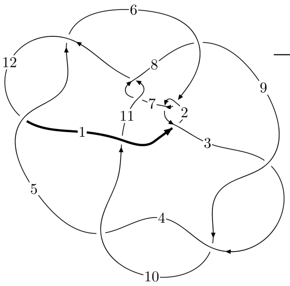
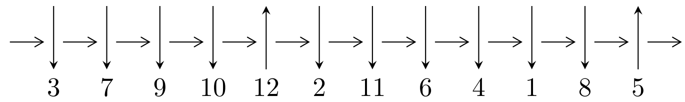
$12a_{0587}$ ($K12a_{0587}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 3.83230 \times 10^{210} u^{94} + 2.87938 \times 10^{210} u^{93} + \cdots + 6.01126 \times 10^{209} b + 1.51610 \times 10^{211}, \\
& -6.22396 \times 10^{212} u^{94} - 5.32040 \times 10^{212} u^{93} + \cdots + 1.38259 \times 10^{211} a - 3.59834 \times 10^{213}, \\
& u^{95} + u^{94} + \cdots + 14u + 1 \rangle \\
I_2^u = \langle & b + u,\ -5u^3 + u^2 + 3a + u + 1,\ u^4 - u^2 + 1 \rangle \\
I_3^u = \langle & u^3 + b - u,\ -2u^3 - 2u^2 + 3a + u + 1,\ u^4 - u^2 + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 103 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. $I^u_1 = \langle 3.83\times10^{210}u^{94} + 2.88\times10^{210}u^{93} + \cdots + 6.01\times10^{209}b + 1.52\times10^{211},\ -6.22\times10^{212}u^{94} - 5.32\times10^{212}u^{93} + \cdots + 1.38\times10^{211}a - 3.60\times10^{213},\ u^{95} + u^{94} + \cdots + 14u + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^2+1\\-u^4+2u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}45.0167u^{94} + 38.4814u^{93} + \cdots + 2267.19u + 260.261\\-6.37520u^{94} - 4.78997u^{93} + \cdots - 257.604u - 25.2210\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1.59454u^{94} + 0.308707u^{93} + \cdots - 66.9417u - 32.4693\\7.62210u^{94} + 6.21989u^{93} + \cdots + 361.151u + 39.4626\end{pmatrix}$$
$$a_1 = \begin{pmatrix}9.21664u^{94} + 6.52860u^{93} + \cdots + 294.209u + 6.99328\\7.62210u^{94} + 6.21989u^{93} + \cdots + 361.151u + 39.4626\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-11.7276u^{94} + 0.556507u^{93} + \cdots + 490.732u + 114.762\\-13.6943u^{94} - 10.5472u^{93} + \cdots - 561.915u - 56.4554\end{pmatrix}$$
$$a_6 = \begin{pmatrix}28.2378u^{94} + 25.1088u^{93} + \cdots + 1538.65u + 179.735\\0.930224u^{94} + 1.04484u^{93} + \cdots + 81.7759u + 13.0061\end{pmatrix}$$
$$a_8 = \begin{pmatrix}19.8661u^{94} + 26.6636u^{93} + \cdots + 1975.80u + 268.892\\-12.5392u^{94} - 9.28515u^{93} + \cdots - 487.948u - 46.1105\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}3.02163u^{94} + 1.62086u^{93} + \cdots + 14.8334u - 24.3382\\7.07489u^{94} + 5.79666u^{93} + \cdots + 336.703u + 36.8118\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -43.6001u^{94} - 30.2490u^{93} + \cdots - 1486.07u - 149.913$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{95} + 45u^{94} + \cdots + 5812u + 169$
c_2, c_6	$u^{95} - 3u^{94} + \cdots - 64u - 13$
c_3, c_4, c_9	$u^{95} - u^{94} + \cdots + 14u - 1$
c_5, c_{12}	$u^{95} - 3u^{94} + \cdots - 544u - 52$
