 - 0.68378I$ $b = 0.696793 - 0.978880I$	$0.90319 - 6.82193I$	$4.00000 + 10.20078I$
$u = 0.536349 + 0.783362I$ $a = -0.292753 - 1.310400I$ $b = 0.714251 + 0.738621I$	$1.65196 - 1.37503I$	$5.70343 + 4.32793I$
$u = 0.536349 - 0.783362I$ $a = -0.292753 + 1.310400I$ $b = 0.714251 - 0.738621I$	$1.65196 + 1.37503I$	$5.70343 - 4.32793I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.536653 + 0.910218I$ $a = 1.30688 - 0.94688I$ $b = 0.277844 + 1.051000I$	$1.022910 + 0.885443I$	0
$u = 0.536653 - 0.910218I$ $a = 1.30688 + 0.94688I$ $b = 0.277844 - 1.051000I$	$1.022910 - 0.885443I$	0
$u = 0.919266 + 0.044023I$ $a = 0.685246 - 0.197964I$ $b = -0.400619 - 1.148570I$	$-1.32773 + 3.65915I$	$0.21562 - 3.87323I$
$u = 0.919266 - 0.044023I$ $a = 0.685246 + 0.197964I$ $b = -0.400619 + 1.148570I$	$-1.32773 - 3.65915I$	$0.21562 + 3.87323I$
$u = -0.498707 + 0.773383I$ $a = 0.440300 - 0.516252I$ $b = -0.706622 + 0.898570I$	$1.13961 - 2.56713I$	$4.00000 + 1.86590I$
$u = -0.498707 - 0.773383I$ $a = 0.440300 + 0.516252I$ $b = -0.706622 - 0.898570I$	$1.13961 + 2.56713I$	$4.00000 - 1.86590I$
$u = -0.714171 + 0.556638I$ $a = 0.58411 + 1.77271I$ $b = 0.158903 + 0.735534I$	$2.30751 + 1.23537I$	$1.43112 - 2.75975I$
$u = -0.714171 - 0.556638I$ $a = 0.58411 - 1.77271I$ $b = 0.158903 - 0.735534I$	$2.30751 - 1.23537I$	$1.43112 + 2.75975I$
$u = -0.339089 + 1.140750I$ $a = -1.67737 + 0.59115I$ $b = 0.628783 - 0.316202I$	$5.30182 + 3.74007I$	0
$u = -0.339089 - 1.140750I$ $a = -1.67737 - 0.59115I$ $b = 0.628783 + 0.316202I$	$5.30182 - 3.74007I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.953198 + 0.755841I$ $a = -0.598616 + 0.308645I$ $b = 0.445402 + 1.166070I$	$-8.89416 + 1.07478I$	0
$u = 0.953198 - 0.755841I$ $a = -0.598616 - 0.308645I$ $b = 0.445402 - 1.166070I$	$-8.89416 - 1.07478I$	0
$u = -0.854923 + 0.866674I$ $a = -0.496614 + 0.011802I$ $b = 0.545772 + 0.013538I$	$-5.80014 + 2.95712I$	0
$u = -0.854923 - 0.866674I$ $a = -0.496614 - 0.011802I$ $b = 0.545772 - 0.013538I$	$-5.80014 - 2.95712I$	0
$u = -0.833013 + 0.906851I$ $a = 0.242257 - 0.165490I$ $b = -0.027191 - 0.303343I$	$-5.70705 + 3.10651I$	0
$u = -0.833013 - 0.906851I$ $a = 0.242257 + 0.165490I$ $b = -0.027191 + 0.303343I$	$-5.70705 - 3.10651I$	0
$u = -0.549089 + 1.115550I$ $a = -1.74225 + 0.41891I$ $b = 0.160584 + 0.669882I$	$4.17437 + 3.71139I$	0
$u = -0.549089 - 1.115550I$ $a = -1.74225 - 0.41891I$ $b = 0.160584 - 0.669882I$	$4.17437 - 3.71139I$	0
$u = -0.797232 + 0.958267I$ $a = 0.498877 - 0.859914I$ $b = -0.507934 + 0.279262I$	$-5.49508 + 3.22478I$	0
$u = -0.797232 - 0.958267I$ $a = 0.498877 + 0.859914I$ $b = -0.507934 - 0.279262I$	$-5.49508 - 3.22478I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.447329 + 1.169880I$ $a = -0.453069 - 1.212100I$ $b = 0.452862 + 1.045590I$	$2.40731 - 0.69677I$	0
