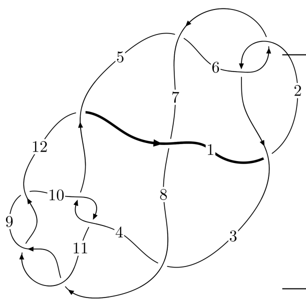
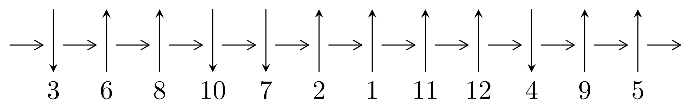
$12a_{0304}$ ($K12a_{0304}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I_1^u = \langle 2u^{76} + u^{75} + \cdots + 7u^2 + b,\ 2u^{76} + 2u^{75} + \cdots + a - 1,\ u^{77} + 2u^{76} + \cdots - u - 1\rangle$
$I_2^u = \langle -u^8 + u^7 - u^6 + u^5 - u^4 + u^3 + b + u,\ u^6 + u^4 + u^2 + a + u,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 86 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.

$$I^u_1 = \langle 2u^{76}+u^{75}+\cdots+7u^2+b,\ 2u^{76}+2u^{75}+\cdots+a-1,\ u^{77}+2u^{76}+\cdots-u-1\rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

$$a_8 = \begin{pmatrix} u^7+2u^5+2u^3+2u \\ -u^9-u^7-u^5+u \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -2u^{76}-2u^{75}+\cdots+5u+1 \\ -2u^{76}-u^{75}+\cdots-15u^3-7u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{14}-3u^{12}-6u^{10}-9u^8-8u^6-6u^4-2u^2+1 \\ u^{16}+2u^{14}+4u^{12}+4u^{10}+2u^8-2u^4-2u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{73}+u^{72}+\cdots+8u^2+5u \\ -u^{75}-u^{74}+\cdots-6u^2-u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^{10}+u^8+2u^6+u^4+u^2+1 \\ u^{10}+2u^8+3u^6+2u^4+u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{76}-u^{75}+\cdots+6u+1 \\ -u^{76}-u^{75}+\cdots-14u^3-6u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{76}-6u^{75}+\cdots+4u+6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{77} + 24u^{76} + \cdots + 11u - 1$
c_2, c_6	$u^{77} - 2u^{76} + \cdots - u + 1$
c_3, c_{12}	$u^{77} - 2u^{76} + \cdots - 645u + 241$
c_4, c_{10}	$u^{77} - u^{76} + \cdots + 512u + 512$
c_7	$u^{77} + 10u^{76} + \cdots + 45303u + 6643$
c_8, c_9, c_{11}	$u^{77} + 10u^{76} + \cdots + 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{77} + 60y^{76} + \cdots + 131y - 1$
c_2, c_6	$y^{77} + 24y^{76} + \cdots + 11y - 1$
c_3, c_{12}	$y^{77} - 72y^{76} + \cdots - 658353y - 58081$
c_4, c_{10}	$y^{77} + 57y^{76} + \cdots + 786432y - 262144$
c_7	$y^{77} - 24y^{76} + \cdots + 567824027y - 44129449$
c_8, c_9, c_{11}	$y^{77} - 80y^{76} + \cdots + 15y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.699304 + 0.727429I$ $a = -0.81750 + 1.62981I$ $b = 1.09069 + 1.48911I$	$1.98631 - 1.49498I$	0
$u = 0.699304 - 0.727429I$ $a = -0.81750 - 1.62981I$ $b = 1.09069 - 1.48911I$	$1.98631 + 1.49498I$	0
$u = 0.744909 + 0.652303I$ $a = 1.26089 - 1.11132I$ $b = -0.58742 - 1.53965I$	$7.63346 - 4.09071I$	$11.11372 + 0.I$
$u = 0.744909 - 0.652303I$ $a = 1.26089 + 1.11132I$ $b = -0.58742 + 1.53965I$	$7.63346 + 4.09071I$	$11.11372 + 0.I$
$u = 0.255824 + 0.983693I$ $a = -2.12297 + 1.21195I$ $b = -0.696626 + 0.485271I$	$2.47634 + 0.27430I$	0
$u = 0.255824 - 0.983693I$ $a = -2.12297 - 1.21195I$ $b = -0.696626 - 0.485271I$	$2.47634 - 0.27430I$	0
