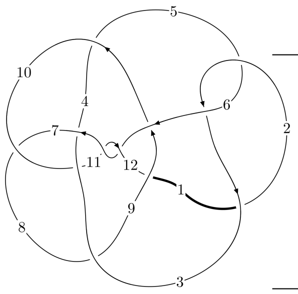
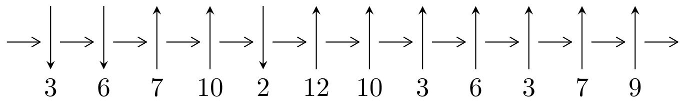
$12n_{0451}$ ($K12n_{0451}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 13u^{14} - 82u^{13} + \cdots + 2b - 28,\ -u^{14} + 3u^{13} + \cdots + 2a + 7,\ u^{15} - 8u^{14} + \cdots + 18u + 4\rangle$$

$$\begin{aligned} I_2^u = \langle &-u^7 - u^6 + 4u^5 + 3u^4 - 5u^3 - 3u^2 + b + 2u + 1, \\ &2u^9 + 6u^8 - u^7 - 18u^6 - 10u^5 + 18u^4 + 15u^3 - 4u^2 + 3a - 4u + 1, \\ &u^{10} + 3u^9 - 2u^8 - 12u^7 - 2u^6 + 18u^5 + 9u^4 - 11u^3 - 8u^2 + 2u + 3\rangle \end{aligned}$$

