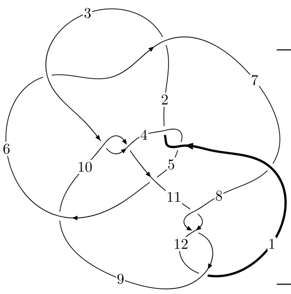
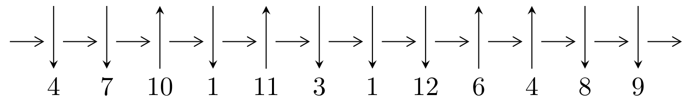
$12n_{0804}$ ($K12n_{0804}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -15u^{27} - 74u^{26} + \cdots + 2b + 46,\ 7u^{27} + 28u^{26} + \cdots + 4a - 16,\ u^{28} + 6u^{27} + \cdots - 2u - 4 \rangle$$
$$I_2^u = \langle -26336u^8a^3 - 36861u^8a^2 + \cdots - 5783a + 173926,\ -4u^8a^2 - 11u^8a + \cdots - 3a + 11,$$
$$u^9 - u^8 - 4u^7 + 3u^6 + 5u^5 - u^4 - 2u^3 - 2u^2 + u - 1 \rangle$$
$$I_3^u = \langle u^{15} - u^{14} - 7u^{13} + 5u^{12} + 20u^{11} - 7u^{10} - 27u^9 - 4u^8 + 12u^7 + 15u^6 + 8u^5 - 3u^4 - 7u^3 - 8u^2 + b - u,$$
$$-u^{16} + u^{15} + \cdots + a - 1,\ u^{17} - u^{16} + \cdots - u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 81 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. $\boldsymbol{I_1^u = \langle -15u^{27} - 74u^{26} + \cdots + 2b + 46,\ 7u^{27} + 28u^{26} + \cdots + 4a - 16,\ u^{28} + 6u^{27} + \cdots - 2u - 4\rangle}$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{7}{4}u^{27} - 7u^{26} + \cdots - \frac{5}{4}u + 4 \\ \frac{15}{2}u^{27} + 37u^{26} + \cdots + \frac{11}{2}u - 23 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -6u^{27} - \frac{61}{2}u^{26} + \cdots - 6u + \frac{45}{2} \\ -\frac{27}{2}u^{27} - 66u^{26} + \cdots - \frac{25}{2}u + 46 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{65}{4}u^{27} - 72u^{26} + \cdots - \frac{27}{4}u + 41 \\ -\frac{51}{2}u^{27} - 113u^{26} + \cdots - \frac{17}{2}u + 65 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 + 2u \\ -u^5 + u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{23}{4}u^{27} - 29u^{26} + \cdots - \frac{29}{4}u + 20 \\ -\frac{23}{2}u^{27} - 56u^{26} + \cdots - \frac{17}{2}u + 37 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2u^{27} + \frac{17}{2}u^{26} + \cdots - u^2 - \frac{7}{2} \\ \frac{7}{2}u^{27} + 14u^{26} + \cdots - \frac{1}{2}u - 6 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -2u^{27} - \frac{19}{2}u^{26} + \cdots - 2u + \frac{13}{2} \\ \frac{13}{2}u^{27} + 31u^{26} + \cdots + \frac{13}{2}u - 20 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -25u^{27} - 119u^{26} + 24u^{25} + 825u^{24} + 445u^{23} - 2632u^{22} - 1414u^{21} + 5532u^{20} + 700u^{19} - 8560u^{18} + 4311u^{17} + 8407u^{16} - 10994u^{15} - 1234u^{14} + 11725u^{13} - 8592u^{12} - 3652u^{11} + 9729u^{10} - 5400u^{9} - 2649u^{8} + 5362u^{7} - 2247u^{6} - 727u^{5} + 1376u^{4} - 434u^{3} + 57u^{2} - 28u + 74$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{28} - 2u^{27} + \cdots + 13u - 1$
