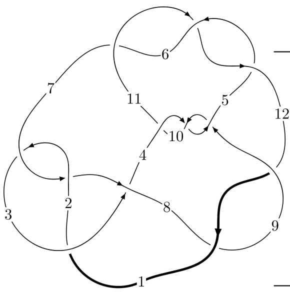
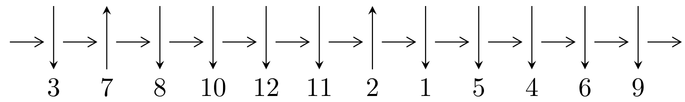
$12a_{0542}$ $(K12a_{0542})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 2u^{32} - 7u^{31} + \cdots + b + 5,\ -u^{32} + u^{31} + \cdots + 2a - 5,\ u^{33} - 3u^{32} + \cdots + 11u - 2\rangle \\
I_2^u &= \langle -u^{18}a + u^{18} + \cdots + b - a,\ u^{19} - u^{17}a + \cdots + a^2 - 1,\ u^{20} + u^{19} + \cdots + 2u + 1\rangle \\
I_3^u &= \langle -u^{11} - 2u^9 + u^8 - 3u^7 + 2u^6 - u^5 + 2u^4 + u^2 + b,\ -u^{10} - 2u^8 - 2u^6 + u^2 + a, \\
&\quad u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 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.

$\boldsymbol{I_1^u = \langle 2u^{32}-7u^{31}+\cdots+b+5,\ -u^{32}+u^{31}+\cdots+2a-5,\ u^{33}-3u^{32}+\cdots+11u-2\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u^4+u^2+1\\u^6+2u^4+u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^7-2u^5-2u^3\\-u^7-u^5+u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}\frac{1}{2}u^{32}-\frac{1}{2}u^{31}+\cdots-5u+\frac{5}{2}\\-2u^{32}+7u^{31}+\cdots+26u-5\end{pmatrix}$$
$$a_6 = \begin{pmatrix}\frac{1}{2}u^{32}-\frac{3}{2}u^{31}+\cdots-6u+\frac{3}{2}\\u^{30}-u^{29}+\cdots-3u+1\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u^{12}+3u^{10}+5u^8+4u^6+2u^4+u^2+1\\u^{12}+2u^{10}+2u^8-u^4\end{pmatrix}$$
$$a_5 = \begin{pmatrix}\frac{3}{2}u^{32}-\frac{9}{2}u^{31}+\cdots-18u+\frac{9}{2}\\-u^{31}+3u^{30}+\cdots-12u+3\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}\frac{1}{2}u^{32}-\frac{1}{2}u^{31}+\cdots-4u+\frac{3}{2}\\-u^{32}+4u^{31}+\cdots+15u-3\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 2u^{32}-6u^{31}+18u^{30}-40u^{29}+72u^{28}-142u^{27}+192u^{26}-340u^{25}+374u^{24}-594u^{23}+574u^{22}-810u^{21}+724u^{20}-894u^{19}+758u^{18}-840u^{17}+664u^{16}-680u^{15}+466u^{14}-448u^{13}+262u^{12}-214u^{11}+100u^{10}-42u^9-6u^8+20u^7-48u^6+34u^5-38u^4+36u^3-20u^2+26u-22$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{33} + 15u^{32} + \cdots + 9u - 4$
c_2, c_7	$u^{33} + 3u^{32} + \cdots + 11u + 2$
c_3	$u^{33} - 3u^{32} + \cdots - 73u + 10$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$u^{33} + 22u^{31} + \cdots + 3u + 1$
c_8, c_{12}	$u^{33} + 15u^{32} + \cdots + 2771u + 266$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{33} + 7y^{32} + \cdots + 561y - 16$