$$\begin{aligned} I_3^u = \langle &a^3u^2 + 8a^3u + 6a^2u^2 + 2a^3 + 9a^2u - a^2 - 3u^2 + 13b - 11u - 6, \\ &- 2a^3u^2 + a^4 - a^3u - 3a^2u^2 + 4a^3 - 3a^2u - 6u^2a + 7a^2 - 3au - 16u^2 + 13a - 9u + 37,\ u^3 + u^2 - 2u - 1\rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 37 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. $I^u_1 = \langle 13u^{14}-82u^{13}+\cdots+2b-28,\ -u^{14}+3u^{13}+\cdots+2a+7,\ u^{15}-8u^{14}+\cdots+18u+4\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}\frac{1}{2}u^{14}-\frac{3}{2}u^{13}+\cdots-\frac{3}{2}u-\frac{7}{2}\\-\frac{13}{2}u^{14}+41u^{13}+\cdots+\frac{145}{2}u+14\end{pmatrix}$$
$$a_4 = \begin{pmatrix}\frac{19}{4}u^{14}-\frac{61}{2}u^{13}+\cdots-\frac{239}{4}u-11\\\frac{1}{2}u^{14}-3u^{13}+\cdots-\frac{9}{2}u-1\end{pmatrix}$$
$$a_9 = \begin{pmatrix}\frac{1}{2}u^{14}-\frac{3}{2}u^{13}+\cdots-\frac{3}{2}u-\frac{7}{2}\\-\frac{1}{2}u^{14}+6u^{13}+\cdots+\frac{51}{2}u+4\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^{14}-\frac{15}{2}u^{13}+\cdots-27u-\frac{15}{2}\\-\frac{1}{2}u^{14}+6u^{13}+\cdots+\frac{51}{2}u+4\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-\frac{1}{2}u^{14}+\frac{7}{2}u^{13}+\cdots-\frac{3}{2}u-\frac{3}{2}\\-\frac{13}{2}u^{14}+41u^{13}+\cdots+\frac{145}{2}u+14\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-\frac{11}{4}u^{14}+\frac{35}{2}u^{13}+\cdots+\frac{143}{4}u+9\\-\frac{15}{2}u^{14}+48u^{13}+\cdots+\frac{193}{2}u+19\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}6u^{14}-\frac{79}{2}u^{13}+\cdots-71u-\frac{21}{2}\\\frac{13}{2}u^{14}-41u^{13}+\cdots-\frac{145}{2}u-14\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -14u^{14}+88u^{13}-169u^{12}+49u^{11}+u^{10}+512u^9-618u^8-173u^7-82u^6+878u^5-86u^4-524u^3-44u^2+156u+46$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} + 18u^{14} + \cdots + 428u + 16$
c_2, c_5	$u^{15} + 8u^{14} + \cdots + 18u - 4$
c_3, c_{10}	$u^{15} - u^{14} + \cdots - u - 1$
c_4, c_8	$u^{15} + 15u^{13} + \cdots - 5u^2 - 1$
c_6, c_{11}	$u^{15} - 8u^{14} + \cdots + 44u - 8$
c_7	$u^{15} + 11u^{14} + \cdots - 30u - 4$
c_9, c_{12}	$u^{15} + u^{14} + \cdots - 10u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} - 38y^{14} + \cdots + 98672y - 256$
