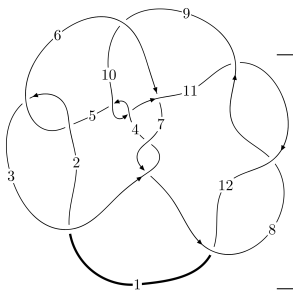
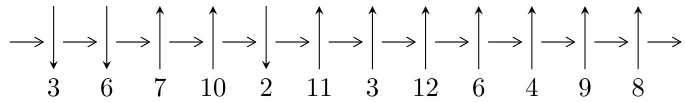
$12n_{0411}$ ($K12n_{0411}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^{12} - 6u^{11} + 10u^{10} - 16u^9 + 24u^8 - 45u^7 + 45u^6 - 39u^5 + 21u^4 - 20u^3 - 3u^2 + 3b + u - 6, \\
& u^{12} - 5u^{11} + 10u^{10} - 15u^9 + 23u^8 - 39u^7 + 45u^6 - 36u^5 + 18u^4 - 11u^3 - 2u^2 + 3a + 4u - 5, \\
& u^{13} - 4u^{12} + 10u^{11} - 17u^{10} + 28u^9 - 42u^8 + 57u^7 - 57u^6 + 45u^5 - 23u^4 + 8u^3 + 4u^2 - 4u + 3\rangle \\
I_2^u = \langle & u^3 + 2u^2 + b + 3u + 2,\ -u^3 - 3u^2 + a - 5u - 2,\ u^4 + 3u^3 + 5u^2 + 3u + 1\rangle \\
I_3^u = \langle & -u^3 - u^2 + b - a - u,\ a^2 + au + u^2,\ u^4 + u^3 + u^2 + 1\rangle \\
I_4^u = \langle & -u^3 + u^2 + b - a - u,\ a^2 + au - u^2 + 2u - 2,\ u^4 - u^3 + u^2 + 1\rangle
\end{aligned}$$

* 4 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.

