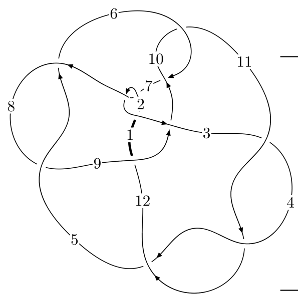
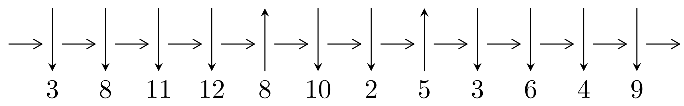
$12n_{0653}$ ($K12n_{0653}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 15u^{19} + 52u^{18} + \cdots + b - 21,\ 21u^{19} + 75u^{18} + \cdots + 2a - 23,\ u^{20} + 5u^{19} + \cdots + u - 2\rangle$$

$$\begin{aligned} I_2^u = \langle &2u^{12} - 2u^{11} - 11u^{10} + 8u^9 + 23u^8 - 5u^7 - 22u^6 - 13u^5 + 4u^4 + 16u^3 + 8u^2 + b - u - 2, \\ &2u^{12} - 2u^{11} - 12u^{10} + 9u^9 + 28u^8 - 9u^7 - 31u^6 - 10u^5 + 11u^4 + 20u^3 + 8u^2 + a - 6u - 5, \\ &u^{13} - 2u^{12} - 5u^{11} + 10u^{10} + 10u^9 - 16u^8 - 13u^7 + 6u^6 + 12u^5 + 8u^4 - 4u^3 - 7u^2 - 2u + 1\rangle \end{aligned}$$

$$\begin{aligned} I_3^u = \langle &u^5 - u^4 - 2u^3 - au + u^2 + b + u + 1,\ -u^5a - 4u^5 + 4u^3a + u^4 + 11u^3 + a^2 - 3au + u^2 - 2a - 4u - 6, \\ &u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1\rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 45 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. $I_1^u = \langle 15u^{19}+52u^{18}+\cdots+b-21,\ 21u^{19}+75u^{18}+\cdots+2a-23,\ u^{20}+5u^{19}+\cdots+u-2\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -10.5000u^{19} - 37.5000u^{18} + \cdots - 17.5000u + 11.5000 \\ -15u^{19} - 52u^{18} + \cdots - 22u + 21 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{11}{2}u^{19} + \frac{37}{2}u^{18} + \cdots + \frac{11}{2}u - \frac{11}{2} \\ 9u^{19} + 30u^{18} + \cdots + 12u - 11 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{5}{2}u^{19} - \frac{19}{2}u^{18} + \cdots - \frac{7}{2}u + \frac{5}{2} \\ 4u^{19} + 13u^{18} + \cdots + 6u - 3 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -\frac{5}{2}u^{19} - \frac{17}{2}u^{18} + \cdots - \frac{7}{2}u + \frac{7}{2} \\ -6u^{19} - 20u^{18} + \cdots - 7u + 7 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{5}{2}u^{19} + \frac{19}{2}u^{18} + \cdots + \frac{9}{2}u - \frac{7}{2} \\ 3u^{19} + 12u^{18} + \cdots + 7u - 5 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -23u^{19} - 80u^{18} + \cdots - 34u + 27 \\ -32u^{19} - 110u^{18} + \cdots - 45u + 42 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -22.5000u^{19} - 78.5000u^{18} + \cdots - 33.5000u + 27.5000 \\ -29u^{19} - 100u^{18} + \cdots - 41u + 39 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -15u^{19} - 52u^{18} + 51u^{17} + 300u^{16} - 63u^{15} - 689u^{14} + 302u^{13} + 905u^{12} - 1067u^{11} - 777u^{10} + 1394u^9 + 39u^8 - 722u^7 + 587u^6 + 181u^5 + 7u^4 + 174u^3 - 147u^2 - 9u + 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} + 31u^{19} + \cdots - 5u + 1$
c_2, c_7, c_{12}	$u^{20} + u^{19} + \cdots - 3u - 1$
c_3, c_4, c_{11}	$u^{20} + 5u^{19} + \cdots + u - 2$
c_5, c_8	$u^{20} - u^{19} + \cdots - 7u + 1$
c_6, c_{10}	$u^{20} + 14u^{19} + \cdots + 608u + 64$
