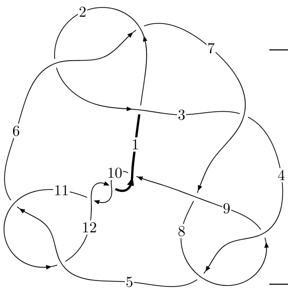
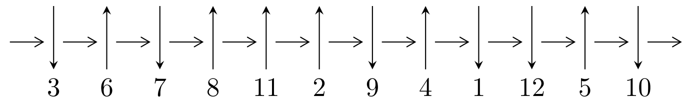
$12a_{0208}$ ($K12a_{0208}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-73876195581u^{31} + 635182095531u^{30} + \cdots + 12605434449654b - 1153435624046, \\
&-324186211813u^{31} + 2767349300228u^{30} + \cdots + 2521086899308a + 292251319739, \\
&u^{32} - 8u^{31} + \cdots - 3u + 4\rangle \\
I_2^u = \langle &-46u^{26}a + 785u^{26} + \cdots + 710a - 2547,\ 2u^{26}a - 2u^{26} + \cdots - 7a + 10,\ u^{27} - 7u^{26} + \cdots - 2u + 1\rangle \\
I_3^u = \langle &b - u + 1,\ a - 1,\ u^2 - u + 1\rangle \\
I_4^u = \langle &b^2 + 1,\ u^2 + a - u + 2,\ u^3 - u^2 + 2u - 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 94 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.

$$I_1^u = \langle -7.39\times10^{10}u^{31}+6.35\times10^{11}u^{30}+\cdots+1.26\times10^{12}b-1.15\times10^{12},\ -3.24\times10^{11}u^{31}+2.77\times10^{12}u^{30}+\cdots+2.52\times10^{12}a+2.92\times10^{11},\ u^{32}-8u^{31}+\cdots-3u+4\rangle$$

(i) Arc colorings

$$a_1 = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}0.128590u^{31}-1.09768u^{30}+\cdots+5.24512u-0.115923\\0.0586066u^{31}-0.503895u^{30}+\cdots-1.40068u+0.915030\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.0983513u^{31}-0.889506u^{30}+\cdots+3.00247u+0.618797\\0.0740836u^{31}-0.470529u^{30}+\cdots-1.24670u+0.527414\end{pmatrix}$$

$$a_5 = \begin{pmatrix}0.146540u^{31}-1.26945u^{30}+\cdots+4.04903u+0.702930\\0.0976318u^{31}-0.820411u^{30}+\cdots-1.76926u+1.02768\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0.172435u^{31}-1.36004u^{30}+\cdots+1.75577u+1.14621\\0.0740836u^{31}-0.470529u^{30}+\cdots-1.24670u+0.527414\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.131853u^{31}-1.12891u^{30}+\cdots+1.57311u+0.851141\\-0.0194438u^{31}+0.129136u^{30}+\cdots-1.66352u+0.689740\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.0569748u^{31}+0.488280u^{30}+\cdots-2.43533u+0.0685016\\-0.0390252u^{31}+0.316515u^{30}+\cdots+0.368581u-0.112645\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0.256919u^{31}-2.15298u^{30}+\cdots+3.47300u+0.998503\\0.136486u^{31}-0.905042u^{30}+\cdots-2.46312u+0.976685\end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix}u^2+1\\u^4+2u^2\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= \frac{204288482497}{630271724827}u^{31} - \frac{1674264130767}{630271724827}u^{30} + \cdots + \frac{8358771694435}{630271724827}u + \frac{744767795870}{630271724827}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{32} + 15u^{31} + \cdots + 6u + 1$
c_2, c_4, c_6 c_8	$u^{32} - u^{31} + \cdots + 3u^2 + 1$
