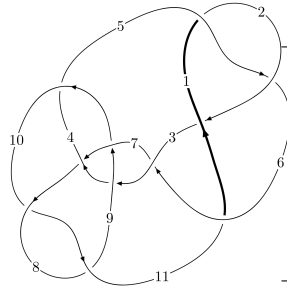
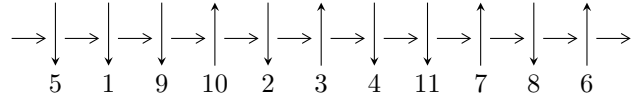


11a<sub>71</sub> (K11a<sub>71</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

**Ideals for irreducible components<sup>2</sup> of  $X_{\text{par}}$**

$$I_1^u = \langle 7.83384 \times 10^{25} u^{79} - 2.56733 \times 10^{25} u^{78} + \dots + 1.29163 \times 10^{26} b - 2.49920 \times 10^{25}, \\ 2.29485 \times 10^{26} u^{79} + 3.32810 \times 10^{26} u^{78} + \dots + 6.45815 \times 10^{25} a + 5.38395 \times 10^{26}, u^{80} + 2u^{79} + \dots + 5u + 1 \rangle \\ I_2^u = \langle b - 1, a + 1, u + 1 \rangle$$

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

<sup>1</sup>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>).

<sup>2</sup>All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$$I_1^u = \langle 7.83 \times 10^{25} u^{79} - 2.57 \times 10^{25} u^{78} + \dots + 1.29 \times 10^{26} b - 2.50 \times 10^{25}, 2.29 \times 10^{26} u^{79} + 3.33 \times 10^{26} u^{78} + \dots + 6.46 \times 10^{25} a + 5.38 \times 10^{26}, u^{80} + 2u^{79} + \dots + 5u + 1 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_2 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_6 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\ a_1 &= \begin{pmatrix} u \\ -u^3 + u \end{pmatrix} \\ a_3 &= \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix} \\ a_7 &= \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ -u^{10} + 2u^8 - 3u^6 + 2u^4 - u^2 \end{pmatrix} \\ a_8 &= \begin{pmatrix} -3.55341u^{79} - 5.15334u^{78} + \dots - 20.1149u - 8.33667 \\ -0.606508u^{79} + 0.198767u^{78} + \dots + 0.990713u + 0.193492 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix} \\ a_9 &= \begin{pmatrix} -3.78703u^{79} - 5.38668u^{78} + \dots - 20.9985u - 8.55334 \\ -0.572619u^{79} + 0.249326u^{78} + \dots + 1.94321u + 0.227381 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} -4.01996u^{79} - 5.62000u^{78} + \dots - 20.4242u - 8.87000 \\ -0.540079u^{79} + 0.255493u^{78} + \dots + 1.98965u + 0.259921 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 8.92076u^{79} + 10.5265u^{78} + \dots + 40.2493u + 13.8432 \\ -1.55419u^{79} - 2.35995u^{78} + \dots - 9.35652u - 2.35995 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 8.92076u^{79} + 10.5265u^{78} + \dots + 40.2493u + 13.8432 \\ -1.55419u^{79} - 2.35995u^{78} + \dots - 9.35652u - 2.35995 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = -1