c_9	$u^{20} - 26u^{18} + \cdots - 494u - 599$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20} - 103y^{19} + \cdots - 159y + 1$
c_2, c_7, c_{12}	$y^{20} - 31y^{19} + \cdots + 5y + 1$
c_3, c_4, c_{11}	$y^{20} - 21y^{19} + \cdots - 61y + 4$
c_5, c_8	$y^{20} + 29y^{19} + \cdots - 55y + 1$
c_6, c_{10}	$y^{20} + 6y^{19} + \cdots - 33792y + 4096$
c_9	$y^{20} - 52y^{19} + \cdots + 2577254y + 358801$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.537648 + 0.858586I$ $a = 0.960669 - 0.049342I$ $b = -0.558866 - 0.798289I$	$-14.2098 + 2.1239I$	$-11.72729 + 0.16245I$
$u = 0.537648 - 0.858586I$ $a = 0.960669 + 0.049342I$ $b = -0.558866 + 0.798289I$	$-14.2098 - 2.1239I$	$-11.72729 - 0.16245I$
$u = 0.606622 + 0.819368I$ $a = -0.914544 - 0.419396I$ $b = 0.211143 + 1.003760I$	$-14.4361 - 7.6779I$	$-11.74067 + 4.57873I$
$u = 0.606622 - 0.819368I$ $a = -0.914544 + 0.419396I$ $b = 0.211143 - 1.003760I$	$-14.4361 + 7.6779I$	$-11.74067 - 4.57873I$
$u = -1.223290 + 0.229738I$ $a = -0.518734 - 0.448442I$ $b = -0.737585 - 0.429401I$	$-1.41396 + 1.68379I$	$-7.75011 + 2.58763I$
$u = -1.223290 - 0.229738I$ $a = -0.518734 + 0.448442I$ $b = -0.737585 + 0.429401I$	$-1.41396 - 1.68379I$	$-7.75011 - 2.58763I$
$u = -0.087774 + 0.628145I$ $a = 0.205193 + 0.654515I$ $b = 0.429141 - 0.071442I$	$2.02337 + 1.45900I$	$-2.57228 - 5.20755I$
$u = -0.087774 - 0.628145I$ $a = 0.205193 - 0.654515I$ $b = 0.429141 + 0.071442I$	$2.02337 - 1.45900I$	$-2.57228 + 5.20755I$
$u = 1.382330 + 0.213207I$ $a = -0.232569 + 0.103641I$ $b = 0.343585 - 0.093682I$	$-2.65671 - 4.43053I$	$-10.17327 + 4.41788I$
$u = 1.382330 - 0.213207I$ $a = -0.232569 - 0.103641I$ $b = 0.343585 + 0.093682I$	$-2.65671 + 4.43053I$	$-10.17327 - 4.41788I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.43646$ $a = 0.235964$ $b = -0.338953$	-6.53090	-14.6160
$u = -1.51134 + 0.02336I$ $a = -0.24536 - 2.15134I$ $b = -0.42108 - 3.24569I$	$-7.13768 + 2.65728I$	$-12.42433 - 2.06390I$
$u = -1.51134 - 0.02336I$ $a = -0.24536 + 2.15134I$ $b = -0.42108 + 3.24569I$	$-7.13768 - 2.65728I$	$-12.42433 + 2.06390I$
$u = 0.418033 + 0.095358I$ $a = -0.16881 + 1.84075I$ $b = 0.246100 - 0.753394I$	$-0.61706 - 2.23609I$	$-3.44792 + 0.63650I$
$u = 0.418033 - 0.095358I$ $a = -0.16881 - 1.84075I$ $b = 0.246100 + 0.753394I$	$-0.61706 + 2.23609I$	$-3.44792 - 0.63650I$
$u = -1.56523 + 0.31596I$ $a = 0.97491 - 1.39039I$ $b = 1.08666 - 2.48431I$	$18.4230 + 2.2284I$	$-14.3978 - 0.8992I$
$u = -1.56523 - 0.31596I$ $a = 0.97491 + 1.39039I$ $b = 1.08666 + 2.48431I$	$18.4230 - 2.2284I$	$-14.3978 + 0.8992I$
$u = -1.58137 + 0.27874I$ $a = -0.51960 + 1.97559I$ $b = -0.27100 + 3.26896I$	$17.8528 + 11.7492I$	$-14.2038 - 4.7569I$
$u = -1.58137 - 0.27874I$ $a = -0.51960 - 1.97559I$ $b = -0.27100 - 3.26896I$	$17.8528 - 11.7492I$	$-14.2038 + 4.7569I$
$u = -0.387724$ $a = -0.818265$ $b = -0.317261$	-0.639359	-15.5090

II.