$u = -0.170505 + 0.968417I$ $a = -0.123996 + 0.383932I$ $b = 0.236307 + 0.425064I$	$-1.37887 - 2.37996I$	$0. + 4.42703I$
$u = -0.170505 - 0.968417I$ $a = -0.123996 - 0.383932I$ $b = 0.236307 - 0.425064I$	$-1.37887 + 2.37996I$	$0. - 4.42703I$
$u = -0.049028 + 0.970113I$ $a = 0.677255 + 0.372469I$ $b = 0.574789 - 0.544320I$	$-3.09814 - 1.84421I$	$-3.35735 + 5.07051I$
$u = -0.049028 - 0.970113I$ $a = 0.677255 - 0.372469I$ $b = 0.574789 + 0.544320I$	$-3.09814 + 1.84421I$	$-3.35735 - 5.07051I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.241315 + 1.005140I$ $a = 0.101331 - 0.745818I$ $b = -0.473125 - 0.927993I$	$4.49560 - 2.98378I$	0
$u = -0.241315 - 1.005140I$ $a = 0.101331 + 0.745818I$ $b = -0.473125 + 0.927993I$	$4.49560 + 2.98378I$	0
$u = -0.624221 + 0.829893I$ $a = 0.010477 + 0.678321I$ $b = -0.085050 + 0.648925I$	$0.50764 - 1.96211I$	0
$u = -0.624221 - 0.829893I$ $a = 0.010477 - 0.678321I$ $b = -0.085050 - 0.648925I$	$0.50764 + 1.96211I$	0
$u = 0.223875 + 1.016610I$ $a = 1.84493 - 1.38311I$ $b = 0.493359 - 0.072238I$	$2.19034 + 5.64361I$	0
$u = 0.223875 - 1.016610I$ $a = 1.84493 + 1.38311I$ $b = 0.493359 + 0.072238I$	$2.19034 - 5.64361I$	0
$u = -0.078493 + 1.040650I$ $a = -0.401232 - 0.523528I$ $b = -0.931882 + 0.327502I$	$1.89327 - 3.83436I$	0
$u = -0.078493 - 1.040650I$ $a = -0.401232 + 0.523528I$ $b = -0.931882 - 0.327502I$	$1.89327 + 3.83436I$	0
$u = 0.310575 + 0.996870I$ $a = 2.14157 - 1.01275I$ $b = 1.167780 - 0.616429I$	$9.61828 - 3.45293I$	0
$u = 0.310575 - 0.996870I$ $a = 2.14157 + 1.01275I$ $b = 1.167780 + 0.616429I$	$9.61828 + 3.45293I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.717183 + 0.773636I$ $a = -0.688793 - 1.001440I$ $b = -0.47922 - 1.34039I$	$4.52846 - 0.10642I$	0
$u = -0.717183 - 0.773636I$ $a = -0.688793 + 1.001440I$ $b = -0.47922 + 1.34039I$	$4.52846 + 0.10642I$	0
$u = 0.219337 + 1.048440I$ $a = -1.58099 + 1.23292I$ $b = -0.576448 - 0.293765I$	$8.99981 + 9.75853I$	0
$u = 0.219337 - 1.048440I$ $a = -1.58099 - 1.23292I$ $b = -0.576448 + 0.293765I$	$8.99981 - 9.75853I$	0
$u = 0.704904 + 0.820857I$ $a = -0.16649 - 2.37291I$ $b = -2.35033 - 1.28135I$	$3.58538 + 2.22665I$	0
$u = 0.704904 - 0.820857I$ $a = -0.16649 + 2.37291I$ $b = -2.35033 + 1.28135I$	$3.58538 - 2.22665I$	0
$u = 0.807197 + 0.737360I$ $a = -0.566438 - 0.328800I$ $b = -0.580161 + 0.466851I$	$4.99997 - 1.53810I$	0
$u = 0.807197 - 0.737360I$ $a = -0.566438 + 0.328800I$ $b = -0.580161 - 0.466851I$	$4.99997 + 1.53810I$	0
$u = 0.043394 + 0.902576I$ $a = -1.53012 - 0.31935I$ $b = -0.469965 + 0.858865I$	$-0.372258 + 0.930123I$	$1.97825 + 1.00417I$