c_7, c_{11}	$u^{95} + 5u^{94} + \cdots - 22u - 1$
c_8	$529(529u^{95} - 345u^{94} + \cdots - 1.01241 \times 10^8 u + 1.22522 \times 10^7)$
c_{10}	$529(529u^{95} + 1035u^{94} + \cdots + 6.65199 \times 10^7 u + 1.26008 \times 10^7)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{95} + 15y^{94} + \cdots + 2924000y - 28561$
c_2, c_6	$y^{95} - 45y^{94} + \cdots + 5812y - 169$
c_3, c_4, c_9	$y^{95} - 93y^{94} + \cdots + 88y - 1$
c_5, c_{12}	$y^{95} + 83y^{94} + \cdots - 1192y - 2704$
c_7, c_{11}	$y^{95} - 57y^{94} + \cdots + 304y - 1$
c_8	$279841(279841y^{95} - 2.19233 \times 10^7 y^{94} + \cdots + 8.54386 \times 10^{15} y - 1.50117 \times 10^{14})$
c_{10}	$279841(279841y^{95} - 1.00515 \times 10^7 y^{94} + \cdots + 2.52702 \times 10^{16} y - 1.58780 \times 10^{14})$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.324076 + 0.932614I$ $a = -0.57215 - 1.46473I$ $b = 1.106370 + 0.298292I$	$-8.62975 - 0.07531I$	0
$u = 0.324076 - 0.932614I$ $a = -0.57215 + 1.46473I$ $b = 1.106370 - 0.298292I$	$-8.62975 + 0.07531I$	0
$u = 0.740982 + 0.622306I$ $a = 0.271489 + 0.025604I$ $b = -1.207240 + 0.119440I$	$-10.13730 - 5.06463I$	0
$u = 0.740982 - 0.622306I$ $a = 0.271489 - 0.025604I$ $b = -1.207240 - 0.119440I$	$-10.13730 + 5.06463I$	0
$u = 0.893227 + 0.368349I$ $a = -0.219033 + 0.457967I$ $b = 0.831308 - 0.551679I$	$-0.1180870 + 0.0250280I$	0
$u = 0.893227 - 0.368349I$ $a = -0.219033 - 0.457967I$ $b = 0.831308 + 0.551679I$	$-0.1180870 - 0.0250280I$	0
$u = 0.569885 + 0.872471I$ $a = -0.19005 - 1.86439I$ $b = 1.143560 + 0.616829I$	$-6.8689 - 13.3214I$	0
$u = 0.569885 - 0.872471I$ $a = -0.19005 + 1.86439I$ $b = 1.143560 - 0.616829I$	$-6.8689 + 13.3214I$	0
$u = -0.530173 + 0.768074I$ $a = -0.75856 - 1.22838I$ $b = 0.385983 + 0.866786I$	$-4.58095 + 7.84168I$	0
$u = -0.530173 - 0.768074I$ $a = -0.75856 + 1.22838I$ $b = 0.385983 - 0.866786I$	$-4.58095 - 7.84168I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.563129 + 0.738059I$ $a = -0.28918 - 1.51880I$ $b = -0.284444 + 0.674957I$	$-4.69329 - 2.77756I$	0
$u = -0.563129 - 0.738059I$ $a = -0.28918 + 1.51880I$ $b = -0.284444 - 0.674957I$	$-4.69329 + 2.77756I$	0
$u = 0.461536 + 0.798582I$ $a = -0.528916 + 1.097220I$ $b = 0.413376 - 0.527923I$	$-0.62347 - 2.22932I$	0
$u = 0.461536 - 0.798582I$ $a = -0.528916 - 1.097220I$ $b = 0.413376 + 0.527923I$	$-0.62347 + 2.22932I$	0
$u = -1.028620 + 0.372700I$ $a = 0.336932 + 1.297890I$ $b = 0.792047 - 0.591034I$	$0.00681 + 4.54787I$	0
$u = -1.028620 - 0.372700I$ $a = 0.336932 - 1.297890I$ $b = 0.792047 + 0.591034I$	$0.00681 - 4.54787I$	0
$u = 0.657206 + 0.901845I$ $a = 0.644915 - 0.664953I$ $b = -1.111150 + 0.535210I$	$-7.03870 + 7.43919I$	0