c_2, c_5	$y^{15} - 18y^{14} + \cdots + 428y - 16$
c_3, c_{10}	$y^{15} - 19y^{14} + \cdots + 23y - 1$
c_4, c_8	$y^{15} + 30y^{14} + \cdots - 10y - 1$
c_6, c_{11}	$y^{15} + 8y^{14} + \cdots + 144y - 64$
c_7	$y^{15} + 5y^{14} + \cdots + 108y - 16$
c_9, c_{12}	$y^{15} + 19y^{14} + \cdots + 54y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.959509 + 0.354430I$ $a = -0.161134 + 0.086188I$ $b = 0.316905 + 0.548611I$	$-1.65521 - 1.25769I$	$0.52360 + 4.10357I$
$u = 0.959509 - 0.354430I$ $a = -0.161134 - 0.086188I$ $b = 0.316905 - 0.548611I$	$-1.65521 + 1.25769I$	$0.52360 - 4.10357I$
$u = -0.550498 + 0.994483I$ $a = -0.718395 + 0.573199I$ $b = -1.342500 + 0.128424I$	$2.97662 - 0.13213I$	$5.02719 - 0.29116I$
$u = -0.550498 - 0.994483I$ $a = -0.718395 - 0.573199I$ $b = -1.342500 - 0.128424I$	$2.97662 + 0.13213I$	$5.02719 + 0.29116I$
$u = -0.946416 + 0.902266I$ $a = 0.592748 - 0.766485I$ $b = 1.45247 + 0.51633I$	$1.73111 + 6.58453I$	$3.78417 - 5.80099I$
$u = -0.946416 - 0.902266I$ $a = 0.592748 + 0.766485I$ $b = 1.45247 - 0.51633I$	$1.73111 - 6.58453I$	$3.78417 + 5.80099I$
$u = -0.484300 + 0.231140I$ $a = 1.92354 - 0.88468I$ $b = 0.417351 + 0.091087I$	$-3.75387 - 2.45110I$	$11.17942 + 2.61787I$
$u = -0.484300 - 0.231140I$ $a = 1.92354 + 0.88468I$ $b = 0.417351 - 0.091087I$	$-3.75387 + 2.45110I$	$11.17942 - 2.61787I$
$u = 1.61285 + 0.22347I$ $a = -0.112650 - 0.865027I$ $b = -1.065320 + 0.236511I$	$-10.89750 + 0.20978I$	$2.15059 - 0.10319I$
$u = 1.61285 - 0.22347I$ $a = -0.112650 + 0.865027I$ $b = -1.065320 - 0.236511I$	$-10.89750 - 0.20978I$	$2.15059 + 0.10319I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.72721 + 0.30285I$ $a = -0.232010 + 0.919021I$ $b = 1.57691 - 0.30542I$	$-4.83321 - 4.76833I$	$4.97369 + 2.14836I$
$u = 1.72721 - 0.30285I$ $a = -0.232010 - 0.919021I$ $b = 1.57691 + 0.30542I$	$-4.83321 + 4.76833I$	$4.97369 - 2.14836I$
$u = -0.224907$ $a = -2.25152$ $b = -0.299515$	0.730621	13.9140
$u = 1.79410 + 0.24246I$ $a = 0.333662 - 1.121120I$ $b = -1.70606 + 0.72255I$	$-7.78478 - 11.23000I$	$2.90412 + 5.28147I$
$u = 1.79410 - 0.24246I$ $a = 0.333662 + 1.121120I$ $b = -1.70606 - 0.72255I$	$-7.78478 + 11.23000I$	$2.90412 - 5.28147I$

