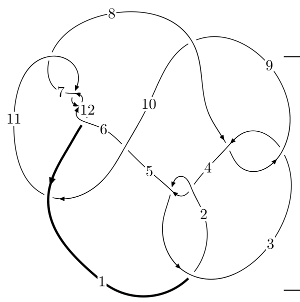
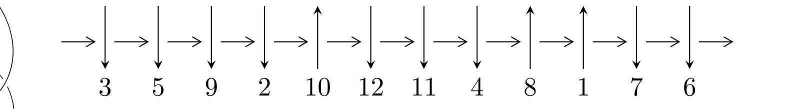
$12a_{0151}$ ($K12a_{0151}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{74} + 41u^{72} + \cdots + b + 1,\ -u^{76} + 2u^{75} + \cdots + a - u,\ u^{77} - 2u^{76} + \cdots - u + 1\rangle$$
$$I_2^u = \langle b + 1,\ -u^3 + u^2 + a - 3u + 1,\ u^4 - u^3 + 3u^2 - 2u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 81 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.

$$I_1^u = \langle u^{74}+41u^{72}+\cdots+b+1,\ -u^{76}+2u^{75}+\cdots+a-u,\ u^{77}-2u^{76}+\cdots-u+1\rangle$$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{76} - 2u^{75} + \cdots + 5u^2 + u \\ -u^{74} - 41u^{72} + \cdots + 3u^2 - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{76} - 2u^{75} + \cdots + 5u^2 + 2u \\ -u^{73} + u^{72} + \cdots + u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -u^{10} - 5u^8 - 6u^6 + u^4 + u^2 + 1 \\ u^{10} + 6u^8 + 11u^6 + 6u^4 + u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{76} - 2u^{75} + \cdots + 2u + 1 \\ u^{74} - 2u^{73} + \cdots + u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{11} - 6u^9 - 12u^7 - 10u^5 - 5u^3 \\ -u^{13} - 7u^{11} - 17u^9 - 16u^7 - 4u^5 + u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -u^{76} + 2u^{75} + \cdots + 2u - 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{77} + 41u^{76} + \cdots + 5u + 1$
c_2, c_4	$u^{77} - 5u^{76} + \cdots - 5u + 1$
c_3, c_8	$u^{77} - u^{76} + \cdots + 8u + 16$
c_5	$u^{77} - 2u^{76} + \cdots - 1449u + 389$
c_6, c_7, c_{11} c_{12}	$u^{77} - 2u^{76} + \cdots - u + 1$
c_9	$u^{77} - 27u^{76} + \cdots - 4544u + 256$
c_{10}	$u^{77} + 20u^{76} + \cdots + 465u + 19$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{77} - 5y^{76} + \cdots + 41y - 1$
c_2, c_4	$y^{77} - 41y^{76} + \cdots + 5y - 1$
c_3, c_8	$y^{77} + 27y^{76} + \cdots - 4544y - 256$
c_5	$y^{77} - 16y^{76} + \cdots + 6370043y - 151321$
c_6, c_7, c_{11} c_{12}	$y^{77} + 88y^{76} + \cdots + 3y - 1$
c_9	$y^{77} + 39y^{76} + \cdots + 1101824y - 65536$
c_{10}	$y^{77} - 4y^{76} + \cdots + 22843y - 361$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.147502 + 0.868411I$ $a = 1.00045 + 1.34841I$ $b = 0.178842 - 0.009385I$	$0.75106 + 6.34655I$	0
$u = 0.147502 - 0.868411I$ $a = 1.00045 - 1.34841I$ $b = 0.178842 + 0.009385I$	$0.75106 - 6.34655I$	0
$u = 0.520795 + 0.686903I$ $a = 0.21130 + 1.67245I$ $b = -2.20006 - 1.58322I$	$-1.56675 - 12.64520I$	$0. + 10.71218I$
$u = 0.520795 - 0.686903I$ $a = 0.21130 - 1.67245I$ $b = -2.20006 + 1.58322I$	$-1.56675 + 12.64520I$	$0. - 10.71218I$