$u = 0.657206 - 0.901845I$ $a = 0.644915 + 0.664953I$ $b = -1.111150 - 0.535210I$	$-7.03870 - 7.43919I$	0
$u = -0.555423 + 1.010360I$ $a = -0.23176 + 1.60411I$ $b = 1.060760 - 0.514305I$	$-2.49114 + 6.53115I$	0
$u = -0.555423 - 1.010360I$ $a = -0.23176 - 1.60411I$ $b = 1.060760 + 0.514305I$	$-2.49114 - 6.53115I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.445712 + 0.635397I$ $a = 0.11193 - 1.81470I$ $b = -1.139330 + 0.600773I$	$-1.72270 + 8.42111I$	0
$u = -0.445712 - 0.635397I$ $a = 0.11193 + 1.81470I$ $b = -1.139330 - 0.600773I$	$-1.72270 - 8.42111I$	0
$u = 1.066390 + 0.614208I$ $a = -0.16248 + 1.40511I$ $b = -0.778605 - 0.254375I$	$-2.29481 - 2.77237I$	0
$u = 1.066390 - 0.614208I$ $a = -0.16248 - 1.40511I$ $b = -0.778605 + 0.254375I$	$-2.29481 + 2.77237I$	0
$u = -0.890509 + 0.889227I$ $a = 0.352038 + 0.577350I$ $b = -1.021720 - 0.391174I$	$-3.42941 - 0.01024I$	0
$u = -0.890509 - 0.889227I$ $a = 0.352038 - 0.577350I$ $b = -1.021720 + 0.391174I$	$-3.42941 + 0.01024I$	0
$u = 0.337463 + 0.657456I$ $a = 0.20569 + 2.01133I$ $b = -0.979429 - 0.576485I$	$1.42526 - 3.92148I$	0
$u = 0.337463 - 0.657456I$ $a = 0.20569 - 2.01133I$ $b = -0.979429 + 0.576485I$	$1.42526 + 3.92148I$	0
$u = -0.519994 + 0.514146I$ $a = -0.573261 + 0.194172I$ $b = 1.027730 + 0.525528I$	$-2.04737 - 4.42997I$	0
$u = -0.519994 - 0.514146I$ $a = -0.573261 - 0.194172I$ $b = 1.027730 - 0.525528I$	$-2.04737 + 4.42997I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.688347+0.015904I$ $a=-1.00082-1.58321I$ $b=-0.745151-0.178389I$	$-3.31796-2.34016I$	$-17.3652+3.7071I$
$u=-0.688347-0.015904I$ $a=-1.00082+1.58321I$ $b=-0.745151+0.178389I$	$-3.31796+2.34016I$	$-17.3652-3.7071I$
$u=\ 0.634046+0.217215I$ $a=\ 0.789475-0.701622I$ $b=\ 0.546456+0.509073I$	$-0.559909+0.111371I$	$-8.00000+1.58099I$
$u=\ 0.634046-0.217215I$ $a=\ 0.789475+0.701622I$ $b=\ 0.546456-0.509073I$	$-0.559909-0.111371I$	$-8.00000-1.58099I$
$u=-0.167463+0.634472I$ $a=\ 0.94089+1.19979I$ $b=-0.616501-0.643520I$	$2.51116-0.85388I$	$-1.53097+2.15494I$
$u=-0.167463-0.634472I$ $a=\ 0.94089-1.19979I$ $b=-0.616501+0.643520I$	$2.51116+0.85388I$	$-1.53097-2.15494I$
$u=-1.349460+0.003354I$ $a=-1.023390-0.016086I$ $b=\ 0.363060+0.020561I$	$-6.49407+0.00002I$	0
$u=-1.349460-0.003354I$ $a=-1.023390+0.016086I$ $b=\ 0.363060-0.020561I$	$-6.49407-0.00002I$	0
$u=\ 1.370850+0.152453I$ $a=-0.394075+0.330422I$ $b=\ 0.391587-0.786955I$	$-2.29932-1.84849I$	0
$u=\ 1.370850-0.152453I$ $a=-0.394075-0.330422I$ $b=\ 0.391587+0.786955I$	$-2.29932+1.84849I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.285873 + 0.537667I$ $a = 0.640866 - 1.135400I$ $b = -0.334758 + 0.847402I$	$0.65285 - 3.08282I$	$-5.72735 + 6.58681I$