$u = 0.447329 - 1.169880I$ $a = -0.453069 + 1.212100I$ $b = 0.452862 - 1.045590I$	$2.40731 + 0.69677I$	0
$u = 0.950733 + 0.838002I$ $a = 1.046540 + 0.328040I$ $b = -1.080450 + 0.250407I$	$-3.94832 + 2.68251I$	0
$u = 0.950733 - 0.838002I$ $a = 1.046540 - 0.328040I$ $b = -1.080450 - 0.250407I$	$-3.94832 - 2.68251I$	0
$u = 0.023056 + 0.722524I$ $a = -1.76080 + 3.14396I$ $b = 0.630679 - 0.948352I$	$3.75759 - 4.41575I$	$12.04885 + 5.91677I$
$u = 0.023056 - 0.722524I$ $a = -1.76080 - 3.14396I$ $b = 0.630679 + 0.948352I$	$3.75759 + 4.41575I$	$12.04885 - 5.91677I$
$u = -0.713686$ $a = 1.13925$ $b = -0.584356$	1.80251	5.12800
$u = -0.193742 + 0.683841I$ $a = 0.962945 + 0.999475I$ $b = -0.922328 - 0.420825I$	$5.03052 + 1.51034I$	$15.7178 - 3.9613I$
$u = -0.193742 - 0.683841I$ $a = 0.962945 - 0.999475I$ $b = -0.922328 + 0.420825I$	$5.03052 - 1.51034I$	$15.7178 + 3.9613I$
$u = -1.024200 + 0.791302I$ $a = 0.552140 - 0.058409I$ $b = -0.63656 + 1.26921I$	$-7.10877 - 8.80138I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.024200 - 0.791302I$ $a = 0.552140 + 0.058409I$ $b = -0.63656 - 1.26921I$	$-7.10877 + 8.80138I$	0
$u = 0.192935 + 0.676072I$ $a = 0.776674 + 0.010062I$ $b = -0.227422 + 0.327785I$	$0.407727 - 0.970478I$	$6.53993 + 7.03429I$
$u = 0.192935 - 0.676072I$ $a = 0.776674 - 0.010062I$ $b = -0.227422 - 0.327785I$	$0.407727 + 0.970478I$	$6.53993 - 7.03429I$
$u = 0.355761 + 1.266190I$ $a = -1.89805 + 0.78083I$ $b = 0.519188 - 1.142400I$	$2.83831 - 8.31122I$	0
$u = 0.355761 - 1.266190I$ $a = -1.89805 - 0.78083I$ $b = 0.519188 + 1.142400I$	$2.83831 + 8.31122I$	0
$u = -0.559146 + 0.388651I$ $a = 0.288682 - 1.213700I$ $b = 0.032965 - 1.064690I$	$-3.46149 + 1.16170I$	$-2.54854 - 2.69088I$
$u = -0.559146 - 0.388651I$ $a = 0.288682 + 1.213700I$ $b = 0.032965 + 1.064690I$	$-3.46149 - 1.16170I$	$-2.54854 + 2.69088I$
$u = 0.941004 + 0.941682I$ $a = -1.35873 - 0.69131I$ $b = 0.478389 - 1.144710I$	$-8.66705 - 7.05024I$	0
$u = 0.941004 - 0.941682I$ $a = -1.35873 + 0.69131I$ $b = 0.478389 + 1.144710I$	$-8.66705 + 7.05024I$	0
$u = 0.863954 + 1.022410I$ $a = -0.887849 - 0.917663I$ $b = 1.092590 + 0.344179I$	$-3.35897 - 9.35941I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.863954 - 1.022410I$ $a = -0.887849 + 0.917663I$ $b = 1.092590 - 0.344179I$	$-3.35897 + 9.35941I$	0
$u = 0.809043 + 1.069000I$ $a = 2.03359 + 0.42601I$ $b = -0.512076 + 1.123520I$	$-7.88943 - 7.57959I$	0
$u = 0.809043 - 1.069000I$ $a = 2.03359 - 0.42601I$ $b = -0.512076 - 1.123520I$	$-7.88943 + 7.57959I$	0
$u = 0.934970 + 0.965256I$ $a = 0.095422 - 0.223855I$ $b = -0.413625 - 1.135060I$	$-8.59820 + 0.16475I$	0
$u = 0.934970 - 0.965256I$ $a = 0.095422 + 0.223855I$ $b = -0.413625 + 1.135060I$	$-8.59820 - 0.16475I$	0