$u = 0.497864 + 0.685888I$ $a = -0.556603 - 1.182010I$ $b = 1.38750 + 0.81038I$	$1.29389 - 7.48427I$	$0. + 7.68149I$
$u = 0.497864 - 0.685888I$ $a = -0.556603 + 1.182010I$ $b = 1.38750 - 0.81038I$	$1.29389 + 7.48427I$	$0. - 7.68149I$
$u = 0.413130 + 0.737541I$ $a = -0.490546 + 0.140022I$ $b = -0.797872 - 0.479732I$	$4.73817 - 5.59106I$	$0. + 8.14504I$
$u = 0.413130 - 0.737541I$ $a = -0.490546 - 0.140022I$ $b = -0.797872 + 0.479732I$	$4.73817 + 5.59106I$	$0. - 8.14504I$
$u = 0.357537 + 0.755900I$ $a = 0.294340 - 0.397674I$ $b = 0.702726 + 0.957885I$	$5.09245 - 0.54892I$	0
$u = 0.357537 - 0.755900I$ $a = 0.294340 + 0.397674I$ $b = 0.702726 - 0.957885I$	$5.09245 + 0.54892I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.495825 + 0.664107I$ $a = -0.62922 + 1.27595I$ $b = 2.40846 - 1.04658I$	$-2.95420 + 6.44351I$	$-7.08625 - 7.32729I$
$u = -0.495825 - 0.664107I$ $a = -0.62922 - 1.27595I$ $b = 2.40846 + 1.04658I$	$-2.95420 - 6.44351I$	$-7.08625 + 7.32729I$
$u = 0.193399 + 0.795349I$ $a = -0.537195 - 1.091020I$ $b = 0.135236 + 0.414324I$	$3.19115 + 1.49818I$	$1.97075 + 0.I$
$u = 0.193399 - 0.795349I$ $a = -0.537195 + 1.091020I$ $b = 0.135236 - 0.414324I$	$3.19115 - 1.49818I$	$1.97075 + 0.I$
$u = 0.488823 + 0.646835I$ $a = 1.51179 + 1.29272I$ $b = -1.85197 + 0.68898I$	$-3.35350 - 3.73810I$	$-7.27072 + 6.60342I$
$u = 0.488823 - 0.646835I$ $a = 1.51179 - 1.29272I$ $b = -1.85197 - 0.68898I$	$-3.35350 + 3.73810I$	$-7.27072 - 6.60342I$
$u = -0.527611 + 0.599110I$ $a = -1.47399 + 0.63795I$ $b = 1.46102 + 1.13607I$	$-3.33467 - 1.17240I$	$-7.69005 + 0.66623I$
$u = -0.527611 - 0.599110I$ $a = -1.47399 - 0.63795I$ $b = 1.46102 - 1.13607I$	$-3.33467 + 1.17240I$	$-7.69005 - 0.66623I$
$u = -0.456080 + 0.623390I$ $a = 0.606942 - 0.737172I$ $b = -0.997890 + 0.562471I$	$-0.30493 + 2.30855I$	$-4.02531 - 3.57138I$
$u = -0.456080 - 0.623390I$ $a = 0.606942 + 0.737172I$ $b = -0.997890 - 0.562471I$	$-0.30493 - 2.30855I$	$-4.02531 + 3.57138I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.329535 + 0.645278I$ $a = 0.213272 - 0.767135I$ $b = 0.431356 + 0.788245I$	$0.51022 + 2.21242I$	$-2.24825 - 6.81811I$
$u = -0.329535 - 0.645278I$ $a = 0.213272 + 0.767135I$ $b = 0.431356 - 0.788245I$	$0.51022 - 2.21242I$	$-2.24825 + 6.81811I$
$u = -0.119692 + 0.706613I$ $a = 0.02252 + 1.42872I$ $b = -0.852997 + 0.030726I$	$-0.802285 - 0.992180I$	$-3.49623 + 0.26671I$
$u = -0.119692 - 0.706613I$ $a = 0.02252 - 1.42872I$ $b = -0.852997 - 0.030726I$	$-0.802285 + 0.992180I$	$-3.49623 - 0.26671I$
