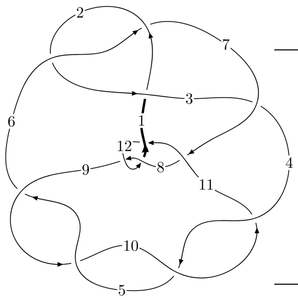
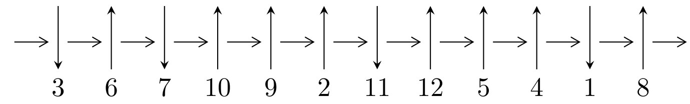
$12a_{0248}$ ($K12a_{0248}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{20} + u^{19} + \cdots - 3u^2 + 2b,\ u^{20} + u^{19} + \cdots + 2a - 1,\ u^{22} + u^{21} + \cdots + u + 1\rangle$$
$$I_2^u = \langle 3.68754 \times 10^{30}u^{61} + 8.39103 \times 10^{30}u^{60} + \cdots + 2.19146 \times 10^{31}b - 4.54412 \times 10^{30},$$
$$5.62366 \times 10^{30}u^{61} + 9.32012 \times 10^{29}u^{60} + \cdots + 6.57438 \times 10^{31}a + 1.25939 \times 10^{32},\ u^{62} + 2u^{61} + \cdots + 7u + 3$$
$$I_3^u = \langle -au + b - u,\ a^2 - 2u,\ u^2 - u + 1\rangle$$
$$I_4^u = \langle b + u,\ a,\ u^2 + u + 1\rangle$$
$$I_5^u = \langle -au + b + 1,\ a^2 - 2u,\ u^2 - u + 1\rangle$$
$$I_6^u = \langle b + 1,\ a,\ u^2 + u + 1\rangle$$

* 6 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 96 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.

$$I^u_1 = \langle u^{20}+u^{19}+\cdots-3u^2+2b,\ u^{20}+u^{19}+\cdots+2a-1,\ u^{22}+u^{21}+\cdots+u+1\rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u^4+u^2+1\\u^6+2u^4+u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-\frac{1}{2}u^{20}-\frac{1}{2}u^{19}+\cdots-\frac{1}{2}u+\frac{1}{2}\\-\frac{1}{2}u^{20}-\frac{1}{2}u^{19}+\cdots-\frac{1}{2}u^3+\frac{3}{2}u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}\frac{1}{2}u^{21}+\frac{1}{2}u^{20}+\cdots+\frac{1}{2}u^4-\frac{5}{2}u^3\\-\frac{1}{2}u^{19}-\frac{1}{2}u^{18}+\cdots-\frac{1}{2}u^2+\frac{1}{2}u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-\frac{1}{2}u^{20}-\frac{1}{2}u^{19}+\cdots-\frac{1}{2}u+\frac{1}{2}\\-\frac{1}{2}u^{20}-\frac{1}{2}u^{19}+\cdots-\frac{1}{2}u^3+\frac{3}{2}u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-\frac{1}{2}u^{19}-\frac{1}{2}u^{18}+\cdots-\frac{1}{2}u^2+\frac{1}{2}u\\-\frac{1}{2}u^{21}-\frac{1}{2}u^{20}+\cdots-\frac{1}{2}u^2+\frac{1}{2}u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-\frac{1}{2}u^{20}-u^{19}+\cdots-2u-\frac{1}{2}\\-u^{21}-\frac{3}{2}u^{20}+\cdots-2u^2-\frac{1}{2}u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-\frac{1}{2}u^{20}-\frac{1}{2}u^{19}+\cdots-\frac{1}{2}u+\frac{1}{2}\\-\frac{1}{2}u^{20}-\frac{1}{2}u^{19}+\cdots+\frac{1}{2}u+\frac{1}{2}\end{pmatrix}$$

(ii) Obstruction class $=-1$

(iii) Cusp Shapes $= 5u^{21}+u^{20}+29u^{19}+u^{18}+79u^{17}-5u^{16}+115u^{15}-19u^{14}+79u^{13}-18u^{12}-5u^{11}-30u^9+8u^8+15u^7-18u^6+37u^5-17u^4+11u^3+1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{22} + 13u^{21} + \cdots + 3u + 1$
