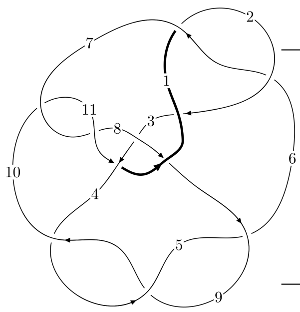
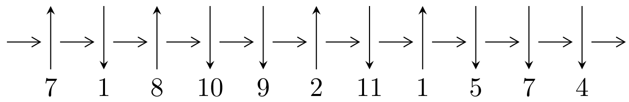
$11n_{117}$ ($K11n_{117}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 7u^{12} + 50u^{11} + \cdots + 2b + 42,\ 7u^{12} + 54u^{11} + \cdots + 4a + 52,$$
$$u^{13} + 8u^{12} + 33u^{11} + 88u^{10} + 170u^9 + 251u^8 + 292u^7 + 262u^6 + 172u^5 + 79u^4 + 38u^3 + 31u^2 + 18u + 4\rangle$$
$$I_2^u = \langle -3a^3u^2 + 2a^3u + 2a^2u^2 + 4a^3 - 3a^2u - 5u^2a - a^2 + 3u^2 + 5b + 10a - 7u + 6,$$
$$a^4 - a^3u + 3a^2u^2 - 5a^2u + 5a^2 - au + 8u^2 + a - 15u + 11,\ u^3 - u^2 + 1\rangle$$
$$I_3^u = \langle u^7 - 2u^6 + 3u^5 - 2u^4 - 2u^3 + 3u^2 + b - u - 1,\ u^5 - 2u^4 + 4u^3 - 4u^2 + a + 2u,$$
$$u^8 - 3u^7 + 6u^6 - 7u^5 + 4u^4 + u^3 - 2u^2 + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 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. $I^u_1 = \langle 7u^{12}+50u^{11}+\cdots+2b+42,\ 7u^{12}+54u^{11}+\cdots+4a+52,\ u^{13}+8u^{12}+\cdots+18u+4\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{7}{4}u^{12} - \frac{27}{2}u^{11} + \cdots - \frac{153}{4}u - 13 \\ -\frac{7}{2}u^{12} - 25u^{11} + \cdots - \frac{121}{2}u - 21 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{1}{2}u^{12} - \frac{7}{2}u^{11} + \cdots - \frac{9}{2}u - \frac{1}{2} \\ \frac{1}{2}u^{12} + 3u^{11} + \cdots + 4u^2 + \frac{3}{2}u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{2}u^{11} + 3u^{10} + \cdots + 4u + \frac{3}{2} \\ -\frac{1}{2}u^{12} - 3u^{11} + \cdots - 3u^2 - \frac{1}{2}u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -\frac{21}{4}u^{12} - \frac{77}{2}u^{11} + \cdots - \frac{395}{4}u - 34 \\ -\frac{7}{2}u^{12} - 25u^{11} + \cdots - \frac{121}{2}u - 21 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -6u^{12} - \frac{91}{2}u^{11} + \cdots - 113u - \frac{75}{2} \\ -\frac{3}{2}u^{12} - 17u^{11} + \cdots - \frac{149}{2}u - 26 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{3}{2}u^{12} - \frac{21}{2}u^{11} + \cdots - \frac{35}{2}u - \frac{9}{2} \\ -\frac{3}{2}u^{12} - 11u^{11} + \cdots - \frac{43}{2}u - 6 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{21}{4}u^{12} + \frac{77}{2}u^{11} + \cdots + \frac{347}{4}u + 26 \\ \frac{9}{2}u^{12} + 35u^{11} + \cdots + \frac{181}{2}u + 27 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{21}{4}u^{12} - \frac{79}{2}u^{11} + \cdots - \frac{387}{4}u - 32 \\ -\frac{5}{2}u^{12} - 23u^{11} + \cdots - \frac{165}{2}u - 29 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{21}{4}u^{12} - \frac{79}{2}u^{11} + \cdots - \frac{387}{4}u - 32 \\ -\frac{5}{2}u^{12} - 23u^{11} + \cdots - \frac{165}{2}u - 29 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -11u^{12} - 82u^{11} - 318u^{10} - 792u^9 - 1428u^8 - 1957u^7 - 2100u^6 - 1675u^5 - 912u^4 - 319u^3 - 215u^2 - 210u - 74$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_6	$u^{13} + 10u^{11} + \cdots - 2u + 1$
c_2	$u^{13} + 20u^{12} + \cdots + 4u - 1$
c_4, c_5, c_9	$u^{13} + 7u^{12} + \cdots + 52u + 8$
c_7, c_{10}	$u^{13} + u^{12} + \cdots - u + 1$
c_8	$u^{13} - u^{12} + \cdots - 25u + 61$
c_{11}	$u^{13} - 8u^{12} + \cdots + 18u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$y^{13} + 20y^{12} + \cdots + 4y - 1$
c_2	$y^{13} - 56y^{12} + \cdots + 56y - 1$
c_4, c_5, c_9	$y^{13} + 11y^{12} + \cdots - 176y - 64$
c_7, c_{10}	$y^{13} - 15y^{12} + \cdots - 17y - 1$
c_8	$y^{13} + 31y^{12} + \cdots + 4407y - 3721$
c_{11}	$y^{13} + 2y^{12} + \cdots + 76y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.679884+0.210052I$ $a=\ \ 0.660299+0.261424I$ $b=\ \ 1.156160-0.636682I$	$2.05464+3.32300I$	$2.35472-0.87537I$
$u=-0.679884-0.210052I$ $a=\ \ 0.660299-0.261424I$ $b=\ \ 1.156160+0.636682I$	$2.05464-3.32300I$	$2.35472+0.87537I$
$u=\ \ 0.134806+1.341750I$ $a=-0.549424-0.347392I$ $b=\ \ 0.196581+0.458453I$	$6.25855-1.58741I$	$3.86210+4.96482I$
$u=\ \ 0.134806-1.341750I$ $a=-0.549424+0.347392I$ $b=\ \ 0.196581-0.458453I$	$6.25855+1.58741I$	$3.86210-4.96482I$
$u=-0.594830$ $a=-0.764918$ $b=-1.12298$	-1.85194	-5.42920
$u=\ \ 0.405732+0.430962I$ $a=\ \ 0.404293+0.808155I$ $b=\ \ 0.019709-0.363243I$	$-0.133748-1.066330I$	$-2.25480+6.30909I$
$u=\ \ 0.405732-0.430962I$ $a=\ \ 0.404293-0.808155I$ $b=\ \ 0.019709+0.363243I$	$-0.133748+1.066330I$	$-2.25480-6.30909I$
$u=-1.23597+1.03056I$ $a=\ \ 0.522817-1.037940I$ $b=-1.59018+0.77503I$	$-10.3151+11.3952I$	$-4.67074-5.46785I$
$u=-1.23597-1.03056I$ $a=\ \ 0.522817+1.037940I$ $b=-1.59018-0.77503I$	$-10.3151-11.3952I$	$-4.67074+5.46785I$
$u=-1.19711+1.14120I$ $a=-0.773854+0.862682I$ $b=\ \ 1.62163-0.33100I$	$-14.5236+4.3483I$	$-7.04341-2.19507I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.19711-1.14120I$ $a=-0.773854-0.862682I$ $b=\ 1.62163+0.33100I$	$-14.5236-4.3483I$	$-7.04341+2.19507I$
$u=-1.13016+1.29050I$ $a=\ 0.868328-0.530434I$ $b=-1.342400-0.094615I$	$-9.55616-2.72200I$	$-5.53329+1.17863I$
$u=-1.13016-1.29050I$ $a=\ 0.868328+0.530434I$ $b=-1.342400+0.094615I$	$-9.55616+2.72200I$	$-5.53329-1.17863I$

II.

