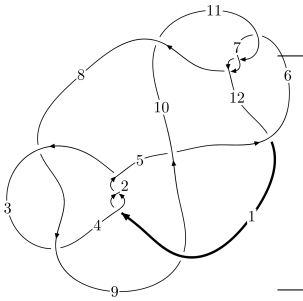
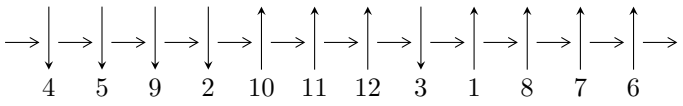
$12a_{0837}$ $(K12a_{0837})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$\underset{c_7}{7,12} \to \underset{c_8}{3,8} \to \underset{c_3}{9} \to \underset{c_{11}}{4} \to \underset{c_6}{11} \to \underset{c_{12}}{6} \to \underset{c_{10}}{1} \to \underset{c_5}{10} \to \underset{c_2}{5} \to 2 \longrightarrow\!\!\!\!\rightarrow c_1, c_4, c_9$$

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

$$I_1^u = \langle u^{78} - 30u^{76} + \cdots + b - 2u,\ -u^{78} - u^{77} + \cdots + a + 2,\ u^{80} + 2u^{79} + \cdots - 4u + 1\rangle$$
$$I_2^u = \langle -u^7 + 2u^5 + u^4 - u^3 - u^2 + b - u,\ u^7 - u^6 - 2u^5 + 2u^4 + u^3 - u^2 + a + u - 1,$$
$$u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 88 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.

$\boldsymbol{I_1^u = \langle u^{78}-30u^{76}+\cdots+b-2u,\ -u^{78}-u^{77}+\cdots+a+2,\ u^{80}+2u^{79}+\cdots-4u+1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}u^{78}+u^{77}+\cdots-5u-2\\-u^{78}+30u^{76}+\cdots+2u^2+2u\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}u^{15}-6u^{13}+14u^{11}-14u^9+2u^7+6u^5-2u^3-2u\\-u^{15}+5u^{13}-8u^{11}+u^9+8u^7-4u^5-2u^3+u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}u^{78}+u^{77}+\cdots-u-3\\2u^{79}+u^{78}+\cdots-7u+2\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}-u^2+1\\u^2\end{pmatrix}$$

$$a_1 = \begin{pmatrix}u^5-2u^3+u\\-u^5+u^3+u\end{pmatrix}$$

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

$$a_5 = \begin{pmatrix}u^{10}-5u^8+8u^6-3u^4-3u^2+1\\-u^{12}+4u^{10}-4u^8-2u^6+3u^4+2u^2\end{pmatrix}$$