$u = -0.476481 + 0.477330I$ $a = 0.396437 + 0.236890I$ $b = 0.1231540 + 0.0259316I$	$-0.84037 + 1.67654I$	$-2.17669 - 5.36545I$
$u = -0.476481 - 0.477330I$ $a = 0.396437 - 0.236890I$ $b = 0.1231540 - 0.0259316I$	$-0.84037 - 1.67654I$	$-2.17669 + 5.36545I$
$u = -0.569974 + 0.326103I$ $a = 1.24611 + 0.92452I$ $b = 0.93980 - 1.46984I$	$-4.13049 + 4.94098I$	$-9.85658 - 6.91642I$
$u = -0.569974 - 0.326103I$ $a = 1.24611 - 0.92452I$ $b = 0.93980 + 1.46984I$	$-4.13049 - 4.94098I$	$-9.85658 + 6.91642I$
$u = 0.601381 + 0.214453I$ $a = 0.66955 + 1.97747I$ $b = -1.60236 + 0.47260I$	$-2.95096 + 8.82146I$	$-8.76825 - 5.53788I$
$u = 0.601381 - 0.214453I$ $a = 0.66955 - 1.97747I$ $b = -1.60236 - 0.47260I$	$-2.95096 - 8.82146I$	$-8.76825 + 5.53788I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.239459 + 0.553343I$ $a = 0.05250 + 2.04681I$ $b = -1.230210 - 0.268136I$	$-1.30165 - 0.91702I$	$-0.765784 - 0.785173I$
$u = 0.239459 - 0.553343I$ $a = 0.05250 - 2.04681I$ $b = -1.230210 + 0.268136I$	$-1.30165 + 0.91702I$	$-0.765784 + 0.785173I$
$u = 0.567780 + 0.198342I$ $a = -0.318817 - 0.964786I$ $b = 1.073270 + 0.085750I$	$-0.12372 + 3.82886I$	$-5.59925 - 2.44752I$
$u = 0.567780 - 0.198342I$ $a = -0.318817 + 0.964786I$ $b = 1.073270 - 0.085750I$	$-0.12372 - 3.82886I$	$-5.59925 + 2.44752I$
$u = -0.550902 + 0.231672I$ $a = -0.39744 + 2.34421I$ $b = 1.41177 - 0.10713I$	$-4.21089 - 2.83361I$	$-10.84511 + 1.35497I$
$u = -0.550902 - 0.231672I$ $a = -0.39744 - 2.34421I$ $b = 1.41177 + 0.10713I$	$-4.21089 + 2.83361I$	$-10.84511 - 1.35497I$
$u = 0.533622 + 0.257110I$ $a = -1.21401 + 0.94791I$ $b = -1.41362 - 1.14182I$	$-4.48641 + 0.19420I$	$-11.14123 - 0.15034I$
$u = 0.533622 - 0.257110I$ $a = -1.21401 - 0.94791I$ $b = -1.41362 + 1.14182I$	$-4.48641 - 0.19420I$	$-11.14123 + 0.15034I$
$u = -0.05638 + 1.41840I$ $a = 1.17528 + 2.58800I$ $b = -0.34737 - 1.83289I$	$1.23925 + 7.06140I$	0
$u = -0.05638 - 1.41840I$ $a = 1.17528 - 2.58800I$ $b = -0.34737 + 1.83289I$	$1.23925 - 7.06140I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.488667+0.304473I$ $a=\ \ 0.150993-0.782541I$ $b=-0.654382+0.514959I$	$-1.23510+1.00162I$	$-7.18292-3.69576I$
$u=-0.488667-0.304473I$ $a=\ \ 0.150993+0.782541I$ $b=-0.654382-0.514959I$	$-1.23510-1.00162I$	$-7.18292+3.69576I$
$u=\ \ 0.01005+1.44330I$ $a=-0.56482+3.02578I$ $b=-0.09064-2.16022I$	$0.59076-1.36180I$	0
$u=\ \ 0.01005-1.44330I$ $a=-0.56482-3.02578I$ $b=-0.09064+2.16022I$	$0.59076+1.36180I$	0
$u=-0.03666+1.45665I$ $a=-0.21997-2.07372I$ $b=\ \ 0.12168+1.71437I$	$4.29158+2.58426I$	0