$u = 0.285873 - 0.537667I$ $a = 0.640866 + 1.135400I$ $b = -0.334758 - 0.847402I$	$0.65285 + 3.08282I$	$-5.72735 - 6.58681I$
$u = -1.41992 + 0.06769I$ $a = 0.423092 - 0.516069I$ $b = -0.578569 + 0.777127I$	$-5.89719 + 3.01762I$	0
$u = -1.41992 - 0.06769I$ $a = 0.423092 + 0.516069I$ $b = -0.578569 - 0.777127I$	$-5.89719 - 3.01762I$	0
$u = -1.42403 + 0.14320I$ $a = -0.293544 - 0.361005I$ $b = 0.199462 + 1.104120I$	$-4.83461 + 5.45013I$	0
$u = -1.42403 - 0.14320I$ $a = -0.293544 + 0.361005I$ $b = 0.199462 - 1.104120I$	$-4.83461 - 5.45013I$	0
$u = 1.42892 + 0.08720I$ $a = -0.92447 + 1.27995I$ $b = -0.961852 + 0.399126I$	$-8.27189 + 2.49117I$	0
$u = 1.42892 - 0.08720I$ $a = -0.92447 - 1.27995I$ $b = -0.961852 - 0.399126I$	$-8.27189 - 2.49117I$	0
$u = 1.43420 + 0.13326I$ $a = 1.52406 - 1.83104I$ $b = 1.017390 + 0.428965I$	$-8.23402 - 3.27950I$	0
$u = 1.43420 - 0.13326I$ $a = 1.52406 + 1.83104I$ $b = 1.017390 - 0.428965I$	$-8.23402 + 3.27950I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.45321 + 0.01462I$ $a = -1.08757 + 1.42578I$ $b = -1.042040 - 0.600114I$	$-7.36301 - 2.23164I$	0
$u = 1.45321 - 0.01462I$ $a = -1.08757 - 1.42578I$ $b = -1.042040 + 0.600114I$	$-7.36301 + 2.23164I$	0
$u = 1.45978 + 0.07323I$ $a = -0.090635 + 0.736569I$ $b = -0.77265 - 1.19938I$	$-8.95103 - 5.08029I$	0
$u = 1.45978 - 0.07323I$ $a = -0.090635 - 0.736569I$ $b = -0.77265 + 1.19938I$	$-8.95103 + 5.08029I$	0
$u = -1.45946 + 0.20650I$ $a = 0.89169 + 1.37027I$ $b = 1.106580 - 0.585561I$	$-4.42188 + 6.98601I$	0
$u = -1.45946 - 0.20650I$ $a = 0.89169 - 1.37027I$ $b = 1.106580 + 0.585561I$	$-4.42188 - 6.98601I$	0
$u = -1.48216 + 0.02984I$ $a = -0.467979 - 0.695967I$ $b = -1.42038 + 0.80271I$	$-11.08730 + 2.97745I$	0
$u = -1.48216 - 0.02984I$ $a = -0.467979 + 0.695967I$ $b = -1.42038 - 0.80271I$	$-11.08730 - 2.97745I$	0
$u = -1.48776 + 0.00307I$ $a = -1.174830 + 0.041396I$ $b = -0.948018 - 0.139900I$	$-7.28570 - 0.05797I$	0
$u = -1.48776 - 0.00307I$ $a = -1.174830 - 0.041396I$ $b = -0.948018 + 0.139900I$	$-7.28570 + 0.05797I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.512086$ $a = -0.351550$ $b = 1.26425$	-5.16409	-21.4310
$u = 1.49274$ $a = -0.625686$ $b = -1.62427$	-11.6983	0
$u = 0.234531 + 0.448531I$ $a = -0.597145 + 0.065732I$ $b = 0.369329 + 0.395606I$	$-0.71598 - 1.49940I$	$-6.15907 + 3.34895I$
$u = 0.234531 - 0.448531I$ $a = -0.597145 - 0.065732I$ $b = 0.369329 - 0.395606I$	$-0.71598 + 1.49940I$	$-6.15907 - 3.34895I$
$u = 1.49156 + 0.20895I$ $a = 0.83745 - 1.19974I$ $b = 1.250940 + 0.625768I$	$-8.04831 - 11.47770I$	0