$$\boldsymbol{I_2^u = \langle -3a^3u^2 + 2a^2u^2 + \cdots + 10a + 6,\ 3a^2u^2 + 8u^2 + \cdots + a + 11,\ u^3 - u^2 + 1\rangle}$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} a \\ \frac{3}{5}a^3u^2 - \frac{2}{5}a^2u^2 + \cdots - 2a - \frac{6}{5} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -a^2u \\ \frac{2}{5}a^3u^2 - \frac{3}{5}a^2u^2 + \cdots - a + \frac{6}{5} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{2}{5}a^3u^2 + \frac{2}{5}a^2u^2 + \cdots - a + \frac{6}{5} \\ a^3u^2 - a^3 + au + 4u^2 - 2a - 2u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{3}{5}a^3u^2 - \frac{2}{5}a^2u^2 + \cdots - a - \frac{6}{5} \\ \frac{3}{5}a^3u^2 - \frac{2}{5}a^2u^2 + \cdots - 2a - \frac{6}{5} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{3}{5}a^3u^2 + \frac{2}{5}a^2u^2 + \cdots + a + \frac{6}{5} \\ a^3u^2 + 2a^3u + a^3 - 2a^2u + 2u^2a + au + 4u^2 + 2a - 6u + 4 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} \frac{3}{5}a^3u^2 - \frac{2}{5}a^2u^2 + \cdots - a - \frac{6}{5} \\ -\frac{3}{5}a^3u^2 + \frac{2}{5}a^2u^2 + \cdots - 2a - \frac{14}{5} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{3}{5}a^3u^2 - \frac{2}{5}a^2u^2 + \cdots - a - \frac{6}{5} \\ -a^3u - a^3 + a^2u - u^2a - u^2 - 2a + 2u - 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{3}{5}a^3u^2 - \frac{2}{5}a^2u^2 + \cdots - a - \frac{6}{5} \\ -a^3u - a^3 + a^2u - u^2a - u^2 - 2a + 2u - 2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -\frac{4}{5}a^3u^2 + \frac{16}{5}a^3u - \frac{4}{5}a^2u^2 + \frac{12}{5}a^3 - \frac{4}{5}a^2u - \frac{8}{5}a^2 + 4au - \frac{16}{5}u^2 + \frac{44}{5}u - \frac{42}{5}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_6	$u^{12} + u^{11} + \cdots - 28u + 19$
c_2	$u^{12} + 15u^{11} + \cdots + 1116u + 361$
c_4, c_5, c_9	$(u^2 - u + 1)^6$
c_7, c_{10}	$u^{12} + 3u^{11} + \cdots + 36u + 7$
c_8	$u^{12} + u^{11} + \cdots + 72u + 61$
c_{11}	$(u^3 + u^2 - 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$y^{12} + 15y^{11} + \cdots + 1116y + 361$
c_2	$y^{12} - 29y^{11} + \cdots + 1501032y + 130321$
c_4, c_5, c_9	$(y^2 + y + 1)^6$
c_7, c_{10}	$y^{12} - 5y^{11} + \cdots - 708y + 49$
c_8	$y^{12} + 23y^{11} + \cdots - 3964y + 3721$
c_{11}	$(y^3 - y^2 + 2y - 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 0.666043 + 0.768482I$ $b = -1.68307 - 0.58734I$	$-1.91067 - 4.85801I$	$-4.49024 + 6.44355I$
$u = 0.877439 + 0.744862I$ $a = 0.417746 - 1.155940I$ $b = 1.027310 + 0.598610I$	$-1.91067 - 4.85801I$	$-4.49024 + 6.44355I$
$u = 0.877439 + 0.744862I$ $a = 0.337860 + 1.183260I$ $b = -0.993753 - 0.194653I$	$-1.91067 - 0.79824I$	$-4.49024 - 0.48465I$
$u = 0.877439 + 0.744862I$ $a = -0.544210 - 0.050945I$ $b = 1.311880 - 0.378892I$	$-1.91067 - 0.79824I$	$-4.49024 - 0.48465I$
$u = 0.877439 - 0.744862I$ $a = 0.666043 - 0.768482I$ $b = -1.68307 + 0.58734I$	$-1.91067 + 4.85801I$	$-4.49024 - 6.44355I$
$u = 0.877439 - 0.744862I$ $a = 0.417746 + 1.155940I$ $b = 1.027310 - 0.598610I$	$-1.91067 + 4.85801I$	$-4.49024 - 6.44355I$