II.

$$I_2^u = \langle -u^7 - u^6 + \cdots + b + 1,\ 2u^9 + 6u^8 + \cdots + 3a + 1,\ u^{10} + 3u^9 + \cdots + 2u + 3\rangle$$

(i) Arc colorings

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

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

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

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

$$a_5 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{2}{3}u^9 - 2u^8 + \cdots + \frac{4}{3}u - \frac{1}{3} \\ u^7 + u^6 - 4u^5 - 3u^4 + 5u^3 + 3u^2 - 2u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{1}{3}u^9 - \frac{8}{3}u^7 + \cdots + \frac{7}{3}u + \frac{8}{3} \\ -u^3 + 2u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{2}{3}u^9 - 2u^8 + \cdots + \frac{4}{3}u - \frac{1}{3} \\ -u^9 - 2u^8 + 3u^7 + 7u^6 - 3u^5 - 9u^4 + u^3 + 4u^2 - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{3}u^9 - \frac{8}{3}u^7 + \cdots + \frac{4}{3}u + \frac{2}{3} \\ -u^9 - 2u^8 + 3u^7 + 7u^6 - 3u^5 - 9u^4 + u^3 + 4u^2 - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{2}{3}u^9 + 2u^8 + \cdots - \frac{10}{3}u - \frac{2}{3} \\ -u^7 - u^6 + 4u^5 + 3u^4 - 5u^3 - 3u^2 + 2u + 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{2}{3}u^9 + 2u^8 + \cdots - \frac{10}{3}u - \frac{2}{3} \\ u^9 + 2u^8 - 3u^7 - 7u^6 + 2u^5 + 9u^4 + 2u^3 - 5u^2 - 2u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{2}{3}u^9 - 2u^8 + \cdots - \frac{2}{3}u - \frac{4}{3} \\ u^7 + u^6 - 4u^5 - 3u^4 + 5u^3 + 3u^2 - 2u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^9 - 8u^8 + 5u^7 + 23u^6 + u^5 - 21u^4 - 5u^3 + 3u^2 - 4u + 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{10}-13u^9+\cdots-52u+9$
c_2	$u^{10}+3u^9-2u^8-12u^7-2u^6+18u^5+9u^4-11u^3-8u^2+2u+3$
c_3, c_{10}	$u^{10}-u^9-3u^8+3u^7-u^6+2u^5+5u^4-9u^3+7u^2-2u+1$
c_4, c_8	$u^{10}+3u^8-4u^7-11u^6+11u^5+13u^4-6u^3-2u^2+3u+1$
c_5	$u^{10}-3u^9-2u^8+12u^7-2u^6-18u^5+9u^4+11u^3-8u^2-2u+3$
c_6	$u^{10}-u^9+4u^8-3u^7+7u^6-3u^5+5u^4-u^3+2u^2+u+1$
c_7	$u^{10}+6u^9+13u^8+12u^7+5u^6+2u^5+4u^4+22u^3+41u^2+28u+7$
c_9, c_{12}	$u^{10}-u^9+4u^8-6u^7+4u^6-6u^5+10u^4-9u^3+6u^2-3u+1$
c_{11}	$u^{10}+u^9+4u^8+3u^7+7u^6+3u^5+5u^4+u^3+2u^2-u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{10} - 25y^9 + \cdots + 212y + 81$
c_2, c_5	$y^{10} - 13y^9 + \cdots - 52y + 9$
c_3, c_{10}	$y^{10} - 7y^9 + 13y^8 + 11y^7 - 45y^6 - 4y^5 + 53y^4 - 5y^3 + 23y^2 + 10y + 1$
c_4, c_8	$y^{10} + 6y^9 + \cdots - 13y + 1$
c_6, c_{11}	$y^{10} + 7y^9 + \cdots + 3y + 1$
c_7	$y^{10} - 10y^9 + \cdots - 210y + 49$
c_9, c_{12}	$y^{10} + 7y^9 + 12y^8 + 4y^7 + 18y^6 - 20y^5 + 12y^4 + 11y^3 + 2y^2 + 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.794660 + 0.197895I$ $a = -1.21999 - 0.81881I$ $b = -0.033564 + 0.426607I$	$-4.30076 + 2.46712I$	$-4.14664 - 2.94515I$
$u = 0.794660 - 0.197895I$ $a = -1.21999 + 0.81881I$ $b = -0.033564 - 0.426607I$	$-4.30076 - 2.46712I$	$-4.14664 + 2.94515I$
$u = -1.154300 + 0.430931I$ $a = -0.174417 + 0.481835I$ $b = -1.57328 - 0.24809I$	$3.14814 + 4.53334I$	$4.18402 - 3.64382I$
$u = -1.154300 - 0.430931I$ $a = -0.174417 - 0.481835I$ $b = -1.57328 + 0.24809I$	$3.14814 - 4.53334I$	$4.18402 + 3.64382I$
$u = -0.563250 + 0.505340I$ $a = -0.146187 - 0.911256I$ $b = 1.55694 - 0.21156I$	$5.07321 - 0.90406I$	$8.90897 - 1.12395I$
$u = -0.563250 - 0.505340I$ $a = -0.146187 + 0.911256I$ $b = 1.55694 + 0.21156I$	$5.07321 + 0.90406I$	$8.90897 + 1.12395I$
$u = 1.228530 + 0.260062I$ $a = 0.760530 + 0.065247I$ $b = -0.634254 - 0.504382I$	$-1.184580 - 0.336842I$	$3.77741 - 2.24920I$
$u = 1.228530 - 0.260062I$ $a = 0.760530 - 0.065247I$ $b = -0.634254 + 0.504382I$	$-1.184580 + 0.336842I$	$3.77741 + 2.24920I$
$u = -1.80564 + 0.05386I$ $a = 0.113401 - 1.082570I$ $b = 0.184156 + 1.137500I$	$-14.2505 - 0.9863I$	$-1.223765 + 0.251668I$
$u = -1.80564 - 0.05386I$ $a = 0.113401 + 1.082570I$ $b = 0.184156 - 1.137500I$	$-14.2505 + 0.9863I$	$-1.223765 - 0.251668I$

