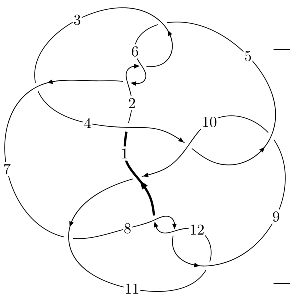
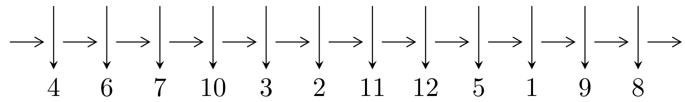
$12a_{0880}$ ($K12a_{0880}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^{15} + u^{14} + 7u^{13} + 6u^{12} + 17u^{11} + 12u^{10} + 14u^9 + 6u^8 - 3u^7 - 6u^6 - 5u^5 - 3u^4 + 2u^3 + 2u^2 + b + u - 1, \\
& -u^{15} - u^{14} - 7u^{13} - 6u^{12} - 17u^{11} - 12u^{10} - 14u^9 - 6u^8 + 3u^7 + 6u^6 + 5u^5 + 3u^4 - u^3 - 2u^2 + a + u + 1, \\
& u^{17} + u^{16} + \cdots + 2u - 1\rangle \\
I_2^u = \langle & 6u^{71} + 3u^{70} + \cdots + 2b + 6,\ 13u^{71} + 37u^{70} + \cdots + 2a + 22,\ u^{72} + 3u^{71} + \cdots + 4u + 1\rangle \\
I_3^u = \langle & u^2 + b,\ a + 1,\ u^3 - u^2 + 2u - 1\rangle \\
I_4^u = \langle & -u^2 a + b,\ -u^2 a + a^2 + u^2 - 2a + 2,\ u^3 - u^2 + 2u - 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 98 representations.

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[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.

$$\boldsymbol{I_1^u = \langle u^{15} + u^{14} + \cdots + b - 1,\ -u^{15} - u^{14} + \cdots + a + 1,\ u^{17} + u^{16} + \cdots + 2u - 1\rangle}$$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^{15} + u^{14} + \cdots - u - 1 \\ -u^{15} - u^{14} + \cdots - u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{15} - u^{14} + \cdots - u^2 - u \\ u^{15} + u^{14} + \cdots + u^2 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^4 - u^2 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{15} + u^{14} + \cdots + 2u^2 - 1 \\ -u^{15} - u^{14} + \cdots - u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{16} + u^{15} + \cdots + u^3 + 1 \\ -u^{16} - u^{15} + \cdots - u^3 - 2u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{12} - u^{11} - 6u^{10} - 5u^9 - 13u^8 - 8u^7 - 11u^6 - 3u^5 - 2u^4 + u^3 - u - 1 \\ u^{12} + u^{11} + 5u^{10} + 5u^9 + 8u^8 + 8u^7 + 3u^6 + 3u^5 - u^4 - u^3 + u^2 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{16} - 4u^{15} - 32u^{14} - 30u^{13} - 98u^{12} - 86u^{11} - 136u^{10} - 108u^9 - 70u^8 - 40u^7 + 10u^6 + 18u^5 + 12u^4 - 2u^3 - 4u^2 - 8u - 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{17} - 3u^{16} + \cdots - 13u^2 + 1$
c_2, c_5, c_6 c_8, c_{11}, c_{12}	$u^{17} - u^{16} + \cdots + 2u + 1$
c_3, c_7	$u^{17} + u^{16} + \cdots - 2u + 1$
c_4, c_9	$u^{17} - 7u^{16} + \cdots - 24u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{17} + 13y^{16} + \cdots + 26y - 1$
c_2, c_5, c_6 c_8, c_{11}, c_{12}	$y^{17} + 17y^{16} + \cdots + 10y - 1$
c_3, c_7	$y^{17} + 5y^{16} + \cdots + 10y - 1$