c_2, c_7	$y^{33} + 15y^{32} + \cdots + 9y - 4$
c_3	$y^{33} - y^{32} + \cdots + 2089y - 100$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$y^{33} + 44y^{32} + \cdots - 9y - 1$
c_8, c_{12}	$y^{33} + 27y^{32} + \cdots + 249593y - 70756$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.152282 + 0.979504I$ $a = 0.411441 - 0.397281I$ $b = -0.351596 - 0.571101I$	$-1.33752 - 1.02267I$	$-11.79490 + 5.10112I$
$u = 0.152282 - 0.979504I$ $a = 0.411441 + 0.397281I$ $b = -0.351596 + 0.571101I$	$-1.33752 + 1.02267I$	$-11.79490 - 5.10112I$
$u = -0.792598 + 0.556744I$ $a = 0.72926 - 1.56216I$ $b = -0.99765 - 2.35854I$	$18.0990 - 6.1471I$	$1.69208 + 3.47910I$
$u = -0.792598 - 0.556744I$ $a = 0.72926 + 1.56216I$ $b = -0.99765 + 2.35854I$	$18.0990 + 6.1471I$	$1.69208 - 3.47910I$
$u = -0.650620 + 0.804954I$ $a = -1.19586 + 1.00059I$ $b = 0.77206 + 2.17268I$	$12.43520 - 2.51799I$	$1.14659 + 3.10078I$
$u = -0.650620 - 0.804954I$ $a = -1.19586 - 1.00059I$ $b = 0.77206 - 2.17268I$	$12.43520 + 2.51799I$	$1.14659 - 3.10078I$
$u = -0.312053 + 0.912696I$ $a = 0.330741 - 0.254799I$ $b = -0.282384 - 0.391510I$	$-0.69539 - 1.36266I$	$-7.61505 + 4.53766I$
$u = -0.312053 - 0.912696I$ $a = 0.330741 + 0.254799I$ $b = -0.282384 + 0.391510I$	$-0.69539 + 1.36266I$	$-7.61505 - 4.53766I$
$u = 0.824879 + 0.434235I$ $a = 1.12098 + 1.36653I$ $b = -1.46731 + 1.70693I$	$17.3944 - 9.5155I$	$1.10338 + 3.69852I$
$u = 0.824879 - 0.434235I$ $a = 1.12098 - 1.36653I$ $b = -1.46731 - 1.70693I$	$17.3944 + 9.5155I$	$1.10338 - 3.69852I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.431324 + 1.046010I$ $a = -0.122761 + 0.496880I$ $b = -0.240841 + 1.306230I$	$-3.14332 + 3.33428I$	$-15.0959 - 5.5855I$
$u = 0.431324 - 1.046010I$ $a = -0.122761 - 0.496880I$ $b = -0.240841 - 1.306230I$	$-3.14332 - 3.33428I$	$-15.0959 + 5.5855I$
$u = 0.726459 + 0.451334I$ $a = -0.749693 - 0.212595I$ $b = 0.378857 - 0.838797I$	$3.27296 - 2.61780I$	$-4.13522 + 5.27122I$
$u = 0.726459 - 0.451334I$ $a = -0.749693 + 0.212595I$ $b = 0.378857 + 0.838797I$	$3.27296 + 2.61780I$	$-4.13522 - 5.27122I$
$u = -0.707357 + 0.467844I$ $a = -0.002391 + 0.722817I$ $b = 0.632335 + 0.653593I$	$3.38103 - 0.22806I$	$-3.58439 + 4.33946I$