$u = 0.877439 - 0.744862I$ $a = 0.337860 - 1.183260I$ $b = -0.993753 + 0.194653I$	$-1.91067 + 0.79824I$	$-4.49024 + 0.48465I$
$u = 0.877439 - 0.744862I$ $a = -0.544210 + 0.050945I$ $b = 1.311880 + 0.378892I$	$-1.91067 + 0.79824I$	$-4.49024 + 0.48465I$
$u = -0.754878$ $a = 0.17299 + 1.94449I$ $b = -0.73677 - 1.98368I$	$-6.04826 + 2.02988I$	$-11.01951 - 3.46410I$
$u = -0.754878$ $a = 0.17299 - 1.94449I$ $b = -0.73677 + 1.98368I$	$-6.04826 - 2.02988I$	$-11.01951 + 3.46410I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.754878$ $a=-0.55043+2.59824I$ $b=-0.425587+0.029583I$	$-6.04826-2.02988I$	$-11.01951+3.46410I$
$u=-0.754878$ $a=-0.55043-2.59824I$ $b=-0.425587-0.029583I$	$-6.04826+2.02988I$	$-11.01951-3.46410I$

III. $\boldsymbol{I_3^u = \langle u^7 - 2u^6 + 3u^5 - 2u^4 - 2u^3 + 3u^2 + b - u - 1,\ u^5 - 2u^4 + 4u^3 - 4u^2 + a + 2u,\ u^8 - 3u^7 + 6u^6 - 7u^5 + 4u^4 + u^3 - 2u^2 + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

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

$$a_3 = \begin{pmatrix} -u^7 + 4u^6 - 9u^5 + 13u^4 - 11u^3 + 3u^2 + 3u - 2 \\ u^7 - 3u^6 + 6u^5 - 7u^4 + 4u^3 + u^2 - u \end{pmatrix}$$

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

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

$$a_6 = \begin{pmatrix} -u^7 + 3u^6 - 6u^5 + 7u^4 - 4u^3 - u^2 + 3u - 1 \\ -u^5 + 2u^4 - 3u^3 + 3u^2 - u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -u^7 + 2u^6 - 4u^5 + 3u^4 - 3u^2 + 2u \\ -2u^7 + 4u^6 - 8u^5 + 7u^4 - 3u^3 - u^2 + u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 - u + 1 \\ u^5 - u^4 + 3u^3 - 2u^2 + u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 - u + 1 \\ u^5 - u^4 + 3u^3 - 2u^2 + u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^7 - 9u^6 + 17u^5 - 15u^4 + 5u^3 + 8u^2 - 2u - 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8+4u^6-u^5+5u^4-u^3+3u^2-u+1$
c_2	$u^8+8u^7+26u^6+45u^5+49u^4+35u^3+17u^2+5u+1$
c_3, c_6	$u^8+4u^6+u^5+5u^4+u^3+3u^2+u+1$
c_4, c_5	$u^8+5u^6+8u^4-u^3+5u^2-2u+1$
c_7	$u^8+u^7-u^6-u^5+u^4-2u^3-u^2+2u+1$
c_8	$u^8-u^7+4u^6-5u^5+3u^4-7u^3+7u^2-2u+1$
c_9	$u^8+5u^6+8u^4+u^3+5u^2+2u+1$
c_{10}	$u^8-u^7-u^6+u^5+u^4+2u^3-u^2-2u+1$
c_{11}	$u^8-3u^7+6u^6-7u^5+4u^4+u^3-2u^2+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$y^8 + 8y^7 + 26y^6 + 45y^5 + 49y^4 + 35y^3 + 17y^2 + 5y + 1$
c_2	$y^8 - 12y^7 + 54y^6 - 3y^5 + 57y^4 + 43y^3 + 37y^2 + 9y + 1$
c_4, c_5, c_9	$y^8 + 10y^7 + 41y^6 + 90y^5 + 116y^4 + 89y^3 + 37y^2 + 6y + 1$
c_7, c_{10}	$y^8 - 3y^7 + 5y^6 - y^5 - 3y^4 - 4y^3 + 11y^2 - 6y + 1$
c_8	$y^8 + 7y^7 + 12y^6 - y^5 - 7y^4 - 19y^3 + 27y^2 + 10y + 1$
c_{11}	$y^8 + 3y^7 + 2y^6 + y^5 + 8y^4 - 5y^3 + 12y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.950543 + 0.460045I$ $a = 0.101607 - 0.618527I$ $b = 1.25100 + 0.69398I$	$1.36880 - 3.95256I$	$-4.43548 + 5.62596I$
$u = 0.950543 - 0.460045I$ $a = 0.101607 + 0.618527I$ $b = 1.25100 - 0.69398I$	$1.36880 + 3.95256I$	$-4.43548 - 5.62596I$