c_4, c_9	$y^{17} + 7y^{16} + \cdots + 256y - 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.091941 + 1.094580I$ $a = 0.581769 - 0.777593I$ $b = -0.435961 - 0.127897I$	$3.05673 - 2.28115I$	$-9.55605 + 3.69550I$
$u = 0.091941 - 1.094580I$ $a = 0.581769 + 0.777593I$ $b = -0.435961 + 0.127897I$	$3.05673 + 2.28115I$	$-9.55605 - 3.69550I$
$u = -0.721066 + 0.328898I$ $a = 0.222416 - 1.215200I$ $b = 1.360620 + 0.079969I$	$1.60562 + 8.48162I$	$-11.6917 - 8.7222I$
$u = -0.721066 - 0.328898I$ $a = 0.222416 + 1.215200I$ $b = 1.360620 - 0.079969I$	$1.60562 - 8.48162I$	$-11.6917 + 8.7222I$
$u = -0.474834 + 0.556801I$ $a = 0.363619 - 1.313000I$ $b = 0.251475 - 0.004597I$	$3.62349 - 0.43208I$	$-6.82365 - 2.95346I$
$u = -0.474834 - 0.556801I$ $a = 0.363619 + 1.313000I$ $b = 0.251475 + 0.004597I$	$3.62349 + 0.43208I$	$-6.82365 + 2.95346I$
$u = 0.602130 + 0.282651I$ $a = -0.29346 - 1.46942I$ $b = -0.984788 + 0.619269I$	$-1.19117 - 2.88336I$	$-13.9594 + 7.1058I$
$u = 0.602130 - 0.282651I$ $a = -0.29346 + 1.46942I$ $b = -0.984788 - 0.619269I$	$-1.19117 + 2.88336I$	$-13.9594 - 7.1058I$
$u = 0.065351 + 1.353320I$ $a = -0.09164 + 1.99081I$ $b = 0.31972 - 2.23621I$	$8.04992 - 2.40798I$	$-3.08239 + 2.80961I$
$u = 0.065351 - 1.353320I$ $a = -0.09164 - 1.99081I$ $b = 0.31972 + 2.23621I$	$8.04992 + 2.40798I$	$-3.08239 - 2.80961I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.24047 + 1.42815I$ $a = -3.28620 - 0.25955I$ $b = 4.26275 + 0.06839I$	$9.86744 - 9.13272I$	$-4.35551 + 6.02598I$
$u = 0.24047 - 1.42815I$ $a = -3.28620 + 0.25955I$ $b = 4.26275 - 0.06839I$	$9.86744 + 9.13272I$	$-4.35551 - 6.02598I$
$u = -0.28648 + 1.44189I$ $a = 2.80799 - 1.15056I$ $b = -3.99833 + 0.90955I$	$12.9584 + 15.8554I$	$-3.84401 - 8.82100I$
$u = -0.28648 - 1.44189I$ $a = 2.80799 + 1.15056I$ $b = -3.99833 - 0.90955I$	$12.9584 - 15.8554I$	$-3.84401 + 8.82100I$
$u = -0.16848 + 1.47926I$ $a = 1.76249 + 0.47839I$ $b = -2.52677 - 0.32597I$	$16.6406 + 4.3048I$	$-0.33728 - 2.80753I$
$u = -0.16848 - 1.47926I$ $a = 1.76249 - 0.47839I$ $b = -2.52677 + 0.32597I$	$16.6406 - 4.3048I$	$-0.33728 + 2.80753I$
$u = 0.301943$ $a = -1.13397$ $b = 0.502560$	-0.656393	-14.7000

