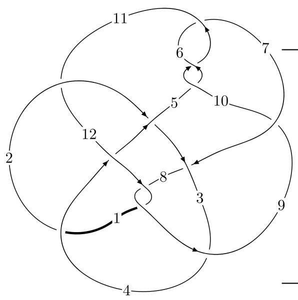
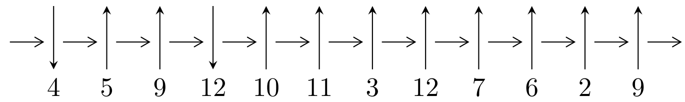
$12n_{0700}$ $(K12n_{0700})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 12u^{31} - 42u^{30} + \cdots + b + 13,\ -13u^{31} + 41u^{30} + \cdots + 2a - 20,\ u^{32} - 5u^{31} + \cdots - 8u - 2\rangle$$
$$I_2^u = \langle -3u^{15} - 2u^{14} + \cdots + b - 3,\ 3u^{15} - 22u^{13} + \cdots + 2a + 5,\ u^{16} + 2u^{15} + \cdots - 3u + 2\rangle$$
$$\begin{aligned} I_3^u = \langle &-u^{14} - u^{13} + 5u^{12} + 4u^{11} - 10u^{10} - 5u^9 + 9u^8 - 2u^6 + 4u^5 - 2u^4 - 2u^3 - au + b - u + 1, \\ &-u^{14}a - 5u^{14} + \cdots + 3a + 12, \\ &u^{15} + u^{14} - 6u^{13} - 5u^{12} + 14u^{11} + 8u^{10} - 14u^9 - u^8 + 2u^7 - 8u^6 + 6u^5 + 4u^4 - 2u^3 + 2u^2 - 2u - 1\rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 78 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. $\boldsymbol{I_1^u = \langle 12u^{31} - 42u^{30} + \cdots + b + 13,\ -13u^{31} + 41u^{30} + \cdots + 2a - 20,\ u^{32} - 5u^{31} + \cdots - 8u - 2\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} \frac{13}{2}u^{31} - \frac{41}{2}u^{30} + \cdots + \frac{69}{2}u + 10 \\ -12u^{31} + 42u^{30} + \cdots - 62u - 13 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} \frac{17}{2}u^{31} - \frac{61}{2}u^{30} + \cdots + \frac{103}{2}u + 12 \\ -12u^{31} + 42u^{30} + \cdots - 79u - 17 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{1}{2}u^{31} + \frac{15}{2}u^{30} + \cdots - \frac{49}{2}u - 2 \\ -5u^{31} + 14u^{30} + \cdots - 3u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{7}{2}u^{31} - \frac{15}{2}u^{30} + \cdots + \frac{15}{2}u + 5 \\ -5u^{31} + 14u^{30} + \cdots - 3u - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -\frac{9}{2}u^{31} + \frac{31}{2}u^{30} + \cdots - \frac{39}{2}u - 5 \\ 12u^{31} - 42u^{30} + \cdots + 79u + 17 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^4 + u^2 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{27}{2}u^{31} + \frac{99}{2}u^{30} + \cdots - \frac{199}{2}u - 21 \\ 19u^{31} - 71u^{30} + \cdots + 139u + 29 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 19u^{31} - 65u^{30} - 138u^{29} + 623u^{28} + 427u^{27} - 2612u^{26} - 1023u^{25} + 6228u^{24} + 3091u^{23} - 8672u^{22} - 8566u^{21} + 4803u^{20} + 15237u^{19} + 6582u^{18} - 14312u^{17} - 16767u^{16} + 1566u^{15} + 14326u^{14} + 11332u^{13} - 1711u^{12} - 10557u^{11} - 6164u^{10} + 1148u^9 + 3788u^8 + 3056u^7 + 240u^6 - 1226u^5 - 540u^4 - 312u^3 + 110u^2 + 80u + 16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 17u^{31} + \cdots - 308u + 178$
c_2, c_{11}	$u^{32} + 2u^{31} + \cdots - 11u + 1$
c_3, c_8, c_{12}	$u^{32} + 23u^{30} + \cdots + u - 1$
c_4	$u^{32} + 29u^{31} + \cdots + 393216u + 32768$
c_5, c_6, c_{10}	$u^{32} - 5u^{31} + \cdots - 8u - 2$
c_7	$u^{32} + u^{31} + \cdots + 221u - 97$