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle a^3u^2+6a^2u^2+\cdots-a^2-6,\ -2a^3u^2-3a^2u^2+\cdots+13a+37,\ u^3+u^2-2u-1\rangle}$

(i) Arc colorings

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

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

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

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

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

$$a_{10} = \begin{pmatrix}a\\-0.0769231a^3u^2-0.461538a^2u^2+\cdots+0.0769231a^2+0.461538\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-0.615385a^3u^2-0.692308a^2u^2+\cdots+a+1.69231\\\frac{8}{13}a^3u^2+\frac{9}{13}a^2u^2+\cdots-a-\frac{48}{13}\end{pmatrix}$$

$$a_9 = \begin{pmatrix}a\\-0.0769231a^3u^2-0.461538a^2u^2+\cdots+0.0769231a^2+0.461538\end{pmatrix}$$

$$a_8 = \begin{pmatrix}\frac{1}{13}a^3u^2+\frac{6}{13}a^2u^2+\cdots+a-\frac{6}{13}\\-0.0769231a^3u^2-0.461538a^2u^2+\cdots+0.0769231a^2+0.461538\end{pmatrix}$$

$$a_7 = \begin{pmatrix}\frac{1}{13}a^3u^2+\frac{6}{13}a^2u^2+\cdots-a-\frac{6}{13}\\0.307692a^3u^2-0.153846a^2u^2+\cdots-0.307692a^2+0.153846\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}\frac{1}{13}a^3u^2+\frac{6}{13}a^2u^2+\cdots-a-\frac{32}{13}\\-0.538462a^3u^2+0.769231a^2u^2+\cdots-0.461538a^2-0.769231\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}\frac{1}{13}a^3u^2+\frac{6}{13}a^2u^2+\cdots-a-\frac{6}{13}\\0.0769231a^3u^2+0.461538a^2u^2+\cdots-0.0769231a^2-0.461538\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{28}{13}a^3u^2-\frac{16}{13}a^3u-\frac{12}{13}a^2u^2-\frac{4}{13}a^3-\frac{44}{13}a^2u-\frac{24}{13}a^2+4au+\frac{32}{13}u^2+\frac{48}{13}u+\frac{38}{13}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^3+5u^2+6u+1)^4$
c_2, c_5, c_7	$(u^3-u^2-2u+1)^4$
c_3, c_{10}	$u^{12}-u^{11}+\cdots-34u+13$
c_4, c_8	$u^{12}+u^{11}+\cdots+208u+139$
c_6, c_{11}	$(u^2+u+1)^6$
c_9, c_{12}	$u^{12}-u^{11}+\cdots-16u+43$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^3 - 13y^2 + 26y - 1)^4$
c_2, c_5, c_7	$(y^3 - 5y^2 + 6y - 1)^4$
c_3, c_{10}	$y^{12} - 5y^{11} + \cdots - 740y + 169$
c_4, c_8	$y^{12} + 19y^{11} + \cdots + 24568y + 19321$
c_6, c_{11}	$(y^2 + y + 1)^6$
c_9, c_{12}	$y^{12} + 11y^{11} + \cdots + 948y + 1849$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.24698$ $a = 1.002800 + 0.135184I$ $b = -0.601826 - 0.829682I$	$-1.40994 + 2.02988I$	$4.00000 - 3.46410I$
$u = 1.24698$ $a = 1.002800 - 0.135184I$ $b = -0.601826 + 0.829682I$	$-1.40994 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.24698$ $a = -0.824347 + 0.444265I$ $b = 1.225320 + 0.250234I$	$-1.40994 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.24698$ $a = -0.824347 - 0.444265I$ $b = 1.225320 - 0.250234I$	$-1.40994 + 2.02988I$	$4.00000 - 3.46410I$
$u = -0.445042$ $a = 0.52051 + 2.02175I$ $b = -1.64400 - 0.07581I$	$4.22983 + 2.02988I$	$4.00000 - 3.46410I$