$u = -0.962896 + 0.944222I$ $a = 0.399298 + 0.175699I$ $b = 0.20863 - 1.53443I$	$-9.92576 + 4.62699I$	0
$u = -0.962896 - 0.944222I$ $a = 0.399298 - 0.175699I$ $b = 0.20863 + 1.53443I$	$-9.92576 - 4.62699I$	0
$u = -0.947987 + 0.978674I$ $a = 1.247310 - 0.029592I$ $b = -0.31760 - 1.50215I$	$-9.81795 + 2.36926I$	0
$u = -0.947987 - 0.978674I$ $a = 1.247310 + 0.029592I$ $b = -0.31760 + 1.50215I$	$-9.81795 - 2.36926I$	0
$u = -0.864777 + 1.081390I$ $a = -1.98594 + 0.31084I$ $b = 0.68088 + 1.24619I$	$-6.1652 + 15.6905I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.864777 - 1.081390I$ $a = -1.98594 - 0.31084I$ $b = 0.68088 - 1.24619I$	$-6.1652 - 15.6905I$	0
$u = -0.074172 + 0.553647I$ $a = 2.29514 + 0.12509I$ $b = -0.751395 - 1.112610I$	$3.07118 + 4.62645I$	$11.23018 - 8.45860I$
$u = -0.074172 - 0.553647I$ $a = 2.29514 - 0.12509I$ $b = -0.751395 + 1.112610I$	$3.07118 - 4.62645I$	$11.23018 + 8.45860I$
$u = -0.030447 + 0.536065I$ $a = -5.17229 + 0.79790I$ $b = 0.640566 - 0.750092I$	$4.38121 - 0.57043I$	$13.19784 + 0.22094I$
$u = -0.030447 - 0.536065I$ $a = -5.17229 - 0.79790I$ $b = 0.640566 + 0.750092I$	$4.38121 + 0.57043I$	$13.19784 - 0.22094I$

II.

$\boldsymbol{I_2^u = \langle u^{16} + u^{15} + \cdots + b + 2,\ -u^{16} - u^{15} + \cdots + a - 2,\ u^{18} + 4u^{16} + \cdots - u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} u^{16} + u^{15} + \cdots + 4u + 2 \\ -u^{16} - u^{15} + \cdots - u - 2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -4u^{16} - 2u^{15} + \cdots - 4u - 1 \\ 2u^{16} + u^{15} + \cdots + 2u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -2u^{16} - u^{15} + \cdots - 2u^2 - 2u \\ 2u^{16} + u^{15} + \cdots + 2u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{17} - u^{16} + \cdots + 4u - 4 \\ -u^{17} - 3u^{15} + \cdots - 2u + 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{17} - 2u^{16} + \cdots - 6u + 1 \\ 2u^{16} + u^{15} + \cdots + 3u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 3u^{17} + u^{16} + \cdots + 9u - 3 \\ -2u^{17} - u^{16} + \cdots - u^2 - 5u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^{17} - 5u^{16} + 4u^{15} - 17u^{14} + 12u^{13} - 43u^{12} + 28u^{11} - 73u^{10} + 43u^9 - 93u^8 + 47u^7 - 72u^6 + 28u^5 - 37u^4 + 9u^3 - 8u^2 - 2u + 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} - 11u^{17} + \cdots - 12u + 1$
c_2	$u^{18} + u^{17} + \cdots + 6u^2 + 1$
c_3	$u^{18} + 4u^{16} + \cdots - u + 1$
c_4	$u^{18} - 4u^{17} + \cdots - 4u + 1$
c_5	$u^{18} - u^{17} + \cdots + 6u^2 + 1$
c_6	$u^{18} + u^{17} + \cdots + 4u + 1$
c_7	$u^{18} + 3u^{17} + \cdots - 3u + 1$
c_8	$u^{18} + 4u^{16} + \cdots + u + 1$
c_9	$u^{18} - 8u^{17} + \cdots - 9u + 1$
c_{10}	$u^{18} - 5u^{17} + \cdots + 2u + 1$
c_{11}	$u^{18} - u^{17} + \cdots - 4u + 1$
c_{12}	$u^{18} - 4u^{17} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} + 3y^{17} + \cdots - 8y + 1$
