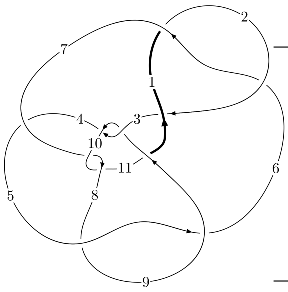
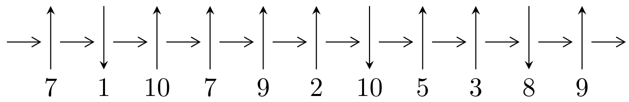
$11n_{127}$ ($K11n_{127}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -u^{15} + 6u^{14} + \cdots + 2b - 11u,\ -u^{15} + 3u^{14} + \cdots + 2a + 11,\ u^{16} - 4u^{15} + \cdots - 14u + 4\rangle \\
I_2^u &= \langle u^8 + 2u^7 + 4u^6 + 5u^5 + 6u^4 + 6u^3 + 3u^2 + b + 2u + 1,\ u^7 + u^6 + 2u^5 + u^4 + 2u^3 + 2u^2 + a, \\
&\quad u^9 + u^8 + 3u^7 + 2u^6 + 4u^5 + 3u^4 + 2u^3 + 2u^2 + 1\rangle \\
I_3^u &= \langle 2u^3ba - 2u^4a + u^2ba - 2u^3a + 2bau - 2u^2a + b^2 + 2ba - au + u^2 + 2u + 1, \\
&\quad u^4a + u^3a - u^4 + 2u^2a + a^2 + au - u^2 + a + u,\ u^5 + u^4 + 2u^3 + u^2 + u + 1\rangle
\end{aligned}$$

* 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. $I_1^u = \langle -u^{15}+6u^{14}+\cdots+2b-11u,\ -u^{15}+3u^{14}+\cdots+2a+11,\ u^{16}-4u^{15}+\cdots-14u+4\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{2}u^{15} - \frac{3}{2}u^{14} + \cdots + 13u - \frac{11}{2} \\ \frac{1}{2}u^{15} - 3u^{14} + \cdots - \frac{23}{2}u^2 + \frac{11}{2}u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{3}{4}u^{15} - \frac{5}{2}u^{14} + \cdots + \frac{27}{4}u - 2 \\ -\frac{1}{2}u^{15} + 2u^{14} + \cdots - \frac{7}{2}u + 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{1}{2}u^{14} + \cdots - \frac{27}{4}u + 3 \\ -\frac{1}{2}u^{15} + u^{14} + \cdots + \frac{1}{2}u - 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{3}{2}u^{14} + 5u^{13} + \cdots + \frac{33}{2}u - \frac{15}{2} \\ \frac{3}{2}u^{15} - 5u^{14} + \cdots - \frac{33}{2}u^2 + \frac{15}{2}u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{3}{4}u^{15} - \frac{5}{2}u^{14} + \cdots + \frac{27}{4}u - 2 \\ -\frac{1}{2}u^{15} + 2u^{14} + \cdots - \frac{15}{2}u + 3 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{1}{2}u^{14} + \cdots - \frac{23}{4}u + 4 \\ -\frac{3}{2}u^{15} + 4u^{14} + \cdots - \frac{13}{2}u + 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{1}{2}u^{14} + \cdots - \frac{23}{4}u + 4 \\ -\frac{3}{2}u^{15} + 4u^{14} + \cdots - \frac{13}{2}u + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= u^{15} + 2u^{14} - 4u^{13} + 18u^{12} - 23u^{11} + 36u^{10} - 42u^9 + 49u^8 - 57u^7 + 38u^6 - 17u^5 + 6u^4 - 4u^3 + 23u^2 - 14u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{16} + 4u^{15} + \cdots + 14u + 4$
c_2	$u^{16} + 8u^{15} + \cdots - 12u + 16$
c_3, c_5, c_8 c_9	$u^{16} - u^{15} + \cdots - u + 1$
c_4	$u^{16} + u^{15} + \cdots - u + 1$