$u = 1.49156 - 0.20895I$ $a = 0.83745 + 1.19974I$ $b = 1.250940 - 0.625768I$	$-8.04831 + 11.47770I$	0
$u = -0.337519 + 0.313167I$ $a = -0.81445 + 1.60127I$ $b = 0.643763 - 0.919367I$	$-3.06247 + 3.79289I$	$-12.8027 - 12.4163I$
$u = -0.337519 - 0.313167I$ $a = -0.81445 - 1.60127I$ $b = 0.643763 + 0.919367I$	$-3.06247 - 3.79289I$	$-12.8027 + 12.4163I$
$u = 0.457671$ $a = 0.744423$ $b = 0.436249$	-0.800628	-11.8890
$u = 1.52280 + 0.25579I$ $a = 0.446441 - 0.808912I$ $b = -0.057837 + 0.708672I$	$-11.46720 - 0.79382I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.52280 - 0.25579I$ $a = 0.446441 + 0.808912I$ $b = -0.057837 - 0.708672I$	$-11.46720 + 0.79382I$	0
$u = -1.53199 + 0.27313I$ $a = 0.435468 + 0.585455I$ $b = -0.366714 - 0.819444I$	$-7.20531 + 6.12991I$	0
$u = -1.53199 - 0.27313I$ $a = 0.435468 - 0.585455I$ $b = -0.366714 + 0.819444I$	$-7.20531 - 6.12991I$	0
$u = -0.089043 + 0.433089I$ $a = 2.65903 - 3.82631I$ $b = -0.952211 + 0.388329I$	$-3.11696 + 1.47900I$	$-4.54348 - 4.47757I$
$u = -0.089043 - 0.433089I$ $a = 2.65903 + 3.82631I$ $b = -0.952211 - 0.388329I$	$-3.11696 - 1.47900I$	$-4.54348 + 4.47757I$
$u = 1.53594 + 0.26544I$ $a = 0.568714 - 0.525422I$ $b = -0.387652 + 0.998965I$	$-11.3324 - 11.6288I$	0
$u = 1.53594 - 0.26544I$ $a = 0.568714 + 0.525422I$ $b = -0.387652 - 0.998965I$	$-11.3324 + 11.6288I$	0
$u = 0.422131 + 0.107983I$ $a = -0.45738 - 1.67606I$ $b = 1.171970 + 0.672778I$	$-4.81368 - 2.48540I$	$-22.8854 + 6.6337I$
$u = 0.422131 - 0.107983I$ $a = -0.45738 + 1.67606I$ $b = 1.171970 - 0.672778I$	$-4.81368 + 2.48540I$	$-22.8854 - 6.6337I$
$u = -1.53098 + 0.39379I$ $a = -0.40652 - 1.44972I$ $b = -1.151730 + 0.452179I$	$-14.5947 + 5.0254I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.53098 - 0.39379I$ $a = -0.40652 + 1.44972I$ $b = -1.151730 - 0.452179I$	$-14.5947 - 5.0254I$	0
$u = -1.57837 + 0.18063I$ $a = 0.587660 + 0.219510I$ $b = 1.386840 + 0.091526I$	$-17.8165 + 7.9839I$	0
$u = -1.57837 - 0.18063I$ $a = 0.587660 - 0.219510I$ $b = 1.386840 - 0.091526I$	$-17.8165 - 7.9839I$	0
$u = -1.56353 + 0.30289I$ $a = -0.67347 - 1.52002I$ $b = -1.192820 + 0.662030I$	$-13.8217 + 17.6321I$	0
$u = -1.56353 - 0.30289I$ $a = -0.67347 + 1.52002I$ $b = -1.192820 - 0.662030I$	$-13.8217 - 17.6321I$	0
$u = 1.58570 + 0.33378I$ $a = -0.58741 + 1.42117I$ $b = -1.134900 - 0.594549I$	$-9.5017 - 11.4013I$	0
$u = 1.58570 - 0.33378I$ $a = -0.58741 - 1.42117I$ $b = -1.134900 + 0.594549I$	$-9.5017 + 11.4013I$	0
$u = 1.62550 + 0.15463I$ $a = 0.672705 + 0.179863I$ $b = 1.158440 - 0.175281I$	$-12.26950 - 3.43058I$	0