c_9	$u^{32} + 15u^{31} + \cdots + 964u + 86$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} - 33y^{31} + \cdots - 1623172y + 31684$
c_2, c_{11}	$y^{32} + 14y^{31} + \cdots - 73y + 1$
c_3, c_8, c_{12}	$y^{32} + 46y^{31} + \cdots + 13y + 1$
c_4	$y^{32} - 9y^{31} + \cdots - 5368709120y + 1073741824$
c_5, c_6, c_{10}	$y^{32} - 29y^{31} + \cdots - 60y + 4$
c_7	$y^{32} + 25y^{31} + \cdots - 27307y + 9409$
c_9	$y^{32} + 7y^{31} + \cdots - 138956y + 7396$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.856862 + 0.544335I$ $a = -0.529669 + 0.145017I$ $b = -0.374915 + 0.412577I$	$-7.76454 - 4.88822I$	$4.38586 + 5.79440I$
$u = -0.856862 - 0.544335I$ $a = -0.529669 - 0.145017I$ $b = -0.374915 - 0.412577I$	$-7.76454 + 4.88822I$	$4.38586 - 5.79440I$
$u = -0.300083 + 0.868605I$ $a = 0.628210 + 0.007038I$ $b = 0.194628 - 0.543554I$	$-9.54364 - 0.04641I$	$0.192477 - 0.463915I$
$u = -0.300083 - 0.868605I$ $a = 0.628210 - 0.007038I$ $b = 0.194628 + 0.543554I$	$-9.54364 + 0.04641I$	$0.192477 + 0.463915I$
$u = -0.982425 + 0.459735I$ $a = 0.063117 - 0.663220I$ $b = -0.242898 - 0.680581I$	$-8.42524 + 6.40056I$	$6.06353 - 2.39705I$
$u = -0.982425 - 0.459735I$ $a = 0.063117 + 0.663220I$ $b = -0.242898 + 0.680581I$	$-8.42524 - 6.40056I$	$6.06353 + 2.39705I$
$u = -0.211672 + 0.838103I$ $a = -0.712628 - 1.047410I$ $b = -1.028680 + 0.375549I$	$-10.8094 - 11.0307I$	$3.82556 + 6.27574I$
$u = -0.211672 - 0.838103I$ $a = -0.712628 + 1.047410I$ $b = -1.028680 - 0.375549I$	$-10.8094 + 11.0307I$	$3.82556 - 6.27574I$
$u = -1.229180 + 0.220961I$ $a = 0.111894 + 0.489674I$ $b = 0.245737 + 0.577172I$	$1.77560 + 0.48261I$	$9.87124 + 2.81544I$
$u = -1.229180 - 0.220961I$ $a = 0.111894 - 0.489674I$ $b = 0.245737 - 0.577172I$	$1.77560 - 0.48261I$	$9.87124 - 2.81544I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.262910 + 0.254948I$ $a = 0.070086 - 0.361128I$ $b = -0.003556 - 0.473942I$	$1.17420 - 4.36507I$	$10.02842 + 6.42012I$
$u = -1.262910 - 0.254948I$ $a = 0.070086 + 0.361128I$ $b = -0.003556 + 0.473942I$	$1.17420 + 4.36507I$	$10.02842 - 6.42012I$
$u = 1.287670 + 0.253472I$ $a = -1.52393 + 0.12920I$ $b = 1.99507 + 0.21991I$	$1.37746 + 2.34487I$	$8.41481 - 0.55216I$
$u = 1.287670 - 0.253472I$ $a = -1.52393 - 0.12920I$ $b = 1.99507 - 0.21991I$	$1.37746 - 2.34487I$	$8.41481 + 0.55216I$
$u = -0.098169 + 0.677929I$ $a = 0.71726 + 1.41090I$ $b = 1.026900 - 0.347744I$	$-1.60725 - 3.69611I$	$3.29803 + 2.27748I$
$u = -0.098169 - 0.677929I$ $a = 0.71726 - 1.41090I$ $b = 1.026900 + 0.347744I$	$-1.60725 + 3.69611I$	$3.29803 - 2.27748I$
$u = -0.015798 + 0.674807I$ $a = -0.638339 - 0.789035I$ $b = -0.542531 + 0.418291I$	$-2.66882 + 1.00290I$	$3.62847 - 3.27774I$
$u = -0.015798 - 0.674807I$ $a = -0.638339 + 0.789035I$ $b = -0.542531 - 0.418291I$	$-2.66882 - 1.00290I$	$3.62847 + 3.27774I$