c_2, c_6, c_8 c_{12}	$u^{22} - u^{21} + \cdots - u + 1$
c_3, c_7	$u^{22} + u^{21} + \cdots + u + 1$
c_4, c_5, c_9 c_{10}	$u^{22} - 5u^{21} + \cdots - 24u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{22} - 3y^{21} + \cdots + 11y + 1$
c_2, c_6, c_8 c_{12}	$y^{22} + 13y^{21} + \cdots + 3y + 1$
c_3, c_7	$y^{22} - 19y^{21} + \cdots + 3y + 1$
c_4, c_5, c_9 c_{10}	$y^{22} + 25y^{21} + \cdots - 32y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.277173 + 1.020170I$ $a = -1.65615 - 0.40699I$ $b = 0.13433 - 1.51680I$	$-7.08694 + 3.87705I$	$-7.21377 - 4.81561I$
$u = 0.277173 - 1.020170I$ $a = -1.65615 + 0.40699I$ $b = 0.13433 + 1.51680I$	$-7.08694 - 3.87705I$	$-7.21377 + 4.81561I$
$u = -0.121456 + 0.889759I$ $a = -1.029430 - 0.242749I$ $b = -0.505192 + 0.384473I$	$-2.07127 - 1.48890I$	$-2.67809 + 4.69847I$
$u = -0.121456 - 0.889759I$ $a = -1.029430 + 0.242749I$ $b = -0.505192 - 0.384473I$	$-2.07127 + 1.48890I$	$-2.67809 - 4.69847I$
$u = -0.848934 + 0.255974I$ $a = 1.72949 - 0.07214I$ $b = 1.176080 - 0.436448I$	$-8.20167 + 4.95433I$	$1.91829 - 2.01188I$
$u = -0.848934 - 0.255974I$ $a = 1.72949 + 0.07214I$ $b = 1.176080 + 0.436448I$	$-8.20167 - 4.95433I$	$1.91829 + 2.01188I$
$u = 0.403077 + 1.151660I$ $a = -0.87654 - 1.38792I$ $b = 1.59601 - 1.51481I$	$-7.80702 + 4.05683I$	$-5.44929 - 3.62162I$
$u = 0.403077 - 1.151660I$ $a = -0.87654 + 1.38792I$ $b = 1.59601 + 1.51481I$	$-7.80702 - 4.05683I$	$-5.44929 + 3.62162I$
$u = 0.716845 + 0.261797I$ $a = 1.67749 + 0.17960I$ $b = 0.911783 + 0.513874I$	$-0.28086 - 2.78084I$	$4.54791 + 3.72037I$
$u = 0.716845 - 0.261797I$ $a = 1.67749 - 0.17960I$ $b = 0.911783 - 0.513874I$	$-0.28086 + 2.78084I$	$4.54791 - 3.72037I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.498272 + 1.142550I$ $a = -0.43520 + 1.93340I$ $b = 2.28341 + 1.52363I$	$-3.73649 - 7.94900I$	$-0.13573 + 6.16396I$
$u = -0.498272 - 1.142550I$ $a = -0.43520 - 1.93340I$ $b = 2.28341 - 1.52363I$	$-3.73649 + 7.94900I$	$-0.13573 - 6.16396I$
$u = 0.444842 + 0.593309I$ $a = 1.42127 + 1.52607I$ $b = -0.44921 + 1.51322I$	$-4.25955 + 2.40332I$	$2.42276 - 1.87700I$
$u = 0.444842 - 0.593309I$ $a = 1.42127 - 1.52607I$ $b = -0.44921 - 1.51322I$	$-4.25955 - 2.40332I$	$2.42276 + 1.87700I$
$u = 0.551692 + 1.163780I$ $a = -0.01034 - 1.91326I$ $b = 2.50735 - 1.20167I$	$-5.50564 + 12.55900I$	$-1.64021 - 10.10675I$
$u = 0.551692 - 1.163780I$ $a = -0.01034 + 1.91326I$ $b = 2.50735 + 1.20167I$	$-5.50564 - 12.55900I$	$-1.64021 + 10.10675I$
$u = -0.335392 + 1.264210I$ $a = -0.530073 + 0.859819I$ $b = 1.47236 + 0.87987I$	$-17.5375 - 2.7555I$	$-7.01676 + 2.91273I$
