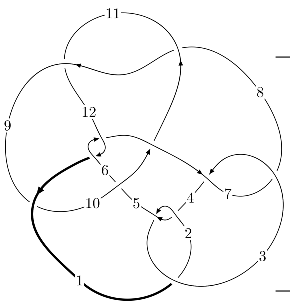
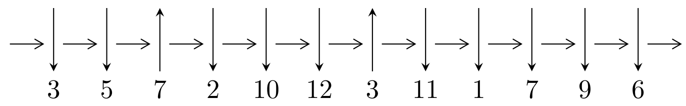
$12n_{0209}$ ($K12n_{0209}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -5.23422 \times 10^{225} u^{80} - 3.14728 \times 10^{226} u^{79} + \cdots + 7.26097 \times 10^{226} b - 1.56109 \times 10^{228}, \\
&\quad 1.52450 \times 10^{227} u^{80} + 8.16205 \times 10^{227} u^{79} + \cdots + 1.04921 \times 10^{229} a + 3.18901 \times 10^{229}, \\
&\quad u^{81} + 7u^{80} + \cdots + 339u + 289 \rangle \\
I_2^u &= \langle b,\ u^7 + 2u^6 - 2u^5 - 4u^4 + 2u^3 + 2u^2 + a + 2,\ u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1 \rangle \\
I_3^u &= \langle 17a^4 - 21a^3 - 14a^2 + 2b - 10a - 2,\ 17a^5 - 21a^4 - 14a^3 - 10a^2 - 3a - 1,\ u - 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 94 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. $\boldsymbol{I_1^u = \langle -5.23 \times 10^{225} u^{80} - 3.15 \times 10^{226} u^{79} + \cdots + 7.26 \times 10^{226} b - 1.56 \times 10^{228},\ 1.52 \times 10^{227} u^{80} + 8.16 \times 10^{227} u^{79} + \cdots + 1.05 \times 10^{229} a + 3.19 \times 10^{229},\ u^{81} + 7u^{80} + \cdots + 339u + 289 \rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.0145300u^{80} - 0.0777923u^{79} + \cdots - 22.8342u - 3.03944 \\ 0.0720871u^{80} + 0.433451u^{79} + \cdots + 3.99323u + 21.4997 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 0.0147005u^{80} + 0.0809008u^{79} + \cdots - 2.31377u - 2.09026 \\ 0.0156887u^{80} + 0.119395u^{79} + \cdots + 8.42077u + 7.01956 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0746670u^{80} - 0.405647u^{79} + \cdots - 44.6010u - 7.58701 \\ -0.113401u^{80} - 0.763523u^{79} + \cdots - 3.60335u - 48.0310 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0281304u^{80} + 0.170708u^{79} + \cdots - 0.344505u + 3.51186 \\ -0.00165030u^{80} + 0.00828984u^{79} + \cdots + 3.99497u + 2.63202 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0351087u^{80} + 0.201342u^{79} + \cdots + 5.20848u + 5.81452 \\ 0.0238883u^{80} + 0.167706u^{79} + \cdots + 0.366478u + 11.4771 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.00904290u^{80} - 0.0356816u^{79} + \cdots - 5.40973u + 0.0932125 \\ -0.0291714u^{80} - 0.166685u^{79} + \cdots - 3.26701u - 5.74492 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0232151u^{80} - 0.118816u^{79} + \cdots - 8.79210u - 5.37544 \\ -0.0263971u^{80} - 0.159410u^{79} + \cdots + 3.72966u - 8.15827 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0129986u^{80} - 0.114755u^{79} + \cdots - 18.9004u - 15.8345 \\ 0.121360u^{80} + 0.725051u^{79} + \cdots + 18.3566u + 28.5476 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.172208u^{80} - 0.999000u^{79} + \cdots - 8.43774u - 31.9194$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{81}+36u^{80}+\cdots+29u+1$
c_2, c_4	$u^{81}-10u^{80}+\cdots-13u+1$