$$a_2 = \begin{pmatrix}u^{78}+u^{77}+\cdots-2u-2\\u^{79}-32u^{77}+\cdots-2u+1\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3u^{79}+98u^{77}+\cdots-2u-11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$u^{80} - 9u^{79} + \cdots + 6u - 1$
c_3, c_8	$u^{80} + u^{79} + \cdots - 384u - 256$
c_5	$u^{80} + 2u^{79} + \cdots + 1220u + 757$
c_6, c_7, c_{11}	$u^{80} - 2u^{79} + \cdots + 4u + 1$
c_9	$u^{80} - 6u^{79} + \cdots + 123136u - 10736$
c_{10}, c_{12}	$u^{80} + 6u^{79} + \cdots - 292u - 53$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{80} - 79y^{79} + \cdots + 20y + 1$
c_3, c_8	$y^{80} - 51y^{79} + \cdots - 638976y + 65536$
c_5	$y^{80} + 6y^{79} + \cdots + 12140628y + 573049$
c_6, c_7, c_{11}	$y^{80} - 66y^{79} + \cdots - 24y + 1$
c_9	$y^{80} + 42y^{79} + \cdots - 4371656480y + 115261696$
c_{10}, c_{12}	$y^{80} + 54y^{79} + \cdots - 91836y + 2809$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.876291+0.160225I$ $a=\ 0.126511+0.194287I$ $b=\ 0.991591-0.142647I$	$-3.22938+0.02843I$	$-1.84884+0.48915I$
$u=-0.876291-0.160225I$ $a=\ 0.126511-0.194287I$ $b=\ 0.991591+0.142647I$	$-3.22938-0.02843I$	$-1.84884-0.48915I$
$u=\ 0.061548+0.829572I$ $a=-2.75467-0.96522I$ $b=-0.479375-0.000835I$	$-14.1634-1.3518I$	$-7.92930+0.28677I$
$u=\ 0.061548-0.829572I$ $a=-2.75467+0.96522I$ $b=-0.479375+0.000835I$	$-14.1634+1.3518I$	$-7.92930-0.28677I$
$u=\ 0.124055+0.821527I$ $a=\ 2.86514+0.84565I$ $b=\ 0.663517+0.615007I$	$-12.1701+11.2092I$	$-5.92334-6.70693I$
$u=\ 0.124055-0.821527I$ $a=\ 2.86514-0.84565I$ $b=\ 0.663517-0.615007I$	$-12.1701-11.2092I$	$-5.92334+6.70693I$
$u=\ 0.110007+0.808995I$ $a=-2.92348-0.92359I$ $b=-0.827690-0.452767I$	$-5.77427+7.00502I$	$-3.79403-6.58682I$
$u=\ 0.110007-0.808995I$ $a=-2.92348+0.92359I$ $b=-0.827690+0.452767I$	$-5.77427-7.00502I$	$-3.79403+6.58682I$
$u=\ 1.123910+0.371621I$ $a=-1.247920+0.018594I$ $b=\ 2.82867+1.63771I$	$-9.11869-6.88395I$	0
$u=\ 1.123910-0.371621I$ $a=-1.247920-0.018594I$ $b=\ 2.82867-1.63771I$	$-9.11869+6.88395I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.098406+0.810214I$ $a=-0.63923-1.38592I$ $b=-0.389110+0.252548I$	$-8.29890-4.46765I$	$-5.51069+3.55720I$
$u=-0.098406-0.810214I$ $a=-0.63923+1.38592I$ $b=-0.389110-0.252548I$	$-8.29890+4.46765I$	$-5.51069-3.55720I$
$u=\ 0.085461+0.805086I$ $a=\ 2.93657+0.81283I$ $b=\ 0.809055+0.115028I$	$-6.57809+1.74161I$	$-5.90436-0.72823I$
$u=\ 0.085461-0.805086I$ $a=\ 2.93657-0.81283I$ $b=\ 0.809055-0.115028I$	$-6.57809-1.74161I$	$-5.90436+0.72823I$
$u=\ 1.145300+0.351627I$ $a=\ 1.67209-0.06130I$ $b=-3.24427-1.61589I$	$-2.62101-2.78978I$	0
$u=\ 1.145300-0.351627I$ $a=\ 1.67209+0.06130I$ $b=-3.24427+1.61589I$	$-2.62101+2.78978I$	0
$u=-1.168410+0.294889I$ $a=\ 0.1148200+0.0781573I$ $b=-0.327938-0.588526I$	$0.663853-0.774238I$	0
$u=-1.168410-0.294889I$ $a=\ 0.1148200-0.0781573I$ $b=-0.327938+0.588526I$	$0.663853+0.774238I$	0
$u=-1.161670+0.354754I$ $a=-0.349914-0.227723I$ $b=\ 0.76660+1.23782I$	$-5.05506+0.24657I$	0
$u=-1.161670-0.354754I$ $a=-0.349914+0.227723I$ $b=\ 0.76660-1.23782I$	$-5.05506-0.24657I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.104056+0.769226I$ $a=\ 0.343299+0.727264I$ $b=\ 0.247120-0.134794I$	$-2.54055-3.11403I$	$2.14109+3.96126I$
$u=-0.104056-0.769226I$ $a=\ 0.343299-0.727264I$ $b=\ 0.247120+0.134794I$	$-2.54055+3.11403I$	$2.14109-3.96126I$
$u=\ 1.178980+0.350632I$ $a=-1.98357-0.34974I$ $b=\ 3.41068+2.02898I$	$-3.23753+2.44113I$	0
$u=\ 1.178980-0.350632I$ $a=-1.98357+0.34974I$ $b=\ 3.41068-2.02898I$	$-3.23753-2.44113I$	0
$u=-0.173756+0.720531I$ $a=\ 0.909003-0.853662I$ $b=-0.420842-0.340767I$	$-5.51527-3.58891I$	$-5.34819+4.59326I$
$u=-0.173756-0.720531I$ $a=\ 0.909003+0.853662I$ $b=-0.420842+0.340767I$	$-5.51527+3.58891I$	$-5.34819-4.59326I$
$u=\ 1.202850+0.378423I$ $a=\ 1.81156+0.67727I$ $b=-3.24144-2.11727I$	$-10.65550+5.69954I$	0
$u=\ 1.202850-0.378423I$ $a=\ 1.81156-0.67727I$ $b=-3.24144+2.11727I$	$-10.65550-5.69954I$	0
$u=\ 0.026848+0.719407I$ $a=\ 1.81521-0.24784I$ $b=\ 0.321846-0.756545I$	$-4.06965+1.05961I$	$-4.75524+0.35267I$
$u=\ 0.026848-0.719407I$ $a=\ 1.81521+0.24784I$ $b=\ 0.321846+0.756545I$	$-4.06965-1.05961I$	$-4.75524-0.35267I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.268360 + 0.284560I$ $a = -1.38083 - 1.56784I$ $b = 1.50576 + 2.71525I$	$-0.22850 + 2.54847I$	0
$u = 1.268360 - 0.284560I$ $a = -1.38083 + 1.56784I$ $b = 1.50576 - 2.71525I$	$-0.22850 - 2.54847I$	0
$u = -1.282660 + 0.242315I$ $a = -0.063197 + 0.146379I$ $b = -0.784403 + 0.183442I$	$2.57911 - 1.28933I$	0
$u = -1.282660 - 0.242315I$ $a = -0.063197 - 0.146379I$ $b = -0.784403 - 0.183442I$	$2.57911 + 1.28933I$	0
$u = -0.079891 + 0.677812I$ $a = -1.109980 + 0.265114I$ $b = 0.080705 + 0.500690I$	$-1.11785 - 1.88218I$	$1.71266 + 4.77492I$
$u = -0.079891 - 0.677812I$ $a = -1.109980 - 0.265114I$ $b = 0.080705 - 0.500690I$	$-1.11785 + 1.88218I$	$1.71266 - 4.77492I$