$u = 0.043394 - 0.902576I$ $a = -1.53012 + 0.31935I$ $b = -0.469965 - 0.858865I$	$-0.372258 - 0.930123I$	$1.97825 - 1.00417I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.563256 + 0.951321I$ $a = 0.866937 - 0.738751I$ $b = 1.091910 - 0.695769I$	$4.66955 - 1.97768I$	0
$u = -0.563256 - 0.951321I$ $a = 0.866937 + 0.738751I$ $b = 1.091910 + 0.695769I$	$4.66955 + 1.97768I$	0
$u = -0.837454 + 0.735539I$ $a = 0.97292 - 2.63486I$ $b = 3.85435 - 1.42730I$	$9.14362 + 4.92278I$	0
$u = -0.837454 - 0.735539I$ $a = 0.97292 + 2.63486I$ $b = 3.85435 + 1.42730I$	$9.14362 - 4.92278I$	0
$u = -0.848212 + 0.723641I$ $a = -0.65408 + 2.75056I$ $b = -3.60857 + 1.61834I$	$16.0825 + 9.2947I$	0
$u = -0.848212 - 0.723641I$ $a = -0.65408 - 2.75056I$ $b = -3.60857 - 1.61834I$	$16.0825 - 9.2947I$	0
$u = 0.837918 + 0.744240I$ $a = 1.131590 + 0.579415I$ $b = 1.08747 - 1.03259I$	$11.50510 - 2.10024I$	0
$u = 0.837918 - 0.744240I$ $a = 1.131590 - 0.579415I$ $b = 1.08747 + 1.03259I$	$11.50510 + 2.10024I$	0
$u = -0.646096 + 0.917216I$ $a = -0.846044 - 0.138690I$ $b = -0.772032 - 0.322959I$	$0.20183 - 3.00562I$	0
$u = -0.646096 - 0.917216I$ $a = -0.846044 + 0.138690I$ $b = -0.772032 + 0.322959I$	$0.20183 + 3.00562I$	0

Solutions to I^u_1	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.833767 + 0.752545I$ $a = -1.13895 + 2.12752I$ $b = -3.71757 + 0.92447I$	$9.45729 - 0.80584I$	0
$u = -0.833767 - 0.752545I$ $a = -1.13895 - 2.12752I$ $b = -3.71757 - 0.92447I$	$9.45729 + 0.80584I$	0
$u = -0.842397 + 0.771277I$ $a = 0.72246 - 1.71278I$ $b = 3.13729 - 0.92017I$	$16.9497 - 4.8229I$	0
$u = -0.842397 - 0.771277I$ $a = 0.72246 + 1.71278I$ $b = 3.13729 + 0.92017I$	$16.9497 + 4.8229I$	0
$u = 0.695171 + 0.910303I$ $a = -1.68350 - 1.82196I$ $b = -3.07562 + 0.18717I$	$3.30878 + 3.15042I$	0
$u = 0.695171 - 0.910303I$ $a = -1.68350 + 1.82196I$ $b = -3.07562 - 0.18717I$	$3.30878 - 3.15042I$	0
$u = 0.778091 + 0.876907I$ $a = 0.78071 + 1.84733I$ $b = 2.58901 + 0.36941I$	$11.68920 + 2.92576I$	0
$u = 0.778091 - 0.876907I$ $a = 0.78071 - 1.84733I$ $b = 2.58901 - 0.36941I$	$11.68920 - 2.92576I$	0
$u = -0.701213 + 0.941339I$ $a = 1.24030 + 1.13056I$ $b = 0.57088 + 1.33782I$	$4.01964 - 5.33236I$	0
$u = -0.701213 - 0.941339I$ $a = 1.24030 - 1.13056I$ $b = 0.57088 - 1.33782I$	$4.01964 + 5.33236I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.686147 + 0.961876I$ $a = 1.75231 + 0.57908I$ $b = 2.14537 - 1.15325I$	$1.28678 + 6.84249I$	0
$u = 0.686147 - 0.961876I$ $a = 1.75231 - 0.57908I$ $b = 2.14537 + 1.15325I$	$1.28678 - 6.84249I$	0
$u = 0.685651 + 1.000130I$ $a = -1.67169 + 0.22266I$ $b = -1.46366 + 1.84464I$	$6.61216 + 9.54266I$	0
$u = 0.685651 - 1.000130I$ $a = -1.67169 - 0.22266I$ $b = -1.46366 - 1.84464I$	$6.61216 - 9.54266I$	0
$u = 0.736625 + 0.987761I$ $a = 0.098715 - 0.670264I$ $b = -0.640229 - 0.744065I$	$4.23362 + 7.34344I$	0