c_3, c_7	$u^{81}-2u^{80}+\cdots+128u+256$
c_5	$u^{81}-2u^{80}+\cdots-32096u+9248$
c_6, c_{12}	$u^{81}-3u^{80}+\cdots+3u-1$
c_8, c_{11}	$u^{81}-7u^{80}+\cdots+339u-289$
c_9	$17(17u^{81}-148u^{80}+\cdots-626508u-174339)$
c_{10}	$17(17u^{81}-14u^{80}+\cdots-259698u+23437)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{81} + 28y^{80} + \cdots + 6913y - 1$
c_2, c_4	$y^{81} - 36y^{80} + \cdots + 29y - 1$
c_3, c_7	$y^{81} - 48y^{80} + \cdots + 2080768y - 65536$
c_5	$y^{81} + 30y^{80} + \cdots - 1164952064y - 85525504$
c_6, c_{12}	$y^{81} + 45y^{80} + \cdots + 5y - 1$
c_8, c_{11}	$y^{81} - 43y^{80} + \cdots + 4014687y - 83521$
c_9	$289(289y^{81} - 4428y^{80} + \cdots - 1.69694 \times 10^{11}y - 3.03941 \times 10^{10})$
c_{10}	$289(289y^{81} + 19082y^{80} + \cdots - 6.59115 \times 10^{9}y - 5.49293 \times 10^{8})$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.917000 + 0.360308I$ $a = -1.078270 + 0.779634I$ $b = 1.254380 + 0.379088I$	$-3.62852 + 1.44404I$	0
$u = -0.917000 - 0.360308I$ $a = -1.078270 - 0.779634I$ $b = 1.254380 - 0.379088I$	$-3.62852 - 1.44404I$	0
$u = -0.111889 + 0.977557I$ $a = -1.355590 + 0.347160I$ $b = 1.38541 - 0.48962I$	$3.90532 - 6.32227I$	0
$u = -0.111889 - 0.977557I$ $a = -1.355590 - 0.347160I$ $b = 1.38541 + 0.48962I$	$3.90532 + 6.32227I$	0
$u = -0.940232 + 0.031195I$ $a = -0.010189 + 0.505506I$ $b = 0.430170 + 1.261980I$	$-7.39266 + 4.46618I$	$14.6599 - 16.9007I$
$u = -0.940232 - 0.031195I$ $a = -0.010189 - 0.505506I$ $b = 0.430170 - 1.261980I$	$-7.39266 - 4.46618I$	$14.6599 + 16.9007I$
$u = -0.371472 + 0.861519I$ $a = 1.261110 - 0.601092I$ $b = -1.45648 + 0.17045I$	$5.13729 - 0.14448I$	0
$u = -0.371472 - 0.861519I$ $a = 1.261110 + 0.601092I$ $b = -1.45648 - 0.17045I$	$5.13729 + 0.14448I$	0
$u = -0.800962 + 0.697533I$ $a = -0.975358 + 0.428485I$ $b = 1.60879 - 0.22946I$	$8.03820 + 4.62100I$	0
$u = -0.800962 - 0.697533I$ $a = -0.975358 - 0.428485I$ $b = 1.60879 + 0.22946I$	$8.03820 - 4.62100I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.342134 + 1.013250I$ $a = 0.746244 - 0.080296I$ $b = -0.120668 - 1.075100I$	$3.50365 - 4.45577I$	0
$u = -0.342134 - 1.013250I$ $a = 0.746244 + 0.080296I$ $b = -0.120668 + 1.075100I$	$3.50365 + 4.45577I$	0
$u = 0.892514 + 0.209012I$ $a = 1.48162 + 1.11275I$ $b = 0.031998 - 0.705333I$	$-0.856013 - 0.572838I$	0
$u = 0.892514 - 0.209012I$ $a = 1.48162 - 1.11275I$ $b = 0.031998 + 0.705333I$	$-0.856013 + 0.572838I$	0
$u = 0.895635 + 0.122019I$ $a = -1.93397 - 4.12821I$ $b = 1.290060 - 0.297853I$	$3.27537 - 3.11183I$	$-8.00000 - 6.68590I$
$u = 0.895635 - 0.122019I$ $a = -1.93397 + 4.12821I$ $b = 1.290060 + 0.297853I$	$3.27537 + 3.11183I$	$-8.00000 + 6.68590I$
$u = -0.839636 + 0.720962I$ $a = -0.96974 + 1.18828I$ $b = 1.314700 + 0.516481I$	$7.93642 + 0.74689I$	0
$u = -0.839636 - 0.720962I$ $a = -0.96974 - 1.18828I$ $b = 1.314700 - 0.516481I$	$7.93642 - 0.74689I$	0