$u=-0.03666-1.45665I$ $a=-0.21997+2.07372I$ $b=\ \ 0.12168-1.71437I$	$4.29158-2.58426I$	0
$u=\ \ 0.534715+0.043976I$ $a=-0.299545+1.301610I$ $b=\ \ 0.001572+0.505363I$	$2.72042+2.38215I$	$-3.39829-3.47176I$
$u=\ \ 0.534715-0.043976I$ $a=-0.299545-1.301610I$ $b=\ \ 0.001572-0.505363I$	$2.72042-2.38215I$	$-3.39829+3.47176I$
$u=-0.11215+1.52782I$ $a=\ \ 0.045420+0.186861I$ $b=\ \ 0.157790+0.134911I$	$5.84388+3.68403I$	0
$u=-0.11215-1.52782I$ $a=\ \ 0.045420-0.186861I$ $b=\ \ 0.157790-0.134911I$	$5.84388-3.68403I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.14882 + 1.56363I$ $a = -2.27040 + 0.02252I$ $b = 1.78461 + 0.69724I$	$3.91086 + 1.27549I$	0
$u = -0.14882 - 1.56363I$ $a = -2.27040 - 0.02252I$ $b = 1.78461 - 0.69724I$	$3.91086 - 1.27549I$	0
$u = 0.07520 + 1.58182I$ $a = 1.07795 + 1.47054I$ $b = -1.31557 - 0.54304I$	$6.12632 - 2.09774I$	0
$u = 0.07520 - 1.58182I$ $a = 1.07795 - 1.47054I$ $b = -1.31557 + 0.54304I$	$6.12632 + 2.09774I$	0
$u = -0.12847 + 1.58382I$ $a = 1.00018 - 1.87505I$ $b = -1.19047 + 1.69046I$	$7.18665 + 4.43566I$	0
$u = -0.12847 - 1.58382I$ $a = 1.00018 + 1.87505I$ $b = -1.19047 - 1.69046I$	$7.18665 - 4.43566I$	0
$u = 0.13987 + 1.58706I$ $a = 2.38629 + 0.78813I$ $b = -2.00944 + 0.20089I$	$4.20190 - 6.04430I$	0
$u = 0.13987 - 1.58706I$ $a = 2.38629 - 0.78813I$ $b = -2.00944 - 0.20089I$	$4.20190 + 6.04430I$	0
$u = -0.09303 + 1.59051I$ $a = -1.17833 - 1.13689I$ $b = 1.52083 + 1.18697I$	$8.15557 + 3.76836I$	0
$u = -0.09303 - 1.59051I$ $a = -1.17833 + 1.13689I$ $b = 1.52083 - 1.18697I$	$8.15557 - 3.76836I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.06060 + 1.59336I$ $a = 1.69546 - 0.16765I$ $b = -2.23387 + 0.64752I$	$6.99743 - 0.14653I$	0
$u = -0.06060 - 1.59336I$ $a = 1.69546 + 0.16765I$ $b = -2.23387 - 0.64752I$	$6.99743 + 0.14653I$	0
$u = -0.14352 + 1.59232I$ $a = -2.38022 + 2.82434I$ $b = 3.13268 - 2.26053I$	$4.67971 + 8.80327I$	0
$u = -0.14352 - 1.59232I$ $a = -2.38022 - 2.82434I$ $b = 3.13268 + 2.26053I$	$4.67971 - 8.80327I$	0
$u = 0.14523 + 1.59970I$ $a = -1.14163 - 2.15168I$ $b = 1.43776 + 1.73418I$	$9.03599 - 9.87352I$	0
$u = 0.14523 - 1.59970I$ $a = -1.14163 + 2.15168I$ $b = 1.43776 - 1.73418I$	$9.03599 + 9.87352I$	0
$u = 0.15340 + 1.59954I$ $a = 1.61377 + 3.30142I$ $b = -2.51838 - 2.69954I$	$6.1639 - 15.1531I$	0
$u = 0.15340 - 1.59954I$ $a = 1.61377 - 3.30142I$ $b = -2.51838 + 2.69954I$	$6.1639 + 15.1531I$	0
$u = 0.05996 + 1.61405I$ $a = 0.104728 - 1.032870I$ $b = -0.455343 + 0.714306I$	$11.39780 + 0.51480I$	0