$$\boldsymbol{I_1^u = \langle u^{12}-6u^{11}+\cdots+3b-6,\ u^{12}-5u^{11}+\cdots+3a-5,\ u^{13}-4u^{12}+\cdots-4u+3\rangle}$$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -\frac{1}{3}u^{12}+\frac{5}{3}u^{11}+\cdots-\frac{4}{3}u+\frac{5}{3} \\ -\frac{1}{3}u^{12}+2u^{11}+\cdots-\frac{1}{3}u+2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{4}{3}u^{12}+\frac{11}{3}u^{11}+\cdots-\frac{10}{3}u+\frac{2}{3} \\ \frac{5}{3}u^{12}-6u^{11}+\cdots+\frac{14}{3}u-4 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{3}u^{12}-\frac{7}{3}u^{11}+\cdots+\frac{4}{3}u-\frac{10}{3} \\ \frac{5}{3}u^{12}-6u^{11}+\cdots+\frac{14}{3}u-4 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -\frac{5}{3}u^{12}+6u^{11}+\cdots-\frac{14}{3}u+3 \\ \frac{4}{3}u^{12}-9u^{11}+\cdots+\frac{19}{3}u-10 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{5}{3}u^{12}-\frac{14}{3}u^{11}+\cdots+\frac{5}{3}u-\frac{5}{3} \\ \frac{5}{3}u^{12}-3u^{11}+\cdots+u^2+\frac{8}{3}u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{4}{3}u^{11}+3u^{10}+\cdots-\frac{4}{3}u^2-\frac{4}{3} \\ \frac{1}{3}u^{12}-3u^{11}+\cdots+\frac{4}{3}u-3 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{3}u^{12}+\frac{5}{3}u^{11}+\cdots-\frac{4}{3}u+\frac{5}{3} \\ \frac{1}{3}u^{12}-3u^{11}+\cdots+\frac{4}{3}u-3 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{4}{3}u^{11}-3u^{10}+\cdots+\frac{4}{3}u^2+\frac{4}{3} \\ -2u^{12}+5u^{11}+\cdots-2u+2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{5}{3}u^{12}-\frac{14}{3}u^{11}+\cdots+\frac{5}{3}u-\frac{5}{3} \\ -2u^{12}+8u^{11}+\cdots-4u+5 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -3u^{12}+11u^{11}-24u^{10}+36u^9-58u^8+85u^7-105u^6+83u^5-44u^4+u^3+16u^2-21u+9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} + 20u^{11} + \cdots + 36u + 1$
c_2, c_5	$u^{13} + 2u^{12} + \cdots + 18u^2 - 1$
c_3, c_7	$u^{13} - u^{12} + \cdots + 3u - 9$
c_4, c_8, c_{10} c_{11}, c_{12}	$u^{13} + 7u^{11} + \cdots - u - 1$
c_6	$u^{13} + 4u^{12} + \cdots - 4u - 3$
c_9	$u^{13} - 2u^{12} + \cdots - 133u - 47$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} + 40y^{12} + \cdots + 516y - 1$
c_2, c_5	$y^{13} + 20y^{11} + \cdots + 36y - 1$
c_3, c_7	$y^{13} + 5y^{12} + \cdots + 531y - 81$
c_4, c_8, c_{10} c_{11}, c_{12}	$y^{13} + 14y^{12} + \cdots - 3y - 1$
c_6	$y^{13} + 4y^{12} + \cdots - 8y - 9$
c_9	$y^{13} + 2y^{12} + \cdots + 7725y - 2209$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.112707 + 0.825249I$ $a = 1.70029 - 0.14926I$ $b = 2.12147 - 1.28759I$	$-12.72660 - 0.46866I$	$-5.30984 - 0.31692I$
$u = -0.112707 - 0.825249I$ $a = 1.70029 + 0.14926I$ $b = 2.12147 + 1.28759I$	$-12.72660 + 0.46866I$	$-5.30984 + 0.31692I$
$u = 0.406174 + 0.693805I$ $a = -0.149604 - 0.367477I$ $b = -0.471527 + 0.893453I$	$-1.76494 + 1.40421I$	$0.52711 - 5.14601I$
$u = 0.406174 - 0.693805I$ $a = -0.149604 + 0.367477I$ $b = -0.471527 - 0.893453I$	$-1.76494 - 1.40421I$	$0.52711 + 5.14601I$
$u = 1.024170 + 0.753551I$ $a = 0.053482 + 1.217710I$ $b = 0.722949 - 0.068003I$	$3.48672 - 4.77545I$	$3.43860 + 2.44766I$
$u = 1.024170 - 0.753551I$ $a = 0.053482 - 1.217710I$ $b = 0.722949 + 0.068003I$	$3.48672 + 4.77545I$	$3.43860 - 2.44766I$
$u = 0.843226 + 1.079170I$ $a = 1.241480 + 0.154013I$ $b = 2.48433 - 0.51976I$	$2.43630 + 11.55640I$	$2.21919 - 5.92330I$
$u = 0.843226 - 1.079170I$ $a = 1.241480 - 0.154013I$ $b = 2.48433 + 0.51976I$	$2.43630 - 11.55640I$	$2.21919 + 5.92330I$
$u = 0.909975 + 1.063640I$ $a = -0.583078 - 0.410756I$ $b = -1.264870 - 0.146138I$	$-5.92792 + 3.64387I$	$-2.44803 - 4.63149I$
$u = 0.909975 - 1.063640I$ $a = -0.583078 + 0.410756I$ $b = -1.264870 + 0.146138I$	$-5.92792 - 3.64387I$	$-2.44803 + 4.63149I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.81473+1.23874I$ $a=-0.804503+0.414194I$ $b=-2.15769-0.65518I$	$-8.05335-3.89125I$	$-0.817708+0.132635I$
$u=-0.81473-1.23874I$ $a=-0.804503-0.414194I$ $b=-2.15769+0.65518I$	$-8.05335+3.89125I$	$-0.817708-0.132635I$
$u=-0.512230$ $a=\quad 0.750525$ $b=\quad 0.130679$	0.686378	14.7810

II.