c_3	$u^{32} + 4u^{31} + \cdots + 192u + 128$
c_5, c_{11}	$u^{32} + 2u^{31} + \cdots - 3u + 2$
c_9, c_{10}, c_{12}	$u^{32} + 8u^{31} + \cdots + 3u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{32} + 11y^{31} + \cdots + 2y + 1$
c_2, c_4, c_6 c_8	$y^{32} + 15y^{31} + \cdots + 6y + 1$
c_3	$y^{32} - 14y^{31} + \cdots + 307200y + 16384$
c_5, c_{11}	$y^{32} + 8y^{31} + \cdots + 3y + 4$
c_9, c_{10}, c_{12}	$y^{32} + 32y^{31} + \cdots + 239y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.999865 + 0.413471I$ $a = -0.208119 + 0.661905I$ $b = 0.483840 + 1.151180I$	$-7.03351 + 5.35323I$	$-7.40440 - 3.59025I$
$u = 0.999865 - 0.413471I$ $a = -0.208119 - 0.661905I$ $b = 0.483840 - 1.151180I$	$-7.03351 - 5.35323I$	$-7.40440 + 3.59025I$
$u = 0.689885 + 0.574928I$ $a = 0.507556 + 0.433180I$ $b = -0.644771 - 0.193099I$	$-0.67877 - 2.26339I$	$1.01658 + 3.94466I$
$u = 0.689885 - 0.574928I$ $a = 0.507556 - 0.433180I$ $b = -0.644771 + 0.193099I$	$-0.67877 + 2.26339I$	$1.01658 - 3.94466I$
$u = -0.071362 + 1.109170I$ $a = 0.066207 - 0.263550I$ $b = -0.462260 + 1.063600I$	$-0.59844 - 5.94993I$	$-0.50554 + 7.47801I$
$u = -0.071362 - 1.109170I$ $a = 0.066207 + 0.263550I$ $b = -0.462260 - 1.063600I$	$-0.59844 + 5.94993I$	$-0.50554 - 7.47801I$
$u = 0.856161 + 0.051151I$ $a = 0.159385 - 0.513993I$ $b = -0.308997 - 0.714151I$	$-2.68984 + 1.38889I$	$-4.39846 - 4.80710I$
$u = 0.856161 - 0.051151I$ $a = 0.159385 + 0.513993I$ $b = -0.308997 + 0.714151I$	$-2.68984 - 1.38889I$	$-4.39846 + 4.80710I$
$u = 0.926661 + 0.673958I$ $a = -1.33199 - 0.84627I$ $b = 0.530539 - 1.183740I$	$-6.27266 - 11.59750I$	$-5.82560 + 10.02458I$
$u = 0.926661 - 0.673958I$ $a = -1.33199 + 0.84627I$ $b = 0.530539 + 1.183740I$	$-6.27266 + 11.59750I$	$-5.82560 - 10.02458I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.284666 + 1.231480I$ $a = 0.003444 - 0.217087I$ $b = -0.044400 - 0.677264I$	$1.09703 - 2.68597I$	$3.28542 + 2.17424I$
$u = 0.284666 - 1.231480I$ $a = 0.003444 + 0.217087I$ $b = -0.044400 + 0.677264I$	$1.09703 + 2.68597I$	$3.28542 - 2.17424I$
$u = -0.134520 + 1.396800I$ $a = 1.98921 - 0.16991I$ $b = -0.578102 - 1.189990I$	$1.63545 + 10.10540I$	$0. - 5.69385I$
$u = -0.134520 - 1.396800I$ $a = 1.98921 + 0.16991I$ $b = -0.578102 + 1.189990I$	$1.63545 - 10.10540I$	$0. + 5.69385I$
$u = -0.02346 + 1.43595I$ $a = -1.030550 + 0.853034I$ $b = 0.790287 - 0.361253I$	$6.70077 - 0.35933I$	$6.32864 + 0.I$
$u = -0.02346 - 1.43595I$ $a = -1.030550 - 0.853034I$ $b = 0.790287 + 0.361253I$	$6.70077 + 0.35933I$	$6.32864 + 0.I$
$u = 0.41491 + 1.42277I$ $a = -0.149267 - 0.036799I$ $b = 0.429768 + 1.091750I$	$-1.327340 + 0.277330I$	0