$u = 1.62550 - 0.15463I$ $a = 0.672705 - 0.179863I$ $b = 1.158440 + 0.175281I$	$-12.26950 + 3.43058I$	0
$u = -1.66015 + 0.23571I$ $a = 0.309280 - 0.288553I$ $b = 1.152050 + 0.402083I$	$-14.9337 - 3.0765I$	0

Solutions to I^u_1	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.66015 - 0.23571I$ $a = \quad 0.309280 + 0.288553I$ $b = \quad 1.152050 - 0.402083I$	$-14.9337 + 3.0765I$	0
$u = -0.254207 + 0.093976I$ $a = -0.02448 - 12.67700I$ $b = -0.775297 - 0.496292I$	$-3.15119 - 2.08241I$	$-30.9227 - 13.8100I$
$u = -0.254207 - 0.093976I$ $a = -0.02448 + 12.67700I$ $b = -0.775297 + 0.496292I$	$-3.15119 + 2.08241I$	$-30.9227 + 13.8100I$
$u = -0.197015 + 0.025110I$ $a = \quad 2.85799 + 5.76242I$ $b = \quad 0.903883 - 0.528559I$	$-1.74590 + 2.04516I$	$-12.58558 - 2.81237I$
$u = -0.197015 - 0.025110I$ $a = \quad 2.85799 - 5.76242I$ $b = \quad 0.903883 + 0.528559I$	$-1.74590 - 2.04516I$	$-12.58558 + 2.81237I$

II. $I_2^u = \langle b + u,\ -5u^3 + u^2 + 3a + u + 1,\ u^4 - u^2 + 1 \rangle$

(i) Arc colorings

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

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

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

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

$$a_5 = \begin{pmatrix} -u^2 + 1 \\ u^2 + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{5}{3}u^3 - \frac{1}{3}u^2 - \frac{1}{3}u - \frac{1}{3} \\ -u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{3}u^3 + \frac{4}{3}u^2 - \frac{1}{3}u - \frac{2}{3} \\ -u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -\frac{1}{3}u^3 + \frac{1}{3}u^2 - \frac{1}{3}u - \frac{2}{3} \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{3}u^3 - \frac{1}{3}u^2 - \frac{4}{3}u \\ -\frac{5}{3}u^3 - \frac{2}{3}u^2 + \frac{4}{3}u + \frac{1}{3} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{1}{3}u^3 + \frac{1}{3}u^2 + \frac{1}{3}u - \frac{2}{3} \\ u^3 - u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{2}{3}u^2 \\ -\frac{1}{3}u^3 - \frac{1}{3}u^2 + \frac{2}{3}u + \frac{2}{3} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{1}{3}u^3 + \frac{1}{3}u^2 - \frac{4}{3}u - \frac{2}{3} \\ -2u^3 - u^2 + u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u^2 - 16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^2-u+1)^2$
c_2, c_3, c_4 c_6, c_9	u^4-u^2+1
c_5, c_{12}	$(u^2+1)^2$
c_8	$9(9u^4+4)$
c_{10}	$9(9u^4-18u^3+18u^2-6u+1)$
c_{11}	$(u^2+u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{11}	$(y^2 + y + 1)^2$
c_2, c_3, c_4 c_6, c_9	$(y^2 - y + 1)^2$
c_5, c_{12}	$(y + 1)^4$
c_8	$81(9y^2 + 4)^2$
c_{10}	$81(81y^4 + 126y^2 + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.866025 + 0.500000I$ $a = -0.78868 + 1.21132I$ $b = -0.866025 - 0.500000I$	$-1.64493 - 4.05977I$	$-12.00000 + 6.92820I$