c_2, c_6	$u^{28} + 20u^{27} + \cdots - 5888u - 512$
c_3, c_9, c_{10}	$u^{28} - u^{27} + \cdots + u + 1$
c_5	$u^{28} + 16u^{26} + \cdots - 4u - 11$
c_7	$u^{28} - 18u^{27} + \cdots - 990u + 52$
c_8, c_{11}, c_{12}	$u^{28} + 6u^{27} + \cdots - 2u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{28} - 38y^{27} + \cdots - 43y + 1$
c_2, c_6	$y^{28} + 10y^{27} + \cdots - 65536y + 262144$
c_3, c_9, c_{10}	$y^{28} - 15y^{27} + \cdots - 7y + 1$
c_5	$y^{28} + 32y^{27} + \cdots + 2096y + 121$
c_7	$y^{28} - 2y^{27} + \cdots - 384700y + 2704$
c_8, c_{11}, c_{12}	$y^{28} - 26y^{27} + \cdots + 4y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.953650$ $a = 0.557977$ $b = 1.71191$	-2.95076	1.04180
$u = 0.658308 + 0.612846I$ $a = -1.282020 - 0.481173I$ $b = -1.120110 - 0.609967I$	$0.15275 + 6.58351I$	$-2.72995 - 3.03083I$
$u = 0.658308 - 0.612846I$ $a = -1.282020 + 0.481173I$ $b = -1.120110 + 0.609967I$	$0.15275 - 6.58351I$	$-2.72995 + 3.03083I$
$u = 0.402654 + 0.774191I$ $a = -1.05898 - 1.82975I$ $b = 0.061414 - 0.574417I$	$1.01000 - 11.30550I$	$-1.14807 + 7.82851I$
$u = 0.402654 - 0.774191I$ $a = -1.05898 + 1.82975I$ $b = 0.061414 + 0.574417I$	$1.01000 + 11.30550I$	$-1.14807 - 7.82851I$
$u = 0.046469 + 0.849926I$ $a = -0.926104 - 0.236908I$ $b = 0.122562 + 0.203546I$	$6.61374 + 1.82301I$	$-2.15341 - 3.95044I$
$u = 0.046469 - 0.849926I$ $a = -0.926104 + 0.236908I$ $b = 0.122562 - 0.203546I$	$6.61374 - 1.82301I$	$-2.15341 + 3.95044I$
$u = -1.19440$ $a = 0.501244$ $b = 0.563490$	-2.49793	-0.727600
$u = 0.323728 + 0.735663I$ $a = 1.50512 + 1.36499I$ $b = 0.190601 + 0.251246I$	$-1.82680 - 3.57508I$	$-0.50281 + 5.56081I$
$u = 0.323728 - 0.735663I$ $a = 1.50512 - 1.36499I$ $b = 0.190601 - 0.251246I$	$-1.82680 + 3.57508I$	$-0.50281 - 5.56081I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.199900 + 0.405002I$ $a = -0.456093 - 0.265236I$ $b = -1.03504 - 0.98880I$	$3.05496 - 6.32046I$	$-4.20827 + 7.87588I$
$u = 1.199900 - 0.405002I$ $a = -0.456093 + 0.265236I$ $b = -1.03504 + 0.98880I$	$3.05496 + 6.32046I$	$-4.20827 - 7.87588I$
$u = 0.559106 + 0.438994I$ $a = 0.554411 + 1.068500I$ $b = 0.939165 + 0.581582I$	$-2.96704 - 0.44419I$	$-3.65164 - 1.30956I$
$u = 0.559106 - 0.438994I$ $a = 0.554411 - 1.068500I$ $b = 0.939165 - 0.581582I$	$-2.96704 + 0.44419I$	$-3.65164 + 1.30956I$