$u = 0.41491 - 1.42277I$ $a = -0.149267 + 0.036799I$ $b = 0.429768 - 1.091750I$	$-1.327340 - 0.277330I$	0
$u = -0.142919 + 0.470061I$ $a = -1.90622 + 0.84746I$ $b = 0.540356 + 0.720045I$	$1.30044 + 2.16188I$	$5.01054 - 3.83056I$
$u = -0.142919 - 0.470061I$ $a = -1.90622 - 0.84746I$ $b = 0.540356 - 0.720045I$	$1.30044 - 2.16188I$	$5.01054 + 3.83056I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.03544 + 1.51856I$ $a = -1.68660 - 0.54922I$ $b = 0.699799 + 0.849942I$	$8.08214 + 2.19583I$	0
$u = 0.03544 - 1.51856I$ $a = -1.68660 + 0.54922I$ $b = 0.699799 - 0.849942I$	$8.08214 - 2.19583I$	0
$u = -0.454564 + 0.152446I$ $a = 0.84677 - 2.43519I$ $b = -0.530198 - 1.146870I$	$-3.38970 + 8.05749I$	$-0.05529 - 6.30206I$
$u = -0.454564 - 0.152446I$ $a = 0.84677 + 2.43519I$ $b = -0.530198 + 1.146870I$	$-3.38970 - 8.05749I$	$-0.05529 + 6.30206I$
$u = 0.25659 + 1.55249I$ $a = 1.018930 + 0.749304I$ $b = -0.804182 - 0.329406I$	$6.33684 - 5.84113I$	0
$u = 0.25659 - 1.55249I$ $a = 1.018930 - 0.749304I$ $b = -0.804182 + 0.329406I$	$6.33684 + 5.84113I$	0
$u = 0.16262 + 1.57088I$ $a = 1.62580 - 0.57249I$ $b = -0.694814 + 0.875920I$	$7.92044 - 8.51420I$	0
$u = 0.16262 - 1.57088I$ $a = 1.62580 + 0.57249I$ $b = -0.694814 - 0.875920I$	$7.92044 + 8.51420I$	0
$u = 0.34020 + 1.59071I$ $a = -1.81440 - 0.16181I$ $b = 0.574377 - 1.201010I$	$1.0251 - 16.3375I$	0
$u = 0.34020 - 1.59071I$ $a = -1.81440 + 0.16181I$ $b = 0.574377 + 1.201010I$	$1.0251 + 16.3375I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.140182 + 0.315362I$ $a = 0.784849 + 1.141860I$ $b = 0.518758 - 0.447984I$	$1.051570 - 0.810934I$	$6.74474 + 3.92362I$
$u = -0.140182 - 0.315362I$ $a = 0.784849 - 1.141860I$ $b = 0.518758 + 0.447984I$	$1.051570 + 0.810934I$	$6.74474 - 3.92362I$

II. $\boldsymbol{I_2^u = \langle -46u^{26}a + 785u^{26} + \cdots + 710a - 2547,\ 2u^{26}a - 2u^{26} + \cdots - 7a + 10,\ u^{27} - 7u^{26} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} a \\ 0.0330223au^{26} - 0.563532u^{26} + \cdots - 0.509691a + 1.82843 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.563532au^{26} - 1.98636u^{26} + \cdots - 1.82843a + 3.96339 \\ -0.0567121au^{26} + 0.0330223u^{26} + \cdots + 0.310122a - 1.50969 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{24} + 6u^{23} + \cdots - 4u + 1 \\ u^{24} - 6u^{23} + \cdots - 8u^3 + 4u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.506820au^{26} - 1.95334u^{26} + \cdots - 1.51831a + 2.45370 \\ -0.0567121au^{26} + 0.0330223u^{26} + \cdots + 0.310122a - 1.50969 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.310122au^{26} - 