$u = -0.335392 - 1.264210I$ $a = -0.530073 - 0.859819I$ $b = 1.47236 - 0.87987I$	$-17.5375 + 2.7555I$	$-7.01676 - 2.91273I$
$u = -0.591533 + 1.189200I$ $a = 0.24537 + 1.77352I$ $b = 2.54369 + 0.94767I$	$-13.6900 - 15.6170I$	$-3.36409 + 8.79372I$
$u = -0.591533 - 1.189200I$ $a = 0.24537 - 1.77352I$ $b = 2.54369 - 0.94767I$	$-13.6900 + 15.6170I$	$-3.36409 - 8.79372I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.498042 + 0.364034I$ $a = 1.46412 - 0.51940I$ $b = 0.329394 - 0.747695I$	$1.089740 - 0.536721I$	$8.60899 + 3.28109I$
$u = -0.498042 - 0.364034I$ $a = 1.46412 + 0.51940I$ $b = 0.329394 + 0.747695I$	$1.089740 + 0.536721I$	$8.60899 - 3.28109I$

II.

$\boldsymbol{I^u_2 = \langle 3.69\times10^{30}u^{61} + 8.39\times10^{30}u^{60} + \cdots + 2.19\times10^{31}b - 4.54\times10^{30},\ 5.62\times10^{30}u^{61} + 9.32\times10^{29}u^{60} + \cdots + 6.57\times10^{31}a + 1.26\times10^{32},\ u^{62} + 2u^{61} + \cdots + 7u + 3\rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0855391u^{61} - 0.0141764u^{60} + \cdots - 4.70351u - 1.91561 \\ -0.168269u^{61} - 0.382897u^{60} + \cdots - 2.55324u + 0.207356 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.784652u^{61} - 1.03466u^{60} + \cdots - 6.06002u - 3.97213 \\ -0.416695u^{61} + 0.167342u^{60} + \cdots + 4.79125u + 3.54242 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0402708u^{61} + 0.447531u^{60} + \cdots - 3.91890u - 2.58902 \\ -0.267323u^{61} - 0.161926u^{60} + \cdots - 2.65084u + 0.351084 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.291785u^{61} - 0.157841u^{60} + \cdots - 2.92917u - 3.12929 \\ 0.0849651u^{61} + 0.650458u^{60} + \cdots + 0.142039u + 0.688054 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.890090u^{61} - 2.38676u^{60} + \cdots - 9.65587u - 6.58484 \\ 0.381623u^{61} - 0.451639u^{60} + \cdots + 1.38007u + 0.627994 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.223944u^{61} + 0.335268u^{60} + \cdots - 2.74033u - 3.36849 \\ -0.480269u^{61} - 0.308145u^{60} + \cdots - 1.68366u - 0.00366767 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.13514u^{61} + 3.90356u^{60} + \cdots + 2.88438u - 1.52833$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{62} + 30u^{61} + \cdots + 35u + 9$
c_2, c_6, c_8 c_{12}	$u^{62} - 2u^{61} + \cdots - 7u + 3$
c_3, c_7	$u^{62} + 2u^{61} + \cdots - 10747u + 14583$
c_4, c_5, c_9 c_{10}	$(u^{31} + 2u^{30} + \cdots - 8u - 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{62} + 6y^{61} + \cdots - 1009y + 81$