c_2, c_5	$y^{18} + 11y^{17} + \cdots + 12y + 1$
c_3, c_8	$y^{18} + 8y^{17} + \cdots + 9y + 1$
c_4	$y^{18} - 6y^{17} + \cdots + 8y + 1$
c_6, c_{11}	$y^{18} - 13y^{17} + \cdots + 46y^2 + 1$
c_7	$y^{18} + 19y^{17} + \cdots + 21y + 1$
c_9	$y^{18} + 12y^{17} + \cdots + 9y + 1$
c_{10}	$y^{18} - 13y^{17} + \cdots + 4y + 1$
c_{12}	$y^{18} + 8y^{17} + \cdots - 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.107994 + 0.886491I$ $a = 1.91623 - 0.60555I$ $b = -0.107602 + 0.863856I$	$-1.61758 - 0.49645I$	$1.92124 - 0.97423I$
$u = 0.107994 - 0.886491I$ $a = 1.91623 + 0.60555I$ $b = -0.107602 - 0.863856I$	$-1.61758 + 0.49645I$	$1.92124 + 0.97423I$
$u = 0.696066 + 0.545570I$ $a = 0.930161 + 0.577007I$ $b = -0.660457 + 1.151080I$	$1.36974 - 4.92053I$	$6.15031 + 6.00947I$
$u = 0.696066 - 0.545570I$ $a = 0.930161 - 0.577007I$ $b = -0.660457 - 1.151080I$	$1.36974 + 4.92053I$	$6.15031 - 6.00947I$
$u = 0.417406 + 1.060020I$ $a = -2.25827 + 0.86221I$ $b = 0.612837 - 1.010440I$	$4.28511 - 7.05199I$	$8.53221 + 6.99194I$
$u = 0.417406 - 1.060020I$ $a = -2.25827 - 0.86221I$ $b = 0.612837 + 1.010440I$	$4.28511 + 7.05199I$	$8.53221 - 6.99194I$
$u = -0.455958 + 1.047990I$ $a = -1.70552 + 0.75131I$ $b = 0.588097 - 0.707693I$	$5.28455 + 2.26664I$	$8.19627 - 0.17793I$
$u = -0.455958 - 1.047990I$ $a = -1.70552 - 0.75131I$ $b = 0.588097 + 0.707693I$	$5.28455 - 2.26664I$	$8.19627 + 0.17793I$
$u = -0.511216 + 1.063110I$ $a = -1.63867 + 0.87954I$ $b = 0.508680 + 0.656191I$	$4.88269 + 4.32798I$	$10.85694 - 7.34698I$
$u = -0.511216 - 1.063110I$ $a = -1.63867 - 0.87954I$ $b = 0.508680 - 0.656191I$	$4.88269 - 4.32798I$	$10.85694 + 7.34698I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.799524 + 0.903741I$ $a = -0.290516 + 0.477123I$ $b = -0.036667 - 0.598516I$	$-6.13063 - 3.00712I$	$-9.64781 + 0.96053I$
$u = 0.799524 - 0.903741I$ $a = -0.290516 - 0.477123I$ $b = -0.036667 + 0.598516I$	$-6.13063 + 3.00712I$	$-9.64781 - 0.96053I$
$u = -0.412746 + 0.599657I$ $a = 2.89005 + 1.07924I$ $b = -0.649239 - 0.664089I$	$3.73184 + 1.45023I$	$7.20580 - 4.76250I$
$u = -0.412746 - 0.599657I$ $a = 2.89005 - 1.07924I$ $b = -0.649239 + 0.664089I$	$3.73184 - 1.45023I$	$7.20580 + 4.76250I$
$u = 0.301656 + 0.628925I$ $a = 1.33746 + 1.39082I$ $b = -0.688010 - 1.001630I$	$2.66029 + 3.82389I$	$5.08137 - 0.98229I$
$u = 0.301656 - 0.628925I$ $a = 1.33746 - 1.39082I$ $b = -0.688010 + 1.001630I$	$2.66029 - 3.82389I$	$5.08137 + 0.98229I$
$u = -0.942726 + 0.959928I$ $a = 0.819075 - 0.139736I$ $b = -0.06764 - 1.41514I$	$-9.53122 + 3.46203I$	$3.70366 - 2.71671I$
$u = -0.942726 - 0.959928I$ $a = 0.819075 + 0.139736I$ $b = -0.06764 + 1.41514I$	$-9.53122 - 3.46203I$	$3.70366 + 2.71671I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^3 - u^2 - u + 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_9	$y^4 + 2y^3 + 7y^2 + 5y + 1$