$u = -1.291540 + 0.383259I$ $a = -0.271704 + 0.642178I$ $b = -0.236794 + 1.202110I$	$2.45039 + 2.60036I$	$-6.92230 - 0.38709I$
$u = -1.291540 - 0.383259I$ $a = -0.271704 - 0.642178I$ $b = -0.236794 - 1.202110I$	$2.45039 - 2.60036I$	$-6.92230 + 0.38709I$
$u = 1.393630 + 0.056371I$ $a = 0.117598 + 0.610861I$ $b = 0.32341 + 2.06894I$	$-5.35082 - 2.09473I$	$-9.32900 + 3.91976I$
$u = 1.393630 - 0.056371I$ $a = 0.117598 - 0.610861I$ $b = 0.32341 - 2.06894I$	$-5.35082 + 2.09473I$	$-9.32900 - 3.91976I$
$u = -1.44514 + 0.28991I$ $a = -0.09541 - 1.48867I$ $b = 0.20048 - 3.17159I$	$-7.50725 + 7.32315I$	$-4.57096 - 5.41383I$
$u = -1.44514 - 0.28991I$ $a = -0.09541 + 1.48867I$ $b = 0.20048 + 3.17159I$	$-7.50725 - 7.32315I$	$-4.57096 + 5.41383I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.47470 + 0.16414I$ $a = -0.609161 - 0.895856I$ $b = -0.02962 - 2.05701I$	$-9.43653 + 2.71269I$	$-7.85713 + 0.I$
$u = -1.47470 - 0.16414I$ $a = -0.609161 + 0.895856I$ $b = -0.02962 + 2.05701I$	$-9.43653 - 2.71269I$	$-7.85713 + 0.I$
$u = -1.47870 + 0.29110I$ $a = 0.46176 + 1.47662I$ $b = 0.52784 + 3.55403I$	$-5.0564 + 15.1855I$	$-4.66281 - 7.85224I$
$u = -1.47870 - 0.29110I$ $a = 0.46176 - 1.47662I$ $b = 0.52784 - 3.55403I$	$-5.0564 - 15.1855I$	$-4.66281 + 7.85224I$
$u = -1.52541 + 0.15808I$ $a = 0.112693 + 0.750612I$ $b = -0.99764 + 1.57771I$	$-7.05591 - 3.93502I$	$-6.54817 + 3.13330I$
$u = -1.52541 - 0.15808I$ $a = 0.112693 - 0.750612I$ $b = -0.99764 - 1.57771I$	$-7.05591 + 3.93502I$	$-6.54817 - 3.13330I$
$u = -0.247934 + 0.324230I$ $a = 0.668275 - 0.831350I$ $b = -0.083982 - 0.333429I$	$-0.143060 + 0.866290I$	$-3.37260 - 7.97095I$
$u = -0.247934 - 0.324230I$ $a = 0.668275 + 0.831350I$ $b = -0.083982 + 0.333429I$	$-0.143060 - 0.866290I$	$-3.37260 + 7.97095I$

II. $\boldsymbol{I^u_2 = \langle -2.63\times 10^4 a^3u^8 - 3.69\times 10^4 a^2u^8 + \cdots - 5783a + 1.74\times 10^5,\ -4u^8a^2 - 11u^8a + \cdots - 3a + 11,\ u^9 - u^8 + \cdots + u - 1\rangle}$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ 0.217680a^3u^8 + 0.304674a^2u^8 + \cdots + 0.0477993a - 1.43758 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0388230a^3u^8 + 0.221854a^2u^8 + \cdots + 0.325520a + 1.11376 \\ -0.487796a^3u^8 - 0.886325a^2u^8 + \cdots + 0.0427656a + 1.01842 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.217680a^3u^8 - 0.304674a^2u^8 + \cdots + 0.952201a + 1.43758 \\ -0.204720a^3u^8 - 0.196619a^2u^8 + \cdots + 0.127586a - 0.334521 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 + 2u \\ -u^5 + u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.00223995a^3u^8 - 0.310129a^2u^8 + \cdots + 0.227979a - 0.929694 \\ 0.579593a^3u^8 + 0.0401868a^2u^8 + \cdots + 0.201769a - 2.52773 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.199330a^3u^8 + 0.0246477a^2u^8 + \cdots + 0.744894a + 2.28670 \\ 0.991354a^3u^8 + 1.06644a^2u^8 + \cdots + 1.13530a + 0.724503 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0717692a^3u^8 + 0.0393107a^2u^8 + \cdots + 0.243030a + 1.08904 \\ 0.482366a^3u^8 - 2.04709a^2u^8 + \cdots + 0.821375a + 0.907005 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{13960}{24197}u^8a^3 + \frac{55088}{24197}u^8a^2 + \cdots - \frac{10276}{24197}a + \frac{14766}{24197}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{36} - 7u^{35} + \cdots - 5076u + 409$
c_2, c_6	$(u^2 - u + 1)^{18}$
c_3, c_9, c_{10}	$u^{36} + u^{35} + \cdots - 1924u + 1369$
c_5	$u^{36} + u^{35} + \cdots + 270248u + 42439$
c_7	$(u^9 + 3u^8 + 2u^7 - 5u^6 - u^5 + 13u^4 + 10u^3 - 2u^2 + u + 3)^4$
c_8, c_{11}, c_{12}	$(u^9 - u^8 - 4u^7 + 3u^6 + 5u^5 - u^4 - 2u^3 - 2u^2 + u - 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{36} - 13y^{35} + \cdots + 722700y + 167281$
c_2, c_6	$(y^2 + y + 1)^{18}$
c_3, c_9, c_{10}	$y^{36} - 21y^{35} + \cdots - 24937704y + 1874161$
c_5	$y^{36} + 3y^{35} + \cdots - 30558823476y + 1801068721$
c_7	$(y^9 - 5y^8 + 32y^7 - 87y^6 + 185y^5 - 223y^4 + 180y^3 - 62y^2 + 13y - 9)^4$
c_8, c_{11}, c_{12}	$(y^9 - 9y^8 + 32y^7 - 55y^6 + 45y^5 - 19y^4 + 16y^3 - 10y^2 - 3y - 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.482242+0.666986I$ $a=-1.051030+0.210171I$ $b=-0.827471+0.256935I$	$-2.12882+0.18400I$	$-2.24115+0.41812I$
$u=-0.482242+0.666986I$ $a=1.20765-1.03644I$ $b=0.590198-0.907501I$	$-2.12882+4.24376I$	$-2.24115-6.51008I$
$u=-0.482242+0.666986I$ $a=-0.32978+1.74923I$ $b=0.047751+0.476433I$	$-2.12882+4.24376I$	$-2.24115-6.51008I$
$u=-0.482242+0.666986I$ $a=1.22939-1.32682I$ $b=0.135181-0.593881I$	$-2.12882+0.18400I$	$-2.24115+0.41812I$
$u=-0.482242-0.666986I$ $a=-1.051030-0.210171I$ $b=-0.827471-0.256935I$	$-2.12882-0.18400I$	$-2.24115-0.41812I$
$u=-0.482242-0.666986I$ $a=1.20765+1.03644I$ $b=0.590198+0.907501I$	$-2.12882-4.24376I$	$-2.24115+6.51008I$
$u=-0.482242-0.666986I$ $a=-0.32978-1.74923I$ $b=0.047751-0.476433I$	$-2.12882-4.24376I$	$-2.24115+6.51008I$
$u=-0.482242-0.666986I$ $a=1.22939+1.32682I$ $b=0.135181+0.593881I$	$-2.12882-0.18400I$	$-2.24115-0.41812I$