$u = 1.105450 + 0.164736I$ $a = 0.28372 - 1.70100I$ $b = -0.264306 - 0.568630I$	$-3.28994 - 0.66311I$	0
$u = 1.105450 - 0.164736I$ $a = 0.28372 + 1.70100I$ $b = -0.264306 + 0.568630I$	$-3.28994 + 0.66311I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.020470 + 0.465233I$ $a = 0.350709 - 0.283567I$ $b = 0.470622 - 1.297750I$	$-2.44609 + 4.54883I$	0
$u = -1.020470 - 0.465233I$ $a = 0.350709 + 0.283567I$ $b = 0.470622 + 1.297750I$	$-2.44609 - 4.54883I$	0
$u = -1.000620 + 0.534124I$ $a = 0.72960 - 1.23645I$ $b = -1.26179 - 0.74689I$	$5.50142 + 6.66477I$	0
$u = -1.000620 - 0.534124I$ $a = 0.72960 + 1.23645I$ $b = -1.26179 + 0.74689I$	$5.50142 - 6.66477I$	0
$u = -0.555993 + 0.653154I$ $a = -0.902306 + 0.309346I$ $b = -0.377849 + 1.055930I$	$2.93287 + 0.15502I$	$-5.05413 - 1.86046I$
$u = -0.555993 - 0.653154I$ $a = -0.902306 - 0.309346I$ $b = -0.377849 - 1.055930I$	$2.93287 - 0.15502I$	$-5.05413 + 1.86046I$
$u = 1.046410 + 0.466176I$ $a = -3.05815 - 0.66577I$ $b = 0.563976 - 0.252821I$	$-2.51389 - 1.66198I$	0
$u = 1.046410 - 0.466176I$ $a = -3.05815 + 0.66577I$ $b = 0.563976 + 0.252821I$	$-2.51389 + 1.66198I$	0
$u = -0.337368 + 0.781993I$ $a = 2.07028 - 1.19509I$ $b = -0.917288 - 0.136182I$	$1.75099 - 2.26560I$	$-3.42990 + 1.10505I$
$u = -0.337368 - 0.781993I$ $a = 2.07028 + 1.19509I$ $b = -0.917288 + 0.136182I$	$1.75099 + 2.26560I$	$-3.42990 - 1.10505I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.582612 + 0.616671I$ $a = 0.778140 - 0.416338I$ $b = -1.52599 + 0.50100I$	$6.76050 - 2.10600I$	$-3.77694 - 1.06020I$
$u = -0.582612 - 0.616671I$ $a = 0.778140 + 0.416338I$ $b = -1.52599 - 0.50100I$	$6.76050 + 2.10600I$	$-3.77694 + 1.06020I$
$u = -1.013890 + 0.572439I$ $a = 0.396514 - 0.225881I$ $b = -0.003874 - 1.341760I$	$1.57086 + 4.63500I$	0
$u = -1.013890 - 0.572439I$ $a = 0.396514 + 0.225881I$ $b = -0.003874 + 1.341760I$	$1.57086 - 4.63500I$	0
$u = 1.152030 + 0.190177I$ $a = -0.407337 + 0.569974I$ $b = 0.218066 - 0.304864I$	$-0.977641 - 0.985323I$	0
$u = 1.152030 - 0.190177I$ $a = -0.407337 - 0.569974I$ $b = 0.218066 + 0.304864I$	$-0.977641 + 0.985323I$	0
$u = 0.971105 + 0.694183I$ $a = -0.589638 + 0.317515I$ $b = 0.304908 + 0.772829I$	$-1.76648 - 3.44608I$	0
$u = 0.971105 - 0.694183I$ $a = -0.589638 - 0.317515I$ $b = 0.304908 - 0.772829I$	$-1.76648 + 3.44608I$	0
$u = 0.303060 + 0.732514I$ $a = 0.632497 - 0.637842I$ $b = -0.536208 + 0.020154I$	$1.74024 - 2.57808I$	$-1.64614 + 3.99127I$
$u = 0.303060 - 0.732514I$ $a = 0.632497 + 0.637842I$ $b = -0.536208 - 0.020154I$	$1.74024 + 2.57808I$	$-1.64614 - 3.99127I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.035680 + 0.682829I$ $a = -0.796823 - 0.654771I$ $b = 1.124380 + 0.061386I$	$0.245536 + 0.603566I$	0
$u = 1.035680 - 0.682829I$ $a = -0.796823 + 0.654771I$ $b = 1.124380 - 0.061386I$	$0.245536 - 0.603566I$	0