$$\boldsymbol{I_2^u = \langle 2u^{12}-2u^{11}+\cdots+b-2,\ 2u^{12}-2u^{11}+\cdots+a-5,\ u^{13}-2u^{12}+\cdots-2u+1\rangle}$$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-2u^{12}+2u^{11}+\cdots+6u+5\\-2u^{12}+2u^{11}+\cdots+u+2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}3u^{12}-3u^{11}+\cdots-5u-5\\3u^{12}-2u^{11}+\cdots+17u^2-3\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-2u^{12}+3u^{11}+\cdots+9u+5\\-u^{12}+2u^{11}+\cdots+3u+1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^{12}-3u^{11}+\cdots-17u-7\\-u^{11}+u^{10}+5u^9-3u^8-10u^7+9u^5+7u^4-6u^2-4u-1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^2+1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u^{12}-u^{11}+\cdots-15u-4\\-3u^{12}+u^{11}+\cdots-7u+1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}5u^{12}-6u^{11}+\cdots-10u-9\\5u^{12}-4u^{11}+\cdots+u-6\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-3u^{12}+3u^{11}+\cdots+5u+5\\-4u^{12}+4u^{11}+\cdots+u+3\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -4u^{12}+9u^{11}+17u^{10}-41u^9-27u^8+56u^7+32u^6-11u^5-30u^4-29u^3+8u^2+12u-8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} - 15u^{12} + \cdots + 9u - 1$
c_2	$u^{13} + u^{12} + \cdots + 3u - 1$
c_3, c_4	$u^{13} - 2u^{12} + \cdots - 2u + 1$
c_5	$u^{13} - u^{12} + \cdots + u - 1$
c_6	$u^{13} + u^{12} + \cdots + u + 1$
c_7, c_{12}	$u^{13} - u^{12} + \cdots + 3u + 1$
c_8	$u^{13} + u^{12} + \cdots + u + 1$
c_9	$u^{13} - 6u^{11} - 8u^{10} + 7u^8 + 3u^7 + 16u^6 - 2u^5 + 14u^4 - 3u^3 + 6u^2 + 1$
c_{10}	$u^{13} - u^{12} + \cdots + u - 1$
c_{11}	$u^{13} + 2u^{12} + \cdots - 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 31y^{12} + \cdots - 15y - 1$
c_2, c_7, c_{12}	$y^{13} - 15y^{12} + \cdots + 9y - 1$
c_3, c_4, c_{11}	$y^{13} - 14y^{12} + \cdots + 18y - 1$
c_5, c_8	$y^{13} + 5y^{12} + \cdots - 7y - 1$
c_6, c_{10}	$y^{13} + 7y^{12} + \cdots - 5y - 1$
c_9	$y^{13} - 12y^{12} + \cdots - 12y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.132140 + 0.168986I$ $a = 0.092976 + 0.325055I$ $b = -0.160192 - 0.352296I$	$-1.75574 + 2.59120I$	$-12.09350 - 3.87877I$
$u = -1.132140 - 0.168986I$ $a = 0.092976 - 0.325055I$ $b = -0.160192 + 0.352296I$	$-1.75574 - 2.59120I$	$-12.09350 + 3.87877I$
$u = -0.189605 + 0.771385I$ $a = 0.646314 + 0.286377I$ $b = -0.343451 + 0.444258I$	$0.707606 + 0.983665I$	$-10.21762 - 1.58969I$
$u = -0.189605 - 0.771385I$ $a = 0.646314 - 0.286377I$ $b = -0.343451 - 0.444258I$	$0.707606 - 0.983665I$	$-10.21762 + 1.58969I$
$u = 1.27456$ $a = -2.12141$ $b = -2.70385$	-10.1403	-16.1260
$u = -0.596279 + 0.393194I$ $a = -0.433017 + 0.867082I$ $b = -0.082733 - 0.687283I$	$-1.18520 + 2.76688I$	$-11.52015 - 6.83060I$
$u = -0.596279 - 0.393194I$ $a = -0.433017 - 0.867082I$ $b = -0.082733 + 0.687283I$	$-1.18520 - 2.76688I$	$-11.52015 + 6.83060I$