$u=1.28056$ $a=1.073610+0.310999I$ $b=0.35482+1.72769I$	$2.09801-2.02988I$	$0.33330+3.46410I$
$u=1.28056$ $a=1.073610-0.310999I$ $b=0.35482-1.72769I$	$2.09801+2.02988I$	$0.33330-3.46410I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.28056$ $a = -1.84588 + 1.02661I$ $b = -2.79563 + 2.49991I$	$2.09801 - 2.02988I$	$0.33330 + 3.46410I$
$u = 1.28056$ $a = -1.84588 - 1.02661I$ $b = -2.79563 - 2.49991I$	$2.09801 + 2.02988I$	$0.33330 - 3.46410I$
$u = -1.380230 + 0.162431I$ $a = -0.765740 - 0.299051I$ $b = -1.69716 - 2.22480I$	$-0.22800 + 5.44061I$	$-3.88238 - 7.86053I$
$u = -1.380230 + 0.162431I$ $a = -0.59954 + 1.33085I$ $b = -0.60116 + 3.08351I$	$-0.22800 + 5.44061I$	$-3.88238 - 7.86053I$
$u = -1.380230 + 0.162431I$ $a = 1.22002 + 0.90366I$ $b = 2.56008 + 2.51241I$	$-0.227995 + 1.380850I$	$-3.88238 - 0.93232I$
$u = -1.380230 + 0.162431I$ $a = 0.356182 - 0.237194I$ $b = -0.667250 - 0.951369I$	$-0.227995 + 1.380850I$	$-3.88238 - 0.93232I$
$u = -1.380230 - 0.162431I$ $a = -0.765740 + 0.299051I$ $b = -1.69716 + 2.22480I$	$-0.22800 - 5.44061I$	$-3.88238 + 7.86053I$
$u = -1.380230 - 0.162431I$ $a = -0.59954 - 1.33085I$ $b = -0.60116 - 3.08351I$	$-0.22800 - 5.44061I$	$-3.88238 + 7.86053I$
$u = -1.380230 - 0.162431I$ $a = 1.22002 - 0.90366I$ $b = 2.56008 - 2.51241I$	$-0.227995 - 1.380850I$	$-3.88238 + 0.93232I$
$u = -1.380230 - 0.162431I$ $a = 0.356182 + 0.237194I$ $b = -0.667250 + 0.951369I$	$-0.227995 - 1.380850I$	$-3.88238 + 0.93232I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.230908 + 0.456719I$ $a = -0.131464 + 0.571431I$ $b = -1.154890 - 0.321257I$	$4.89942 + 0.92019I$	$1.44626 + 2.77537I$
$u = 0.230908 + 0.456719I$ $a = -1.11828 + 2.44778I$ $b = -0.822161 + 0.979129I$	$4.89942 - 3.13958I$	$1.44626 + 9.70357I$
$u = 0.230908 + 0.456719I$ $a = -2.02069 - 2.00197I$ $b = 0.537114 + 0.030275I$	$4.89942 - 3.13958I$	$1.44626 + 9.70357I$
$u = 0.230908 + 0.456719I$ $a = 1.31486 - 3.51276I$ $b = 0.423243 - 0.430303I$	$4.89942 + 0.92019I$	$1.44626 + 2.77537I$
$u = 0.230908 - 0.456719I$ $a = -0.131464 - 0.571431I$ $b = -1.154890 + 0.321257I$	$4.89942 - 0.92019I$	$1.44626 - 2.77537I$
$u = 0.230908 - 0.456719I$ $a = -1.11828 - 2.44778I$ $b = -0.822161 - 0.979129I$	$4.89942 + 3.13958I$	$1.44626 - 9.70357I$
$u = 0.230908 - 0.456719I$ $a = -2.02069 + 2.00197I$ $b = 0.537114 - 0.030275I$	$4.89942 + 3.13958I$	$1.44626 - 9.70357I$