c_7, c_{10}	$u^{16} - 9u^{15} + \cdots - 128u + 32$
c_{11}	$u^{16} + 3u^{15} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{16} + 8y^{15} + \cdots - 12y + 16$
c_2	$y^{16} + 20y^{14} + \cdots + 784y + 256$
c_3, c_5, c_8 c_9	$y^{16} + y^{15} + \cdots - 5y + 1$
c_4	$y^{16} + 29y^{15} + \cdots + 31y + 1$
c_7, c_{10}	$y^{16} - 13y^{15} + \cdots - 512y + 1024$
c_{11}	$y^{16} + 17y^{15} + \cdots - 21y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.942369 + 0.202951I$ $a = -1.72389 - 0.04762I$ $b = 0.379524 + 0.857765I$	$-6.09218 - 7.65352I$	$5.03016 + 4.26371I$
$u = 0.942369 - 0.202951I$ $a = -1.72389 + 0.04762I$ $b = 0.379524 - 0.857765I$	$-6.09218 + 7.65352I$	$5.03016 - 4.26371I$
$u = 0.278245 + 1.091110I$ $a = 0.701786 - 0.590992I$ $b = -0.528417 - 0.110176I$	$-3.59071 + 0.23489I$	$0.00495 + 2.03163I$
$u = 0.278245 - 1.091110I$ $a = 0.701786 + 0.590992I$ $b = -0.528417 + 0.110176I$	$-3.59071 - 0.23489I$	$0.00495 - 2.03163I$
$u = -0.666650 + 0.457955I$ $a = 0.813008 - 0.264852I$ $b = 0.209000 + 0.442237I$	$1.227240 - 0.533814I$	$8.87917 + 3.72662I$
$u = -0.666650 - 0.457955I$ $a = 0.813008 + 0.264852I$ $b = 0.209000 - 0.442237I$	$1.227240 + 0.533814I$	$8.87917 - 3.72662I$
$u = 0.709198 + 0.345008I$ $a = 0.992942 + 0.950055I$ $b = 0.076805 - 1.100350I$	$0.53868 - 2.34706I$	$5.73269 + 5.07520I$
$u = 0.709198 - 0.345008I$ $a = 0.992942 - 0.950055I$ $b = 0.076805 + 1.100350I$	$0.53868 + 2.34706I$	$5.73269 - 5.07520I$
$u = 0.555419 + 1.111790I$ $a = -0.674901 - 0.885563I$ $b = -0.72750 + 1.84198I$	$-1.69676 + 7.19836I$	$2.21492 - 9.55770I$
$u = 0.555419 - 1.111790I$ $a = -0.674901 + 0.885563I$ $b = -0.72750 - 1.84198I$	$-1.69676 - 7.19836I$	$2.21492 + 9.55770I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.706391+1.042180I$ $a=\ \ 0.131675+0.901270I$ $b=-0.95468-1.04353I$	$-0.51238-4.79975I$	$9.59566+5.34793I$
$u=-0.706391-1.042180I$ $a=\ \ 0.131675-0.901270I$ $b=-0.95468+1.04353I$	$-0.51238+4.79975I$	$9.59566-5.34793I$
$u=\ \ 0.572643+1.229640I$ $a=-0.261905+1.244920I$ $b=\ \ 1.82806-2.11251I$	$-9.2176+13.1290I$	$2.40989-7.11896I$
$u=\ \ 0.572643-1.229640I$ $a=-0.261905-1.244920I$ $b=\ \ 1.82806+2.11251I$	$-9.2176-13.1290I$	$2.40989+7.11896I$
$u=\ \ 0.315167+1.323970I$ $a=-0.478712+1.077590I$ $b=\ \ 0.217216-1.305260I$	$-11.08760-3.34610I$	$0.13256+2.28731I$
$u=\ \ 0.315167-1.323970I$ $a=-0.478712-1.077590I$ $b=\ \ 0.217216+1.305260I$	$-11.08760+3.34610I$	$0.13256-2.28731I$