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle 6u^{71}+3u^{70}+\cdots+2b+6,\ 13u^{71}+37u^{70}+\cdots+2a+22,\ u^{72}+3u^{71}+\cdots+4u+1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{13}{2}u^{71} - \frac{37}{2}u^{70} + \cdots - \frac{73}{2}u - 11 \\ -3u^{71} - \frac{3}{2}u^{70} + \cdots - \frac{11}{2}u - 3 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{71} + \frac{5}{2}u^{70} + \cdots + \frac{11}{2}u + \frac{1}{2} \\ \frac{1}{2}u^{69} + u^{68} + \cdots + 3u + \frac{1}{2} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^4 - u^2 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -14u^{71} - 41u^{70} + \cdots - 62u - \frac{37}{2} \\ \frac{7}{2}u^{71} + 21u^{70} + \cdots + 14u + \frac{7}{2} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 6u^{71} + 18u^{70} + \cdots + 32u + 15 \\ \frac{3}{2}u^{71} - \frac{1}{2}u^{70} + \cdots + \frac{3}{2}u + 3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{23}{2}u^{71} - \frac{67}{2}u^{70} + \cdots - \frac{107}{2}u - 15 \\ u^{71} + \frac{27}{2}u^{70} + \cdots + \frac{15}{2}u + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{33}{2}u^{71} + 36u^{70} + \cdots + 50u + \frac{29}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{72} - 15u^{71} + \cdots - 73808u + 6497$
c_2, c_5, c_6 c_8, c_{11}, c_{12}	$u^{72} - 3u^{71} + \cdots - 4u + 1$
c_3, c_7	$u^{72} + 3u^{71} + \cdots - 604u + 137$
c_4, c_9	$(u^{36} + 3u^{35} + \cdots + 12u + 8)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{72} + 25y^{71} + \cdots + 288840316y + 42211009$
c_2, c_5, c_6 c_8, c_{11}, c_{12}	$y^{72} + 65y^{71} + \cdots - 4y + 1$
c_3, c_7	$y^{72} + 5y^{71} + \cdots + 440196y + 18769$
c_4, c_9	$(y^{36} + 21y^{35} + \cdots + 752y + 64)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.028099 + 1.172780I$ $a = -0.871667 + 1.020780I$ $b = 1.43262 - 0.20599I$	$0.543677 + 0.795055I$	0
$u = -0.028099 - 1.172780I$ $a = -0.871667 - 1.020780I$ $b = 1.43262 + 0.20599I$	$0.543677 - 0.795055I$	0
$u = -0.486820 + 0.662033I$ $a = 0.20277 - 1.54250I$ $b = 0.859587 - 0.132580I$	$8.43073 - 7.86342I$	$-5.29136 + 3.41606I$
$u = -0.486820 - 0.662033I$ $a = 0.20277 + 1.54250I$ $b = 0.859587 + 0.132580I$	$8.43073 + 7.86342I$	$-5.29136 - 3.41606I$
$u = 0.263106 + 1.148630I$ $a = -0.175976 + 0.566859I$ $b = -0.690420 - 0.221203I$	$1.54122 - 4.89012I$	0
$u = 0.263106 - 1.148630I$ $a = -0.175976 - 0.566859I$ $b = -0.690420 + 0.221203I$	$1.54122 + 4.89012I$	0
$u = -0.739526 + 0.334846I$ $a = -0.06745 + 1.51141I$ $b = -1.48882 - 0.07395I$	$7.26375 + 12.12330I$	$-7.67566 - 8.67883I$
$u = -0.739526 - 0.334846I$ $a = -0.06745 - 1.51141I$ $b = -1.48882 + 0.07395I$	$7.26375 - 12.12330I$	$-7.67566 + 8.67883I$
$u = 0.309257 + 1.151650I$ $a = 0.004957 - 0.470407I$ $b = 1.155150 + 0.255668I$	$6.92907 - 8.07419I$	0