$u = 0.230908 - 0.456719I$ $a = 1.31486 + 3.51276I$ $b = 0.423243 + 0.430303I$	$4.89942 - 0.92019I$	$1.44626 - 2.77537I$
$u = 1.49128 + 0.23430I$ $a = -0.186213 + 0.985787I$ $b = 0.84640 + 2.46596I$	$-8.52641 - 7.53037I$	$-5.48937 + 6.43708I$
$u = 1.49128 + 0.23430I$ $a = -0.145881 + 1.246310I$ $b = 0.20347 + 3.14266I$	$-8.52641 - 3.47060I$	$-5.48937 - 0.49112I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.49128 + 0.23430I$ $a = 0.083099 - 0.678110I$ $b = -0.753793 - 1.188340I$	$-8.52641 - 3.47060I$	$-5.48937 - 0.49112I$
$u = 1.49128 + 0.23430I$ $a = 0.709680 - 1.215520I$ $b = 1.12126 - 2.96653I$	$-8.52641 - 7.53037I$	$-5.48937 + 6.43708I$
$u = 1.49128 - 0.23430I$ $a = -0.186213 - 0.985787I$ $b = 0.84640 - 2.46596I$	$-8.52641 + 7.53037I$	$-5.48937 - 6.43708I$
$u = 1.49128 - 0.23430I$ $a = -0.145881 - 1.246310I$ $b = 0.20347 - 3.14266I$	$-8.52641 + 3.47060I$	$-5.48937 + 0.49112I$
$u = 1.49128 - 0.23430I$ $a = 0.083099 + 0.678110I$ $b = -0.753793 + 1.188340I$	$-8.52641 + 3.47060I$	$-5.48937 + 0.49112I$
$u = 1.49128 - 0.23430I$ $a = 0.709680 + 1.215520I$ $b = 1.12126 + 2.96653I$	$-8.52641 + 7.53037I$	$-5.48937 - 6.43708I$

III.

$$\boldsymbol{I_3^u = \langle u^{15} - u^{14} + \cdots + b - u,\ -u^{16} + u^{15} + \cdots + a - 1,\ u^{17} - u^{16} + \cdots - u + 1\rangle}$$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^{16} - u^{15} + \cdots + 10u + 1 \\ -u^{15} + u^{14} + \cdots + 8u^2 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{16} - u^{15} + \cdots - 5u - 2 \\ -u^{16} - u^{15} + \cdots - 4u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{16} - 8u^{14} + \cdots + 8u + 1 \\ u^{16} - 7u^{14} + 19u^{12} - 23u^{10} + 9u^8 + u^7 + 3u^6 - 2u^5 - u^4 + u^2 + 2u - 1 \end{pmatrix}$$

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

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

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

$$a_6 = \begin{pmatrix} u^{16} - u^{15} + \cdots + 9u^2 + 10u \\ u^{16} - u^{15} + \cdots + 2u - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{16} + u^{15} + \cdots - 13u - 1 \\ u^{14} - u^{13} + \cdots - 3u + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{16} + 8u^{14} + \cdots - 6u - 2 \\ -u^{16} + 8u^{14} + \cdots - 4u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^{16} + 3u^{15} + 4u^{14} - 21u^{13} + u^{12} + 57u^{11} - 24u^{10} - 70u^9 + 29u^8 + 28u^7 + 8u^6 + 13u^5 - 14u^4 - 12u^3 - 16u^2 + 6u + 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{17} - 2u^{16} + \cdots - u - 1$