$u = -0.707357 - 0.467844I$ $a = -0.002391 - 0.722817I$ $b = 0.632335 - 0.653593I$	$3.38103 + 0.22806I$	$-3.58439 - 4.33946I$
$u = 0.088747 + 1.156850I$ $a = -1.388160 + 0.151770I$ $b = 0.022859 + 0.945454I$	$11.90350 - 7.25131I$	$-4.54406 + 3.22535I$
$u = 0.088747 - 1.156850I$ $a = -1.388160 - 0.151770I$ $b = 0.022859 - 0.945454I$	$11.90350 + 7.25131I$	$-4.54406 - 3.22535I$
$u = 0.318246 + 1.146590I$ $a = 1.217500 + 0.275354I$ $b = 1.209060 + 0.038598I$	$5.45646 - 0.34796I$	$-5.32880 - 0.36416I$
$u = 0.318246 - 1.146590I$ $a = 1.217500 - 0.275354I$ $b = 1.209060 - 0.038598I$	$5.45646 + 0.34796I$	$-5.32880 + 0.36416I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.580137 + 1.064780I$ $a = -0.502160 + 0.001706I$ $b = -0.032476 + 0.816149I$	$1.61599 - 4.72097I$	$-6.74809 + 0.86070I$
$u = -0.580137 - 1.064780I$ $a = -0.502160 - 0.001706I$ $b = -0.032476 - 0.816149I$	$1.61599 + 4.72097I$	$-6.74809 - 0.86070I$
$u = 0.589459 + 1.075110I$ $a = -0.159012 - 0.548760I$ $b = 0.88162 - 1.58124I$	$1.43372 + 7.64854I$	$-7.35632 - 9.80003I$
$u = 0.589459 - 1.075110I$ $a = -0.159012 + 0.548760I$ $b = 0.88162 + 1.58124I$	$1.43372 - 7.64854I$	$-7.35632 + 9.80003I$
$u = -0.653412 + 1.040510I$ $a = 1.258390 - 0.530338I$ $b = -0.66209 - 2.26242I$	$16.6529 + 0.7161I$	$-0.27219 + 1.44446I$
$u = -0.653412 - 1.040510I$ $a = 1.258390 + 0.530338I$ $b = -0.66209 + 2.26242I$	$16.6529 - 0.7161I$	$-0.27219 - 1.44446I$
$u = 0.736931 + 0.188573I$ $a = -0.64087 - 1.89931I$ $b = 0.664431 - 0.704418I$	$9.45531 - 3.71600I$	$-0.33346 + 2.59966I$
$u = 0.736931 - 0.188573I$ $a = -0.64087 + 1.89931I$ $b = 0.664431 + 0.704418I$	$9.45531 + 3.71600I$	$-0.33346 - 2.59966I$
$u = 0.504676 + 1.139920I$ $a = -1.045940 - 0.587726I$ $b = -1.15935 - 2.28346I$	$6.69649 + 8.32618I$	$-3.83980 - 6.48439I$
$u = 0.504676 - 1.139920I$ $a = -1.045940 + 0.587726I$ $b = -1.15935 + 2.28346I$	$6.69649 - 8.32618I$	$-3.83980 + 6.48439I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.623116 + 1.112210I$ $a = 0.964833 + 0.850517I$ $b = -0.28596 + 3.70200I$	$15.3636 + 14.9191I$	$-1.64706 - 7.93751I$
$u = 0.623116 - 1.112210I$ $a = 0.964833 - 0.850517I$ $b = -0.28596 - 3.70200I$	$15.3636 - 14.9191I$	$-1.64706 + 7.93751I$
$u = 0.400115$ $a = 1.04742$ $b = -0.163122$	-0.742996	-13.2940

II.