c_2, c_6, c_8 c_{12}	$y^{62} + 30y^{61} + \cdots + 35y + 9$
c_3, c_7	$y^{62} - 18y^{61} + \cdots + 711358091y + 212663889$
c_4, c_5, c_9 c_{10}	$(y^{31} + 38y^{30} + \cdots - 48y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.666104+0.730543I$ $a=\quad 0.087322+0.584354I$ $b=\quad 0.496094-0.738057I$	$-0.36232-5.51796I$	$0.77837+9.61169I$
$u=-0.666104-0.730543I$ $a=\quad 0.087322-0.584354I$ $b=\quad 0.496094+0.738057I$	$-0.36232+5.51796I$	$0.77837-9.61169I$
$u=\quad 0.686447+0.784394I$ $a=\quad 0.440237+0.732627I$ $b=-0.108205+0.403174I$	$-5.20347+2.59275I$	$2.06256-3.16265I$
$u=\quad 0.686447-0.784394I$ $a=\quad 0.440237-0.732627I$ $b=-0.108205-0.403174I$	$-5.20347-2.59275I$	$2.06256+3.16265I$
$u=-0.896489+0.288317I$ $a=-2.09267-0.04312I$ $b=-1.76964+0.85544I$	$-10.9647+10.1676I$	$-0.91392-5.40901I$
$u=-0.896489-0.288317I$ $a=-2.09267+0.04312I$ $b=-1.76964-0.85544I$	$-10.9647-10.1676I$	$-0.91392+5.40901I$
$u=-0.629178+0.873889I$ $a=-0.199672-0.056127I$ $b=-1.082620-0.085481I$	$-0.779034+0.507247I$	$0.-2.93446I$
$u=-0.629178-0.873889I$ $a=-0.199672+0.056127I$ $b=-1.082620+0.085481I$	$-0.779034-0.507247I$	$0.+2.93446I$
$u=\quad 0.449825+0.996232I$ $a=-0.050283-0.198043I$ $b=-1.082620-0.085481I$	$-0.779034+0.507247I$	0
$u=\quad 0.449825-0.996232I$ $a=-0.050283+0.198043I$ $b=-1.082620+0.085481I$	$-0.779034-0.507247I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.890494 + 0.168471I$ $a = -1.321460 - 0.466064I$ $b = -1.36135 - 0.59633I$	$-12.95390 + 1.38125I$	$-3.10767 + 0.27219I$
$u = -0.890494 - 0.168471I$ $a = -1.321460 + 0.466064I$ $b = -1.36135 + 0.59633I$	$-12.95390 - 1.38125I$	$-3.10767 - 0.27219I$
$u = 0.788781 + 0.767503I$ $a = 0.238484 - 0.701341I$ $b = 0.558659 + 0.646395I$	$-7.97068 + 6.77480I$	$0. - 6.34396I$
$u = 0.788781 - 0.767503I$ $a = 0.238484 + 0.701341I$ $b = 0.558659 - 0.646395I$	$-7.97068 - 6.77480I$	$0. + 6.34396I$
$u = -0.563357 + 0.949810I$ $a = 0.400448 - 0.334162I$ $b = 0.360204 - 0.897228I$	$0.38775 - 3.17615I$	0
$u = -0.563357 - 0.949810I$ $a = 0.400448 + 0.334162I$ $b = 0.360204 + 0.897228I$	$0.38775 + 3.17615I$	0
$u = 0.550433 + 0.959763I$ $a = 1.297360 + 0.482083I$ $b = 0.29971 + 1.71948I$	$-5.29982 + 1.79874I$	0
$u = 0.550433 - 0.959763I$ $a = 1.297360 - 0.482083I$ $b = 0.29971 - 1.71948I$	$-5.29982 - 1.79874I$	0
$u = -0.586824 + 0.636146I$ $a = 0.495132 - 0.651002I$ $b = -0.374983 - 0.161852I$	$1.31051 - 1.39768I$	$6.56379 + 5.41262I$