c_2	$u^{17} + u^{16} + \cdots + 2u - 1$
c_3, c_9	$u^{17} + u^{16} + \cdots + 3u + 1$
c_4	$u^{17} + 2u^{16} + \cdots - u + 1$
c_5	$u^{17} - 2u^{15} + \cdots + 84u - 41$
c_6	$u^{17} - u^{16} + \cdots + 2u + 1$
c_7	$u^{17} - 3u^{16} + \cdots + 3u + 1$
c_8	$u^{17} + u^{16} + \cdots - u - 1$
c_{10}	$u^{17} - u^{16} + \cdots + 3u - 1$
c_{11}, c_{12}	$u^{17} - u^{16} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{17} - 2y^{16} + \cdots - 9y - 1$
c_2, c_6	$y^{17} + 9y^{16} + \cdots + 2y - 1$
c_3, c_9, c_{10}	$y^{17} - 15y^{16} + \cdots + 11y - 1$
c_5	$y^{17} - 4y^{16} + \cdots - 488y - 1681$
c_7	$y^{17} + 3y^{16} + \cdots + 5y - 1$
c_8, c_{11}, c_{12}	$y^{17} - 17y^{16} + \cdots - 13y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.10763$ $a = 0.523883$ $b = 1.55918$	-3.57905	-12.6170
$u = -0.425905 + 0.642898I$ $a = 0.97515 - 1.20944I$ $b = 0.403007 - 0.429698I$	$-2.71770 + 2.02657I$	$-3.63087 - 3.52897I$
$u = -0.425905 - 0.642898I$ $a = 0.97515 + 1.20944I$ $b = 0.403007 + 0.429698I$	$-2.71770 - 2.02657I$	$-3.63087 + 3.52897I$
$u = 0.042131 + 0.757767I$ $a = -0.815059 - 1.037950I$ $b = 0.377107 - 0.136334I$	$7.62816 + 1.34697I$	$6.00457 - 0.36396I$
$u = 0.042131 - 0.757767I$ $a = -0.815059 + 1.037950I$ $b = 0.377107 + 0.136334I$	$7.62816 - 1.34697I$	$6.00457 + 0.36396I$
$u = 1.254420 + 0.313440I$ $a = -1.064240 - 0.333124I$ $b = -1.56387 - 0.74311I$	$3.88217 - 5.20142I$	$-0.01102 + 3.47502I$
$u = 1.254420 - 0.313440I$ $a = -1.064240 + 0.333124I$ $b = -1.56387 + 0.74311I$	$3.88217 + 5.20142I$	$-0.01102 - 3.47502I$
$u = 1.299980 + 0.091388I$ $a = 1.56649 + 0.19813I$ $b = 1.82630 + 0.03282I$	$1.28803 + 0.77615I$	$-3.30157 + 0.81536I$
$u = 1.299980 - 0.091388I$ $a = 1.56649 - 0.19813I$ $b = 1.82630 - 0.03282I$	$1.28803 - 0.77615I$	$-3.30157 - 0.81536I$
$u = -1.309310 + 0.331733I$ $a = 0.075882 + 0.519832I$ $b = 0.55535 + 1.50065I$	$3.38854 + 2.59091I$	$2.12182 - 1.26130I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.309310-0.331733I$ $a=\quad 0.075882-0.519832I$ $b=\quad 0.55535-1.50065I$	$3.38854-2.59091I$	$2.12182+1.26130I$
$u=-1.384890+0.123590I$ $a=-0.394901-0.892836I$ $b=-1.54132-2.86492I$	$0.25538+3.89922I$	$-2.28228-2.97017I$
$u=-1.384890-0.123590I$ $a=-0.394901+0.892836I$ $b=-1.54132+2.86492I$	$0.25538-3.89922I$	$-2.28228+2.97017I$
$u=\quad 1.47712+0.23945I$ $a=-0.303394+1.097550I$ $b=\quad 0.08342+2.50104I$	$-8.88015-5.28838I$	$-6.60018+3.61585I$