$\boldsymbol{I_2^u = \langle -u^{18}a+u^{18}+\cdots+b-a,\ u^{19}-u^{17}a+\cdots+a^2-1,\ u^{20}+u^{19}+\cdots+2u+1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4+u^2+1 \\ u^6+2u^4+u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^7-2u^5-2u^3 \\ -u^7-u^5+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ u^{18}a-u^{18}+\cdots+2au+a \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{18}a+u^{19}+\cdots+3u+1 \\ -u^{19}a+u^{19}+\cdots+2u^2+u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{12}+3u^{10}+5u^8+4u^6+2u^4+u^2+1 \\ u^{12}+2u^{10}+2u^8-u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{18}a+u^{19}+\cdots+3u+1 \\ -u^{19}a+u^{19}+\cdots+2u^2+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{17}+4u^{15}+\cdots+a+1 \\ u^{18}a-u^{18}+\cdots+a-u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{18}-4u^{17}-16u^{16}-16u^{15}-36u^{14}-40u^{13}-52u^{12}-60u^{11}-56u^{10}-64u^9-56u^8-52u^7-48u^6-40u^5-32u^4-32u^3-12u^2-12u-10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{20} + 9u^{19} + \cdots + 2u + 1)^2$
c_2, c_7	$(u^{20} - u^{19} + \cdots - 2u + 1)^2$
c_3	$(u^{20} + u^{19} + \cdots + 4u + 1)^2$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$u^{40} - u^{39} + \cdots + 66u + 17$
c_8, c_{12}	$(u^{20} - 5u^{19} + \cdots - 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{20}+5y^{19}+\cdots+10y+1)^2$
c_2, c_7	$(y^{20}+9y^{19}+\cdots+2y+1)^2$
c_3	$(y^{20}+y^{19}+\cdots+18y+1)^2$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$y^{40}+35y^{39}+\cdots-140y+289$
c_8, c_{12}	$(y^{20}+21y^{19}+\cdots+10y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.781348 + 0.506112I$ $a = 0.441997 - 1.155880I$ $b = 0.856427 - 0.565059I$	$10.37890 + 1.55876I$	$0.11661 - 2.37917I$
$u = 0.781348 + 0.506112I$ $a = 0.83804 + 1.43690I$ $b = -1.33192 + 2.45508I$	$10.37890 + 1.55876I$	$0.11661 - 2.37917I$
$u = 0.781348 - 0.506112I$ $a = 0.441997 + 1.155880I$ $b = 0.856427 + 0.565059I$	$10.37890 - 1.55876I$	$0.11661 + 2.37917I$
$u = 0.781348 - 0.506112I$ $a = 0.83804 - 1.43690I$ $b = -1.33192 - 2.45508I$	$10.37890 - 1.55876I$	$0.11661 + 2.37917I$
$u = 0.487491 + 0.960535I$ $a = 0.982330 + 0.105300I$ $b = -0.201846 - 0.351155I$	$3.03554 + 2.59904I$	$-2.40613 - 3.16627I$
$u = 0.487491 + 0.960535I$ $a = -0.922458 - 0.679240I$ $b = 0.64390 - 3.08542I$	$3.03554 + 2.59904I$	$-2.40613 - 3.16627I$
$u = 0.487491 - 0.960535I$ $a = 0.982330 - 0.105300I$ $b = -0.201846 + 0.351155I$	$3.03554 - 2.59904I$	$-2.40613 + 3.16627I$
$u = 0.487491 - 0.960535I$ $a = -0.922458 + 0.679240I$ $b = 0.64390 + 3.08542I$	$3.03554 - 2.59904I$	$-2.40613 + 3.16627I$
$u = -0.795114 + 0.464423I$ $a = -1.229700 + 0.036323I$ $b = 0.103460 + 0.921159I$	$10.14230 + 4.70967I$	$-0.36261 - 2.80351I$