$u = 0.05996 - 1.61405I$ $a = 0.104728 + 1.032870I$ $b = -0.455343 - 0.714306I$	$11.39780 - 0.51480I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.11610 + 1.61439I$ $a = 0.905099 + 0.726337I$ $b = -1.64446 - 0.61307I$	$12.7656 - 7.5677I$	0
$u = 0.11610 - 1.61439I$ $a = 0.905099 - 0.726337I$ $b = -1.64446 + 0.61307I$	$12.7656 + 7.5677I$	0
$u = 0.10031 + 1.61635I$ $a = -0.69833 - 1.55637I$ $b = 1.33076 + 1.58550I$	$13.20050 - 2.26533I$	0
$u = 0.10031 - 1.61635I$ $a = -0.69833 + 1.55637I$ $b = 1.33076 - 1.58550I$	$13.20050 + 2.26533I$	0
$u = 0.04244 + 1.62116I$ $a = -0.585045 + 0.293685I$ $b = 1.363650 + 0.283002I$	$9.19349 + 5.63914I$	0
$u = 0.04244 - 1.62116I$ $a = -0.585045 - 0.293685I$ $b = 1.363650 - 0.283002I$	$9.19349 - 5.63914I$	0
$u = -0.288406$ $a = 2.15149$ $b = -0.395080$	-1.03844	-10.4690

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

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^3-5u^2+14u-16$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.395123 + 0.506844I$ $a = \quad 0.043315 + 1.227190I$ $b = -1.00000$	$-1.85594 - 1.41510I$	$-11.17855 + 5.62908I$
$u = \quad 0.395123 - 0.506844I$ $a = \quad 0.043315 - 1.227190I$ $b = -1.00000$	$-1.85594 + 1.41510I$	$-11.17855 - 5.62908I$
$u = \quad 0.10488 + 1.55249I$ $a = \quad 0.956685 + 0.641200I$ $b = -1.00000$	$5.14581 - 3.16396I$	$-6.32145 + 1.65351I$
$u = \quad 0.10488 - 1.55249I$ $a = \quad 0.956685 - 0.641200I$ $b = -1.00000$	$5.14581 + 3.16396I$	$-6.32145 - 1.65351I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{77}+41u^{76}+\cdots+5u+1)$
c_2	$((u-1)^4)(u^{77}-5u^{76}+\cdots-5u+1)$
c_3, c_8	$u^4(u^{77}-u^{76}+\cdots+8u+16)$
c_4	$((u+1)^4)(u^{77}-5u^{76}+\cdots-5u+1)$
c_5	$(u^4-u^3+u^2+1)(u^{77}-2u^{76}+\cdots-1449u+389)$
c_6, c_7	$(u^4-u^3+3u^2-2u+1)(u^{77}-2u^{76}+\cdots-u+1)$
c_9	$u^4(u^{77}-27u^{76}+\cdots-4544u+256)$
c_{10}	$(u^4-u^3+u^2+1)(u^{77}+20u^{76}+\cdots+465u+19)$
c_{11}, c_{12}	$(u^4+u^3+3u^2+2u+1)(u^{77}-2u^{76}+\cdots-u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^4)(y^{77} - 5y^{76} + \cdots + 41y - 1)$
c_2, c_4	$((y-1)^4)(y^{77} - 41y^{76} + \cdots + 5y - 1)$
c_3, c_8	$y^4(y^{77} + 27y^{76} + \cdots - 4544y - 256)$
c_5	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{77} - 16y^{76} + \cdots + 6370043y - 151321)$
c_6, c_7, c_{11} c_{12}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{77} + 88y^{76} + \cdots + 3y - 1)$
c_9	$y^4(y^{77} + 39y^{76} + \cdots + 1101824y - 65536)$
c_{10}	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{77} - 4y^{76} + \cdots + 22843y - 361)$