$u = 0.736625 - 0.987761I$ $a = 0.098715 + 0.670264I$ $b = -0.640229 + 0.744065I$	$4.23362 - 7.34344I$	0
$u = -0.757169 + 0.989788I$ $a = -2.14867 + 2.91335I$ $b = -3.80389 + 0.43415I$	$8.72641 - 5.14321I$	0
$u = -0.757169 - 0.989788I$ $a = -2.14867 - 2.91335I$ $b = -3.80389 - 0.43415I$	$8.72641 + 5.14321I$	0
$u = -0.771017 + 0.982703I$ $a = 1.78254 - 2.31369I$ $b = 3.04363 - 0.00238I$	$16.2966 - 1.1968I$	0
$u = -0.771017 - 0.982703I$ $a = 1.78254 + 2.31369I$ $b = 3.04363 + 0.00238I$	$16.2966 + 1.1968I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.755925 + 0.996210I$ $a = -0.272181 + 1.258230I$ $b = 1.18503 + 1.51805I$	$10.72910 + 8.05684I$	0
$u = 0.755925 - 0.996210I$ $a = -0.272181 - 1.258230I$ $b = 1.18503 - 1.51805I$	$10.72910 - 8.05684I$	0
$u = -0.751986 + 1.000640I$ $a = 2.80724 - 2.79451I$ $b = 4.40681 - 0.00361I$	$8.32809 - 10.86460I$	0
$u = -0.751986 - 1.000640I$ $a = 2.80724 + 2.79451I$ $b = 4.40681 + 0.00361I$	$8.32809 + 10.86460I$	0
$u = -0.752276 + 1.011150I$ $a = -2.96847 + 2.38538I$ $b = -4.43046 - 0.42786I$	$15.1972 - 15.2671I$	0
$u = -0.752276 - 1.011150I$ $a = -2.96847 - 2.38538I$ $b = -4.43046 + 0.42786I$	$15.1972 + 15.2671I$	0
$u = 0.689816 + 0.059020I$ $a = -0.29428 + 1.98529I$ $b = 0.338685 + 1.336490I$	$12.6051 + 6.8095I$	$13.22063 - 3.73865I$
$u = 0.689816 - 0.059020I$ $a = -0.29428 - 1.98529I$ $b = 0.338685 - 1.336490I$	$12.6051 - 6.8095I$	$13.22063 + 3.73865I$
$u = -0.663161$ $a = 1.42211$ $b = 0.101068$	7.71855	12.4530
$u = -0.572725 + 0.325539I$ $a = 1.04804 - 1.33507I$ $b = 0.476521 - 0.202237I$	$6.14632 - 2.18923I$	$11.48807 + 3.23279I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.572725-0.325539I$ $a=1.04804+1.33507I$ $b=0.476521+0.202237I$	$6.14632+2.18923I$	$11.48807-3.23279I$
$u=0.658043+0.024681I$ $a=0.12020-1.83501I$ $b=-0.17074-1.56090I$	$5.53553+2.75768I$	$11.68630-3.17781I$
$u=0.658043-0.024681I$ $a=0.12020+1.83501I$ $b=-0.17074+1.56090I$	$5.53553-2.75768I$	$11.68630+3.17781I$
$u=-0.561476$ $a=-0.758314$ $b=-0.0994541$	1.63385	5.54490
$u=-0.295497+0.256148I$ $a=-0.84022+1.42123I$ $b=-0.128866+0.378321I$	$0.365640-0.941295I$	$6.48634+7.23621I$
$u=-0.295497-0.256148I$ $a=-0.84022-1.42123I$ $b=-0.128866-0.378321I$	$0.365640+0.941295I$	$6.48634-7.23621I$
$u=0.266849$ $a=1.64859$ $b=-0.897687$	2.07814	2.50950

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^7 + 4u^6 - 5u^5 + 5u^4 - 10u^3 + 5u^2 - u + 11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^9 - 3u^8 + 8u^7 - 13u^6 + 17u^5 - 17u^4 + 12u^3 - 6u^2 + u + 1$
c_2	$u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$
c_3, c_{12}	$u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1$
c_4, c_{10}	u^9