$u = -0.702589 + 0.265855I$ $a = -0.411201 + 0.605874I$ $b = -0.305807 + 1.214000I$	$-1.00073 - 1.10337I$	$-4.49607 - 0.18743I$
$u = -0.702589 - 0.265855I$ $a = -0.411201 - 0.605874I$ $b = -0.305807 - 1.214000I$	$-1.00073 + 1.10337I$	$-4.49607 + 0.18743I$
$u = -1.130500 + 0.585115I$ $a = 1.40224 - 0.57524I$ $b = -1.259720 - 0.183479I$	$-0.57249 + 7.40525I$	0
$u = -1.130500 - 0.585115I$ $a = 1.40224 + 0.57524I$ $b = -1.259720 + 0.183479I$	$-0.57249 - 7.40525I$	0
$u = -1.116140 + 0.622717I$ $a = 0.992749 - 0.874868I$ $b = -1.43085 - 0.59706I$	$2.95577 + 5.59636I$	0
$u = -1.116140 - 0.622717I$ $a = 0.992749 + 0.874868I$ $b = -1.43085 + 0.59706I$	$2.95577 - 5.59636I$	0
$u = 0.702392 + 0.146750I$ $a = 2.32167 + 2.92316I$ $b = -1.271440 - 0.091622I$	$3.70065 + 2.46096I$	$-6.55380 - 6.04709I$
$u = 0.702392 - 0.146750I$ $a = 2.32167 - 2.92316I$ $b = -1.271440 + 0.091622I$	$3.70065 - 2.46096I$	$-6.55380 + 6.04709I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.291990 + 0.043575I$ $a = 1.44776 - 1.57835I$ $b = -0.384620 - 0.499680I$	$-3.35669 - 0.78678I$	0
$u = 1.291990 - 0.043575I$ $a = 1.44776 + 1.57835I$ $b = -0.384620 + 0.499680I$	$-3.35669 + 0.78678I$	0
$u = -0.471330 + 1.253510I$ $a = -1.260940 + 0.410905I$ $b = 1.41962 - 0.28061I$	$9.06005 - 4.28051I$	0
$u = -0.471330 - 1.253510I$ $a = -1.260940 - 0.410905I$ $b = 1.41962 + 0.28061I$	$9.06005 + 4.28051I$	0
$u = 0.787166 + 1.096680I$ $a = 1.126360 + 0.105606I$ $b = -1.102270 + 0.086046I$	$2.29933 - 2.90155I$	0
$u = 0.787166 - 1.096680I$ $a = 1.126360 - 0.105606I$ $b = -1.102270 - 0.086046I$	$2.29933 + 2.90155I$	0
$u = -1.196940 + 0.647328I$ $a = -0.358449 + 0.094835I$ $b = -0.359544 + 1.313050I$	$0.87722 + 10.39950I$	0
$u = -1.196940 - 0.647328I$ $a = -0.358449 - 0.094835I$ $b = -0.359544 - 1.313050I$	$0.87722 - 10.39950I$	0
$u = 0.617289$ $a = -0.857589$ $b = 0.341255$	-0.986770	-9.94130
$u = -1.268250 + 0.582299I$ $a = -0.955708 + 0.972461I$ $b = 1.34748 + 0.77249I$	$0.44420 + 11.92600I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.268250 - 0.582299I$ $a = -0.955708 - 0.972461I$ $b = 1.34748 - 0.77249I$	$0.44420 - 11.92600I$	0
$u = -1.38442 + 0.30949I$ $a = -0.1103470 - 0.0721860I$ $b = -0.510766 + 0.040571I$	$-3.66273 + 6.35091I$	0
$u = -1.38442 - 0.30949I$ $a = -0.1103470 + 0.0721860I$ $b = -0.510766 - 0.040571I$	$-3.66273 - 6.35091I$	0
$u = -0.32443 + 1.38328I$ $a = 1.191390 - 0.162158I$ $b = -1.36979 + 0.56225I$	$7.48247 - 10.42400I$	0
$u = -0.32443 - 1.38328I$ $a = 1.191390 + 0.162158I$ $b = -1.36979 - 0.56225I$	$7.48247 + 10.42400I$	0
$u = -1.42131$ $a = 0.106801$ $b = 0.488226$	-7.82560	0
$u = -1.25444 + 0.74996I$ $a = -1.14964 + 0.82641I$ $b = 1.47814 + 0.54713I$	$6.48435 + 11.27690I$	0
$u = -1.25444 - 0.74996I$ $a = -1.14964 - 0.82641I$ $b = 1.47814 - 0.54713I$	$6.48435 - 11.27690I$	0
$u = 1.34051 + 0.58473I$ $a = 0.691710 + 0.826704I$ $b = -1.181860 + 0.365384I$	$-0.44702 - 4.44359I$	0