$$\boldsymbol{I^u_2 = \langle u^3+2u^2+b+3u+2,\ -u^3-3u^2+a-5u-2,\ u^4+3u^3+5u^2+3u+1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7u^3-18u^2-19u-4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^4 - 3u^3 + 5u^2 - 3u + 1$
c_2	$u^4 - u^3 - u^2 + u + 1$
c_3	$(u^2 - u + 1)^2$
c_4, c_8	$u^4 + u^3 + 2u^2 + 2u + 1$
c_5	$u^4 + u^3 - u^2 - u + 1$
c_6	$u^4 + 3u^3 + 5u^2 + 3u + 1$
c_7	$(u^2 + u + 1)^2$
c_9, c_{10}, c_{11} c_{12}	$u^4 - u^3 + 2u^2 - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^4 + y^3 + 9y^2 + y + 1$
c_2, c_5	$y^4 - 3y^3 + 5y^2 - 3y + 1$
c_3, c_7	$(y^2 + y + 1)^2$
c_4, c_8, c_9 c_{10}, c_{11}, c_{12}	$y^4 + 3y^3 + 2y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.378256 + 0.440597I$ $a = 0.121744 + 1.306620I$ $b = -0.929304 - 0.758745I$	$-1.54288 - 0.56550I$	$2.94255 - 3.09675I$
$u = -0.378256 - 0.440597I$ $a = 0.121744 - 1.306620I$ $b = -0.929304 + 0.758745I$	$-1.54288 + 0.56550I$	$2.94255 + 3.09675I$
$u = -1.12174 + 1.30662I$ $a = -0.621744 + 0.440597I$ $b = -2.07070 - 0.75874I$	$-8.32672 - 4.62527I$	$-4.94255 + 9.02760I$
$u = -1.12174 - 1.30662I$ $a = -0.621744 - 0.440597I$ $b = -2.07070 + 0.75874I$	$-8.32672 + 4.62527I$	$-4.94255 - 9.02760I$

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

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} a \\ u^3 + u^2 + a + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -u^3a - u^2a - u \\ -u^3a + u^3 + u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3a - 3u^2a - 2u^3 + au - 1 \\ -4u^3a + 2u^3 + 3u^2 - 3a - 3u + 3 \end{pmatrix}$$

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

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

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

$$a_{12} = \begin{pmatrix} u^2a \\ u^3a + a + u \end{pmatrix}$$

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^2 - 4u + 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 - 13u^7 + 49u^6 + 10u^5 - 330u^4 - 13u^3 + 1300u^2 + 868u + 169$
c_2, c_5	$u^8 + 3u^7 + 11u^6 + 28u^5 + 48u^4 + 79u^3 + 96u^2 + 58u + 13$
c_3, c_7	$u^8 + u^7 - 5u^6 - 4u^5 + 15u^4 + 31u^3 + 34u^2 + 32u + 19$
c_4, c_8, c_{10} c_{11}, c_{12}	$u^8 + u^7 - 2u^6 - u^5 + 6u^4 + 4u^3 + u^2 + 2u + 1$
c_6	$(u^4 - u^3 + u^2 + 1)^2$
c_9	$u^8 + u^7 - 4u^6 + 7u^5 + 24u^4 - 9u^3 - 9u^2 - 2u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^8 - 71y^7 + \cdots - 314024y + 28561$
c_2, c_5	$y^8 + 13y^7 + 49y^6 - 10y^5 - 330y^4 + 13y^3 + 1300y^2 - 868y + 169$
c_3, c_7	$y^8 - 11y^7 + 63y^6 - 160y^5 + 107y^4 + 125y^3 - 258y^2 + 268y + 361$
c_4, c_8, c_{10} c_{11}, c_{12}	$y^8 - 5y^7 + 18y^6 - 31y^5 + 38y^4 - 4y^3 - 3y^2 - 2y + 1$
c_6	$(y^4 + y^3 + 3y^2 + 2y + 1)^2$
c_9	$y^8 - 9y^7 + 50y^6 - 241y^5 + 786y^4 - 517y^3 + 237y^2 - 76y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.351808 + 0.720342I$ $a = 0.447930 - 0.664845I$ $b = -0.099494 + 0.456028I$	$-1.85594 + 1.41510I$	$1.17326 - 4.90874I$
$u = 0.351808 + 0.720342I$ $a = -0.799738 - 0.055496I$ $b = -1.34716 + 1.06538I$	$-1.85594 + 1.41510I$	$1.17326 - 4.90874I$
$u = 0.351808 - 0.720342I$ $a = 0.447930 + 0.664845I$ $b = -0.099494 - 0.456028I$	$-1.85594 - 1.41510I$	$1.17326 + 4.90874I$
$u = 0.351808 - 0.720342I$ $a = -0.799738 + 0.055496I$ $b = -1.34716 - 1.06538I$	$-1.85594 - 1.41510I$	$1.17326 + 4.90874I$
$u = -0.851808 + 0.911292I$ $a = -0.363298 - 1.193330I$ $b = 0.184126 - 0.607681I$	$5.14581 - 3.16396I$	$4.82674 + 2.56480I$
$u = -0.851808 + 0.911292I$ $a = 1.215110 + 0.282041I$ $b = 1.76253 + 0.86769I$	$5.14581 - 3.16396I$	$4.82674 + 2.56480I$
$u = -0.851808 - 0.911292I$ $a = -0.363298 + 1.193330I$ $b = 0.184126 + 0.607681I$	$5.14581 + 3.16396I$	$4.82674 - 2.56480I$
$u = -0.851808 - 0.911292I$ $a = 1.215110 - 0.282041I$ $b = 1.76253 - 0.86769I$	$5.14581 + 3.16396I$	$4.82674 - 2.56480I$