c_6	$u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1$
c_7	$u^9 - 5u^8 + 12u^7 - 15u^6 + 9u^5 + u^4 - 4u^3 + 2u^2 + u - 1$
c_8, c_9	$(u + 1)^9$
c_{11}	$(u - 1)^9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_2, c_6	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_3, c_{12}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_4, c_{10}	y^9
c_7	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$
c_8, c_9, c_{11}	$(y-1)^9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.140343 + 0.966856I$ $a = 0.855828 - 0.530357I$ $b = 0.154190 + 0.257272I$	$-0.13850 - 2.09337I$	$4.27981 + 4.44592I$
$u = -0.140343 - 0.966856I$ $a = 0.855828 + 0.530357I$ $b = 0.154190 - 0.257272I$	$-0.13850 + 2.09337I$	$4.27981 - 4.44592I$
$u = -0.628449 + 0.875112I$ $a = 0.77654 - 1.46791I$ $b = 1.76111 - 0.42995I$	$2.26187 - 2.45442I$	$4.16203 + 2.47153I$
$u = -0.628449 - 0.875112I$ $a = 0.77654 + 1.46791I$ $b = 1.76111 + 0.42995I$	$2.26187 + 2.45442I$	$4.16203 - 2.47153I$
$u = 0.796005 + 0.733148I$ $a = 0.852888 - 0.566992I$ $b = 0.430151 - 1.332530I$	$6.01628 - 1.33617I$	$13.03110 + 0.17445I$
$u = 0.796005 - 0.733148I$ $a = 0.852888 + 0.566992I$ $b = 0.430151 + 1.332530I$	$6.01628 + 1.33617I$	$13.03110 - 0.17445I$
$u = 0.728966 + 0.986295I$ $a = -1.06667 + 0.97795I$ $b = -0.23704 + 1.46509I$	$5.24306 + 7.08493I$	$11.12684 - 5.18429I$
$u = 0.728966 - 0.986295I$ $a = -1.06667 - 0.97795I$ $b = -0.23704 - 1.46509I$	$5.24306 - 7.08493I$	$11.12684 + 5.18429I$
$u = -0.512358$ $a = 0.162845$ $b = 0.783184$	2.84338	14.8000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^9 - 3u^8 + 8u^7 - 13u^6 + 17u^5 - 17u^4 + 12u^3 - 6u^2 + u + 1)$ $\cdot (u^{77} + 24u^{76} + \cdots + 11u - 1)$
c_2	$(u^9 - u^8 + \cdots + u + 1)(u^{77} - 2u^{76} + \cdots - u + 1)$
c_3, c_{12}	$(u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1)$ $\cdot (u^{77} - 2u^{76} + \cdots - 645u + 241)$
c_4, c_{10}	$u^9(u^{77} - u^{76} + \cdots + 512u + 512)$
c_6	$(u^9 + u^8 + \cdots + u - 1)(u^{77} - 2u^{76} + \cdots - u + 1)$
c_7	$(u^9 - 5u^8 + 12u^7 - 15u^6 + 9u^5 + u^4 - 4u^3 + 2u^2 + u - 1)$ $\cdot (u^{77} + 10u^{76} + \cdots + 45303u + 6643)$
c_8, c_9	$((u + 1)^9)(u^{77} + 10u^{76} + \cdots + 7u + 1)$
c_{11}	$((u - 1)^9)(u^{77} + 10u^{76} + \cdots + 7u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{77}+60y^{76}+\cdots+131y-1)$
c_2, c_6	$(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{77}+24y^{76}+\cdots+11y-1)$
c_3, c_{12}	$(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{77}-72y^{76}+\cdots-658353y-58081)$
c_4, c_{10}	$y^9(y^{77}+57y^{76}+\cdots+786432y-262144)$
c_7	$(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{77}-24y^{76}+\cdots+567824027y-44129449)$
c_8, c_9, c_{11}	$((y-1)^9)(y^{77}-80y^{76}+\cdots+15y-1)$