0.490309u^{26} + \cdots + 0.569275a + 0.263460 \\ -0.124910au^{26} - 0.433597u^{26} + \cdots - 0.506820a + 1.95334 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.185212au^{26} + 0.0567121u^{26} + \cdots - 1.07609a + 0.689878 \\ 0.152190au^{26} + 0.620244u^{26} + \cdots + 0.433597a - 2.13855 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{23} + 6u^{22} + \cdots + 8u^2 - 4u \\ -u^{23} + 6u^{22} + \cdots + 4u^2 - u \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 4u^{26} - 28u^{25} + 152u^{24} - 584u^{23} + 1880u^{22} - 5032u^{21} + 11712u^{20} - 23756u^{19} + 42652u^{18} - 67860u^{17} + 96136u^{16} - 120956u^{15} + 134900u^{14} - 132208u^{13} + 112636u^{12} - 81568u^{11} + 48448u^{10} - 21704u^9 + 5692u^8 + 744u^7 - 1464u^6 + 528u^5 + 136u^4 - 188u^3 + 76u^2 + 12u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{54} + 31u^{53} + \cdots + 16u^2 + 1$
c_2, c_4, c_6 c_8	$u^{54} - u^{53} + \cdots - 2u + 1$
c_3	$(u^{27} - u^{26} + \cdots + 4u - 1)^2$
c_5, c_{11}	$(u^{27} - u^{26} + \cdots - u^2 - 1)^2$
c_9, c_{10}, c_{12}	$(u^{27} + 7u^{26} + \cdots - 2u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{54} - 17y^{53} + \cdots + 32y + 1$
c_2, c_4, c_6 c_8	$y^{54} + 31y^{53} + \cdots + 16y^2 + 1$
c_3	$(y^{27} - 13y^{26} + \cdots - 2y - 1)^2$
c_5, c_{11}	$(y^{27} + 7y^{26} + \cdots - 2y - 1)^2$
c_9, c_{10}, c_{12}	$(y^{27} + 27y^{26} + \cdots + 14y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.851026 + 0.532141I$ $a = -0.307668 + 0.778974I$ $b = 0.344784 + 1.223910I$	$-7.58873 - 2.79673I$	$-8.25981 + 4.61920I$
$u = 0.851026 + 0.532141I$ $a = -1.75724 - 0.97566I$ $b = 0.405628 - 1.159490I$	$-7.58873 - 2.79673I$	$-8.25981 + 4.61920I$
$u = 0.851026 - 0.532141I$ $a = -0.307668 - 0.778974I$ $b = 0.344784 - 1.223910I$	$-7.58873 + 2.79673I$	$-8.25981 - 4.61920I$
$u = 0.851026 - 0.532141I$ $a = -1.75724 + 0.97566I$ $b = 0.405628 + 1.159490I$	$-7.58873 + 2.79673I$	$-8.25981 - 4.61920I$
$u = 0.881276 + 0.374809I$ $a = 0.289170 - 0.634254I$ $b = -0.382236 - 1.103440I$	$-4.11296 + 0.98697I$	$-4.82659 + 0.25321I$
$u = 0.881276 + 0.374809I$ $a = -0.324670 - 0.523733I$ $b = 0.673840 - 0.103585I$	$-4.11296 + 0.98697I$	$-4.82659 + 0.25321I$
$u = 0.881276 - 0.374809I$ $a = 0.289170 + 0.634254I$ $b = -0.382236 + 1.103440I$	$-4.11296 - 0.98697I$	$-4.82659 - 0.25321I$
$u = 0.881276 - 0.374809I$ $a = -0.324670 + 0.523733I$ $b = 0.673840 + 0.103585I$	$-4.11296 - 0.98697I$	$-4.82659 - 0.25321I$
$u = 0.845632 + 0.655604I$ $a = -0.394766 - 0.373032I$ $b = 0.812413 + 0.177201I$	$-3.30741 - 6.65682I$	$-2.80212 + 7.22011I$