$u = 1.34051 - 0.58473I$ $a = 0.691710 - 0.826704I$ $b = -1.181860 - 0.365384I$	$-0.44702 + 4.44359I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.35336 + 0.72876I$ $a = 1.11496 - 0.96787I$ $b = -1.37337 - 0.74737I$	$4.1305 + 17.6948I$	0
$u = -1.35336 - 0.72876I$ $a = 1.11496 + 0.96787I$ $b = -1.37337 + 0.74737I$	$4.1305 - 17.6948I$	0
$u = 1.11420 + 1.11195I$ $a = -1.120210 - 0.444761I$ $b = 1.207870 - 0.444621I$	$1.14509 - 8.06770I$	0
$u = 1.11420 - 1.11195I$ $a = -1.120210 + 0.444761I$ $b = 1.207870 + 0.444621I$	$1.14509 + 8.06770I$	0
$u = 1.61987 + 0.43109I$ $a = -0.221127 - 0.151444I$ $b = 1.065120 + 0.201662I$	$-0.801342 + 0.587804I$	0
$u = 1.61987 - 0.43109I$ $a = -0.221127 + 0.151444I$ $b = 1.065120 - 0.201662I$	$-0.801342 - 0.587804I$	0
$u = 1.69004 + 0.12943I$ $a = 0.194604 + 0.340687I$ $b = -1.109070 + 0.299410I$	$-1.06769 - 4.07791I$	0
$u = 1.69004 - 0.12943I$ $a = 0.194604 - 0.340687I$ $b = -1.109070 - 0.299410I$	$-1.06769 + 4.07791I$	0
$u = -0.082384 + 0.274939I$ $a = -1.95414 + 0.28616I$ $b = -0.037140 + 0.801194I$	$-0.644523 - 1.154210I$	$-7.22358 + 5.30161I$
$u = -0.082384 - 0.274939I$ $a = -1.95414 - 0.28616I$ $b = -0.037140 - 0.801194I$	$-0.644523 + 1.154210I$	$-7.22358 - 5.30161I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.146017$ $a = -7.23453$ $b = 0.460537$	-2.10956	0.570870

II.

$$\boldsymbol{I^u_2 = \langle b,\ u^7+2u^6-2u^5-4u^4+2u^3+2u^2+a+2,\ u^8+u^7-3u^6-2u^5+3u^4+2u-1\rangle}$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -u^7-2u^6+2u^5+4u^4-2u^3-2u^2-2 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^7-2u^6+2u^5+4u^4-2u^3-2u^2-2 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^4+u^2+1 \\ -u^6+2u^4-u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^7+2u^5-2u \\ -u^7+u^6+2u^5-3u^4+2u^2-2u+1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^7-2u^5+2u \\ u^7-u^6-2u^5+3u^4-2u^2+2u-1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2u^7-2u^6+4u^5+4u^4-2u^3-2u^2-2u-2 \\ -u^7+u^6+2u^5-3u^4+2u^2-2u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^7-9u^6-u^5+22u^4-3u^3-12u^2+13u-26$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^8$
c_3, c_7	u^8
c_4	$(u+1)^8$
c_5, c_9	$u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1$
c_6	$u^8 - 3u^7 + 7u^6 - 10u^5 + 11u^4 - 10u^3 + 6u^2 - 4u + 1$
c_8	$u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1$
c_{10}, c_{11}	$u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1$
c_{12}	$u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_7	y^8
c_5, c_9	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_6, c_{12}	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_8, c_{10}, c_{11}	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.180120 + 0.268597I$ $a = -1.21928 - 2.03110I$ $b = 0$	$-2.68559 - 1.13123I$	$-8.69271 - 4.28492I$