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle u^8+2u^7+\cdots+b+1,\ u^7+u^6+2u^5+u^4+2u^3+2u^2+a,\ u^9+u^8+\cdots+2u^2+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u^8-9u^7-17u^6-14u^5-13u^4-19u^3+3u^2-4u+7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^9 + 5y^8 + 13y^7 + 18y^6 + 12y^5 - 3y^4 - 12y^3 - 10y^2 - 4y - 1$
c_2	$y^9 + y^8 + 13y^7 - 6y^6 + 32y^5 - 31y^4 + 24y^3 - 10y^2 - 4y - 1$
c_3, c_5, c_8 c_9	$y^9 - 7y^8 + 17y^7 - 13y^6 - 9y^5 + 16y^4 - 3y^3 - 3y^2 + 3y - 1$
c_4	$y^9 - 3y^8 + 3y^7 + 3y^6 - 16y^5 + 9y^4 + 13y^3 - 17y^2 + 7y - 1$
c_7, c_{10}	$y^9 - 10y^8 + 41y^7 - 92y^6 + 130y^5 - 123y^4 + 80y^3 - 34y^2 + 9y - 1$
c_{11}	$y^9 - 7y^8 + 17y^7 - y^6 + 15y^5 + y^3 + y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.277669 + 0.932262I$ $a = 0.66814 + 1.66313I$ $b = -1.61486 - 0.17253I$	$-5.14657 - 1.15296I$	$-4.87761 + 0.08024I$
$u = -0.277669 - 0.932262I$ $a = 0.66814 - 1.66313I$ $b = -1.61486 + 0.17253I$	$-5.14657 + 1.15296I$	$-4.87761 - 0.08024I$
$u = -0.938745$ $a = 0.531564$ $b = 0.127243$	2.27396	18.5500
$u = 0.467120 + 1.031000I$ $a = 0.163102 - 1.011920I$ $b = -1.29297 + 2.17581I$	$2.64932 + 3.16170I$	$4.24677 - 4.92069I$
$u = 0.467120 - 1.031000I$ $a = 0.163102 + 1.011920I$ $b = -1.29297 - 2.17581I$	$2.64932 - 3.16170I$	$4.24677 + 4.92069I$
$u = 0.379126 + 0.580278I$ $a = 0.955194 - 0.520788I$ $b = 0.99687 - 1.01843I$	$4.15634 + 0.57166I$	$10.33448 + 2.09908I$
$u = 0.379126 - 0.580278I$ $a = 0.955194 + 0.520788I$ $b = 0.99687 + 1.01843I$	$4.15634 - 0.57166I$	$10.33448 - 2.09908I$
$u = -0.599205 + 1.212400I$ $a = -0.052214 + 0.684269I$ $b = -0.652657 - 1.185850I$	$-1.15114 - 5.45727I$	$5.02115 + 10.16231I$
$u = -0.599205 - 1.212400I$ $a = -0.052214 - 0.684269I$ $b = -0.652657 + 1.185850I$	$-1.15114 + 5.45727I$	$5.02115 - 10.16231I$

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

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} a \\ b \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^2ba - ba - au + u^2 \\ -u^4ba - u^3a + u^4 + 2u^3 + au + u^2 + 2u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^4 + u^3 + 2u^2 - a + u + 1 \\ -bau + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^4b - u^4a - 2u^2b - u^2a - b + a \\ u^4b + u^4a + u^2b + b \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^2ba - ba - au + u^2 \\ u^2ba + 2u^3 + au + u^2 + 2u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^4 + u^3 + 2u^2 - a + u + 1 \\ -bau + u^2a \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^4 + u^3 + 2u^2 - a + u + 1 \\ -bau + u^2a \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^3 - 4u^2 - 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$(u^5 - u^4 + 2u^3 - u^2 + u - 1)^4$