$u = 0.729400 + 0.802470I$ $a = 0.242048 + 0.778127I$ $b = -1.021380 - 0.213700I$	$-1.80062 - 2.46434I$	$-3.13589 + 4.70044I$
$u = 0.729400 - 0.802470I$ $a = 0.242048 - 0.778127I$ $b = -1.021380 + 0.213700I$	$-1.80062 + 2.46434I$	$-3.13589 - 4.70044I$
$u = -0.495908 + 0.252645I$ $a = 1.73117 - 2.40896I$ $b = -0.341560 + 1.033290I$	$-5.09351 - 1.73790I$	$-1.280471 + 0.424799I$
$u = -0.495908 - 0.252645I$ $a = 1.73117 + 2.40896I$ $b = -0.341560 - 1.033290I$	$-5.09351 + 1.73790I$	$-1.280471 - 0.424799I$
$u = 0.31597 + 1.53684I$ $a = -0.574823 - 0.324205I$ $b = 0.611947 - 0.066347I$	$5.52534 - 1.23864I$	$-6.14816 + 0.14411I$
$u = 0.31597 - 1.53684I$ $a = -0.574823 + 0.324205I$ $b = 0.611947 + 0.066347I$	$5.52534 + 1.23864I$	$-6.14816 - 0.14411I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^8 + 4u^6 + \cdots - u + 1)(u^{12} + u^{11} + \cdots - 28u + 19)$ $\cdot (u^{13} + 10u^{11} + \cdots - 2u + 1)$
c_2	$(u^8 + 8u^7 + 26u^6 + 45u^5 + 49u^4 + 35u^3 + 17u^2 + 5u + 1)$ $\cdot (u^{12} + 15u^{11} + \cdots + 1116u + 361)(u^{13} + 20u^{12} + \cdots + 4u - 1)$
c_3, c_6	$(u^8 + 4u^6 + \cdots + u + 1)(u^{12} + u^{11} + \cdots - 28u + 19)$ $\cdot (u^{13} + 10u^{11} + \cdots - 2u + 1)$
c_4, c_5	$(u^2 - u + 1)^6(u^8 + 5u^6 + 8u^4 - u^3 + 5u^2 - 2u + 1)$ $\cdot (u^{13} + 7u^{12} + \cdots + 52u + 8)$
c_7	$(u^8 + u^7 + \cdots + 2u + 1)(u^{12} + 3u^{11} + \cdots + 36u + 7)$ $\cdot (u^{13} + u^{12} + \cdots - u + 1)$
c_8	$(u^8 - u^7 + 4u^6 - 5u^5 + 3u^4 - 7u^3 + 7u^2 - 2u + 1)$ $\cdot (u^{12} + u^{11} + \cdots + 72u + 61)(u^{13} - u^{12} + \cdots - 25u + 61)$
c_9	$(u^2 - u + 1)^6(u^8 + 5u^6 + 8u^4 + u^3 + 5u^2 + 2u + 1)$ $\cdot (u^{13} + 7u^{12} + \cdots + 52u + 8)$
c_{10}	$(u^8 - u^7 + \cdots - 2u + 1)(u^{12} + 3u^{11} + \cdots + 36u + 7)$ $\cdot (u^{13} + u^{12} + \cdots - u + 1)$
c_{11}	$(u^3 + u^2 - 1)^4(u^8 - 3u^7 + 6u^6 - 7u^5 + 4u^4 + u^3 - 2u^2 + 1)$ $\cdot (u^{13} - 8u^{12} + \cdots + 18u - 4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$(y^8 + 8y^7 + 26y^6 + 45y^5 + 49y^4 + 35y^3 + 17y^2 + 5y + 1)$ $\cdot (y^{12} + 15y^{11} + \cdots + 1116y + 361)(y^{13} + 20y^{12} + \cdots + 4y - 1)$
c_2	$(y^8 - 12y^7 + 54y^6 - 3y^5 + 57y^4 + 43y^3 + 37y^2 + 9y + 1)$ $\cdot (y^{12} - 29y^{11} + \cdots + 1501032y + 130321)$ $\cdot (y^{13} - 56y^{12} + \cdots + 56y - 1)$
c_4, c_5, c_9	$(y^2 + y + 1)^6$ $\cdot (y^8 + 10y^7 + 41y^6 + 90y^5 + 116y^4 + 89y^3 + 37y^2 + 6y + 1)$ $\cdot (y^{13} + 11y^{12} + \cdots - 176y - 64)$
c_7, c_{10}	$(y^8 - 3y^7 + 5y^6 - y^5 - 3y^4 - 4y^3 + 11y^2 - 6y + 1)$ $\cdot (y^{12} - 5y^{11} + \cdots - 708y + 49)(y^{13} - 15y^{12} + \cdots - 17y - 1)$
c_8	$(y^8 + 7y^7 + 12y^6 - y^5 - 7y^4 - 19y^3 + 27y^2 + 10y + 1)$ $\cdot (y^{12} + 23y^{11} + \cdots - 3964y + 3721)$ $\cdot (y^{13} + 31y^{12} + \cdots + 4407y - 3721)$
c_{11}	$((y^3 - y^2 + 2y - 1)^4)(y^8 + 3y^7 + \cdots - 4y + 1)$ $\cdot (y^{13} + 2y^{12} + \cdots + 76y - 16)$