$u = 1.342160 + 0.077096I$ $a = 1.55439 - 1.39862I$ $b = -2.19406 + 1.75733I$	$5.49774 - 0.90354I$	$12.53276 + 1.80769I$
$u = 1.342160 - 0.077096I$ $a = 1.55439 + 1.39862I$ $b = -2.19406 - 1.75733I$	$5.49774 + 0.90354I$	$12.53276 - 1.80769I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.330040 + 0.281861I$ $a = 2.47693 - 0.37891I$ $b = -3.40120 - 0.19418I$	$2.89499 + 7.19326I$	$8.98916 - 5.05295I$
$u = 1.330040 - 0.281861I$ $a = 2.47693 + 0.37891I$ $b = -3.40120 + 0.19418I$	$2.89499 - 7.19326I$	$8.98916 + 5.05295I$
$u = 1.39497 + 0.35222I$ $a = -2.21296 + 0.14720I$ $b = 3.13885 + 0.57412I$	$-5.7214 + 15.3218I$	$8.04302 - 7.62554I$
$u = 1.39497 - 0.35222I$ $a = -2.21296 - 0.14720I$ $b = 3.13885 - 0.57412I$	$-5.7214 - 15.3218I$	$8.04302 + 7.62554I$
$u = 1.45144 + 0.37096I$ $a = 0.664841 + 0.529951I$ $b = -0.768383 - 1.015820I$	$-3.96493 + 4.54692I$	0
$u = 1.45144 - 0.37096I$ $a = 0.664841 - 0.529951I$ $b = -0.768383 + 1.015820I$	$-3.96493 - 4.54692I$	0
$u = 1.49869 + 0.06046I$ $a = -1.30572 - 0.89485I$ $b = 1.90276 + 1.42005I$	$0.09897 + 6.38740I$	$10.66369 - 5.63916I$
$u = 1.49869 - 0.06046I$ $a = -1.30572 + 0.89485I$ $b = 1.90276 - 1.42005I$	$0.09897 - 6.38740I$	$10.66369 + 5.63916I$
$u = 0.475802$ $a = -0.529412$ $b = 0.251895$	0.724697	12.9880
$u = -1.57937$ $a = 0.0469240$ $b = 0.0741106$	7.86571	-16.8850

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.296068 + 0.129818I$ $a = 0.37776 + 2.13705I$ $b = 0.389271 + 0.583672I$	$0.49245 + 1.79175I$	$2.45715 - 5.83736I$
$u = -0.296068 - 0.129818I$ $a = 0.37776 - 2.13705I$ $b = 0.389271 - 0.583672I$	$0.49245 - 1.79175I$	$2.45715 + 5.83736I$

II. $I_2^u =$
$\langle -3u^{15}-2u^{14}+\cdots+b-3,\ 3u^{15}-22u^{13}+\cdots+2a+5,\ u^{16}+2u^{15}+\cdots-3u+2\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{3}{2}u^{15}+11u^{13}+\cdots+4u-\frac{5}{2} \\ 3u^{15}+2u^{14}+\cdots-7u+3 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{1}{2}u^{15}-3u^{13}+\cdots+2u+\frac{1}{2} \\ -u^{15}+7u^{13}+\cdots+u-1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{1}{2}u^{15}+2u^{14}+\cdots-2u-\frac{1}{2} \\ u^{15}-7u^{13}+\cdots-u+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{1}{2}u^{15}+u^{14}+\cdots+u-\frac{3}{2} \\ u^{15}-7u^{13}+\cdots-u+1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{3}{2}u^{15}+u^{14}+\cdots-u+\frac{3}{2} \\ -u^{15}+7u^{13}+\cdots+u-1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^4+u^2+1 \\ u^6-2u^4+u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{7}{2}u^{15}-3u^{14}+\cdots+13u-\frac{11}{2} \\ 4u^{15}+3u^{14}+\cdots-16u+7 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $=$
$4u^{15}+4u^{14}-25u^{13}-14u^{12}+63u^{11}-69u^9+59u^8+8u^7-72u^6+47u^5-18u^3+25u^2-16u+16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 14u^{15} + \cdots - 41u + 4$