c_2	$(u^5 + 3u^4 + 4u^3 + u^2 - u - 1)^4$
c_3, c_5, c_8 c_9	$u^{20} - u^{19} + \cdots - 10u - 1$
c_4	$u^{20} + u^{19} + \cdots + 148u + 131$
c_7, c_{10}	$(u^2 + u - 1)^{10}$
c_{11}	$u^{20} + 5u^{19} + \cdots - 140u - 71$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^4$
c_2	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^4$
c_3, c_5, c_8 c_9	$y^{20} - 5y^{19} + \cdots - 44y + 1$
c_4	$y^{20} + 15y^{19} + \cdots - 33432y + 17161$
c_7, c_{10}	$(y^2 - 3y + 1)^{10}$
c_{11}	$y^{20} - y^{19} + \cdots - 17044y + 5041$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = -0.264858 + 0.642307I$ $b = -0.66048 + 1.35031I$	$3.61874 + 1.53058I$	$5.48489 - 4.43065I$
$u = 0.339110 + 0.822375I$ $a = -0.264858 + 0.642307I$ $b = 1.94204 - 1.43725I$	$3.61874 + 1.53058I$	$5.48489 - 4.43065I$
$u = 0.339110 + 0.822375I$ $a = 0.69341 - 1.68158I$ $b = -0.784885 + 0.673984I$	$-4.27694 + 1.53058I$	$5.48489 - 4.43065I$
$u = 0.339110 + 0.822375I$ $a = 0.69341 - 1.68158I$ $b = -2.57027 - 0.44637I$	$-4.27694 + 1.53058I$	$5.48489 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = -0.264858 - 0.642307I$ $b = -0.66048 - 1.35031I$	$3.61874 - 1.53058I$	$5.48489 + 4.43065I$
$u = 0.339110 - 0.822375I$ $a = -0.264858 - 0.642307I$ $b = 1.94204 + 1.43725I$	$3.61874 - 1.53058I$	$5.48489 + 4.43065I$
$u = 0.339110 - 0.822375I$ $a = 0.69341 + 1.68158I$ $b = -0.784885 - 0.673984I$	$-4.27694 - 1.53058I$	$5.48489 + 4.43065I$
$u = 0.339110 - 0.822375I$ $a = 0.69341 + 1.68158I$ $b = -2.57027 + 0.44637I$	$-4.27694 - 1.53058I$	$5.48489 + 4.43065I$
$u = -0.766826$ $a = 0.805964$ $b = -0.392752$	1.54676	4.51890
$u = -0.766826$ $a = 0.805964$ $b = 0.269802$	1.54676	4.51890

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.766826$ $a=-2.11004$ $b=\ \ 0.160943+0.669501I$	-6.34892	4.51890
$u=-0.766826$ $a=-2.11004$ $b=\ \ 0.160943-0.669501I$	-6.34892	4.51890
$u=-0.455697+1.200150I$ $a=-0.447404-1.178310I$ $b=\ \ 0.21064+1.68233I$	$-9.82040-4.40083I$	$1.25569+3.49859I$
$u=-0.455697+1.200150I$ $a=-0.447404-1.178310I$ $b=\ \ 2.17455+2.27205I$	$-9.82040-4.40083I$	$1.25569+3.49859I$
$u=-0.455697+1.200150I$ $a=\ \ 0.170893+0.450075I$ $b=-0.90313-1.27207I$	$-1.92472-4.40083I$	$1.25569+3.49859I$