$u = -1.319450 + 0.050809I$ $a = 0.659804 - 0.757470I$ $b = -1.95095 + 1.27020I$	$3.13099 - 0.46029I$	0
$u = -1.319450 - 0.050809I$ $a = 0.659804 + 0.757470I$ $b = -1.95095 - 1.27020I$	$3.13099 + 0.46029I$	0
$u = -1.293290 + 0.302897I$ $a = -0.712362 - 0.212083I$ $b = 2.00229 - 0.73491I$	$0.05794 - 4.76170I$	0
$u = -1.293290 - 0.302897I$ $a = -0.712362 + 0.212083I$ $b = 2.00229 + 0.73491I$	$0.05794 + 4.76170I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.525555 + 0.406126I$ $a = -1.43656 - 1.57364I$ $b = 0.849649 + 0.237312I$	$-7.60137 + 7.31394I$	$-2.35633 - 7.01924I$
$u = 0.525555 - 0.406126I$ $a = -1.43656 + 1.57364I$ $b = 0.849649 - 0.237312I$	$-7.60137 - 7.31394I$	$-2.35633 + 7.01924I$
$u = 1.346940 + 0.076038I$ $a = -0.76105 - 1.54121I$ $b = 0.80314 + 1.89379I$	$1.81267 + 2.78487I$	0
$u = 1.346940 - 0.076038I$ $a = -0.76105 + 1.54121I$ $b = 0.80314 - 1.89379I$	$1.81267 - 2.78487I$	0
$u = 1.319870 + 0.292706I$ $a = 0.590163 + 1.204040I$ $b = -0.62449 - 1.86179I$	$3.28613 + 5.43808I$	0
$u = 1.319870 - 0.292706I$ $a = 0.590163 - 1.204040I$ $b = -0.62449 + 1.86179I$	$3.28613 - 5.43808I$	0
$u = -1.343590 + 0.190900I$ $a = 0.716855 + 0.205344I$ $b = -0.104581 - 0.432832I$	$-2.97413 + 1.50171I$	0
$u = -1.343590 - 0.190900I$ $a = 0.716855 - 0.205344I$ $b = -0.104581 + 0.432832I$	$-2.97413 - 1.50171I$	0
$u = -1.308570 + 0.369166I$ $a = 0.93076 - 1.51894I$ $b = -1.50790 + 3.63906I$	$-9.88263 - 2.95791I$	0
$u = -1.308570 - 0.369166I$ $a = 0.93076 + 1.51894I$ $b = -1.50790 - 3.63906I$	$-9.88263 + 2.95791I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.364130 + 0.025641I$ $a = 0.587914 + 0.874232I$ $b = -0.683473 - 1.056130I$	$6.59459 + 0.84569I$	0
$u = 1.364130 - 0.025641I$ $a = 0.587914 - 0.874232I$ $b = -0.683473 + 1.056130I$	$6.59459 - 0.84569I$	0
$u = -1.323710 + 0.350892I$ $a = -1.60329 + 1.52554I$ $b = 2.37847 - 3.93632I$	$-2.16036 - 5.90707I$	0
$u = -1.323710 - 0.350892I$ $a = -1.60329 - 1.52554I$ $b = 2.37847 + 3.93632I$	$-2.16036 + 5.90707I$	0
$u = -1.368010 + 0.072608I$ $a = -0.16776 + 1.58493I$ $b = 1.07759 - 2.56824I$	$4.39110 - 4.94022I$	0
$u = -1.368010 - 0.072608I$ $a = -0.16776 - 1.58493I$ $b = 1.07759 + 2.56824I$	$4.39110 + 4.94022I$	0
$u = 1.332520 + 0.330599I$ $a = -0.880089 + 0.059703I$ $b = 1.338240 + 0.031915I$	$1.97422 + 7.09169I$	0
$u = 1.332520 - 0.330599I$ $a = -0.880089 - 0.059703I$ $b = 1.338240 - 0.031915I$	$1.97422 - 7.09169I$	0
$u = 1.331770 + 0.353406I$ $a = 1.51891 - 0.09536I$ $b = -2.36445 - 0.02150I$	$-3.81014 + 8.66087I$	0
$u = 1.331770 - 0.353406I$ $a = 1.51891 + 0.09536I$ $b = -2.36445 + 0.02150I$	$-3.81014 - 8.66087I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.344834 + 0.516443I$ $a = 1.018030 + 0.976489I$ $b = -0.859848 - 0.693807I$	$-8.17586 - 3.95463I$	$-4.10155 - 0.16840I$
$u = 0.344834 - 0.516443I$ $a = 1.018030 - 0.976489I$ $b = -0.859848 + 0.693807I$	$-8.17586 + 3.95463I$	$-4.10155 + 0.16840I$
$u = -1.338410 + 0.351784I$ $a = 1.73352 - 1.98362I$ $b = -2.23896 + 4.53468I$	$-1.22329 - 11.18980I$	0
$u = -1.338410 - 0.351784I$ $a = 1.73352 + 1.98362I$ $b = -2.23896 - 4.53468I$	$-1.22329 + 11.18980I$	0
$u = 1.356590 + 0.303136I$ $a = 0.332649 - 1.319690I$ $b = -0.64556 + 1.86817I$	$-0.69617 + 7.31030I$	0
$u = 1.356590 - 0.303136I$ $a = 0.332649 + 1.319690I$ $b = -0.64556 - 1.86817I$	$-0.69617 - 7.31030I$	0
$u = -1.347690 + 0.357270I$ $a = -1.63097 + 2.21403I$ $b = 2.00997 - 4.65273I$	$-7.5407 - 15.4564I$	0
$u = -1.347690 - 0.357270I$ $a = -1.63097 - 2.21403I$ $b = 2.00997 + 4.65273I$	$-7.5407 + 15.4564I$	0
$u = -1.391820 + 0.084980I$ $a = -0.29047 - 1.82633I$ $b = -0.32123 + 2.86162I$	$-1.58820 - 8.79008I$	0
$u = -1.391820 - 0.084980I$ $a = -0.29047 + 1.82633I$ $b = -0.32123 - 2.86162I$	$-1.58820 + 8.79008I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.40474$ $a = -1.32314$ $b = 1.61553$	3.28642	0
$u = 0.463371 + 0.351769I$ $a = 1.64704 + 1.48525I$ $b = -0.749958 - 0.354643I$	$-1.28196 + 3.66343I$	$0.29546 - 7.86407I$
$u = 0.463371 - 0.351769I$ $a = 1.64704 - 1.48525I$ $b = -0.749958 + 0.354643I$	$-1.28196 - 3.66343I$	$0.29546 + 7.86407I$
$u = -0.403667 + 0.370681I$ $a = 1.087240 - 0.181150I$ $b = 0.117334 - 0.754012I$	$-3.56503 - 1.41634I$	$-1.57318 + 4.55275I$
$u = -0.403667 - 0.370681I$ $a = 1.087240 + 0.181150I$ $b = 0.117334 + 0.754012I$	$-3.56503 + 1.41634I$	$-1.57318 - 4.55275I$
$u = 0.319076 + 0.393637I$ $a = -1.59691 - 0.85238I$ $b = 0.699834 + 0.532015I$	$-1.69342 - 0.82758I$	$-2.07495 - 0.65962I$
$u = 0.319076 - 0.393637I$ $a = -1.59691 + 0.85238I$ $b = 0.699834 - 0.532015I$	$-1.69342 + 0.82758I$	$-2.07495 + 0.65962I$
$u = -0.464901 + 0.134379I$ $a = -0.471147 + 0.220662I$ $b = -0.244788 + 0.348012I$	$0.993986 - 0.381631I$	$9.03609 + 2.08695I$
$u = -0.464901 - 0.134379I$ $a = -0.471147 - 0.220662I$ $b = -0.244788 - 0.348012I$	$0.993986 + 0.381631I$	$9.03609 - 2.08695I$
$u = 0.227761$ $a = -3.50429$ $b = 0.602821$	-1.28207	-11.0840