$u = 1.180120 - 0.268597I$ $a = -1.21928 + 2.03110I$ $b = 0$	$-2.68559 + 1.13123I$	$-8.69271 + 4.28492I$
$u = 0.108090 + 0.747508I$ $a = 1.230330 - 0.083902I$ $b = 0$	$0.51448 - 2.57849I$	$-10.43522 + 3.68514I$
$u = 0.108090 - 0.747508I$ $a = 1.230330 + 0.083902I$ $b = 0$	$0.51448 + 2.57849I$	$-10.43522 - 3.68514I$
$u = -1.37100$ $a = -0.337834$ $b = 0$	-8.14766	-26.7400
$u = -1.334530 + 0.318930I$ $a = 0.370895 - 0.073482I$ $b = 0$	$-4.02461 + 6.44354I$	$-20.0271 - 7.9066I$
$u = -1.334530 - 0.318930I$ $a = 0.370895 + 0.073482I$ $b = 0$	$-4.02461 - 6.44354I$	$-20.0271 + 7.9066I$
$u = 0.463640$ $a = -2.42604$ $b = 0$	-2.48997	-21.9500

III.

$$I^u_3 = \langle 17a^4-21a^3-14a^2+2b-10a-2,\ 17a^5-21a^4-14a^3-10a^2-3a-1,\ u-1\rangle$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ -\frac{17}{2}a^4 + \frac{21}{2}a^3 + 7a^2 + 5a + 1 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -\frac{1}{2}a + \frac{1}{2} \\ -\frac{17}{4}a^4 + \frac{19}{2}a^3 + \cdots - a - \frac{3}{2} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -\frac{17}{4}a^4 + \frac{21}{4}a^3 + \cdots + \frac{15}{4}a + \frac{3}{4} \\ \frac{51}{8}a^4 - \frac{63}{8}a^3 - \frac{59}{8}a^2 - \frac{9}{8}a \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{17}{4}a^4 + \frac{19}{2}a^3 + \cdots - \frac{3}{2}a - 1 \\ -\frac{17}{4}a^4 + \frac{19}{2}a^3 + \cdots - a - \frac{3}{2} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{51}{16}a^4 + \frac{11}{8}a^3 + \cdots - \frac{47}{8}a - \frac{39}{16} \\ -1.06250a^4 + 8.75000a^3 + \cdots - 5.25000a - 2.06250 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{4}a^2 - \frac{1}{2}a + \frac{1}{4} \\ -\frac{17}{4}a^4 + \frac{59}{8}a^3 + \cdots + \frac{5}{8}a + \frac{3}{8} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{17}{4}a^4 + \frac{19}{2}a^3 + \cdots - \frac{3}{2}a - 1 \\ -\frac{17}{4}a^4 + \frac{19}{2}a^3 + \cdots - a - \frac{3}{2} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{17}{4}a^3 - \frac{21}{4}a^2 - \frac{13}{4}a - \frac{7}{4} \\ -11.6875a^4 + 17.6250a^3 + \cdots + 1.87500a - 0.562500 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1479}{16}a^4 + \frac{1075}{8}a^3 + \frac{295}{4}a^2 + \frac{37}{8}a - \frac{341}{16}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^5 - 5u^4 + 8u^3 - 3u^2 - u - 1$
c_2	$u^5 + u^4 - 2u^3 - u^2 + u - 1$
c_3	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_4	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_5	u^5
c_6	$u^5 + 3u^4 + 4u^3 + u^2 - u - 1$
c_7	$u^5 + u^4 + 2u^3 + u^2 + u + 1$
c_8	$(u-1)^5$
c_9	$17(17u^5 - 42u^4 + 43u^3 - 22u^2 + 6u - 1)$
c_{10}	$17(17u^5 + 32u^4 + 18u^3 - u^2 - 4u - 1)$
c_{11}	$(u+1)^5$
c_{12}	$u^5 - 3u^4 + 4u^3 - u^2 - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - 9y^4 + 32y^3 - 35y^2 - 5y - 1$
c_2, c_4	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_3, c_7	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_5	y^5