$u = 0.866025 - 0.500000I$ $a = -0.78868 - 1.21132I$ $b = -0.866025 + 0.500000I$	$-1.64493 + 4.05977I$	$-12.00000 - 6.92820I$
$u = -0.866025 + 0.500000I$ $a = -0.21132 + 1.78868I$ $b = 0.866025 - 0.500000I$	$-1.64493 + 4.05977I$	$-12.00000 - 6.92820I$
$u = -0.866025 - 0.500000I$ $a = -0.21132 - 1.78868I$ $b = 0.866025 + 0.500000I$	$-1.64493 - 4.05977I$	$-12.00000 + 6.92820I$

III. $I_3^u = \langle u^3 + b - u,\ -2u^3 - 2u^2 + 3a + u + 1,\ u^4 - u^2 + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^2 - u + 1)^2$
c_2, c_3, c_4 c_6, c_9	$u^4 - u^2 + 1$
c_5, c_{12}	$(u^2 + 1)^2$
c_8	$9(9u^4 + 18u^3 + 9u^2 + 1)$
c_{10}	$9(9u^4 - 18u^3 + 18u^2 - 12u + 4)$
c_{11}	$(u^2 + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{11}	$(y^2+y+1)^2$
c_2, c_3, c_4 c_6, c_9	$(y^2-y+1)^2$
c_5, c_{12}	$(y+1)^4$
c_8	$81(81y^4-162y^3+99y^2+18y+1)$
c_{10}	$81(81y^4-36y^2+16)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.866025 + 0.500000I$ $a = -0.288675 + 1.077350I$ $b = 0.866025 - 0.500000I$	-1.64493	-12.0000
$u = 0.866025 - 0.500000I$ $a = -0.288675 - 1.077350I$ $b = 0.866025 + 0.500000I$	-1.64493	-12.0000
$u = -0.866025 + 0.500000I$ $a = 0.288675 - 0.077350I$ $b = -0.866025 - 0.500000I$	-1.64493	-12.0000
$u = -0.866025 - 0.500000I$ $a = 0.288675 + 0.077350I$ $b = -0.866025 + 0.500000I$	-1.64493	-12.0000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^4)(u^{95}+45u^{94}+\cdots+5812u+169)$
c_2, c_6	$((u^4-u^2+1)^2)(u^{95}-3u^{94}+\cdots-64u-13)$
c_3, c_4, c_9	$((u^4-u^2+1)^2)(u^{95}-u^{94}+\cdots+14u-1)$
c_5, c_{12}	$((u^2+1)^4)(u^{95}-3u^{94}+\cdots-544u-52)$
c_7	$((u^2-u+1)^4)(u^{95}+5u^{94}+\cdots-22u-1)$
c_8	$42849(9u^4+4)(9u^4+18u^3+9u^2+1)$ $\cdot(529u^{95}-345u^{94}+\cdots-101241168u+12252224)$
c_{10}	$42849(9u^4-18u^3+\cdots-12u+4)(9u^4-18u^3+\cdots-6u+1)$ $\cdot(529u^{95}+1035u^{94}+\cdots+66519920u+12600800)$
c_{11}	$((u^2+u+1)^4)(u^{95}+5u^{94}+\cdots-22u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^4)(y^{95}+15y^{94}+\cdots+2924000y-28561)$
c_2, c_6	$((y^2-y+1)^4)(y^{95}-45y^{94}+\cdots+5812y-169)$
c_3, c_4, c_9	$((y^2-y+1)^4)(y^{95}-93y^{94}+\cdots+88y-1)$
c_5, c_{12}	$((y+1)^8)(y^{95}+83y^{94}+\cdots-1192y-2704)$
c_7, c_{11}	$((y^2+y+1)^4)(y^{95}-57y^{94}+\cdots+304y-1)$
c_8	$1836036801(9y^2+4)^2(81y^4-162y^3+99y^2+18y+1)$ $\cdot(2.80\times10^5y^{95}-2.19\times10^7y^{94}+\cdots+8.54\times10^{15}y-1.50\times10^{14})$
c_{10}	$1836036801(81y^4-36y^2+16)(81y^4+126y^2+1)$ $\cdot(2.80\times10^5y^{95}-1.01\times10^7y^{94}+\cdots+2.53\times10^{16}y-1.59\times10^{14})$