c_2, c_{11}	$u^{16} + 2u^{15} + \cdots + 2u + 1$
c_3, c_8	$u^{16} + 6u^{14} + \cdots + 4u + 1$
c_4	$u^{16} + 2u^{15} + \cdots + 2u + 1$
c_5, c_6	$u^{16} - 2u^{15} + \cdots + 3u + 2$
c_7	$u^{16} - u^{15} + \cdots + u^2 + 1$
c_9	$u^{16} - 6u^{15} + \cdots - 7u + 2$
c_{10}	$u^{16} + 2u^{15} + \cdots - 3u + 2$
c_{12}	$u^{16} + 6u^{14} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} - 16y^{15} + \cdots - 97y + 16$
c_2, c_{11}	$y^{16} - 4y^{15} + \cdots - 8y + 1$
c_3, c_8, c_{12}	$y^{16} + 12y^{15} + \cdots - 10y + 1$
c_4	$y^{16} - 8y^{15} + \cdots - 4y + 1$
c_5, c_6, c_{10}	$y^{16} - 16y^{15} + \cdots - y + 4$
c_7	$y^{16} + 15y^{15} + \cdots + 2y + 1$
c_9	$y^{16} - 6y^{14} + \cdots + 7y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.137400 + 0.146818I$ $a = -0.149955 + 0.449115I$ $b = -0.236497 + 0.488807I$	$1.79945 - 1.49089I$	$10.63523 + 4.79741I$
$u = 1.137400 - 0.146818I$ $a = -0.149955 - 0.449115I$ $b = -0.236497 - 0.488807I$	$1.79945 + 1.49089I$	$10.63523 - 4.79741I$
$u = 0.199163 + 0.721319I$ $a = -0.606622 + 1.036950I$ $b = -0.868785 - 0.231047I$	$-0.63802 + 4.76461I$	$9.16165 - 6.96874I$
$u = 0.199163 - 0.721319I$ $a = -0.606622 - 1.036950I$ $b = -0.868785 + 0.231047I$	$-0.63802 - 4.76461I$	$9.16165 + 6.96874I$
$u = -1.242630 + 0.215465I$ $a = 2.27494 + 1.85843I$ $b = -3.22733 - 1.81917I$	$-4.26568 - 2.08418I$	$10.49854 + 3.93307I$
$u = -1.242630 - 0.215465I$ $a = 2.27494 - 1.85843I$ $b = -3.22733 + 1.81917I$	$-4.26568 + 2.08418I$	$10.49854 - 3.93307I$
$u = 0.571020 + 0.339582I$ $a = 0.039795 + 0.842875I$ $b = -0.263501 + 0.494812I$	$1.12725 - 1.33975I$	$12.02351 + 1.24817I$
$u = 0.571020 - 0.339582I$ $a = 0.039795 - 0.842875I$ $b = -0.263501 - 0.494812I$	$1.12725 + 1.33975I$	$12.02351 - 1.24817I$
$u = -0.141358 + 0.640937I$ $a = -0.679498 - 1.144790I$ $b = 0.829793 - 0.273689I$	$-7.63694 - 0.91148I$	$3.93951 + 0.55564I$
$u = -0.141358 - 0.640937I$ $a = -0.679498 + 1.144790I$ $b = 0.829793 + 0.273689I$	$-7.63694 + 0.91148I$	$3.93951 - 0.55564I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.369690 + 0.297062I$ $a = 0.132211 - 0.195026I$ $b = 0.239022 - 0.227851I$	$-2.78866 + 4.38420I$	$9.70308 - 2.57288I$
$u = 1.369690 - 0.297062I$ $a = 0.132211 + 0.195026I$ $b = 0.239022 + 0.227851I$	$-2.78866 - 4.38420I$	$9.70308 + 2.57288I$
$u = -1.376870 + 0.303108I$ $a = -1.97992 - 0.37746I$ $b = 2.84050 - 0.08041I$	$4.35415 - 8.50155I$	$13.9603 + 7.3316I$
$u = -1.376870 - 0.303108I$ $a = -1.97992 + 0.37746I$ $b = 2.84050 + 0.08041I$	$4.35415 + 8.50155I$	$13.9603 - 7.3316I$
$u = -1.51641 + 0.01833I$ $a = -0.780954 - 0.139106I$ $b = 1.186800 + 0.196628I$	$8.04846 + 0.00268I$	$26.0782 - 3.0287I$
$u = -1.51641 - 0.01833I$ $a = -0.780954 + 0.139106I$ $b = 1.186800 - 0.196628I$	$8.04846 - 0.00268I$	$26.0782 + 3.0287I$

III.

