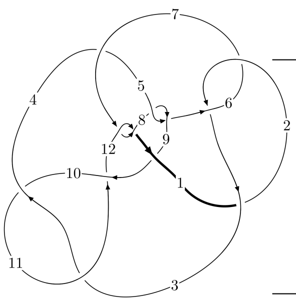
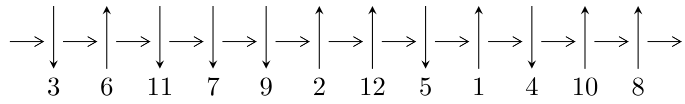
$12a_{0465}$ $(K12a_{0465})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.94916 \times 10^{307} u^{131} - 3.65279 \times 10^{307} u^{130} + \cdots + 2.01785 \times 10^{308} b - 1.09127 \times 10^{309}, \\
& - 3.70110 \times 10^{309} u^{131} + 8.38178 \times 10^{309} u^{130} + \cdots + 2.68374 \times 10^{310} a + 3.35444 \times 10^{311}, \\
& u^{132} - 2u^{131} + \cdots - 476u + 76\rangle \\
I_2^u = \langle & 3au + 9b + 12a + 5u + 11,\ 18a^2 + 3au + 48a + u + 37,\ u^2 + 2\rangle \\
I_3^u = \langle & -9au + 7b + 3a + 2u - 3,\ 9a^2 - 6au - 5u - 11,\ u^2 - u + 1\rangle \\
I_4^u = \langle & b,\ a + u,\ u^2 + u + 1\rangle
\end{aligned}$$

$$I_1^v = \langle a,\ b + v,\ v^2 - v + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 144 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. $\boldsymbol{I^u_1 = \langle 1.95 \times 10^{307} u^{131} - 3.65 \times 10^{307} u^{130} + \cdots + 2.02 \times 10^{308} b - 1.09 \times 10^{309},\ -3.70 \times 10^{309} u^{131} + 8.38 \times 10^{309} u^{130} + \cdots + 2.68 \times 10^{310} a + 3.35 \times 10^{311},\ u^{132} - 2u^{131} + \cdots - 476u + 76\rangle}$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} 0.137909u^{131} - 0.312317u^{130} + \cdots + 84.5087u - 12.4991 \\ -0.0965960u^{131} + 0.181024u^{130} + \cdots - 30.2730u + 5.40808 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.199343u^{131} - 0.396256u^{130} + \cdots + 127.923u - 23.4017 \\ -0.0527294u^{131} + 0.131771u^{130} + \cdots - 4.97262u - 1.02232 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.112731u^{131} - 0.391881u^{130} + \cdots + 143.590u - 27.1262 \\ -0.0759172u^{131} + 0.171870u^{130} + \cdots - 15.7531u + 0.451833 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.146613u^{131} - 0.264486u^{130} + \cdots + 122.951u - 24.4240 \\ -0.0527294u^{131} + 0.131771u^{130} + \cdots - 4.97262u - 1.02232 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0624762u^{131} - 0.0629818u^{130} + \cdots + 131.166u - 24.5816 \\ 0.159767u^{131} - 0.280127u^{130} + \cdots + 76.3670u - 13.7238 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.0225291u^{131} - 0.145369u^{130} + \cdots - 32.5467u + 5.91958 \\ -0.106550u^{131} + 0.113212u^{130} + \cdots - 20.2316u + 3.42718 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0687231u^{131} - 0.262340u^{130} + \cdots + 119.942u - 23.4880 \\ -0.0149219u^{131} + 0.0644011u^{130} + \cdots + 1.87048u - 1.24755 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.497123u^{131} + 0.474012u^{130} + \cdots - 20.8223u - 10.5378$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{132} + 64u^{131} + \cdots + 14800u + 5776$
c_2, c_6	$u^{132} - 2u^{131} + \cdots - 476u + 76$
c_3, c_{10}	$u^{132} + 2u^{131} + \cdots + 476u + 76$
c_4	$2401(2401u^{132} + 37730u^{131} + \cdots + 8199247u + 3800453)$
c_5, c_8	$u^{132} + 3u^{131} + \cdots + 9208u + 1228$
c_7, c_{12}	$u^{132} - 3u^{131} + \cdots - 9208u + 1228$
c_9	$2401(2401u^{132} - 37730u^{131} + \cdots - 8199247u + 3800453)$