$u = -0.795114 + 0.464423I$ $a = 0.96901 - 1.37386I$ $b = -1.62344 - 2.10711I$	$10.14230 + 4.70967I$	$-0.36261 - 2.80351I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.795114-0.464423I$ $a=-1.229700-0.036323I$ $b=\ \ 0.103460-0.921159I$	$10.14230-4.70967I$	$-0.36261+2.80351I$
$u=-0.795114-0.464423I$ $a=\ \ 0.96901+1.37386I$ $b=-1.62344+2.10711I$	$10.14230-4.70967I$	$-0.36261+2.80351I$
$u=-0.331938+1.037100I$ $a=\ \ 0.990151-0.226215I$ $b=\ \ 0.628424+0.095717I$	$-0.345495-0.748059I$	$-11.88926+0.17223I$
$u=-0.331938+1.037100I$ $a=-0.226980-0.173559I$ $b=-1.18881-1.01108I$	$-0.345495-0.748059I$	$-11.88926+0.17223I$
$u=-0.331938-1.037100I$ $a=\ \ 0.990151+0.226215I$ $b=\ \ 0.628424-0.095717I$	$-0.345495+0.748059I$	$-11.88926-0.17223I$
$u=-0.331938-1.037100I$ $a=-0.226980+0.173559I$ $b=-1.18881+1.01108I$	$-0.345495+0.748059I$	$-11.88926-0.17223I$
$u=-0.044359+1.100970I$ $a=\ \ 0.572575+0.770686I$ $b=\ \ 0.055517+1.140730I$	$4.71375+2.89577I$	$-6.31229-2.74717I$
$u=-0.044359+1.100970I$ $a=-1.352650-0.043914I$ $b=\ \ 0.686027-0.496404I$	$4.71375+2.89577I$	$-6.31229-2.74717I$
$u=-0.044359-1.100970I$ $a=\ \ 0.572575-0.770686I$ $b=\ \ 0.055517-1.140730I$	$4.71375-2.89577I$	$-6.31229+2.74717I$
$u=-0.044359-1.100970I$ $a=-1.352650+0.043914I$ $b=\ \ 0.686027+0.496404I$	$4.71375-2.89577I$	$-6.31229+2.74717I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.502129 + 1.070060I$ $a = -0.866977 + 0.566977I$ $b = -0.50635 + 2.53990I$	$0.79812 - 6.06247I$	$-8.39660 + 7.82928I$
$u = -0.502129 + 1.070060I$ $a = 0.006209 - 0.502110I$ $b = 0.617341 - 1.244530I$	$0.79812 - 6.06247I$	$-8.39660 + 7.82928I$
$u = -0.502129 - 1.070060I$ $a = -0.866977 - 0.566977I$ $b = -0.50635 - 2.53990I$	$0.79812 + 6.06247I$	$-8.39660 - 7.82928I$
$u = -0.502129 - 1.070060I$ $a = 0.006209 + 0.502110I$ $b = 0.617341 + 1.244530I$	$0.79812 + 6.06247I$	$-8.39660 - 7.82928I$
$u = 0.455846 + 0.648892I$ $a = 0.497045 + 0.987915I$ $b = 0.351208 + 1.072320I$	$3.96963 + 1.37271I$	$-0.87985 - 4.43993I$
$u = 0.455846 + 0.648892I$ $a = -1.34650 - 0.83977I$ $b = 1.46058 - 1.46134I$	$3.96963 + 1.37271I$	$-0.87985 - 4.43993I$
$u = 0.455846 - 0.648892I$ $a = 0.497045 - 0.987915I$ $b = 0.351208 - 1.072320I$	$3.96963 - 1.37271I$	$-0.87985 + 4.43993I$
$u = 0.455846 - 0.648892I$ $a = -1.34650 + 0.83977I$ $b = 1.46058 + 1.46134I$	$3.96963 - 1.37271I$	$-0.87985 + 4.43993I$
$u = 0.628268 + 1.065390I$ $a = -0.875257 + 0.344934I$ $b = -0.930257 - 0.450510I$	$8.70951 + 3.75485I$	$-2.25682 - 2.44199I$
$u = 0.628268 + 1.065390I$ $a = 1.097080 + 0.604611I$ $b = -1.12744 + 2.94413I$	$8.70951 + 3.75485I$	$-2.25682 - 2.44199I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.628268 - 1.065390I$ $a = -0.875257 - 0.344934I$ $b = -0.930257 + 0.450510I$	$8.70951 - 3.75485I$	$-2.25682 + 2.44199I$