$u = 0.309257 - 1.151650I$ $a = 0.004957 + 0.470407I$ $b = 1.155150 - 0.255668I$	$6.92907 + 8.07419I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.693334 + 0.387106I$ $a = -0.512995 - 0.563906I$ $b = 1.189500 - 0.307569I$	$9.40092 + 2.42015I$	$-5.02486 - 3.32106I$
$u = -0.693334 - 0.387106I$ $a = -0.512995 + 0.563906I$ $b = 1.189500 + 0.307569I$	$9.40092 - 2.42015I$	$-5.02486 + 3.32106I$
$u = -0.074263 + 1.210030I$ $a = 1.12364 - 1.15238I$ $b = -2.07024 + 0.42184I$	$5.33274 + 4.20528I$	0
$u = -0.074263 - 1.210030I$ $a = 1.12364 + 1.15238I$ $b = -2.07024 - 0.42184I$	$5.33274 - 4.20528I$	0
$u = -0.550109 + 0.561117I$ $a = -0.61451 + 1.33701I$ $b = -0.264237 - 0.424531I$	$10.05060 + 1.78164I$	$-3.59526 - 2.92936I$
$u = -0.550109 - 0.561117I$ $a = -0.61451 - 1.33701I$ $b = -0.264237 + 0.424531I$	$10.05060 - 1.78164I$	$-3.59526 + 2.92936I$
$u = -0.458914 + 0.629950I$ $a = -0.25151 + 1.42096I$ $b = -0.592588 + 0.193257I$	$2.73562 - 4.37909I$	$-9.14116 + 3.46632I$
$u = -0.458914 - 0.629950I$ $a = -0.25151 - 1.42096I$ $b = -0.592588 - 0.193257I$	$2.73562 + 4.37909I$	$-9.14116 - 3.46632I$
$u = 0.134798 + 1.220550I$ $a = 0.259072 - 0.959718I$ $b = -0.145300 + 0.658090I$	$2.81331 - 1.98395I$	0
$u = 0.134798 - 1.220550I$ $a = 0.259072 + 0.959718I$ $b = -0.145300 - 0.658090I$	$2.81331 + 1.98395I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.689123 + 0.339547I$ $a = -0.143228 + 0.704284I$ $b = -1.182920 + 0.007819I$	$2.73562 + 4.37909I$	$-9.14116 - 3.46632I$
$u = -0.689123 - 0.339547I$ $a = -0.143228 - 0.704284I$ $b = -1.182920 - 0.007819I$	$2.73562 - 4.37909I$	$-9.14116 + 3.46632I$
$u = 0.760429 + 0.051408I$ $a = 0.619326 - 0.928464I$ $b = -0.017927 - 0.618723I$	$3.56538 + 4.16794I$	$-8.26901 - 3.74387I$
$u = 0.760429 - 0.051408I$ $a = 0.619326 + 0.928464I$ $b = -0.017927 + 0.618723I$	$3.56538 - 4.16794I$	$-8.26901 + 3.74387I$
$u = 0.713507 + 0.060631I$ $a = -0.512274 + 0.427549I$ $b = -0.066731 + 0.606152I$	$-1.75773 + 1.27972I$	$-13.2127 - 5.1177I$
$u = 0.713507 - 0.060631I$ $a = -0.512274 - 0.427549I$ $b = -0.066731 - 0.606152I$	$-1.75773 - 1.27972I$	$-13.2127 + 5.1177I$
$u = 0.622211 + 0.330313I$ $a = 0.29143 + 1.89834I$ $b = 1.24066 - 0.71866I$	$4.23221 - 5.96236I$	$-8.77056 + 6.49736I$
$u = 0.622211 - 0.330313I$ $a = 0.29143 - 1.89834I$ $b = 1.24066 + 0.71866I$	$4.23221 + 5.96236I$	$-8.77056 - 6.49736I$
$u = 0.309852 + 1.260530I$ $a = -0.075247 + 1.082060I$ $b = -0.60498 - 1.61917I$	$7.62672 + 0.29835I$	0