c_2, c_3, c_5 c_8	$y^4 + 2y^3 + 3y^2 + y + 1$
c_4, c_{12}	$(y-1)^4$
c_6, c_{11}	$y^4 - 5y^3 + 10y^2 - 9y + 4$
c_7	$y^4 - y^3 + 2y^2 + 7y + 4$
c_{10}	$y^4 + y^3 + 3y^2 + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.547424+0.585652I$ $a=-0.956685+0.641200I$ $b=-0.547424+0.585652I$	3.28987	$7.19151-0.27009I$
$u=-0.547424-0.585652I$ $a=-0.956685-0.641200I$ $b=-0.547424-0.585652I$	3.28987	$7.19151+0.27009I$
$u=0.547424+1.120870I$ $a=-0.043315-1.227190I$ $b=0.547424+1.120870I$	3.28987	$9.30849-1.94753I$
$u=0.547424-1.120870I$ $a=-0.043315+1.227190I$ $b=0.547424-1.120870I$	3.28987	$9.30849+1.94753I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^4-2u^3+3u^2-u+1)(u^{18}-11u^{17}+\cdots-12u+1)$ $\cdot(u^{65}+36u^{64}+\cdots-31u-1)$
c_2	$(u^4+u^2+u+1)(u^{18}+u^{17}+\cdots+6u^2+1)(u^{65}+18u^{63}+\cdots+u-1)$
c_3	$(u^4+u^2+u+1)(u^{18}+4u^{16}+\cdots-u+1)(u^{65}-u^{64}+\cdots+32u-11)$
c_4	$((u+1)^4)(u^{18}-4u^{17}+\cdots-4u+1)(u^{65}-u^{64}+\cdots+170u-99)$
c_5	$(u^4+u^2-u+1)(u^{18}-u^{17}+\cdots+6u^2+1)(u^{65}+18u^{63}+\cdots+u-1)$
c_6	$(u^4+u^3-2u^2-u+2)(u^{18}+u^{17}+\cdots+4u+1)$ $\cdot(u^{65}-u^{64}+\cdots-290u-374)$
c_7	$(u^4-3u^3+4u^2-3u+2)(u^{18}+3u^{17}+\cdots-3u+1)$ $\cdot(u^{65}+u^{64}+\cdots-146235740u-28512220)$
c_8	$(u^4+u^2-u+1)(u^{18}+4u^{16}+\cdots+u+1)(u^{65}-u^{64}+\cdots+32u-11)$
c_9	$(u^4-2u^3+3u^2-u+1)(u^{18}-8u^{17}+\cdots-9u+1)$ $\cdot(u^{65}-17u^{64}+\cdots-3200u+121)$
c_{10}	$(u^4+u^3+u^2+1)(u^{18}-5u^{17}+\cdots+2u+1)$ $\cdot(u^{65}-5u^{64}+\cdots+404554u-19583)$
c_{11}	$(u^4-u^3-2u^2+u+2)(u^{18}-u^{17}+\cdots-4u+1)$ $\cdot(u^{65}-u^{64}+\cdots-290u-374)$
c_{12}	$((u+1)^4)(u^{18}-4u^{17}+\cdots-4u+1)$ $\cdot(u^{65}+3u^{64}+\cdots+761476u+2099)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^4+2y^3+7y^2+5y+1)(y^{18}+3y^{17}+\cdots-8y+1)$ $\cdot(y^{65}+48y^{63}+\cdots+185y-1)$
c_2, c_5	$(y^4+2y^3+3y^2+y+1)(y^{18}+11y^{17}+\cdots+12y+1)$ $\cdot(y^{65}+36y^{64}+\cdots-31y-1)$
c_3, c_8	$(y^4+2y^3+3y^2+y+1)(y^{18}+8y^{17}+\cdots+9y+1)$ $\cdot(y^{65}+17y^{64}+\cdots-3200y-121)$
c_4	$((y-1)^4)(y^{18}-6y^{17}+\cdots+8y+1)$ $\cdot(y^{65}-23y^{64}+\cdots-12086y-9801)$
c_6, c_{11}	$(y^4-5y^3+10y^2-9y+4)(y^{18}-13y^{17}+\cdots+46y^2+1)$ $\cdot(y^{65}-27y^{64}+\cdots+1737928y-139876)$
c_7	$(y^4-y^3+2y^2+7y+4)(y^{18}+19y^{17}+\cdots+21y+1)$ $\cdot(y^{65}+129y^{64}+\cdots-36644682510257400y-812946689328400)$
c_9	$(y^4+2y^3+7y^2+5y+1)(y^{18}+12y^{17}+\cdots+9y+1)$ $\cdot(y^{65}+73y^{64}+\cdots+504824y-14641)$
c_{10}	$(y^4+y^3+3y^2+2y+1)(y^{18}-13y^{17}+\cdots+4y+1)$ $\cdot(y^{65}-77y^{64}+\cdots+2489974016y-383493889)$
c_{12}	$((y-1)^4)(y^{18}+8y^{17}+\cdots-6y+1)$ $\cdot(y^{65}+75y^{64}+\cdots+597043930640y-4405801)$