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^7 + u^6 + 2u^5 - 2u^4 - u^3 + u^2 - u + 1 \\ u^7 - 2u^5 - u^4 + u^3 + u^2 + u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^7 + u^6 + 2u^5 - 2u^4 - u^3 + u^2 - u + 1 \\ u^7 - 2u^5 - u^4 + u^3 + u^2 + u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^5 - 2u^3 + u \\ -u^5 + u^3 + u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^5 - u^3 - u \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^7 + 6u^6 + 2u^5 - 16u^4 - 5u^3 + 9u^2 + 8u + 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_8	y^8
c_5, c_9	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_6, c_7, c_{11}	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_{10}, c_{12}	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.180120+0.268597I$ $a=\ \ 0.663977-0.849844I$ $b=-0.33804+1.54318I$	$-0.604279-1.131230I$	$-1.074136+0.216470I$
$u=-1.180120-0.268597I$ $a=\ \ 0.663977+0.849844I$ $b=-0.33804-1.54318I$	$-0.604279+1.131230I$	$-1.074136-0.216470I$
$u=-0.108090+0.747508I$ $a=-0.727959-0.566792I$ $b=-0.306664-0.427719I$	$-3.80435-2.57849I$	$-3.22623+3.25417I$
$u=-0.108090-0.747508I$ $a=-0.727959+0.566792I$ $b=-0.306664+0.427719I$	$-3.80435+2.57849I$	$-3.22623-3.25417I$
$u=\ \ 1.37100$ $a=-0.910598$ $b=\ \ 1.71160$	4.85780	7.89920
$u=\ \ 1.334530+0.318930I$ $a=\ \ 0.690511-0.438656I$ $b=-1.53294+0.14882I$	$0.73474+6.44354I$	$2.34782-4.54733I$
$u=\ \ 1.334530-0.318930I$ $a=\ \ 0.690511+0.438656I$ $b=-1.53294-0.14882I$	$0.73474-6.44354I$	$2.34782+4.54733I$
$u=-0.463640$ $a=\ \ 1.65754$ $b=-0.356309$	-0.799899	7.00590