$u = -0.586824 - 0.636146I$ $a = 0.495132 + 0.651002I$ $b = -0.374983 + 0.161852I$	$1.31051 + 1.39768I$	$6.56379 - 5.41262I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.491654 + 1.034130I$ $a = 0.074800 + 0.504612I$ $b = 0.496094 + 0.738057I$	$-0.36232 + 5.51796I$	0
$u = 0.491654 - 1.034130I$ $a = 0.074800 - 0.504612I$ $b = 0.496094 - 0.738057I$	$-0.36232 - 5.51796I$	0
$u = 0.801270 + 0.256679I$ $a = -2.23504 - 0.16817I$ $b = -1.66877 - 0.97408I$	$-2.82013 - 7.52476I$	$1.18698 + 6.99451I$
$u = 0.801270 - 0.256679I$ $a = -2.23504 + 0.16817I$ $b = -1.66877 + 0.97408I$	$-2.82013 + 7.52476I$	$1.18698 - 6.99451I$
$u = 0.323535 + 1.114360I$ $a = 0.075800 + 1.078080I$ $b = -1.27158 + 0.73117I$	$-4.23586 + 0.27259I$	0
$u = 0.323535 - 1.114360I$ $a = 0.075800 - 1.078080I$ $b = -1.27158 - 0.73117I$	$-4.23586 - 0.27259I$	0
$u = 0.750659 + 0.887428I$ $a = -0.358620 + 0.042820I$ $b = -1.162170 + 0.126258I$	$-8.32783 - 1.04707I$	0
$u = 0.750659 - 0.887428I$ $a = -0.358620 - 0.042820I$ $b = -1.162170 - 0.126258I$	$-8.32783 + 1.04707I$	0
$u = -0.472572 + 1.082310I$ $a = 0.148446 - 1.393170I$ $b = -1.41819 - 1.05546I$	$-0.99698 - 3.48995I$	0
$u = -0.472572 - 1.082310I$ $a = 0.148446 + 1.393170I$ $b = -1.41819 + 1.05546I$	$-0.99698 + 3.48995I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.387583 + 1.137140I$ $a = 0.60373 + 1.77130I$ $b = 1.90030$	-4.52090	0
$u = -0.387583 - 1.137140I$ $a = 0.60373 - 1.77130I$ $b = 1.90030$	-4.52090	0
$u = -0.426409 + 1.129220I$ $a = -0.131838 + 0.321832I$ $b = -1.162170 + 0.126258I$	$-8.32783 - 1.04707I$	0
$u = -0.426409 - 1.129220I$ $a = -0.131838 - 0.321832I$ $b = -1.162170 - 0.126258I$	$-8.32783 + 1.04707I$	0
$u = 0.291515 + 1.180250I$ $a = 0.23307 - 1.67452I$ $b = 1.65227 - 0.33136I$	$-7.28291 - 4.17154I$	0
$u = 0.291515 - 1.180250I$ $a = 0.23307 + 1.67452I$ $b = 1.65227 + 0.33136I$	$-7.28291 + 4.17154I$	0
$u = -0.475171 + 1.135050I$ $a = 0.049532 - 0.660701I$ $b = 0.558659 - 0.646395I$	$-7.97068 - 6.77480I$	0
$u = -0.475171 - 1.135050I$ $a = 0.049532 + 0.660701I$ $b = 0.558659 + 0.646395I$	$-7.97068 + 6.77480I$	0
$u = 0.418242 + 0.627505I$ $a = -0.559898 - 0.519466I$ $b = 0.360204 + 0.897228I$	$0.38775 + 3.17615I$	$4.19909 + 0.89025I$
$u = 0.418242 - 0.627505I$ $a = -0.559898 + 0.519466I$ $b = 0.360204 - 0.897228I$	$0.38775 - 3.17615I$	$4.19909 - 0.89025I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.530235 + 1.136730I$ $a = -0.07716 + 1.50150I$ $b = -1.66877 + 0.97408I$	$-2.82013 + 7.52476I$	0
$u = 0.530235 - 1.136730I$ $a = -0.07716 - 1.50150I$ $b = -1.66877 - 0.97408I$	$-2.82013 - 7.52476I$	0