$u = 1.369650 + 0.339979I$ $a = 0.746659 + 0.696939I$ $b = 0.78571 + 1.20841I$	$-4.20868 - 5.03112I$	$-13.5740 + 4.7480I$
$u = 1.369650 - 0.339979I$ $a = 0.746659 - 0.696939I$ $b = 0.78571 - 1.20841I$	$-4.20868 + 5.03112I$	$-13.5740 - 4.7480I$
$u = -1.51524$ $a = -0.421908$ $b = 0.639294$	-12.9834	-12.2240

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.53980 + 0.14093I$ $a = -0.10346 - 1.87763I$ $b = 0.10530 - 2.90577I$	$-8.24712 - 4.85635I$	$-12.41808 + 4.09970I$
$u = 1.53980 - 0.14093I$ $a = -0.10346 + 1.87763I$ $b = 0.10530 + 2.90577I$	$-8.24712 + 4.85635I$	$-12.41808 - 4.09970I$
$u = 0.257830$ $a = 5.64437$ $b = 1.45529$	-6.71567	-5.00350

III. $I_3^u = \langle u^5 - u^4 - 2u^3 - au + u^2 + b + u + 1,\ -u^5a - 4u^5 + \cdots - 2a - 6,\ u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ -u^5 + u^4 + 2u^3 + au - u^2 - u - 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^4a + u^5 - u^3a - u^4 - u^2a - u^3 + a - u \\ u^4a - u^3a - u^2a + 2u^3 - 2u^2 + a - 3u - 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^5 + u^4 - u^2a + 2u^3 + au - u^2 + a - u - 1 \\ -u^4a - 2u^5 + u^3a + 2u^4 + 3u^3 + au - u^2 - 2u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -3u^5 + 2u^4 + 8u^3 + au - 2u^2 - a - 5u - 4 \\ -2u^5 + 2u^4 + 4u^3 + au - 2u^2 - 2u - 2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^4a - 3u^5 + u^3a + u^4 + u^2a + 7u^3 - a - 4u - 2 \\ -u^4a - 4u^5 + u^3a + 2u^4 + 8u^3 + au - u^2 - 3u - 3 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -2u^4a - 2u^5 + 2u^3a + 2u^4 + 2u^2a + 2u^3 - 2a + u \\ -2u^4a + 2u^3a + 2u^2a - 4u^3 + 4u^2 - 2a + 5u + 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^4a + u^5 - u^3a - u^4 - u^2a - u^3 + a \\ u^4a - u^3a - u^2a + 2u^3 - 2u^2 + a - 2u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^3 - 8u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{12} + 21u^{11} + \cdots + 44976u + 9409$
c_2, c_7, c_{12}	$u^{12} - u^{11} + \cdots + 68u + 97$
c_3, c_4, c_{11}	$(u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1)^2$
c_5, c_8	$u^{12} + 7u^{11} + \cdots - 48u - 23$
c_6, c_{10}	$(u - 1)^{12}$
c_9	$u^{12} - u^{11} + \cdots - 320u + 239$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{12} - 37y^{11} + \cdots - 144089092y + 88529281$
c_2, c_7, c_{12}	$y^{12} - 21y^{11} + \cdots - 44976y + 9409$
c_3, c_4, c_{11}	$(y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1)^2$
c_5, c_8	$y^{12} + 7y^{11} + \cdots - 7180y + 529$
c_6, c_{10}	$(y-1)^{12}$
c_9	$y^{12} - 33y^{11} + \cdots - 136816y + 57121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.493180 + 0.575288I$ $a = 0.597504 - 0.159655I$ $b = -0.294522 + 1.202870I$	$-3.61949 + 1.97241I$	$-12.57572 - 3.68478I$
$u = -0.493180 + 0.575288I$ $a = -1.45815 + 0.73808I$ $b = 0.202829 - 0.422475I$	$-3.61949 + 1.97241I$	$-12.57572 - 3.68478I$
$u = -0.493180 - 0.575288I$ $a = 0.597504 + 0.159655I$ $b = -0.294522 - 1.202870I$	$-3.61949 - 1.97241I$	$-12.57572 + 3.68478I$