$u=-0.455697+1.200150I$ $a=\ \ 0.170893+0.450075I$ $b=-0.007932-0.238370I$	$-1.92472-4.40083I$	$1.25569+3.49859I$
$u=-0.455697-1.200150I$ $a=-0.447404+1.178310I$ $b=\ \ 0.21064-1.68233I$	$-9.82040+4.40083I$	$1.25569-3.49859I$
$u=-0.455697-1.200150I$ $a=-0.447404+1.178310I$ $b=\ \ 2.17455-2.27205I$	$-9.82040+4.40083I$	$1.25569-3.49859I$
$u=-0.455697-1.200150I$ $a=\ \ 0.170893-0.450075I$ $b=-0.90313+1.27207I$	$-1.92472+4.40083I$	$1.25569-3.49859I$
$u=-0.455697-1.200150I$ $a=\ \ 0.170893-0.450075I$ $b=-0.007932+0.238370I$	$-1.92472+4.40083I$	$1.25569-3.49859I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^5-u^4+2u^3-u^2+u-1)^4$ $\cdot(u^9+u^8+3u^7+2u^6+4u^5+3u^4+2u^3+2u^2+1)$ $\cdot(u^{16}+4u^{15}+\cdots+14u+4)$
c_2	$(u^5+3u^4+4u^3+u^2-u-1)^4$ $\cdot(u^9+5u^8+13u^7+18u^6+12u^5-3u^4-12u^3-10u^2-4u-1)$ $\cdot(u^{16}+8u^{15}+\cdots-12u+16)$
c_3, c_8	$(u^9+u^8-3u^7-3u^6+u^5+2u^4+3u^3+u^2-u-1)$ $\cdot(u^{16}-u^{15}+\cdots-u+1)(u^{20}-u^{19}+\cdots-10u-1)$
c_4	$(u^9-u^8-u^7+3u^6-2u^5+u^4+3u^3-3u^2-u+1)$ $\cdot(u^{16}+u^{15}+\cdots-u+1)(u^{20}+u^{19}+\cdots+148u+131)$
c_5, c_9	$(u^9-u^8-3u^7+3u^6+u^5-2u^4+3u^3-u^2-u+1)$ $\cdot(u^{16}-u^{15}+\cdots-u+1)(u^{20}-u^{19}+\cdots-10u-1)$
c_6	$(u^5-u^4+2u^3-u^2+u-1)^4$ $\cdot(u^9-u^8+3u^7-2u^6+4u^5-3u^4+2u^3-2u^2-1)$ $\cdot(u^{16}+4u^{15}+\cdots+14u+4)$
c_7	$(u^2+u-1)^{10}(u^9-2u^8-3u^7+6u^6+4u^5-7u^4-2u^3+4u^2+u-1)$ $\cdot(u^{16}-9u^{15}+\cdots-128u+32)$
c_{10}	$(u^2+u-1)^{10}(u^9+2u^8-3u^7-6u^6+4u^5+7u^4-2u^3-4u^2+u+1)$ $\cdot(u^{16}-9u^{15}+\cdots-128u+32)$
c_{11}	$(u^9+u^8-3u^7+u^6+5u^5-8u^4+7u^3-5u^2+3u-1)$ $\cdot(u^{16}+3u^{15}+\cdots-u+1)(u^{20}+5u^{19}+\cdots-140u-71)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^5+3y^4+4y^3+y^2-y-1)^4$ $\cdot(y^9+5y^8+13y^7+18y^6+12y^5-3y^4-12y^3-10y^2-4y-1)$ $\cdot(y^{16}+8y^{15}+\cdots-12y+16)$
c_2	$(y^5-y^4+8y^3-3y^2+3y-1)^4$ $\cdot(y^9+y^8+13y^7-6y^6+32y^5-31y^4+24y^3-10y^2-4y-1)$ $\cdot(y^{16}+20y^{14}+\cdots+784y+256)$
c_3, c_5, c_8 c_9	$(y^9-7y^8+17y^7-13y^6-9y^5+16y^4-3y^3-3y^2+3y-1)$ $\cdot(y^{16}+y^{15}+\cdots-5y+1)(y^{20}-5y^{19}+\cdots-44y+1)$
c_4	$(y^9-3y^8+3y^7+3y^6-16y^5+9y^4+13y^3-17y^2+7y-1)$ $\cdot(y^{16}+29y^{15}+\cdots+31y+1)(y^{20}+15y^{19}+\cdots-33432y+17161)$
c_7, c_{10}	$(y^2-3y+1)^{10}$ $\cdot(y^9-10y^8+41y^7-92y^6+130y^5-123y^4+80y^3-34y^2+9y-1)$ $\cdot(y^{16}-13y^{15}+\cdots-512y+1024)$
c_{11}	$(y^9-7y^8+17y^7-y^6+15y^5+y^3+y^2-y-1)$ $\cdot(y^{16}+17y^{15}+\cdots-21y+1)(y^{20}-y^{19}+\cdots-17044y+5041)$