$u = 0.477297 + 1.164540I$ $a = 0.77266 - 1.43879I$ $b = 1.65227 + 0.33136I$	$-7.28291 + 4.17154I$	0
$u = 0.477297 - 1.164540I$ $a = 0.77266 + 1.43879I$ $b = 1.65227 - 0.33136I$	$-7.28291 - 4.17154I$	0
$u = -0.278446 + 1.228190I$ $a = -0.071389 - 1.005860I$ $b = -1.36135 - 0.59633I$	$-12.95390 + 1.38125I$	0
$u = -0.278446 - 1.228190I$ $a = -0.071389 + 1.005860I$ $b = -1.36135 + 0.59633I$	$-12.95390 - 1.38125I$	0
$u = 0.722560 + 0.106633I$ $a = -1.50741 + 0.82209I$ $b = -1.27158 + 0.73117I$	$-4.23586 + 0.27259I$	$-1.68227 + 0.33399I$
$u = 0.722560 - 0.106633I$ $a = -1.50741 - 0.82209I$ $b = -1.27158 - 0.73117I$	$-4.23586 - 0.27259I$	$-1.68227 - 0.33399I$
$u = -0.240118 + 1.264390I$ $a = 0.15678 + 1.45730I$ $b = 1.40042 + 0.34149I$	$-16.1317 + 6.5577I$	0
$u = -0.240118 - 1.264390I$ $a = 0.15678 - 1.45730I$ $b = 1.40042 - 0.34149I$	$-16.1317 - 6.5577I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.566003 + 1.180140I$ $a = -0.23494 - 1.48755I$ $b = -1.76964 - 0.85544I$	$-10.9647 - 10.1676I$	0
$u = -0.566003 - 1.180140I$ $a = -0.23494 + 1.48755I$ $b = -1.76964 + 0.85544I$	$-10.9647 + 10.1676I$	0
$u = -0.664612 + 0.170734I$ $a = -2.32627 + 0.63475I$ $b = -1.41819 + 1.05546I$	$-0.99698 + 3.48995I$	$4.01270 - 2.89115I$
$u = -0.664612 - 0.170734I$ $a = -2.32627 - 0.63475I$ $b = -1.41819 - 1.05546I$	$-0.99698 - 3.48995I$	$4.01270 + 2.89115I$
$u = 0.501484 + 0.456925I$ $a = 0.826582 + 0.636737I$ $b = -0.374983 - 0.161852I$	$1.31051 - 1.39768I$	$6.56379 + 5.41262I$
$u = 0.501484 - 0.456925I$ $a = 0.826582 - 0.636737I$ $b = -0.374983 + 0.161852I$	$1.31051 + 1.39768I$	$6.56379 - 5.41262I$
$u = -0.536448 + 1.217100I$ $a = 0.67450 + 1.24755I$ $b = 1.40042 - 0.34149I$	$-16.1317 - 6.5577I$	0
$u = -0.536448 - 1.217100I$ $a = 0.67450 - 1.24755I$ $b = 1.40042 + 0.34149I$	$-16.1317 + 6.5577I$	0
$u = 0.078963 + 0.630242I$ $a = -2.31047 - 0.68841I$ $b = 0.29971 - 1.71948I$	$-5.29982 - 1.79874I$	$-2.21614 + 3.31862I$
$u = 0.078963 - 0.630242I$ $a = -2.31047 + 0.68841I$ $b = 0.29971 + 1.71948I$	$-5.29982 + 1.79874I$	$-2.21614 - 3.31862I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.583093 + 0.120029I$ $a = 0.73556 - 1.30329I$ $b = -0.108205 + 0.403174I$	$-5.20347 + 2.59275I$	$2.06256 - 3.16265I$
$u = -0.583093 - 0.120029I$ $a = 0.73556 + 1.30329I$ $b = -0.108205 - 0.403174I$	$-5.20347 - 2.59275I$	$2.06256 + 3.16265I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = 1.224740 + 0.707110I$ $b = 0.50000 + 2.28024I$	$-4.93480 + 4.05977I$	$0. - 6.92820I$
$u = 0.500000 + 0.866025I$ $a = -1.224740 - 0.707110I$ $b = 0.500000 - 0.548188I$	$-4.93480 + 4.05977I$	$0. - 6.92820I$