$u = -0.493180 - 0.575288I$ $a = -1.45815 - 0.73808I$ $b = 0.202829 + 0.422475I$	$-3.61949 - 1.97241I$	$-12.57572 + 3.68478I$
$u = 0.483672$ $a = -1.45315$ $b = -2.16590$	-7.31859	-21.4170
$u = 0.483672$ $a = 4.47804$ $b = 0.702848$	-7.31859	-21.4170
$u = 1.52087 + 0.16310I$ $a = -0.53855 - 1.90937I$ $b = -0.74685 - 3.39023I$	$-10.27530 - 4.59213I$	$-16.5811 + 3.2048I$
$u = 1.52087 + 0.16310I$ $a = 0.72182 + 2.15174I$ $b = 0.50765 + 2.99173I$	$-10.27530 - 4.59213I$	$-16.5811 + 3.2048I$
$u = 1.52087 - 0.16310I$ $a = -0.53855 + 1.90937I$ $b = -0.74685 + 3.39023I$	$-10.27530 + 4.59213I$	$-16.5811 - 3.2048I$
$u = 1.52087 - 0.16310I$ $a = 0.72182 - 2.15174I$ $b = 0.50765 - 2.99173I$	$-10.27530 + 4.59213I$	$-16.5811 - 3.2048I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.53904$ $a = 1.22065$ $b = 3.24620$	-14.2398	-20.2690
$u = -1.53904$ $a = 2.10923$ $b = 1.87863$	-14.2398	-20.2690

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{12}+21u^{11}+\cdots+44976u+9409)(u^{13}-15u^{12}+\cdots+9u-1)$ $\cdot(u^{20}+31u^{19}+\cdots-5u+1)$
c_2	$(u^{12}-u^{11}+\cdots+68u+97)(u^{13}+u^{12}+\cdots+3u-1)$ $\cdot(u^{20}+u^{19}+\cdots-3u-1)$
c_3, c_4	$((u^6-u^5-3u^4+2u^3+2u^2+u-1)^2)(u^{13}-2u^{12}+\cdots-2u+1)$ $\cdot(u^{20}+5u^{19}+\cdots+u-2)$
c_5	$(u^{12}+7u^{11}+\cdots-48u-23)(u^{13}-u^{12}+\cdots+u-1)$ $\cdot(u^{20}-u^{19}+\cdots-7u+1)$
c_6	$((u-1)^{12})(u^{13}+u^{12}+\cdots+u+1)(u^{20}+14u^{19}+\cdots+608u+64)$
c_7, c_{12}	$(u^{12}-u^{11}+\cdots+68u+97)(u^{13}-u^{12}+\cdots+3u+1)$ $\cdot(u^{20}+u^{19}+\cdots-3u-1)$
c_8	$(u^{12}+7u^{11}+\cdots-48u-23)(u^{13}+u^{12}+\cdots+u+1)$ $\cdot(u^{20}-u^{19}+\cdots-7u+1)$
c_9	$(u^{12}-u^{11}+\cdots-320u+239)$ $\cdot(u^{13}-6u^{11}-8u^{10}+7u^8+3u^7+16u^6-2u^5+14u^4-3u^3+6u^2+1)$ $\cdot(u^{20}-26u^{18}+\cdots-494u-599)$
c_{10}	$((u-1)^{12})(u^{13}-u^{12}+\cdots+u-1)(u^{20}+14u^{19}+\cdots+608u+64)$
c_{11}	$((u^6-u^5-3u^4+2u^3+2u^2+u-1)^2)(u^{13}+2u^{12}+\cdots-2u-1)$ $\cdot(u^{20}+5u^{19}+\cdots+u-2)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{12} - 37y^{11} + \cdots - 144089092y + 88529281)$ $\cdot (y^{13} - 31y^{12} + \cdots - 15y - 1)(y^{20} - 103y^{19} + \cdots - 159y + 1)$
c_2, c_7, c_{12}	$(y^{12} - 21y^{11} + \cdots - 44976y + 9409)(y^{13} - 15y^{12} + \cdots + 9y - 1)$ $\cdot (y^{20} - 31y^{19} + \cdots + 5y + 1)$
c_3, c_4, c_{11}	$(y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1)^2$ $\cdot (y^{13} - 14y^{12} + \cdots + 18y - 1)(y^{20} - 21y^{19} + \cdots - 61y + 4)$
c_5, c_8	$(y^{12} + 7y^{11} + \cdots - 7180y + 529)(y^{13} + 5y^{12} + \cdots - 7y - 1)$ $\cdot (y^{20} + 29y^{19} + \cdots - 55y + 1)$
c_6, c_{10}	$((y-1)^{12})(y^{13} + 7y^{12} + \cdots - 5y - 1)$ $\cdot (y^{20} + 6y^{19} + \cdots - 33792y + 4096)$
c_9	$(y^{12} - 33y^{11} + \cdots - 136816y + 57121)(y^{13} - 12y^{12} + \cdots - 12y - 1)$ $\cdot (y^{20} - 52y^{19} + \cdots + 2577254y + 358801)$