c_{11}	$u^{132} - 64u^{131} + \cdots - 14800u + 5776$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{132} + 16y^{131} + \cdots + 422881536y + 33362176$
c_2, c_3, c_6 c_{10}	$y^{132} + 64y^{131} + \cdots + 14800y + 5776$
c_4, c_9	$5764801(5764801y^{132} - 1.97886 \times 10^{8}y^{131} + \cdots - 2.94420 \times 10^{14}y + 1.44434 \times 10^{13})$
c_5, c_7, c_8 c_{12}	$y^{132} - 65y^{131} + \cdots - 1106432y + 1507984$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.823198 + 0.569211I$ $a = 0.889660 + 0.779506I$ $b = -0.190681 + 1.006910I$	$-1.53863 + 0.67688I$	0
$u = 0.823198 - 0.569211I$ $a = 0.889660 - 0.779506I$ $b = -0.190681 - 1.006910I$	$-1.53863 - 0.67688I$	0
$u = 0.559179 + 0.825258I$ $a = 4.50642 + 0.70465I$ $b = 0.440469 + 0.792376I$	$0.105725 - 0.171371I$	0
$u = 0.559179 - 0.825258I$ $a = 4.50642 - 0.70465I$ $b = 0.440469 - 0.792376I$	$0.105725 + 0.171371I$	0
$u = -0.424632 + 0.889847I$ $a = 1.42271 - 0.04850I$ $b = -0.03946 - 1.50799I$	$-5.98533 + 1.74123I$	0
$u = -0.424632 - 0.889847I$ $a = 1.42271 + 0.04850I$ $b = -0.03946 + 1.50799I$	$-5.98533 - 1.74123I$	0
$u = 0.936127 + 0.405809I$ $a = -0.808074 + 0.587728I$ $b = 0.624017 + 1.147650I$	$-2.30779 + 13.83220I$	0
$u = 0.936127 - 0.405809I$ $a = -0.808074 - 0.587728I$ $b = 0.624017 - 1.147650I$	$-2.30779 - 13.83220I$	0
$u = 0.305623 + 0.975415I$ $a = -2.36155 + 0.30402I$ $b = 0.725974 - 0.852806I$	$3.22670 - 3.10282I$	0
$u = 0.305623 - 0.975415I$ $a = -2.36155 - 0.30402I$ $b = 0.725974 + 0.852806I$	$3.22670 + 3.10282I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.190681 + 1.006910I$ $a = 1.87153 - 0.08400I$ $b = -0.823198 + 0.569211I$	$1.53863 + 0.67688I$	0
$u = 0.190681 - 1.006910I$ $a = 1.87153 + 0.08400I$ $b = -0.823198 - 0.569211I$	$1.53863 - 0.67688I$	0
$u = -0.065305 + 1.027270I$ $a = 1.121830 - 0.587024I$ $b = 0.065305 + 1.027270I$	$3.95402I$	0
$u = -0.065305 - 1.027270I$ $a = 1.121830 + 0.587024I$ $b = 0.065305 - 1.027270I$	$-3.95402I$	0
$u = -0.840683 + 0.484130I$ $a = -0.764027 - 0.676827I$ $b = 0.312065 - 1.072640I$	$-5.44129 + 1.88998I$	0
$u = -0.840683 - 0.484130I$ $a = -0.764027 + 0.676827I$ $b = 0.312065 + 1.072640I$	$-5.44129 - 1.88998I$	0
$u = 0.780358 + 0.686992I$ $a = -0.500434 - 0.041443I$ $b = 0.615963 + 0.235511I$	$-1.84741 - 4.70427I$	0
$u = 0.780358 - 0.686992I$ $a = -0.500434 + 0.041443I$ $b = 0.615963 - 0.235511I$	$-1.84741 + 4.70427I$	0
$u = -0.875820 + 0.380654I$ $a = -0.525655 + 0.011559I$ $b = 0.875820 + 0.380654I$	$-8.30339I$	0
$u = -0.875820 - 0.380654I$ $a = -0.525655 - 0.011559I$ $b = 0.875820 - 0.380654I$	$8.30339I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.542091 + 0.784398I$ $a = -1.78393 - 1.81238I$ $b = -0.542091 + 0.784398I$	$-\,4.28914I$	0
$u = \ \ 0.542091 - 0.784398I$ $a = -1.78393 + 1.81238I$ $b = -0.542091 - 0.784398I$	$4.28914I$	0
$u = \ \ 0.994492 + 0.335966I$ $a = \ \ 0.826490 - 0.442222I$ $b = -0.576215 - 1.069210I$	$0.91777 + 7.31895I$	0
$u = \ \ 0.994492 - 0.335966I$ $a = \ \ 0.826490 + 0.442222I$ $b = -0.576215 + 1.069210I$	$0.91777 - 7.31895I$	0
$u = \ \ 0.817201 + 0.484524I$ $a = -0.544788 - 0.554708I$ $b = \ \ 0.453821 - 1.077520I$	$-5.47754 - 4.53124I$	0