$u = 0.500000 - 0.866025I$ $a = 1.224740 - 0.707110I$ $b = 0.50000 - 2.28024I$	$-4.93480 - 4.05977I$	$0. + 6.92820I$
$u = 0.500000 - 0.866025I$ $a = -1.224740 + 0.707110I$ $b = 0.500000 + 0.548188I$	$-4.93480 - 4.05977I$	$0. + 6.92820I$

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

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix} u \\ u+1 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} u \\ u+2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 1 \\ -2u \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0$ $b = 0.500000 - 0.866025I$	$-4.05977I$	$0. + 6.92820I$
$u = -0.500000 - 0.866025I$ $a = 0$ $b = 0.500000 + 0.866025I$	$4.05977I$	$0. - 6.92820I$

V. $I_5^u = \langle -au+b+1,\ a^2-2u,\ u^2-u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = 1.224740 + 0.707110I$ $b = -1.00000 + 1.41421I$	-4.93480	0
$u = 0.500000 + 0.866025I$ $a = -1.224740 - 0.707110I$ $b = -1.00000 - 1.41421I$	-4.93480	0
$u = 0.500000 - 0.866025I$ $a = 1.224740 - 0.707110I$ $b = -1.00000 - 1.41421I$	-4.93480	0
$u = 0.500000 - 0.866025I$ $a = -1.224740 + 0.707110I$ $b = -1.00000 + 1.41421I$	-4.93480	0

VI. $I_6^u = \langle b+1,\ a,\ u^2+u+1 \rangle$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix} u \\ u+1 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ 2u+1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -u-1 \\ -2 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0$ $b = -1.00000$	0	6.00000
$u = -0.500000 - 0.866025I$ $a = 0$ $b = -1.00000$	0	6.00000

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$((u^2-u+1)^6)(u^{22}+13u^{21}+\cdots+3u+1)(u^{62}+30u^{61}+\cdots+35u+9)$
c_2, c_8	$((u^2-u+1)^4)(u^2+u+1)^2(u^{22}-u^{21}+\cdots-u+1)$ $\cdot(u^{62}-2u^{61}+\cdots-7u+3)$
c_3, c_7	$((u^2-u+1)^2)(u^2+u+1)^4(u^{22}+u^{21}+\cdots+u+1)$ $\cdot(u^{62}+2u^{61}+\cdots-10747u+14583)$
c_4, c_5, c_9 c_{10}	$u^4(u^2+2)^4(u^{22}-5u^{21}+\cdots-24u+4)(u^{31}+2u^{30}+\cdots-8u-2)^2$
c_6, c_{12}	$((u^2-u+1)^2)(u^2+u+1)^4(u^{22}-u^{21}+\cdots-u+1)$ $\cdot(u^{62}-2u^{61}+\cdots-7u+3)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$((y^2+y+1)^6)(y^{22}-3y^{21}+\cdots+11y+1)$ $\cdot(y^{62}+6y^{61}+\cdots-1009y+81)$
c_2, c_6, c_8 c_{12}	$((y^2+y+1)^6)(y^{22}+13y^{21}+\cdots+3y+1)(y^{62}+30y^{61}+\cdots+35y+9)$
c_3, c_7	$((y^2+y+1)^6)(y^{22}-19y^{21}+\cdots+3y+1)$ $\cdot(y^{62}-18y^{61}+\cdots+711358091y+212663889)$
c_4, c_5, c_9 c_{10}	$y^4(y+2)^8(y^{22}+25y^{21}+\cdots-32y+16)$ $\cdot(y^{31}+38y^{30}+\cdots-48y-4)^2$