$u = 0.845632 + 0.655604I$ $a = 1.48008 + 0.72677I$ $b = -0.494977 + 1.127680I$	$-3.30741 - 6.65682I$	$-2.80212 + 7.22011I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.845632 - 0.655604I$ $a = -0.394766 + 0.373032I$ $b = 0.812413 - 0.177201I$	$-3.30741 + 6.65682I$	$-2.80212 - 7.22011I$
$u = 0.845632 - 0.655604I$ $a = 1.48008 - 0.72677I$ $b = -0.494977 - 1.127680I$	$-3.30741 + 6.65682I$	$-2.80212 - 7.22011I$
$u = 0.099061 + 0.685673I$ $a = -0.394947 + 0.815475I$ $b = 0.466586 - 0.799061I$	$1.05207 - 2.01066I$	$4.08108 + 3.90758I$
$u = 0.099061 + 0.685673I$ $a = 1.217330 - 0.183901I$ $b = -0.549070 - 0.485974I$	$1.05207 - 2.01066I$	$4.08108 + 3.90758I$
$u = 0.099061 - 0.685673I$ $a = -0.394947 - 0.815475I$ $b = 0.466586 + 0.799061I$	$1.05207 + 2.01066I$	$4.08108 - 3.90758I$
$u = 0.099061 - 0.685673I$ $a = 1.217330 + 0.183901I$ $b = -0.549070 + 0.485974I$	$1.05207 + 2.01066I$	$4.08108 - 3.90758I$
$u = -0.033645 + 1.357360I$ $a = -0.015470 - 0.150550I$ $b = -0.274844 + 1.278800I$	$-0.535824 + 0.961395I$	$-1.27084 - 1.18503I$
$u = -0.033645 + 1.357360I$ $a = 2.44863 + 0.04055I$ $b = -0.464129 - 1.077600I$	$-0.535824 + 0.961395I$	$-1.27084 - 1.18503I$
$u = -0.033645 - 1.357360I$ $a = -0.015470 + 0.150550I$ $b = -0.274844 - 1.278800I$	$-0.535824 - 0.961395I$	$-1.27084 + 1.18503I$
$u = -0.033645 - 1.357360I$ $a = 2.44863 - 0.04055I$ $b = -0.464129 + 1.077600I$	$-0.535824 - 0.961395I$	$-1.27084 + 1.18503I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.119558 + 1.364110I$ $a = 0.76183 - 1.36750I$ $b = -0.344719 + 0.341856I$	$1.58939 - 2.83072I$	$1.79804 + 3.74350I$
$u = 0.119558 + 1.364110I$ $a = 0.0108437 + 0.0806079I$ $b = 0.084381 - 1.175530I$	$1.58939 - 2.83072I$	$1.79804 + 3.74350I$
$u = 0.119558 - 1.364110I$ $a = 0.76183 + 1.36750I$ $b = -0.344719 - 0.341856I$	$1.58939 + 2.83072I$	$1.79804 - 3.74350I$
$u = 0.119558 - 1.364110I$ $a = 0.0108437 - 0.0806079I$ $b = 0.084381 + 1.175530I$	$1.58939 + 2.83072I$	$1.79804 - 3.74350I$
$u = -0.08960 + 1.41179I$ $a = 0.960076 - 0.790976I$ $b = -0.884320 + 0.254207I$	$4.44628 + 4.75862I$	$3.32590 - 2.41055I$
$u = -0.08960 + 1.41179I$ $a = -2.05371 + 0.00645I$ $b = 0.577308 + 1.120420I$	$4.44628 + 4.75862I$	$3.32590 - 2.41055I$
$u = -0.08960 - 1.41179I$ $a = 0.960076 + 0.790976I$ $b = -0.884320 - 0.254207I$	$4.44628 - 4.75862I$	$3.32590 + 2.41055I$
$u = -0.08960 - 1.41179I$ $a = -2.05371 - 0.00645I$ $b = 0.577308 - 1.120420I$	$4.44628 - 4.75862I$	$3.32590 + 2.41055I$
$u = 0.25231 + 1.41767I$ $a = -0.704744 - 1.061140I$ $b = 0.433641 + 0.198875I$	$1.41036 - 3.05015I$	$0. + 1.99178I$