IV. $I_4^u = \langle -u^3 + u^2 + b - a - u,\ a^2 + au - u^2 + 2u - 2,\ u^4 - u^3 + u^2 + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2 + 4u + 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 - 7u^7 + 17u^6 - 14u^5 + 2u^4 + u^3 + 1$
c_2	$u^8 + 3u^7 + u^6 - 4u^5 - 4u^4 - u^3 + 2u^2 + 2u + 1$
c_3	$u^8 + u^7 + 5u^6 + 8u^5 + 7u^4 + 11u^3 + 10u^2 + 1$
c_4, c_8	$u^8 - u^7 + 6u^6 - 5u^5 + 12u^4 - 8u^3 + 9u^2 - 4u + 1$
c_5	$u^8 - 3u^7 + u^6 + 4u^5 - 4u^4 + u^3 + 2u^2 - 2u + 1$
c_6	$(u^4 - u^3 + u^2 + 1)^2$
c_7	$u^8 - u^7 + 5u^6 - 8u^5 + 7u^4 - 11u^3 + 10u^2 + 1$
c_9	$u^8 - u^7 + 8u^6 - 3u^5 - 16u^4 - 15u^3 + 47u^2 + 70u + 52$
c_{10}, c_{11}, c_{12}	$u^8 + u^7 + 6u^6 + 5u^5 + 12u^4 + 8u^3 + 9u^2 + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^8 - 15y^7 + 97y^6 - 114y^5 + 34y^4 + 33y^3 + 4y^2 + 1$
c_2, c_5	$y^8 - 7y^7 + 17y^6 - 14y^5 + 2y^4 + y^3 + 1$
c_3, c_7	$y^8 + 9y^7 + 23y^6 + 4y^5 - 25y^4 + 29y^3 + 114y^2 + 20y + 1$
c_4, c_8, c_{10} c_{11}, c_{12}	$y^8 + 11y^7 + 50y^6 + 121y^5 + 166y^4 + 124y^3 + 41y^2 + 2y + 1$
c_6	$(y^4 + y^3 + 3y^2 + 2y + 1)^2$
c_9	$y^8 + 15y^7 + \cdots - 12y + 2704$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.351808+0.720342I$ $a=-1.44280+0.28054I$ $b=-0.89538+1.40141I$	$-11.72550-1.41510I$	$1.17326+4.90874I$
$u=-0.351808+0.720342I$ $a=\quad 1.79461-1.00088I$ $b=\quad 2.34204+0.11999I$	$-11.72550-1.41510I$	$1.17326+4.90874I$
$u=-0.351808-0.720342I$ $a=-1.44280-0.28054I$ $b=-0.89538-1.40141I$	$-11.72550+1.41510I$	$1.17326-4.90874I$
$u=-0.351808-0.720342I$ $a=\quad 1.79461+1.00088I$ $b=\quad 2.34204-0.11999I$	$-11.72550+1.41510I$	$1.17326-4.90874I$
$u=\quad 0.851808+0.911292I$ $a=-0.855085-0.593153I$ $b=-1.402510-0.007501I$	$-4.72380+3.16396I$	$4.82674-2.56480I$
$u=\quad 0.851808+0.911292I$ $a=\quad 0.003277-0.318139I$ $b=-0.544147+0.267512I$	$-4.72380+3.16396I$	$4.82674-2.56480I$
$u=\quad 0.851808-0.911292I$ $a=-0.855085+0.593153I$ $b=-1.402510+0.007501I$	$-4.72380-3.16396I$	$4.82674+2.56480I$
$u=\quad 0.851808-0.911292I$ $a=\quad 0.003277+0.318139I$ $b=-0.544147-0.267512I$	$-4.72380-3.16396I$	$4.82674+2.56480I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^4-3u^3+5u^2-3u+1)$ $\cdot(u^8-13u^7+49u^6+10u^5-330u^4-13u^3+1300u^2+868u+169)$ $\cdot(u^8-7u^7+\cdots+u^3+1)(u^{13}+20u^{11}+\cdots+36u+1)$