$u = \ \ 0.817201 - 0.484524I$ $a = -0.544788 + 0.554708I$ $b = \ \ 0.453821 + 1.077520I$	$-5.47754 + 4.53124I$	0
$u = -0.134345 + 0.932428I$ $a = -1.58441 + 1.51602I$ $b = \ \ 0.667796 - 0.832412I$	$3.26894 - 2.20224I$	0
$u = -0.134345 - 0.932428I$ $a = -1.58441 - 1.51602I$ $b = \ \ 0.667796 + 0.832412I$	$3.26894 + 2.20224I$	0
$u = -0.778502 + 0.520876I$ $a = \ \ 0.594890 + 0.559060I$ $b = -0.536423 + 1.037550I$	$-1.65135 - 3.15049I$	0
$u = -0.778502 - 0.520876I$ $a = \ \ 0.594890 - 0.559060I$ $b = -0.536423 - 1.037550I$	$-1.65135 + 3.15049I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.794043 + 0.494894I$ $a = -0.652893 - 0.992228I$ $b = 0.144394 - 1.255500I$	$-5.60411 + 5.29311I$	0
$u = 0.794043 - 0.494894I$ $a = -0.652893 + 0.992228I$ $b = 0.144394 + 1.255500I$	$-5.60411 - 5.29311I$	0
$u = -0.804376 + 0.473745I$ $a = -0.445827 - 0.606987I$ $b = 0.600283 - 1.174750I$	$-5.40534 - 7.86857I$	0
$u = -0.804376 - 0.473745I$ $a = -0.445827 + 0.606987I$ $b = 0.600283 + 1.174750I$	$-5.40534 + 7.86857I$	0
$u = -0.667796 + 0.832412I$ $a = 0.390266 - 0.930903I$ $b = 0.134345 - 0.932428I$	$-3.26894 + 2.20224I$	0
$u = -0.667796 - 0.832412I$ $a = 0.390266 + 0.930903I$ $b = 0.134345 + 0.932428I$	$-3.26894 - 2.20224I$	0
$u = -0.887707 + 0.281785I$ $a = 0.698511 - 0.047066I$ $b = -0.685230 - 0.439467I$	$2.75162 - 2.43503I$	0
$u = -0.887707 - 0.281785I$ $a = 0.698511 + 0.047066I$ $b = -0.685230 + 0.439467I$	$2.75162 + 2.43503I$	0
$u = 0.363712 + 1.014900I$ $a = 0.732029 + 0.614356I$ $b = -0.662951 - 1.106910I$	$3.62233 + 0.99937I$	0
$u = 0.363712 - 1.014900I$ $a = 0.732029 - 0.614356I$ $b = -0.662951 + 1.106910I$	$3.62233 - 0.99937I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.340852 + 0.844220I$ $a = 2.92738 - 1.67284I$ $b = 0.340852 + 0.844220I$	$3.77961I$	0
$u = -0.340852 - 0.844220I$ $a = 2.92738 + 1.67284I$ $b = 0.340852 - 0.844220I$	$-3.77961I$	0
$u = 0.286052 + 0.862830I$ $a = 0.128517 - 0.772851I$ $b = -0.440853 - 1.054770I$	$2.69897 + 1.03309I$	0
$u = 0.286052 - 0.862830I$ $a = 0.128517 + 0.772851I$ $b = -0.440853 + 1.054770I$	$2.69897 - 1.03309I$	0
$u = -0.440469 + 0.792376I$ $a = 5.56339 - 1.16074I$ $b = -0.559179 + 0.825258I$	$-0.105725 - 0.171371I$	0
$u = -0.440469 - 0.792376I$ $a = 5.56339 + 1.16074I$ $b = -0.559179 - 0.825258I$	$-0.105725 + 0.171371I$	0
$u = -0.030760 + 1.094590I$ $a = 1.33123 - 1.16689I$ $b = -0.639482 + 1.037190I$	$0.11969 - 6.11919I$	0
$u = -0.030760 - 1.094590I$ $a = 1.33123 + 1.16689I$ $b = -0.639482 - 1.037190I$	$0.11969 + 6.11919I$	0
$u = 0.416162 + 1.021470I$ $a = -2.51719 - 0.44595I$ $b = 0.674582 - 1.079680I$	$3.66958 - 3.73337I$	0
$u = 0.416162 - 1.021470I$ $a = -2.51719 + 0.44595I$ $b = 0.674582 + 1.079680I$	$3.66958 + 3.73337I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.312065 + 1.072640I$ $a = -0.76927 + 1.36764I$ $b = 0.840683 - 0.484130I$	$5.44129 - 1.88998I$	0
$u = -0.312065 - 1.072640I$ $a = -0.76927 - 1.36764I$ $b = 0.840683 + 0.484130I$	$5.44129 + 1.88998I$	0
$u = -0.551641 + 0.972164I$ $a = -0.892713 - 0.064231I$ $b = -0.21137 + 1.45409I$	$-7.03788 + 3.12317I$	0