$u=\quad 1.47712-0.23945I$ $a=-0.303394-1.097550I$ $b=\quad 0.08342-2.50104I$	$-8.88015+5.28838I$	$-6.60018-3.61585I$
$u=\quad 0.100269+0.327858I$ $a=\quad 0.69814+4.13737I$ $b=-0.919590+0.605338I$	$5.16976-2.21853I$	$5.50802+1.42500I$
$u=\quad 0.100269-0.327858I$ $a=\quad 0.69814-4.13737I$ $b=-0.919590-0.605338I$	$5.16976+2.21853I$	$5.50802-1.42500I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{17}-2u^{16}+\cdots-u-1)(u^{28}-2u^{27}+\cdots+13u-1)$ $\cdot(u^{36}-7u^{35}+\cdots-5076u+409)$
c_2	$((u^2-u+1)^{18})(u^{17}+u^{16}+\cdots+2u-1)$ $\cdot(u^{28}+20u^{27}+\cdots-5888u-512)$
c_3, c_9	$(u^{17}+u^{16}+\cdots+3u+1)(u^{28}-u^{27}+\cdots+u+1)$ $\cdot(u^{36}+u^{35}+\cdots-1924u+1369)$
c_4	$(u^{17}+2u^{16}+\cdots-u+1)(u^{28}-2u^{27}+\cdots+13u-1)$ $\cdot(u^{36}-7u^{35}+\cdots-5076u+409)$
c_5	$(u^{17}-2u^{15}+\cdots+84u-41)(u^{28}+16u^{26}+\cdots-4u-11)$ $\cdot(u^{36}+u^{35}+\cdots+270248u+42439)$
c_6	$((u^2-u+1)^{18})(u^{17}-u^{16}+\cdots+2u+1)$ $\cdot(u^{28}+20u^{27}+\cdots-5888u-512)$
c_7	$(u^9+3u^8+2u^7-5u^6-u^5+13u^4+10u^3-2u^2+u+3)^4$ $\cdot(u^{17}-3u^{16}+\cdots+3u+1)(u^{28}-18u^{27}+\cdots-990u+52)$
c_8	$(u^9-u^8-4u^7+3u^6+5u^5-u^4-2u^3-2u^2+u-1)^4$ $\cdot(u^{17}+u^{16}+\cdots-u-1)(u^{28}+6u^{27}+\cdots-2u-4)$
c_{10}	$(u^{17}-u^{16}+\cdots+3u-1)(u^{28}-u^{27}+\cdots+u+1)$ $\cdot(u^{36}+u^{35}+\cdots-1924u+1369)$
c_{11}, c_{12}	$(u^9-u^8-4u^7+3u^6+5u^5-u^4-2u^3-2u^2+u-1)^4$ $\cdot(u^{17}-u^{16}+\cdots-u+1)(u^{28}+6u^{27}+\cdots-2u-4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{17} - 2y^{16} + \cdots - 9y - 1)(y^{28} - 38y^{27} + \cdots - 43y + 1)$ $\cdot (y^{36} - 13y^{35} + \cdots + 722700y + 167281)$
c_2, c_6	$((y^2 + y + 1)^{18})(y^{17} + 9y^{16} + \cdots + 2y - 1)$ $\cdot (y^{28} + 10y^{27} + \cdots - 65536y + 262144)$
c_3, c_9, c_{10}	$(y^{17} - 15y^{16} + \cdots + 11y - 1)(y^{28} - 15y^{27} + \cdots - 7y + 1)$ $\cdot (y^{36} - 21y^{35} + \cdots - 24937704y + 1874161)$
c_5	$(y^{17} - 4y^{16} + \cdots - 488y - 1681)(y^{28} + 32y^{27} + \cdots + 2096y + 121)$ $\cdot (y^{36} + 3y^{35} + \cdots - 30558823476y + 1801068721)$
c_7	$(y^9 - 5y^8 + 32y^7 - 87y^6 + 185y^5 - 223y^4 + 180y^3 - 62y^2 + 13y - 9)^4$ $\cdot (y^{17} + 3y^{16} + \cdots + 5y - 1)(y^{28} - 2y^{27} + \cdots - 384700y + 2704)$
c_8, c_{11}, c_{12}	$(y^9 - 9y^8 + 32y^7 - 55y^6 + 45y^5 - 19y^4 + 16y^3 - 10y^2 - 3y - 1)^4$ $\cdot (y^{17} - 17y^{16} + \cdots - 13y - 1)(y^{28} - 26y^{27} + \cdots + 4y + 16)$