c_2	$(u^4-u^3-u^2+u+1)(u^8+3u^7+\cdots+2u+1)$ $\cdot(u^8+3u^7+11u^6+28u^5+48u^4+79u^3+96u^2+58u+13)$ $\cdot(u^{13}+2u^{12}+\cdots+18u^2-1)$
c_3	$((u^2-u+1)^2)(u^8+u^7+\cdots+32u+19)$ $\cdot(u^8+u^7+\cdots+10u^2+1)(u^{13}-u^{12}+\cdots+3u-9)$
c_4, c_8	$(u^4+u^3+2u^2+2u+1)$ $\cdot(u^8-u^7+6u^6-5u^5+12u^4-8u^3+9u^2-4u+1)$ $\cdot(u^8+u^7+\cdots+2u+1)(u^{13}+7u^{11}+\cdots-u-1)$
c_5	$(u^4+u^3-u^2-u+1)(u^8-3u^7+\cdots-2u+1)$ $\cdot(u^8+3u^7+11u^6+28u^5+48u^4+79u^3+96u^2+58u+13)$ $\cdot(u^{13}+2u^{12}+\cdots+18u^2-1)$
c_6	$((u^4-u^3+u^2+1)^4)(u^4+3u^3+\cdots+3u+1)(u^{13}+4u^{12}+\cdots-4u-3)$
c_7	$(u^2+u+1)^2(u^8-u^7+5u^6-8u^5+7u^4-11u^3+10u^2+1)$ $\cdot(u^8+u^7-5u^6-4u^5+15u^4+31u^3+34u^2+32u+19)$ $\cdot(u^{13}-u^{12}+\cdots+3u-9)$
c_9	$(u^4-u^3+2u^2-2u+1)$ $\cdot(u^8-u^7+8u^6-3u^5-16u^4-15u^3+47u^2+70u+52)$ $\cdot(u^8+u^7-4u^6+7u^5+24u^4-9u^3-9u^2-2u+4)$ $\cdot(u^{13}-2u^{12}+\cdots-133u-47)$
c_{10}, c_{11}, c_{12}	$(u^4-u^3+2u^2-2u+1)(u^8+u^7+\cdots+2u+1)$ $\cdot(u^8+u^7+6u^6+5u^5+12u^4+8u^3+9u^2+4u+1)$ $\cdot(u^{13}+7u^{11}+\cdots-u-1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^4+y^3+9y^2+y+1)(y^8-71y^7+\cdots-314024y+28561)$ $\cdot(y^8-15y^7+97y^6-114y^5+34y^4+33y^3+4y^2+1)$ $\cdot(y^{13}+40y^{12}+\cdots+516y-1)$
c_2, c_5	$(y^4-3y^3+5y^2-3y+1)(y^8-7y^7+17y^6-14y^5+2y^4+y^3+1)$ $\cdot(y^8+13y^7+49y^6-10y^5-330y^4+13y^3+1300y^2-868y+169)$ $\cdot(y^{13}+20y^{11}+\cdots+36y-1)$
c_3, c_7	$(y^2+y+1)^2$ $\cdot(y^8-11y^7+63y^6-160y^5+107y^4+125y^3-258y^2+268y+361)$ $\cdot(y^8+9y^7+23y^6+4y^5-25y^4+29y^3+114y^2+20y+1)$ $\cdot(y^{13}+5y^{12}+\cdots+531y-81)$
c_4, c_8, c_{10} c_{11}, c_{12}	$(y^4+3y^3+2y^2+1)$ $\cdot(y^8-5y^7+18y^6-31y^5+38y^4-4y^3-3y^2-2y+1)$ $\cdot(y^8+11y^7+50y^6+121y^5+166y^4+124y^3+41y^2+2y+1)$ $\cdot(y^{13}+14y^{12}+\cdots-3y-1)$
c_6	$(y^4+y^3+3y^2+2y+1)^4(y^4+y^3+9y^2+y+1)$ $\cdot(y^{13}+4y^{12}+\cdots-8y-9)$
c_9	$(y^4+3y^3+2y^2+1)$ $\cdot(y^8-9y^7+50y^6-241y^5+786y^4-517y^3+237y^2-76y+16)$ $\cdot(y^8+15y^7+\cdots-12y+2704)(y^{13}+2y^{12}+\cdots+7725y-2209)$