$u = -0.551641 - 0.972164I$ $a = -0.892713 + 0.064231I$ $b = -0.21137 - 1.45409I$	$-7.03788 - 3.12317I$	0
$u = -0.725974 + 0.852806I$ $a = 1.21922 - 0.99635I$ $b = -0.305623 - 0.975415I$	$-3.22670 + 3.10282I$	0
$u = -0.725974 - 0.852806I$ $a = 1.21922 + 0.99635I$ $b = -0.305623 + 0.975415I$	$-3.22670 - 3.10282I$	0
$u = -0.593570 + 0.641593I$ $a = -1.31728 + 0.93688I$ $b = 0.253656 + 1.348810I$	$-8.03402 + 1.43434I$	0
$u = -0.593570 - 0.641593I$ $a = -1.31728 - 0.93688I$ $b = 0.253656 - 1.348810I$	$-8.03402 - 1.43434I$	0
$u = 0.442482 + 1.047020I$ $a = -0.775241 - 1.125380I$ $b = 0.811066 + 0.953448I$	$3.44590 - 2.80937I$	0
$u = 0.442482 - 1.047020I$ $a = -0.775241 + 1.125380I$ $b = 0.811066 - 0.953448I$	$3.44590 + 2.80937I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.676144 + 0.920637I$ $a = 0.838781 + 0.502579I$ $b = -0.446567 + 0.118673I$	$-1.140000 - 0.761652I$	0
$u = 0.676144 - 0.920637I$ $a = 0.838781 - 0.502579I$ $b = -0.446567 - 0.118673I$	$-1.140000 + 0.761652I$	0
$u = 0.440853 + 1.054770I$ $a = 0.13764 + 1.46787I$ $b = -0.286052 - 0.862830I$	$-2.69897 - 1.03309I$	0
$u = 0.440853 - 1.054770I$ $a = 0.13764 - 1.46787I$ $b = -0.286052 + 0.862830I$	$-2.69897 + 1.03309I$	0
$u = -0.372131 + 1.084960I$ $a = 0.513198 - 0.809836I$ $b = -0.762411 + 0.144170I$	$5.98400 + 2.64260I$	0
$u = -0.372131 - 1.084960I$ $a = 0.513198 + 0.809836I$ $b = -0.762411 - 0.144170I$	$5.98400 - 2.64260I$	0
$u = -0.905060 + 0.710796I$ $a = -1.045390 + 0.744286I$ $b = 0.504598 + 1.087370I$	$-4.18406 + 9.03796I$	0
$u = -0.905060 - 0.710796I$ $a = -1.045390 - 0.744286I$ $b = 0.504598 - 1.087370I$	$-4.18406 - 9.03796I$	0
$u = 0.488416 + 1.049830I$ $a = 1.98084 + 0.74828I$ $b = -0.527973 + 1.235020I$	$2.76109 - 7.52450I$	0
$u = 0.488416 - 1.049830I$ $a = 1.98084 - 0.74828I$ $b = -0.527973 - 1.235020I$	$2.76109 + 7.52450I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.536423 + 1.037550I$ $a = -0.577248 - 1.143850I$ $b = 0.778502 + 0.520876I$	$1.65135 - 3.15049I$	0
$u = 0.536423 - 1.037550I$ $a = -0.577248 + 1.143850I$ $b = 0.778502 - 0.520876I$	$1.65135 + 3.15049I$	0
$u = -0.453821 + 1.077520I$ $a = 1.324010 + 0.107331I$ $b = -0.817201 - 0.484524I$	$5.47754 + 4.53124I$	0
$u = -0.453821 - 1.077520I$ $a = 1.324010 - 0.107331I$ $b = -0.817201 + 0.484524I$	$5.47754 - 4.53124I$	0
$u = 0.685230 + 0.439467I$ $a = -0.418480 - 0.367370I$ $b = 0.887707 - 0.281785I$	$-2.75162 + 2.43503I$	0
$u = 0.685230 - 0.439467I$ $a = -0.418480 + 0.367370I$ $b = 0.887707 + 0.281785I$	$-2.75162 - 2.43503I$	0
$u = -0.504598 + 1.087370I$ $a = -1.83060 + 0.10230I$ $b = 0.905060 + 0.710796I$	$4.18406 + 9.03796I$	0
$u = -0.504598 - 1.087370I$ $a = -1.83060 - 0.10230I$ $b = 0.905060 - 0.710796I$	$4.18406 - 9.03796I$	0
$u = -0.482158 + 1.109660I$ $a = 1.18731 - 0.84176I$ $b = -0.465532 + 0.253242I$	$-0.72270 + 3.54697I$	0
$u = -0.482158 - 1.109660I$ $a = 1.18731 + 0.84176I$ $b = -0.465532 - 0.253242I$	$-0.72270 - 3.54697I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.576215 + 1.069210I$ $a = 0.732912 + 1.102690I$ $b = -0.994492 - 0.335966I$	$-0.91777 - 7.31895I$	0
$u = 0.576215 - 1.069210I$ $a = 0.732912 - 1.102690I$ $b = -0.994492 + 0.335966I$	$-0.91777 + 7.31895I$	0