$u = 0.628268 - 1.065390I$ $a = 1.097080 - 0.604611I$ $b = -1.12744 - 2.94413I$	$8.70951 - 3.75485I$	$-2.25682 + 2.44199I$
$u = -0.621367 + 1.089770I$ $a = -0.010187 + 0.899634I$ $b = 1.18418 + 1.91130I$	$8.27570 - 10.03250I$	$-3.16919 + 7.28178I$
$u = -0.621367 + 1.089770I$ $a = 1.005850 - 0.716169I$ $b = -0.79344 - 3.61211I$	$8.27570 - 10.03250I$	$-3.16919 + 7.28178I$
$u = -0.621367 - 1.089770I$ $a = -0.010187 - 0.899634I$ $b = 1.18418 - 1.91130I$	$8.27570 + 10.03250I$	$-3.16919 - 7.28178I$
$u = -0.621367 - 1.089770I$ $a = 1.005850 + 0.716169I$ $b = -0.79344 + 3.61211I$	$8.27570 + 10.03250I$	$-3.16919 - 7.28178I$
$u = -0.558047 + 0.271580I$ $a = 0.923100 - 0.270249I$ $b = -0.279531 + 0.414404I$	$2.95992 + 1.83292I$	$-4.44386 - 4.26331I$
$u = -0.558047 + 0.271580I$ $a = -0.99267 + 1.70622I$ $b = 0.895968 + 0.669805I$	$2.95992 + 1.83292I$	$-4.44386 - 4.26331I$
$u = -0.558047 - 0.271580I$ $a = 0.923100 + 0.270249I$ $b = -0.279531 - 0.414404I$	$2.95992 - 1.83292I$	$-4.44386 + 4.26331I$
$u = -0.558047 - 0.271580I$ $a = -0.99267 - 1.70622I$ $b = 0.895968 - 0.669805I$	$2.95992 - 1.83292I$	$-4.44386 + 4.26331I$

III. $\boldsymbol{I^u_3 = \langle -u^{11} - 2u^9 + \cdots + u^2 + b,\ -u^{10} - 2u^8 - 2u^6 + u^2 + a,\ u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^7 - 2u^5 - 2u^3 \\ -u^7 - u^5 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{10} + 2u^8 + 2u^6 - u^2 \\ u^{11} + 2u^9 - u^8 + 3u^7 - 2u^6 + u^5 - 2u^4 - u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{11} + 3u^9 + 5u^7 + 4u^5 + 2u^3 + u \\ u^{11} - u^{10} + 3u^9 - 2u^8 + 4u^7 - 2u^6 + 2u^5 + u - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ -u^{10} - 3u^8 - 4u^6 - 3u^4 - u^2 - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{11} + 3u^9 + 5u^7 + 4u^5 + 2u^3 + u \\ u^{11} - u^{10} + 3u^9 - 2u^8 + 4u^7 - 2u^6 + 2u^5 - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{10} + 2u^8 - u^7 + 2u^6 - 2u^5 - 2u^3 - u^2 \\ u^{11} + 2u^9 - u^8 + 2u^7 - 2u^6 - 2u^4 - u^2 + u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^{10} - 12u^8 - 16u^6 - 8u^4 - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)^2$
c_2, c_7, c_8 c_{12}	$u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1$
c_3	$u^{12} - u^{10} + 5u^8 + 6u^4 - 3u^2 + 1$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$(u^2 + 1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)^2$
c_2, c_7, c_8 c_{12}	$(y^6 + 3y^5 + 5y^4 + 4y^3 + 2y^2 + y + 1)^2$
c_3	$(y^6 - y^5 + 5y^4 + 6y^2 - 3y + 1)^2$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$(y + 1)^{12}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.295542 + 1.002190I$ $a = 0.917982 + 0.270708I$ $b = -0.374286 + 1.073090I$	$1.39926 + 0.92430I$	$-5.71672 - 0.79423I$