$u = -0.445042$ $a = 0.52051 - 2.02175I$ $b = -1.64400 + 0.07581I$	$4.22983 - 2.02988I$	$4.00000 + 3.46410I$
$u = -0.445042$ $a = -2.54497 + 1.48471I$ $b = 1.42148 + 0.46123I$	$4.22983 + 2.02988I$	$4.00000 - 3.46410I$
$u = -0.445042$ $a = -2.54497 - 1.48471I$ $b = 1.42148 - 0.46123I$	$4.22983 - 2.02988I$	$4.00000 + 3.46410I$
$u = -1.80194$ $a = 0.248738 + 0.776723I$ $b = -0.526217 - 0.296115I$	$-12.68950 + 2.02988I$	$4.00000 - 3.46410I$
$u = -1.80194$ $a = 0.248738 - 0.776723I$ $b = -0.526217 + 0.296115I$	$-12.68950 - 2.02988I$	$4.00000 + 3.46410I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.80194$ $a = \quad 0.097273 + 1.376030I$ $b = -0.37475 - 1.85664I$	$-12.68950 - 2.02988I$	$4.00000 + 3.46410I$
$u = -1.80194$ $a = \quad 0.097273 - 1.376030I$ $b = -0.37475 + 1.85664I$	$-12.68950 + 2.02988I$	$4.00000 - 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3+5u^2+6u+1)^4)(u^{10}-13u^9+\cdots-52u+9)$ $\cdot\,(u^{15}+18u^{14}+\cdots+428u+16)$
c_2	$(u^3-u^2-2u+1)^4$ $\cdot\,(u^{10}+3u^9-2u^8-12u^7-2u^6+18u^5+9u^4-11u^3-8u^2+2u+3)$ $\cdot\,(u^{15}+8u^{14}+\cdots+18u-4)$
c_3, c_{10}	$(u^{10}-u^9-3u^8+3u^7-u^6+2u^5+5u^4-9u^3+7u^2-2u+1)$ $\cdot\,(u^{12}-u^{11}+\cdots-34u+13)(u^{15}-u^{14}+\cdots-u-1)$
c_4, c_8	$(u^{10}+3u^8-4u^7-11u^6+11u^5+13u^4-6u^3-2u^2+3u+1)$ $\cdot\,(u^{12}+u^{11}+\cdots+208u+139)(u^{15}+15u^{13}+\cdots-5u^2-1)$
c_5	$(u^3-u^2-2u+1)^4$ $\cdot\,(u^{10}-3u^9-2u^8+12u^7-2u^6-18u^5+9u^4+11u^3-8u^2-2u+3)$ $\cdot\,(u^{15}+8u^{14}+\cdots+18u-4)$
c_6	$((u^2+u+1)^6)(u^{10}-u^9+\cdots+u+1)$ $\cdot\,(u^{15}-8u^{14}+\cdots+44u-8)$
c_7	$(u^3-u^2-2u+1)^4$ $\cdot\,(u^{10}+6u^9+13u^8+12u^7+5u^6+2u^5+4u^4+22u^3+41u^2+28u+7)$ $\cdot\,(u^{15}+11u^{14}+\cdots-30u-4)$
c_9, c_{12}	$(u^{10}-u^9+4u^8-6u^7+4u^6-6u^5+10u^4-9u^3+6u^2-3u+1)$ $\cdot\,(u^{12}-u^{11}+\cdots-16u+43)(u^{15}+u^{14}+\cdots-10u-1)$
c_{11}	$((u^2+u+1)^6)(u^{10}+u^9+\cdots-u+1)$ $\cdot\,(u^{15}-8u^{14}+\cdots+44u-8)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^3 - 13y^2 + 26y - 1)^4)(y^{10} - 25y^9 + \cdots + 212y + 81)$ $\cdot\, (y^{15} - 38y^{14} + \cdots + 98672y - 256)$
c_2, c_5	$((y^3 - 5y^2 + 6y - 1)^4)(y^{10} - 13y^9 + \cdots - 52y + 9)$ $\cdot\, (y^{15} - 18y^{14} + \cdots + 428y - 16)$
c_3, c_{10}	$(y^{10} - 7y^9 + 13y^8 + 11y^7 - 45y^6 - 4y^5 + 53y^4 - 5y^3 + 23y^2 + 10y + 1)$ $\cdot\, (y^{12} - 5y^{11} + \cdots - 740y + 169)(y^{15} - 19y^{14} + \cdots + 23y - 1)$
c_4, c_8	$(y^{10} + 6y^9 + \cdots - 13y + 1)(y^{12} + 19y^{11} + \cdots + 24568y + 19321)$ $\cdot\, (y^{15} + 30y^{14} + \cdots - 10y - 1)$
c_6, c_{11}	$((y^2 + y + 1)^6)(y^{10} + 7y^9 + \cdots + 3y + 1)(y^{15} + 8y^{14} + \cdots + 144y - 64)$
c_7	$((y^3 - 5y^2 + 6y - 1)^4)(y^{10} - 10y^9 + \cdots - 210y + 49)$ $\cdot\, (y^{15} + 5y^{14} + \cdots + 108y - 16)$
c_9, c_{12}	$(y^{10} + 7y^9 + 12y^8 + 4y^7 + 18y^6 - 20y^5 + 12y^4 + 11y^3 + 2y^2 + 3y + 1)$ $\cdot\, (y^{12} + 11y^{11} + \cdots + 948y + 1849)(y^{15} + 19y^{14} + \cdots + 54y - 1)$