$u = 0.639482 + 1.037190I$ $a = 0.479761 + 0.412159I$ $b = 0.030760 + 1.094590I$	$-0.11969 - 6.11919I$	0
$u = 0.639482 - 1.037190I$ $a = 0.479761 - 0.412159I$ $b = 0.030760 - 1.094590I$	$-0.11969 + 6.11919I$	0
$u = 0.762411 + 0.144170I$ $a = -1.037450 + 0.166443I$ $b = 0.372131 + 1.084960I$	$-5.98400 + 2.64260I$	$-7.53031 - 4.30612I$
$u = 0.762411 - 0.144170I$ $a = -1.037450 - 0.166443I$ $b = 0.372131 - 1.084960I$	$-5.98400 - 2.64260I$	$-7.53031 + 4.30612I$
$u = -0.621647 + 1.066320I$ $a = -2.20563 + 0.57148I$ $b = 0.621647 + 1.066320I$	$8.43624I$	0
$u = -0.621647 - 1.066320I$ $a = -2.20563 - 0.57148I$ $b = 0.621647 - 1.066320I$	$-\ 8.43624I$	0
$u = 0.627948 + 1.077210I$ $a = -0.872641 - 0.106447I$ $b = -0.100526 - 1.320640I$	$-3.85813 - 10.63980I$	0
$u = 0.627948 - 1.077210I$ $a = -0.872641 + 0.106447I$ $b = -0.100526 + 1.320640I$	$-3.85813 + 10.63980I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.811066 + 0.953448I$ $a = 0.077919 + 0.139152I$ $b = -0.442482 + 1.047020I$	$-3.44590 - 2.80937I$	0
$u = -0.811066 - 0.953448I$ $a = 0.077919 - 0.139152I$ $b = -0.442482 - 1.047020I$	$-3.44590 + 2.80937I$	0
$u = -0.627262 + 1.090270I$ $a = 2.17043 - 0.55484I$ $b = -0.648802 - 1.200400I$	$-3.55819 + 13.23950I$	0
$u = -0.627262 - 1.090270I$ $a = 2.17043 + 0.55484I$ $b = -0.648802 + 1.200400I$	$-3.55819 - 13.23950I$	0
$u = -0.144394 + 1.255500I$ $a = 1.66491 + 0.37293I$ $b = -0.794043 - 0.494894I$	$5.60411 - 5.29311I$	0
$u = -0.144394 - 1.255500I$ $a = 1.66491 - 0.37293I$ $b = -0.794043 + 0.494894I$	$5.60411 + 5.29311I$	0
$u = 0.426260 + 0.593011I$ $a = 0.747594 + 0.224902I$ $b = -0.463849 + 0.281567I$	$0.056199 - 1.099450I$	$1.88449 + 5.07932I$
$u = 0.426260 - 0.593011I$ $a = 0.747594 - 0.224902I$ $b = -0.463849 - 0.281567I$	$0.056199 + 1.099450I$	$1.88449 - 5.07932I$
$u = -0.674582 + 1.079680I$ $a = 2.00622 - 0.52033I$ $b = -0.416162 - 1.021470I$	$-3.66958 + 3.73337I$	0
$u = -0.674582 - 1.079680I$ $a = 2.00622 + 0.52033I$ $b = -0.416162 + 1.021470I$	$-3.66958 - 3.73337I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=0.662951+1.106910I$ $a=-0.136573+0.392511I$ $b=-0.363712-1.014900I$	$-3.62233-0.99937I$	0
$u=0.662951-1.106910I$ $a=-0.136573-0.392511I$ $b=-0.363712+1.014900I$	$-3.62233+0.99937I$	0
$u=-0.577404+0.412181I$ $a=-0.864830-0.502017I$ $b=0.588134-0.056662I$	$-2.83155+0.71775I$	$-2.72776+0.85165I$
$u=-0.577404-0.412181I$ $a=-0.864830+0.502017I$ $b=0.588134+0.056662I$	$-2.83155-0.71775I$	$-2.72776-0.85165I$
$u=-0.624017+1.147650I$ $a=0.721774-1.156220I$ $b=-0.936127+0.405809I$	$2.30779+13.83220I$	0
$u=-0.624017-1.147650I$ $a=0.721774+1.156220I$ $b=-0.936127-0.405809I$	$2.30779-13.83220I$	0
$u=-0.600283+1.174750I$ $a=-0.768502+1.005460I$ $b=0.804376-0.473745I$	$5.40534+7.86857I$	0
$u=-0.600283-1.174750I$ $a=-0.768502-1.005460I$ $b=0.804376+0.473745I$	$5.40534-7.86857I$	0
$u=0.100526+1.320640I$ $a=1.41079+0.80869I$ $b=-0.627948-1.077210I$	$3.85813+10.63980I$	0
$u=0.100526-1.320640I$ $a=1.41079-0.80869I$ $b=-0.627948+1.077210I$	$3.85813-10.63980I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.652855 + 1.162310I$ $a = 2.26946 + 0.51022I$ $b = -0.652855 + 1.162310I$	$-19.6345I$	0