$u = 0.25231 + 1.41767I$ $a = 0.0734789 + 0.0398264I$ $b = -0.155570 - 1.155430I$	$1.41036 - 3.05015I$	$0. + 1.99178I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.25231 - 1.41767I$ $a = -0.704744 + 1.061140I$ $b = 0.433641 - 0.198875I$	$1.41036 + 3.05015I$	$0. - 1.99178I$
$u = 0.25231 - 1.41767I$ $a = 0.0734789 - 0.0398264I$ $b = -0.155570 + 1.155430I$	$1.41036 + 3.05015I$	$0. - 1.99178I$
$u = 0.10205 + 1.54134I$ $a = 1.46611 + 0.70019I$ $b = -0.732596 - 0.699246I$	$8.43216 - 3.15301I$	$5.82291 + 0.I$
$u = 0.10205 + 1.54134I$ $a = -1.44220 + 0.75303I$ $b = 0.722594 - 0.728691I$	$8.43216 - 3.15301I$	$5.82291 + 0.I$
$u = 0.10205 - 1.54134I$ $a = 1.46611 - 0.70019I$ $b = -0.732596 + 0.699246I$	$8.43216 + 3.15301I$	$5.82291 + 0.I$
$u = 0.10205 - 1.54134I$ $a = -1.44220 - 0.75303I$ $b = 0.722594 + 0.728691I$	$8.43216 + 3.15301I$	$5.82291 + 0.I$
$u = 0.30604 + 1.51914I$ $a = -0.1073610 - 0.0682683I$ $b = 0.294293 + 1.287200I$	$-0.99741 - 7.02686I$	$0. + 6.08794I$
$u = 0.30604 + 1.51914I$ $a = -2.24569 - 0.03447I$ $b = 0.474570 - 1.100580I$	$-0.99741 - 7.02686I$	$0. + 6.08794I$
$u = 0.30604 - 1.51914I$ $a = -0.1073610 + 0.0682683I$ $b = 0.294293 - 1.287200I$	$-0.99741 + 7.02686I$	$0. - 6.08794I$
$u = 0.30604 - 1.51914I$ $a = -2.24569 + 0.03447I$ $b = 0.474570 + 1.100580I$	$-0.99741 + 7.02686I$	$0. - 6.08794I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.357506 + 0.271060I$ $a = 1.255620 + 0.003386I$ $b = -0.067219 - 1.140920I$	$-3.64210 - 0.95364I$	$-2.23281 + 7.10310I$
$u = 0.357506 + 0.271060I$ $a = 2.29905 - 3.35138I$ $b = -0.179781 + 0.840004I$	$-3.64210 - 0.95364I$	$-2.23281 + 7.10310I$
$u = 0.357506 - 0.271060I$ $a = 1.255620 - 0.003386I$ $b = -0.067219 + 1.140920I$	$-3.64210 + 0.95364I$	$-2.23281 - 7.10310I$
$u = 0.357506 - 0.271060I$ $a = 2.29905 + 3.35138I$ $b = -0.179781 - 0.840004I$	$-3.64210 + 0.95364I$	$-2.23281 - 7.10310I$
$u = -0.351036 + 0.182657I$ $a = -0.976869 - 0.429852I$ $b = -0.738069 + 0.235848I$	$-0.74562 + 3.27708I$	$3.27794 - 2.87566I$
$u = -0.351036 + 0.182657I$ $a = -1.40048 + 2.62389I$ $b = 0.480202 + 1.056470I$	$-0.74562 + 3.27708I$	$3.27794 - 2.87566I$
$u = -0.351036 - 0.182657I$ $a = -0.976869 + 0.429852I$ $b = -0.738069 - 0.235848I$	$-0.74562 - 3.27708I$	$3.27794 + 2.87566I$
$u = -0.351036 - 0.182657I$ $a = -1.40048 - 2.62389I$ $b = 0.480202 - 1.056470I$	$-0.74562 - 3.27708I$	$3.27794 + 2.87566I$
$u = 0.30716 + 1.57661I$ $a = -0.950516 - 0.672058I$ $b = 0.895765 + 0.235028I$	$3.93318 - 10.97750I$	0
$u = 0.30716 + 1.57661I$ $a = 1.89805 + 0.02059I$ $b = -0.573651 + 1.137950I$	$3.93318 - 10.97750I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.30716 - 1.57661I$ $a = -0.950516 + 0.672058I$ $b = 0.895765 - 0.235028I$	$3.93318 + 10.97750I$	0