c_6, c_{12}	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_8, c_{11}	$(y-1)^5$
c_9	$289(289y^5 - 302y^4 + 205y^3 - 52y^2 - 8y - 1)$
c_{10}	$289(289y^5 - 412y^4 + 252y^3 - 81y^2 + 14y - 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.303936 + 0.297874I$ $b = 0.339110 + 0.822375I$	$-1.97403 + 1.53058I$	$-12.32109 - 4.31295I$
$u = 1.00000$ $a = -0.303936 - 0.297874I$ $b = 0.339110 - 0.822375I$	$-1.97403 - 1.53058I$	$-12.32109 + 4.31295I$
$u = 1.00000$ $a = -0.015358 + 0.416047I$ $b = -0.455697 + 1.200150I$	$-7.51750 - 4.40083I$	$-35.8077 - 9.0642I$
$u = 1.00000$ $a = -0.015358 - 0.416047I$ $b = -0.455697 - 1.200150I$	$-7.51750 + 4.40083I$	$-35.8077 + 9.0642I$
$u = 1.00000$ $a = 1.87388$ $b = -0.766826$	-4.04602	-9.25800

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^8)(u^5-5u^4+\cdots-u-1)(u^{81}+36u^{80}+\cdots+29u+1)$
c_2	$((u-1)^8)(u^5+u^4+\cdots+u-1)(u^{81}-10u^{80}+\cdots-13u+1)$
c_3	$u^8(u^5-u^4+\cdots+u-1)(u^{81}-2u^{80}+\cdots+128u+256)$
c_4	$((u+1)^8)(u^5-u^4+\cdots+u+1)(u^{81}-10u^{80}+\cdots-13u+1)$
c_5	$u^5(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)$ $\cdot(u^{81}-2u^{80}+\cdots-32096u+9248)$
c_6	$(u^5+3u^4+4u^3+u^2-u-1)$ $\cdot(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{81}-3u^{80}+\cdots+3u-1)$
c_7	$u^8(u^5+u^4+\cdots+u+1)(u^{81}-2u^{80}+\cdots+128u+256)$
c_8	$(u-1)^5(u^8+u^7-3u^6-2u^5+3u^4+2u-1)$ $\cdot(u^{81}-7u^{80}+\cdots+339u-289)$
c_9	$289(17u^5-42u^4+43u^3-22u^2+6u-1)$ $\cdot(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)$ $\cdot(17u^{81}-148u^{80}+\cdots-626508u-174339)$
c_{10}	$289(17u^5+32u^4+18u^3-u^2-4u-1)$ $\cdot(u^8-u^7-3u^6+2u^5+3u^4-2u-1)$ $\cdot(17u^{81}-14u^{80}+\cdots-259698u+23437)$
c_{11}	$(u+1)^5(u^8-u^7-3u^6+2u^5+3u^4-2u-1)$ $\cdot(u^{81}-7u^{80}+\cdots+339u-289)$
c_{12}	$(u^5-3u^4+4u^3-u^2-u+1)$ $\cdot(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)$ $\cdot(u^{81}-3u^{80}+\cdots+3u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^8(y^5-9y^4+32y^3-35y^2-5y-1)$ $\cdot(y^{81}+28y^{80}+\cdots+6913y-1)$
c_2, c_4	$((y-1)^8)(y^5-5y^4+\cdots-y-1)(y^{81}-36y^{80}+\cdots+29y-1)$
c_3, c_7	$y^8(y^5+3y^4+\cdots-y-1)(y^{81}-48y^{80}+\cdots+2080768y-65536)$
c_5	$y^5(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(y^{81}+30y^{80}+\cdots-1164952064y-85525504)$
c_6, c_{12}	$(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)$ $\cdot(y^{81}+45y^{80}+\cdots+5y-1)$
c_8, c_{11}	$(y-1)^5(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(y^{81}-43y^{80}+\cdots+4014687y-83521)$
c_9	$83521(289y^5-302y^4+205y^3-52y^2-8y-1)$ $\cdot(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(289y^{81}-4428y^{80}+\cdots-169694389746y-30394086921)$
c_{10}	$83521(289y^5-412y^4+252y^3-81y^2+14y-1)$ $\cdot(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(289y^{81}+19082y^{80}+\cdots-6591150616y-549292969)$