$u = 0.652855 - 1.162310I$ $a = 2.26946 - 0.51022I$ $b = -0.652855 - 1.162310I$	$19.6345I$	0
$u = -0.615963 + 0.235511I$ $a = 0.063853 - 0.350301I$ $b = -0.780358 + 0.686992I$	$1.84741 - 4.70427I$	$0.08651 + 6.41701I$
$u = -0.615963 - 0.235511I$ $a = 0.063853 + 0.350301I$ $b = -0.780358 - 0.686992I$	$1.84741 + 4.70427I$	$0.08651 - 6.41701I$
$u = 0.527973 + 1.235020I$ $a = 2.10900 - 0.20973I$ $b = -0.488416 + 1.049830I$	$-2.76109 - 7.52450I$	0
$u = 0.527973 - 1.235020I$ $a = 2.10900 + 0.20973I$ $b = -0.488416 - 1.049830I$	$-2.76109 + 7.52450I$	0
$u = 0.648802 + 1.200400I$ $a = -2.11366 - 0.34332I$ $b = 0.627262 - 1.090270I$	$3.55819 - 13.23950I$	0
$u = 0.648802 - 1.200400I$ $a = -2.11366 + 0.34332I$ $b = 0.627262 + 1.090270I$	$3.55819 + 13.23950I$	0
$u = -0.253656 + 1.348810I$ $a = -1.57262 - 0.32343I$ $b = 0.593570 + 0.641593I$	$8.03402 + 1.43434I$	0
$u = -0.253656 - 1.348810I$ $a = -1.57262 + 0.32343I$ $b = 0.593570 - 0.641593I$	$8.03402 - 1.43434I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.588134+0.056662I$ $a=\ \ 0.623241+0.414614I$ $b=\ \ 0.577404-0.412181I$	$2.83155-0.71775I$	$2.72776-0.85165I$
$u=-0.588134-0.056662I$ $a=\ \ 0.623241-0.414614I$ $b=\ \ 0.577404+0.412181I$	$2.83155+0.71775I$	$2.72776+0.85165I$
$u=\ \ 0.463849+0.281567I$ $a=\ \ 0.649975+0.433633I$ $b=-0.426260+0.593011I$	$-0.056199-1.099450I$	$-1.88449+5.07932I$
$u=\ \ 0.463849-0.281567I$ $a=\ \ 0.649975-0.433633I$ $b=-0.426260-0.593011I$	$-0.056199+1.099450I$	$-1.88449-5.07932I$
$u=\ \ 0.21137+1.45409I$ $a=-1.166600-0.679942I$ $b=\ \ 0.551641+0.972164I$	$7.03788+3.12317I$	0
$u=\ \ 0.21137-1.45409I$ $a=-1.166600+0.679942I$ $b=\ \ 0.551641-0.972164I$	$7.03788-3.12317I$	0
$u=\ \ 0.465532+0.253242I$ $a=\ \ 0.47243+2.07301I$ $b=\ \ 0.482158+1.109660I$	$0.72270+3.54697I$	$-2.29694-5.05715I$
$u=\ \ 0.465532-0.253242I$ $a=\ \ 0.47243-2.07301I$ $b=\ \ 0.482158-1.109660I$	$0.72270-3.54697I$	$-2.29694+5.05715I$
$u=\ \ 0.03946+1.50799I$ $a=-1.267500+0.495790I$ $b=\ \ 0.424632-0.889847I$	$5.98533-1.74123I$	0
$u=\ \ 0.03946-1.50799I$ $a=-1.267500-0.495790I$ $b=\ \ 0.424632+0.889847I$	$5.98533+1.74123I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.446567 + 0.118673I$ $a = 1.07579 + 1.46333I$ $b = -0.676144 + 0.920637I$	$1.140000 - 0.761652I$	$-1.54281 - 1.70362I$
$u = 0.446567 - 0.118673I$ $a = 1.07579 - 1.46333I$ $b = -0.676144 - 0.920637I$	$1.140000 + 0.761652I$	$-1.54281 + 1.70362I$

II. $I_2^u = \langle 3au + 9b + 12a + 5u + 11,\ 18a^2 + 3au + 48a + u + 37,\ u^2 + 2\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} a \\ -\frac{1}{3}au - \frac{4}{3}a - \frac{5}{9}u - \frac{11}{9} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.555556au + 2.22222a + 0.759259u + 3.70370 \\ -\frac{1}{3}au - \frac{4}{3}a - \frac{5}{9}u - \frac{20}{9} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{2}{9}au + \frac{8}{9}a + \frac{11}{54}u + \frac{40}{27} \\ -\frac{1}{3}au - \frac{4}{3}a - \frac{5}{9}u - \frac{20}{9} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{2}{9}au + \frac{8}{9}a + \frac{11}{54}u + \frac{40}{27} \\ -\frac{1}{3}au - \frac{4}{3}a - \frac{5}{9}u - \frac{20}{9} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ -u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -2u \\ 3u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.259259au + 0.296296a + 0.734568u + 0.493827 \\ \frac{1}{3}au - \frac{2}{3}a - \frac{7}{9}u - \frac{10}{9} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.296296au + 0.481481a - 0.493827u + 1.46914 \\ \frac{1}{3}au - \frac{2}{3}a + \frac{5}{9}u - \frac{25}{9} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{2}{9}au + \frac{8}{9}a + \frac{119}{54}u + \frac{40}{27} \\ -\frac{1}{3}au - \frac{4}{3}a - \frac{32}{9}u - \frac{20}{9} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{4}{3}au + \frac{16}{3}a + \frac{20}{9}u + \frac{116}{9}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u^2 - u + 1)^2$
c_3, c_5, c_8 c_{10}	$(u^2 + 2)^2$
c_4	$27(27u^4 - 18u^3 + 21u^2 - 6u + 1)$
c_6	$(u^2 + u + 1)^2$
c_7	$(u - 1)^4$
c_9	$27(27u^4 - 36u^3 + 12u^2 + 1)$
c_{11}	$(u - 2)^4$
c_{12}	$(u + 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	$(y^2+y+1)^2$
c_3, c_5, c_8 c_{10}	$(y+2)^4$
c_4	$729(729y^4+810y^3+279y^2+6y+1)$
c_7, c_{12}	$(y-1)^4$
c_9	$729(729y^4-648y^3+198y^2+24y+1)$
c_{11}	$(y-4)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = -1.129210 + 0.459499I$ $b = 0.500000 - 0.866025I$	$6.57974 - 2.02988I$	$6.00000 + 3.46410I$
$u = 1.414210I$ $a = -1.53746 - 0.69520I$ $b = 0.500000 + 0.866025I$	$6.57974 + 2.02988I$	$6.00000 - 3.46410I$
$u = -1.414210I$ $a = -1.129210 - 0.459499I$ $b = 0.500000 + 0.866025I$	$6.57974 + 2.02988I$	$6.00000 - 3.46410I$
$u = -1.414210I$ $a = -1.53746 + 0.69520I$ $b = 0.500000 - 0.866025I$	$6.57974 - 2.02988I$	$6.00000 + 3.46410I$

III. $\boldsymbol{I_3^u = \langle -9au + 7b + 3a + 2u - 3,\ 9a^2 - 6au - 5u - 11,\ u^2 - u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u-1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} a \\ \frac{9}{7}au - \frac{3}{7}a - \frac{2}{7}u + \frac{3}{7} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{2}{7}au - \frac{3}{7}a + \frac{43}{21}u - \frac{5}{21} \\ -2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{9}{7}au - \frac{10}{7}a - \frac{2}{7}u + \frac{3}{7} \\ -\frac{9}{7}au + \frac{3}{7}a + \frac{2}{7}u - \frac{3}{7} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{2}{7}au - \frac{3}{7}a + \frac{43}{21}u - \frac{47}{21} \\ -2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.571429au - 0.476190a + 0.349206u - 0.0793651 \\ -0.857143au + 0.285714a + 0.523810u - 0.619048 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.571429au + 0.523810a + 0.349206u - 0.0793651 \\ \frac{3}{7}au - \frac{1}{7}a + \frac{5}{21}u - \frac{4}{21} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -a \\ -\frac{9}{7}au + \frac{3}{7}a + \frac{2}{7}u - \frac{3}{7} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u - 8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-2)^4$
c_2, c_6, c_7 c_{12}	$(u^2+2)^2$
c_3, c_{11}	$(u^2-u+1)^2$
c_4	$27(27u^4+36u^3+12u^2+1)$
c_5	$(u+1)^4$
c_8	$(u-1)^4$
c_9	$27(27u^4+18u^3+21u^2+6u+1)$
c_{10}	$(u^2+u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y-4)^4$