$u = 0.309852 - 1.260530I$ $a = -0.075247 - 1.082060I$ $b = -0.60498 + 1.61917I$	$7.62672 - 0.29835I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.670396 + 0.166557I$		
$a = 0.828226 + 0.508262I$	$0.543677 - 0.795055I$	$-12.98650 + 0.87860I$
$b = 0.402874 - 0.740462I$		
$u = 0.670396 - 0.166557I$		
$a = 0.828226 - 0.508262I$	$0.543677 + 0.795055I$	$-12.98650 - 0.87860I$
$b = 0.402874 + 0.740462I$		
$u = 0.263561 + 1.285520I$		
$a = 0.397587 - 0.820456I$	$2.40132 - 2.25171I$	0
$b = -0.113302 + 1.168640I$		
$u = 0.263561 - 1.285520I$		
$a = 0.397587 + 0.820456I$	$2.40132 + 2.25171I$	0
$b = -0.113302 - 1.168640I$		
$u = -0.627964 + 0.272720I$		
$a = -1.005100 - 0.078332I$	$1.54122 + 4.89012I$	$-10.17132 - 8.17154I$
$b = -0.916212 - 0.274601I$		
$u = -0.627964 - 0.272720I$		
$a = -1.005100 + 0.078332I$	$1.54122 - 4.89012I$	$-10.17132 + 8.17154I$
$b = -0.916212 + 0.274601I$		
$u = 0.472092 + 0.409617I$		
$a = 0.75723 - 1.63308I$	$4.76567 + 2.49919I$	$-7.13527 + 0.48445I$
$b = -1.293070 - 0.105552I$		
$u = 0.472092 - 0.409617I$		
$a = 0.75723 + 1.63308I$	$4.76567 - 2.49919I$	$-7.13527 - 0.48445I$
$b = -1.293070 + 0.105552I$		
$u = 0.267646 + 1.351260I$		
$a = -1.38835 + 0.81532I$	$5.33274 - 4.20528I$	0
$b = 1.62169 - 1.37738I$		
$u = 0.267646 - 1.351260I$		
$a = -1.38835 - 0.81532I$	$5.33274 + 4.20528I$	0
$b = 1.62169 + 1.37738I$		

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.557533 + 0.252581I$ $a = 0.982249 + 0.864931I$ $b = 0.715436 + 0.371416I$	$-1.75773 + 1.27972I$	$-13.2127 - 5.1177I$
$u = -0.557533 - 0.252581I$ $a = 0.982249 - 0.864931I$ $b = 0.715436 - 0.371416I$	$-1.75773 - 1.27972I$	$-13.2127 + 5.1177I$
$u = -0.199074 + 1.399440I$ $a = 0.306691 + 0.999684I$ $b = 0.09647 - 2.03402I$	$7.62672 + 0.29835I$	0
$u = -0.199074 - 1.399440I$ $a = 0.306691 - 0.999684I$ $b = 0.09647 + 2.03402I$	$7.62672 - 0.29835I$	0
$u = 0.20042 + 1.40204I$ $a = -2.12639 - 1.01851I$ $b = 2.70046 + 1.07463I$	$4.76567 - 2.49919I$	0
$u = 0.20042 - 1.40204I$ $a = -2.12639 + 1.01851I$ $b = 2.70046 - 1.07463I$	$4.76567 + 2.49919I$	0
$u = -0.22137 + 1.40379I$ $a = -0.922863 - 0.664443I$ $b = 0.91344 + 1.71767I$	$3.56538 + 4.16794I$	0
$u = -0.22137 - 1.40379I$ $a = -0.922863 + 0.664443I$ $b = 0.91344 - 1.71767I$	$3.56538 - 4.16794I$	0
$u = -0.24258 + 1.40964I$ $a = 1.51890 + 0.27038I$ $b = -1.91772 - 1.23335I$	$6.92907 + 8.07419I$	0
$u = -0.24258 - 1.40964I$ $a = 1.51890 - 0.27038I$ $b = -1.91772 + 1.23335I$	$6.92907 - 8.07419I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.23483 + 1.41097I$ $a = 2.72376 + 0.25541I$ $b = -3.50164 - 0.05571I$	$4.23221 - 5.96236I$	0