$\boldsymbol{I_3^u = \langle -u^{14}-u^{13}+\cdots+b+1,\ -u^{14}a-5u^{14}+\cdots+3a+12,\ u^{15}+u^{14}+\cdots-2u-1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} a \\ u^{14} + u^{13} + \cdots + u - 1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^{13}a + u^{14} + \cdots + a - 1 \\ -u^{13}a - u^{12}a + \cdots - a - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{14} + u^{13} + \cdots + a + u \\ -u^{12} - u^{11} + \cdots + au - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{13}a + u^{14} + \cdots + a - 1 \\ -u^{13}a - u^{12}a + \cdots - a - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -2u^{13}a - u^{14} + \cdots - a + 2 \\ 2u^{13}a + u^{13} + \cdots + 2a + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^4 + u^2 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3u^{14} + u^{13} + \cdots + a + 6 \\ 2u^{14} - 2u^{13} + \cdots - au - 3 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{12} - 20u^{10} + 4u^9 + 36u^8 - 16u^7 - 20u^6 + 20u^5 - 12u^4 - 4u^3 + 12u^2 - 4u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{15}+13u^{14}+\cdots+8u-1)^2$
c_2, c_{11}	$u^{30}+13u^{29}+\cdots-198u-23$
c_3, c_8, c_{12}	$u^{30}-u^{29}+\cdots+356u+599$
c_4	$(u-1)^{30}$
c_5, c_6, c_{10}	$(u^{15}+u^{14}+\cdots-2u-1)^2$
c_7	$u^{30}+u^{29}+\cdots+48394u-9199$
c_9	$(u^{15}-3u^{14}+\cdots+4u^2-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{15} - 29y^{14} + \cdots + 8y - 1)^2$
c_2, c_{11}	$y^{30} - 5y^{29} + \cdots + 7808y + 529$
c_3, c_8, c_{12}	$y^{30} + 39y^{29} + \cdots + 402780y + 358801$
c_4	$(y - 1)^{30}$
c_5, c_6, c_{10}	$(y^{15} - 13y^{14} + \cdots + 8y - 1)^2$
c_7	$y^{30} + 27y^{29} + \cdots - 796940y + 84621601$
c_9	$(y^{15} + 7y^{14} + \cdots + 8y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.897290 + 0.288232I$ $a = -0.503485 - 0.559425I$ $b = 0.416988 - 0.227974I$	$0.184105 - 0.159076I$	$5.79403 - 0.85194I$
$u = 0.897290 + 0.288232I$ $a = -0.347272 + 0.365622I$ $b = 0.290527 + 0.647087I$	$0.184105 - 0.159076I$	$5.79403 - 0.85194I$
$u = 0.897290 - 0.288232I$ $a = -0.503485 + 0.559425I$ $b = 0.416988 + 0.227974I$	$0.184105 + 0.159076I$	$5.79403 + 0.85194I$
$u = 0.897290 - 0.288232I$ $a = -0.347272 - 0.365622I$ $b = 0.290527 - 0.647087I$	$0.184105 + 0.159076I$	$5.79403 + 0.85194I$
$u = 0.200931 + 0.760138I$ $a = 0.347773 - 0.900603I$ $b = 0.695074 + 0.555297I$	$-2.05700 + 4.11725I$	$2.59688 - 3.71929I$