c_2, c_6, c_7 c_{12}	$(y+2)^4$
c_3, c_{10}, c_{11}	$(y^2+y+1)^2$
c_4	$729(729y^4-648y^3+198y^2+24y+1)$
c_5, c_8	$(y-1)^4$
c_9	$729(729y^4+810y^3+279y^2+6y+1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -1.058080 + 0.052973I$ $b = -1.414210I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 1.39141 + 0.52438I$ $b = 1.414210I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -1.058080 - 0.052973I$ $b = 1.414210I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 1.39141 - 0.52438I$ $b = -1.414210I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$

IV. $\boldsymbol{I_4^u = \langle b,\ a+u,\ u^2+u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0.500000 - 0.866025I$ $b = 0$	$-1.64493 + 2.02988I$	$0. - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 0.500000 + 0.866025I$ $b = 0$	$-1.64493 - 2.02988I$	$0. + 3.46410I$

V. $I_1^v = \langle a,\ b+v,\ v^2-v+1 \rangle$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} 0 \\ -v \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ v-1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -v \\ -v+1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} v \\ v-1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ -v+1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ -v \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ -v+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.500000 + 0.866025I$ $a = 0$ $b = -0.500000 - 0.866025I$	$1.64493 + 2.02988I$	$0. - 3.46410I$
$v = 0.500000 - 0.866025I$ $a = 0$ $b = -0.500000 + 0.866025I$	$1.64493 - 2.02988I$	$0. + 3.46410I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^2(u-2)^4(u^2-u+1)^3(u^{132}+64u^{131}+\cdots+14800u+5776)$
c_2	$u^2(u^2+2)^2(u^2-u+1)^2(u^2+u+1)(u^{132}-2u^{131}+\cdots-476u+76)$
c_3	$u^2(u^2+2)^2(u^2-u+1)^2(u^2+u+1)(u^{132}+2u^{131}+\cdots+476u+76)$
c_4	$1750329(u-1)^2(u^2-u+1)(27u^4-18u^3+21u^2-6u+1)$ $\cdot(27u^4+36u^3+12u^2+1)$ $\cdot(2401u^{132}+37730u^{131}+\cdots+8199247u+3800453)$
c_5	$u^2(u-1)^2(u+1)^4(u^2+2)^2(u^{132}+3u^{131}+\cdots+9208u+1228)$
c_6	$u^2(u^2+2)^2(u^2-u+1)(u^2+u+1)^2(u^{132}-2u^{131}+\cdots-476u+76)$
c_7	$u^2(u-1)^4(u+1)^2(u^2+2)^2(u^{132}-3u^{131}+\cdots-9208u+1228)$
c_8	$u^2(u-1)^4(u+1)^2(u^2+2)^2(u^{132}+3u^{131}+\cdots+9208u+1228)$
c_9	$1750329(u+1)^2(u^2+u+1)(27u^4-36u^3+12u^2+1)$ $\cdot(27u^4+18u^3+21u^2+6u+1)$ $\cdot(2401u^{132}-37730u^{131}+\cdots-8199247u+3800453)$
c_{10}	$u^2(u^2+2)^2(u^2-u+1)(u^2+u+1)^2(u^{132}+2u^{131}+\cdots+476u+76)$
c_{11}	$u^2(u-2)^4(u^2-u+1)^3(u^{132}-64u^{131}+\cdots-14800u+5776)$
c_{12}	$u^2(u-1)^2(u+1)^4(u^2+2)^2(u^{132}-3u^{131}+\cdots-9208u+1228)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^2(y-4)^4(y^2+y+1)^3$ $\cdot(y^{132}+16y^{131}+\cdots+422881536y+33362176)$
c_2, c_3, c_6 c_{10}	$y^2(y+2)^4(y^2+y+1)^3(y^{132}+64y^{131}+\cdots+14800y+5776)$
c_4, c_9	$3063651608241(y-1)^2(y^2+y+1)$ $\cdot(729y^4-648y^3+\cdots+24y+1)(729y^4+810y^3+279y^2+6y+1)$ $\cdot(5.76\times10^6y^{132}-1.98\times10^8y^{131}+\cdots-2.94\times10^{14}y+1.44\times10^{13})$
c_5, c_7, c_8 c_{12}	$y^2(y-1)^6(y+2)^4(y^{132}-65y^{131}+\cdots-1106432y+1507984)$