$u = 0.23483 - 1.41097I$ $a = 2.72376 - 0.25541I$ $b = -3.50164 + 0.05571I$	$4.23221 + 5.96236I$	0
$u = 0.18986 + 1.43138I$ $a = 2.63821 + 1.69759I$ $b = -3.36954 - 1.98298I$	10.6075	0
$u = 0.18986 - 1.43138I$ $a = 2.63821 - 1.69759I$ $b = -3.36954 + 1.98298I$	10.6075	0
$u = -0.26545 + 1.43725I$ $a = 2.04182 - 0.85451I$ $b = -2.83123 + 0.45931I$	$8.43073 + 7.86342I$	0
$u = -0.26545 - 1.43725I$ $a = 2.04182 + 0.85451I$ $b = -2.83123 - 0.45931I$	$8.43073 - 7.86342I$	0
$u = -0.27920 + 1.43702I$ $a = -2.55048 + 0.93395I$ $b = 3.60942 - 0.57373I$	$7.26375 + 12.12330I$	0
$u = -0.27920 - 1.43702I$ $a = -2.55048 - 0.93395I$ $b = 3.60942 + 0.57373I$	$7.26375 - 12.12330I$	0
$u = -0.15360 + 1.46034I$ $a = -1.60146 + 0.26365I$ $b = 2.39859 - 0.62513I$	$10.05060 + 1.78164I$	0
$u = -0.15360 - 1.46034I$ $a = -1.60146 - 0.26365I$ $b = 2.39859 + 0.62513I$	$10.05060 - 1.78164I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.13067 + 1.46551I$ $a = \quad 2.05831 - 0.71219I$ $b = -2.99639 + 1.12544I$	$9.40092 - 2.42015I$	0
$u = -0.13067 - 1.46551I$ $a = \quad 2.05831 + 0.71219I$ $b = -2.99639 - 1.12544I$	$9.40092 + 2.42015I$	0
$u = -0.25867 + 1.45576I$ $a = -1.61176 + 1.49131I$ $b = \quad 2.21138 - 1.42343I$	$15.3281 + 5.8880I$	0
$u = -0.25867 - 1.45576I$ $a = -1.61176 - 1.49131I$ $b = \quad 2.21138 + 1.42343I$	$15.3281 - 5.8880I$	0
$u = -0.477473 + 0.201626I$ $a = -0.86751 - 1.69455I$ $b = -0.528630 - 0.550025I$	$2.40132 - 2.25171I$	$-5.72106 - 2.85348I$
$u = -0.477473 - 0.201626I$ $a = -0.86751 + 1.69455I$ $b = -0.528630 + 0.550025I$	$2.40132 + 2.25171I$	$-5.72106 + 2.85348I$
$u = -0.12268 + 1.48064I$ $a = -2.53271 + 0.75877I$ $b = \quad 3.57037 - 1.15531I$	$15.3281 - 5.8880I$	0
$u = -0.12268 - 1.48064I$ $a = -2.53271 - 0.75877I$ $b = \quad 3.57037 + 1.15531I$	$15.3281 + 5.8880I$	0
$u = \quad 0.411433 + 0.249923I$ $a = -0.620932 + 1.023680I$ $b = \quad 0.787442 - 0.018352I$	-0.556807	$-12.02614 + 0.I$
$u = \quad 0.411433 - 0.249923I$ $a = -0.620932 - 1.023680I$ $b = \quad 0.787442 + 0.018352I$	-0.556807	$-12.02614 + 0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.066940 + 0.465647I$ $a = \quad 0.69822 - 1.36466I$ $b = -0.313196 - 0.593198I$	$2.81331 - 1.98395I$	$-6.78982 + 3.37609I$
$u = -0.066940 - 0.465647I$ $a = \quad 0.69822 + 1.36466I$ $b = -0.313196 + 0.593198I$	$2.81331 + 1.98395I$	$-6.78982 - 3.37609I$

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