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$((u-1)^8)(u^{80}-9u^{79}+\cdots+6u-1)$
c_3, c_8	$u^8(u^{80}+u^{79}+\cdots-384u-256)$
c_4	$((u+1)^8)(u^{80}-9u^{79}+\cdots+6u-1)$
c_5	$(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot(u^{80}+2u^{79}+\cdots+1220u+757)$
c_6, c_7	$(u^8-u^7-3u^6+2u^5+3u^4-2u-1)(u^{80}-2u^{79}+\cdots+4u+1)$
c_9	$(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot(u^{80}-6u^{79}+\cdots+123136u-10736)$
c_{10}, c_{12}	$(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{80}+6u^{79}+\cdots-292u-53)$
c_{11}	$(u^8+u^7-3u^6-2u^5+3u^4+2u-1)(u^{80}-2u^{79}+\cdots+4u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$((y-1)^8)(y^{80} - 79y^{79} + \cdots + 20y + 1)$
c_3, c_8	$y^8(y^{80} - 51y^{79} + \cdots - 638976y + 65536)$
c_5	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)$ $\cdot (y^{80} + 6y^{79} + \cdots + 12140628y + 573049)$
c_6, c_7, c_{11}	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)$ $\cdot (y^{80} - 66y^{79} + \cdots - 24y + 1)$
c_9	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)$ $\cdot (y^{80} + 42y^{79} + \cdots - 4371656480y + 115261696)$
c_{10}, c_{12}	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)$ $\cdot (y^{80} + 54y^{79} + \cdots - 91836y + 2809)$