$u = 0.200931 + 0.760138I$ $a = -0.908735 + 0.674195I$ $b = -0.754461 - 0.083397I$	$-2.05700 + 4.11725I$	$2.59688 - 3.71929I$
$u = 0.200931 - 0.760138I$ $a = 0.347773 + 0.900603I$ $b = 0.695074 - 0.555297I$	$-2.05700 - 4.11725I$	$2.59688 + 3.71929I$
$u = 0.200931 - 0.760138I$ $a = -0.908735 - 0.674195I$ $b = -0.754461 + 0.083397I$	$-2.05700 - 4.11725I$	$2.59688 + 3.71929I$
$u = -1.224710 + 0.250895I$ $a = 2.08574 + 1.21971I$ $b = -3.86630 - 0.92593I$	$-5.28079 - 1.64925I$	$1.60633 + 0.16522I$
$u = -1.224710 + 0.250895I$ $a = -2.88112 - 1.34627I$ $b = 2.86043 + 0.97048I$	$-5.28079 - 1.64925I$	$1.60633 + 0.16522I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.224710 - 0.250895I$ $a = 2.08574 - 1.21971I$ $b = -3.86630 + 0.92593I$	$-5.28079 + 1.64925I$	$1.60633 - 0.16522I$
$u = -1.224710 - 0.250895I$ $a = -2.88112 + 1.34627I$ $b = 2.86043 - 0.97048I$	$-5.28079 + 1.64925I$	$1.60633 - 0.16522I$
$u = -0.074720 + 0.708028I$ $a = 0.611710 + 0.650680I$ $b = -1.60975 - 0.81488I$	$-8.75399 - 1.81248I$	$-1.85619 + 4.33913I$
$u = -0.074720 + 0.708028I$ $a = 0.90095 - 2.36865I$ $b = 0.506407 - 0.384488I$	$-8.75399 - 1.81248I$	$-1.85619 + 4.33913I$
$u = -0.074720 - 0.708028I$ $a = 0.611710 - 0.650680I$ $b = -1.60975 + 0.81488I$	$-8.75399 + 1.81248I$	$-1.85619 - 4.33913I$
$u = -0.074720 - 0.708028I$ $a = 0.90095 + 2.36865I$ $b = 0.506407 + 0.384488I$	$-8.75399 + 1.81248I$	$-1.85619 - 4.33913I$
$u = 1.30332$ $a = -1.64310 + 0.40643I$ $b = 2.14148 + 0.52971I$	-1.05425	9.03940
$u = 1.30332$ $a = -1.64310 - 0.40643I$ $b = 2.14148 - 0.52971I$	-1.05425	9.03940
$u = 1.314200 + 0.295245I$ $a = -0.346248 + 1.242720I$ $b = 1.35266 - 2.62536I$	$-4.39644 + 5.45324I$	$3.99532 - 6.35130I$
$u = 1.314200 + 0.295245I$ $a = -0.55258 + 2.12183I$ $b = 0.82195 - 1.53095I$	$-4.39644 + 5.45324I$	$3.99532 - 6.35130I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.314200 - 0.295245I$ $a = -0.346248 - 1.242720I$ $b = 1.35266 + 2.62536I$	$-4.39644 - 5.45324I$	$3.99532 + 6.35130I$
$u = 1.314200 - 0.295245I$ $a = -0.55258 - 2.12183I$ $b = 0.82195 + 1.53095I$	$-4.39644 - 5.45324I$	$3.99532 + 6.35130I$
$u = -1.378140 + 0.316043I$ $a = -1.70922 - 0.18417I$ $b = 2.62416 - 0.47024I$	$2.93922 - 8.01682I$	$7.04132 + 4.89679I$
$u = -1.378140 + 0.316043I$ $a = 1.88334 + 0.09068I$ $b = -2.41375 + 0.28637I$	$2.93922 - 8.01682I$	$7.04132 + 4.89679I$
$u = -1.378140 - 0.316043I$ $a = -1.70922 + 0.18417I$ $b = 2.62416 + 0.47024I$	$2.93922 + 8.01682I$	$7.04132 - 4.89679I$