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

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

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

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

$$a_7 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u - 2 \\ -u^2 - u + 1 \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u^2 + 8u - 20$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -1.00000$ $b = 1.66236 - 0.56228I$	$6.04826 - 5.65624I$	$-4.98049 + 5.95889I$
$u = 0.215080 - 1.307140I$ $a = -1.00000$ $b = 1.66236 + 0.56228I$	$6.04826 + 5.65624I$	$-4.98049 - 5.95889I$
$u = 0.569840$ $a = -1.00000$ $b = -0.324718$	-2.22691	-18.0390

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^2a - 3au - 5u^2 + 5a + 5u - 20$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -0.162359 + 0.986732I$ $b = -0.28492 - 1.73159I$	6.04826	$-8.87505 + 0.I$
$u = 0.215080 + 1.307140I$ $a = 0.500000 - 0.424452I$ $b = -0.592519 + 0.986732I$	$1.91067 - 2.82812I$	$-13.06248 + 4.84887I$
$u = 0.215080 - 1.307140I$ $a = -0.162359 - 0.986732I$ $b = -0.28492 + 1.73159I$	6.04826	$-8.87505 + 0.I$
$u = 0.215080 - 1.307140I$ $a = 0.500000 + 0.424452I$ $b = -0.592519 - 0.986732I$	$1.91067 + 2.82812I$	$-13.06248 - 4.84887I$
$u = 0.569840$ $a = 1.16236 + 0.98673I$ $b = 0.377439 + 0.320410I$	$1.91067 - 2.82812I$	$-13.06248 + 4.84887I$
$u = 0.569840$ $a = 1.16236 - 0.98673I$ $b = 0.377439 - 0.320410I$	$1.91067 + 2.82812I$	$-13.06248 - 4.84887I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$((u^3+u^2-1)^3)(u^{17}-3u^{16}+\cdots-13u^2+1)$ $\cdot\,(u^{72}-15u^{71}+\cdots-73808u+6497)$
c_2, c_8	$((u^3-u^2+2u-1)^3)(u^{17}-u^{16}+\cdots+2u+1)(u^{72}-3u^{71}+\cdots-4u+1)$
c_3, c_7	$((u^3+u^2-1)^3)(u^{17}+u^{16}+\cdots-2u+1)(u^{72}+3u^{71}+\cdots-604u+137)$
c_4, c_9	$u^9(u^{17}-7u^{16}+\cdots-24u+8)(u^{36}+3u^{35}+\cdots+12u+8)^2$
c_5, c_6, c_{11} c_{12}	$((u^3+u^2+2u+1)^3)(u^{17}-u^{16}+\cdots+2u+1)(u^{72}-3u^{71}+\cdots-4u+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$((y^3 - y^2 + 2y - 1)^3)(y^{17} + 13y^{16} + \cdots + 26y - 1)$ $\cdot (y^{72} + 25y^{71} + \cdots + 288840316y + 42211009)$
c_2, c_5, c_6 c_8, c_{11}, c_{12}	$((y^3 + 3y^2 + 2y - 1)^3)(y^{17} + 17y^{16} + \cdots + 10y - 1)$ $\cdot (y^{72} + 65y^{71} + \cdots - 4y + 1)$
c_3, c_7	$((y^3 - y^2 + 2y - 1)^3)(y^{17} + 5y^{16} + \cdots + 10y - 1)$ $\cdot (y^{72} + 5y^{71} + \cdots + 440196y + 18769)$
c_4, c_9	$y^9(y^{17} + 7y^{16} + \cdots + 256y - 64)(y^{36} + 21y^{35} + \cdots + 752y + 64)^2$