$u = 0.295542 - 1.002190I$ $a = 0.917982 - 0.270708I$ $b = -0.374286 - 1.073090I$	$1.39926 - 0.92430I$	$-5.71672 + 0.79423I$
$u = -0.295542 + 1.002190I$ $a = 0.917982 - 0.270708I$ $b = 1.35189 + 0.92878I$	$1.39926 - 0.92430I$	$-5.71672 + 0.79423I$
$u = -0.295542 - 1.002190I$ $a = 0.917982 + 0.270708I$ $b = 1.35189 - 0.92878I$	$1.39926 + 0.92430I$	$-5.71672 - 0.79423I$
$u = 0.664531 + 0.428243I$ $a = -0.685196 - 1.063260I$ $b = 0.24989 - 1.43772I$	$5.18047 - 0.92430I$	$1.71672 + 0.79423I$
$u = 0.664531 - 0.428243I$ $a = -0.685196 + 1.063260I$ $b = 0.24989 + 1.43772I$	$5.18047 + 0.92430I$	$1.71672 - 0.79423I$
$u = -0.664531 + 0.428243I$ $a = -0.685196 + 1.063260I$ $b = 1.238080 + 0.291690I$	$5.18047 + 0.92430I$	$1.71672 - 0.79423I$
$u = -0.664531 - 0.428243I$ $a = -0.685196 - 1.063260I$ $b = 1.238080 - 0.291690I$	$5.18047 - 0.92430I$	$1.71672 + 0.79423I$
$u = 0.558752 + 1.073950I$ $a = -0.732786 - 0.381252I$ $b = 0.586105 - 1.184950I$	$3.28987 + 5.69302I$	$-2.00000 - 5.51057I$
$u = 0.558752 - 1.073950I$ $a = -0.732786 + 0.381252I$ $b = 0.586105 + 1.184950I$	$3.28987 - 5.69302I$	$-2.00000 + 5.51057I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.558752+1.073950I$ $a=-0.732786+0.381252I$ $b=-1.05168+2.33284I$	$3.28987-5.69302I$	$-2.00000+5.51057I$
$u=-0.558752-1.073950I$ $a=-0.732786-0.381252I$ $b=-1.05168-2.33284I$	$3.28987+5.69302I$	$-2.00000-5.51057I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2)(u^{20}+9u^{19}+\cdots+2u+1)^2$ $\cdot(u^{33}+15u^{32}+\cdots+9u-4)$
c_2, c_7	$(u^{12}+3u^{10}+\cdots+u^2+1)(u^{20}-u^{19}+\cdots-2u+1)^2$ $\cdot(u^{33}+3u^{32}+\cdots+11u+2)$
c_3	$(u^{12}-u^{10}+5u^8+6u^4-3u^2+1)(u^{20}+u^{19}+\cdots+4u+1)^2$ $\cdot(u^{33}-3u^{32}+\cdots-73u+10)$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$((u^2+1)^6)(u^{33}+22u^{31}+\cdots+3u+1)(u^{40}-u^{39}+\cdots+66u+17)$
c_8, c_{12}	$(u^{12}+3u^{10}+\cdots+u^2+1)(u^{20}-5u^{19}+\cdots-2u+1)^2$ $\cdot(u^{33}+15u^{32}+\cdots+2771u+266)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^6+y^5+5y^4+6y^2+3y+1)^2)(y^{20}+5y^{19}+\cdots+10y+1)^2$ $\cdot(y^{33}+7y^{32}+\cdots+561y-16)$
c_2, c_7	$((y^6+3y^5+5y^4+4y^3+2y^2+y+1)^2)(y^{20}+9y^{19}+\cdots+2y+1)^2$ $\cdot(y^{33}+15y^{32}+\cdots+9y-4)$
c_3	$((y^6-y^5+5y^4+6y^2-3y+1)^2)(y^{20}+y^{19}+\cdots+18y+1)^2$ $\cdot(y^{33}-y^{32}+\cdots+2089y-100)$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$((y+1)^{12})(y^{33}+44y^{32}+\cdots-9y-1)(y^{40}+35y^{39}+\cdots-140y+289)$
c_8, c_{12}	$((y^6+3y^5+5y^4+4y^3+2y^2+y+1)^2)(y^{20}+21y^{19}+\cdots+10y+1)^2$ $\cdot(y^{33}+27y^{32}+\cdots+249593y-70756)$