$u = -1.378140 - 0.316043I$ $a = 1.88334 - 0.09068I$ $b = -2.41375 - 0.28637I$	$2.93922 + 8.01682I$	$7.04132 - 4.89679I$
$u = -1.43385$ $a = -1.16104$ $b = 1.90536$	7.22226	9.97710
$u = -1.43385$ $a = 1.32884$ $b = -1.66477$	7.22226	9.97710
$u = -0.339181$ $a = -2.02164 + 3.01582I$ $b = -0.685704 - 1.022910I$	-5.98181	8.62820
$u = -0.339181$ $a = -2.02164 - 3.01582I$ $b = -0.685704 + 1.022910I$	-5.98181	8.62820

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^{15}+13u^{14}+\cdots+8u-1)^2)(u^{16}-14u^{15}+\cdots-41u+4)$ $\cdot(u^{32}-17u^{31}+\cdots-308u+178)$
c_2, c_{11}	$(u^{16}+2u^{15}+\cdots+2u+1)(u^{30}+13u^{29}+\cdots-198u-23)$ $\cdot(u^{32}+2u^{31}+\cdots-11u+1)$
c_3, c_8	$(u^{16}+6u^{14}+\cdots+4u+1)(u^{30}-u^{29}+\cdots+356u+599)$ $\cdot(u^{32}+23u^{30}+\cdots+u-1)$
c_4	$((u-1)^{30})(u^{16}+2u^{15}+\cdots+2u+1)$ $\cdot(u^{32}+29u^{31}+\cdots+393216u+32768)$
c_5, c_6	$((u^{15}+u^{14}+\cdots-2u-1)^2)(u^{16}-2u^{15}+\cdots+3u+2)$ $\cdot(u^{32}-5u^{31}+\cdots-8u-2)$
c_7	$(u^{16}-u^{15}+\cdots+u^2+1)(u^{30}+u^{29}+\cdots+48394u-9199)$ $\cdot(u^{32}+u^{31}+\cdots+221u-97)$
c_9	$((u^{15}-3u^{14}+\cdots+4u^2-1)^2)(u^{16}-6u^{15}+\cdots-7u+2)$ $\cdot(u^{32}+15u^{31}+\cdots+964u+86)$
c_{10}	$((u^{15}+u^{14}+\cdots-2u-1)^2)(u^{16}+2u^{15}+\cdots-3u+2)$ $\cdot(u^{32}-5u^{31}+\cdots-8u-2)$
c_{12}	$(u^{16}+6u^{14}+\cdots-4u+1)(u^{30}-u^{29}+\cdots+356u+599)$ $\cdot(u^{32}+23u^{30}+\cdots+u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^{15} - 29y^{14} + \cdots + 8y - 1)^2)(y^{16} - 16y^{15} + \cdots - 97y + 16)$ $\cdot (y^{32} - 33y^{31} + \cdots - 1623172y + 31684)$
c_2, c_{11}	$(y^{16} - 4y^{15} + \cdots - 8y + 1)(y^{30} - 5y^{29} + \cdots + 7808y + 529)$ $\cdot (y^{32} + 14y^{31} + \cdots - 73y + 1)$
c_3, c_8, c_{12}	$(y^{16} + 12y^{15} + \cdots - 10y + 1)(y^{30} + 39y^{29} + \cdots + 402780y + 358801)$ $\cdot (y^{32} + 46y^{31} + \cdots + 13y + 1)$
c_4	$((y - 1)^{30})(y^{16} - 8y^{15} + \cdots - 4y + 1)$ $\cdot (y^{32} - 9y^{31} + \cdots - 5368709120y + 1073741824)$
c_5, c_6, c_{10}	$((y^{15} - 13y^{14} + \cdots + 8y - 1)^2)(y^{16} - 16y^{15} + \cdots - y + 4)$ $\cdot (y^{32} - 29y^{31} + \cdots - 60y + 4)$
c_7	$(y^{16} + 15y^{15} + \cdots + 2y + 1)$ $\cdot (y^{30} + 27y^{29} + \cdots - 796940y + 84621601)$ $\cdot (y^{32} + 25y^{31} + \cdots - 27307y + 9409)$
c_9	$((y^{15} + 7y^{14} + \cdots + 8y - 1)^2)(y^{16} - 6y^{14} + \cdots + 7y + 4)$ $\cdot (y^{32} + 7y^{31} + \cdots - 138956y + 7396)$