$u = 0.30716 - 1.57661I$ $a = 1.89805 - 0.02059I$ $b = -0.573651 - 1.137950I$	$3.93318 + 10.97750I$	0
$u = -0.294686$ $a = 0.41605 + 3.96773I$ $b = -0.324823 + 1.147400I$	-4.80157	-2.25830
$u = -0.294686$ $a = 0.41605 - 3.96773I$ $b = -0.324823 - 1.147400I$	-4.80157	-2.25830

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 12u - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.500000 + 0.866025I$ $a = \quad 1.00000$ $b = -0.500000 + 0.866025I$	$-\ 6.08965I$	$0. + 10.39230I$
$u = \quad 0.500000 - 0.866025I$ $a = \quad 1.00000$ $b = -0.500000 - 0.866025I$	$6.08965I$	$0. - 10.39230I$

IV. $\boldsymbol{I_4^u = \langle b^2+1,\ u^2+a-u+2,\ u^3-u^2+2u-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2+4u-12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -0.122561 + 0.744862I$ $b = 1.000000I$	$-0.26574 - 2.82812I$	$-4.49024 + 2.97945I$
$u = 0.215080 + 1.307140I$ $a = -0.122561 + 0.744862I$ $b = -1.000000I$	$-0.26574 - 2.82812I$	$-4.49024 + 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.122561 - 0.744862I$ $b = 1.000000I$	$-0.26574 + 2.82812I$	$-4.49024 - 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.122561 - 0.744862I$ $b = -1.000000I$	$-0.26574 + 2.82812I$	$-4.49024 - 2.97945I$
$u = 0.569840$ $a = -1.75488$ $b = 1.000000I$	-4.40332	-11.0200
$u = 0.569840$ $a = -1.75488$ $b = -1.000000I$	-4.40332	-11.0200

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$((u-1)^6)(u^2+u+1)(u^{32}+15u^{31}+\cdots+6u+1)$ $\cdot\,(u^{54}+31u^{53}+\cdots+16u^2+1)$
c_2, c_4, c_6 c_8	$((u^2+1)^3)(u^2+u+1)(u^{32}-u^{31}+\cdots+3u^2+1)(u^{54}-u^{53}+\cdots-2u+1)$
c_3	$u^6(u^2-u+1)(u^{27}-u^{26}+\cdots+4u-1)^2$ $\cdot\,(u^{32}+4u^{31}+\cdots+192u+128)$
c_5, c_{11}	$(u^2+u+1)(u^6+u^4+2u^2+1)(u^{27}-u^{26}+\cdots-u^2-1)^2$ $\cdot\,(u^{32}+2u^{31}+\cdots-3u+2)$
c_9, c_{10}	$(u^2+u+1)(u^3-u^2+2u-1)^2(u^{27}+7u^{26}+\cdots-2u-1)^2$ $\cdot\,(u^{32}+8u^{31}+\cdots+3u+4)$
c_{12}	$(u^2+u+1)(u^3+u^2+2u+1)^2(u^{27}+7u^{26}+\cdots-2u-1)^2$ $\cdot\,(u^{32}+8u^{31}+\cdots+3u+4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$((y-1)^6)(y^2+y+1)(y^{32}+11y^{31}+\cdots+2y+1)$ $\cdot(y^{54}-17y^{53}+\cdots+32y+1)$
c_2, c_4, c_6 c_8	$((y+1)^6)(y^2+y+1)(y^{32}+15y^{31}+\cdots+6y+1)$ $\cdot(y^{54}+31y^{53}+\cdots+16y^2+1)$
c_3	$y^6(y^2+y+1)(y^{27}-13y^{26}+\cdots-2y-1)^2$ $\cdot(y^{32}-14y^{31}+\cdots+307200y+16384)$
c_5, c_{11}	$(y^2+y+1)(y^3+y^2+2y+1)^2(y^{27}+7y^{26}+\cdots-2y-1)^2$ $\cdot(y^{32}+8y^{31}+\cdots+3y+4)$
c_9, c_{10}, c_{12}	$(y^2+y+1)(y^3+3y^2+2y-1)^2(y^{27}+27y^{26}+\cdots+14y-1)^2$ $\cdot(y^{32}+32y^{31}+\cdots+239y+16)$