$$\begin{aligned} \text{(iii) Cusp Shapes} &= -\frac{120968554523544040789727864}{21527170222575090764609709} u^{79} - \frac{5739563596393551567527518}{1025103343932147179267129} u^{78} + \\ &\dots - \frac{240609495551769451833935926}{7175723407525030254869903} u - \frac{236354186912654203058622196}{21527170222575090764609709} \end{aligned}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_5$	$u^{80} + 2u^{79} + \dots + 5u + 1$
$c_2$	$u^{80} + 38u^{79} + \dots + 5u + 1$
$c_3$	$u^{80} + 35u^{78} + \dots + 27u - 1$
$c_4$	$u^{80} + 2u^{79} + \dots + 89u + 19$
$c_6$	$u^{80} - 15u^{78} + \dots + 56453u + 8017$
$c_7$	$u^{80} + 4u^{79} + \dots - u - 1$
$c_8, c_{10}$	$u^{80} - 2u^{79} + \dots + 5u - 1$
$c_9$	$u^{80} + 13u^{79} + \dots + 6u + 2$
$c_{11}$	$u^{80} + 3u^{79} + \dots - 1824u - 288$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_5$	$y^{80} - 38y^{79} + \dots - 5y + 1$
$c_2$	$y^{80} + 10y^{79} + \dots - 73y + 1$
$c_3$	$y^{80} + 70y^{79} + \dots - 129y + 1$
$c_4$	$y^{80} + 78y^{79} + \dots + 10547y + 361$
$c_6$	$y^{80} - 30y^{79} + \dots - 2160187985y + 64272289$
$c_7$	$y^{80} - 14y^{79} + \dots - 5y + 1$
$c_8, c_{10}$	$y^{80} - 50y^{79} + \dots + 55y + 1$
$c_9$	$y^{80} - 9y^{79} + \dots - 64y + 4$
$c_{11}$	$y^{80} + 15y^{79} + \dots + 2084544y + 82944$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.993582 + 0.219652I$ $a = -0.681629 + 0.056586I$ $b = -0.017242 - 0.156551I$	$-1.76831 + 0.41384I$	0
$u = -0.993582 - 0.219652I$ $a = -0.681629 - 0.056586I$ $b = -0.017242 + 0.156551I$	$-1.76831 - 0.41384I$	0
$u = -0.633725 + 0.710008I$ $a = 1.304580 + 0.456964I$ $b = -1.169060 - 0.469516I$	$1.10017 + 9.52896I$	$0. - 7.63149I$
$u = -0.633725 - 0.710008I$ $a = 1.304580 - 0.456964I$ $b = -1.169060 + 0.469516I$	$1.10017 - 9.52896I$	$0. + 7.63149I$
$u = 0.666948 + 0.650580I$ $a = -1.033680 + 0.452004I$ $b = 1.264010 - 0.241396I$	$2.84471 - 1.91218I$	$3.52882 + 5.17190I$
$u = 0.666948 - 0.650580I$ $a = -1.033680 - 0.452004I$ $b = 1.264010 + 0.241396I$	$2.84471 + 1.91218I$	$3.52882 - 5.17190I$
$u = -1.031480 + 0.286770I$ $a = 0.53377 - 6.02234I$ $b = 3.13018 + 2.41426I$	$-3.78449 + 0.73170I$	0
$u = -1.031480 - 0.286770I$ $a = 0.53377 + 6.02234I$ $b = 3.13018 - 2.41426I$	$-3.78449 - 0.73170I$	0
$u = -1.017560 + 0.366491I$ $a = 0.142352 + 1.380120I$ $b = -0.580624 - 0.069040I$	$-2.69872 + 1.44530I$	0
$u = -1.017560 - 0.366491I$ $a = 0.142352 - 1.380120I$ $b = -0.580624 + 0.069040I$	$-2.69872 - 1.44530I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.529228 + 0.750028I$ $a = -0.766967 + 0.360768I$ $b = 0.522843 + 0.472910I$	$3.02838 + 1.37936I$	$3.64616 - 3.11353I$
$u = 0.529228 - 0.750028I$ $a = -0.766967 - 0.360768I$ $b = 0.522843 - 0.472910I$	$3.02838 - 1.37936I$	$3.64616 + 3.11353I$
$u = 0.924365 + 0.563218I$ $a = -0.78920 + 1.35114I$ $b = 1.063890 - 0.643299I$	$2.08735 - 2.83654I$	0
$u = 0.924365 - 0.563218I$ $a = -0.78920 - 1.35114I$ $b = 1.063890 + 0.643299I$	$2.08735 + 2.83654I$	0
$u = 1.085720 + 0.197443I$ $a = -0.544690 - 0.850906I$ $b = 0.308390 + 1.048710I$	$-1.19443 + 3.73477I$	0
$u = 1.085720 - 0.197443I$ $a = -0.544690 + 0.850906I$ $b = 0.308390 - 1.048710I$	$-1.19443 - 3.73477I$	0
$u = 1.078910 + 0.266597I$ $a = -0.12207 - 2.82977I$ $b = -1.45556 + 1.85197I$	$-5.69690 + 1.47728I$	0
$u = 1.078910 - 0.266597I$ $a = -0.12207 + 2.82977I$ $b = -1.45556 - 1.85197I$	$-5.69690 - 1.47728I$	0
$u = -0.562648 + 0.677266I$ $a = 0.225635 + 0.785522I$ $b = -0.233404 + 0.503707I$	$4.34092 + 3.75201I$	$2.40820 - 5.29181I$
$u = -0.562648 - 0.677266I$ $a = 0.225635 - 0.785522I$ $b = -0.233404 - 0.503707I$	$4.34092 - 3.75201I$	$2.40820 + 5.29181I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.075990 + 0.321255I$ $a = -0.12764 - 2.13134I$ $b = -1.77154 + 1.40590I$	$-6.18593 - 2.21505I$	0
$u = 1.075990 - 0.321255I$ $a = -0.12764 + 2.13134I$ $b = -1.77154 - 1.40590I$	$-6.18593 + 2.21505I$	0
$u = -0.358068 + 0.799824I$ $a = 1.125740 - 0.036921I$ $b = -0.45145 + 2.59579I$	$-0.37727 - 12.19400I$	$-2.40584 + 6.91147I$
$u = -0.358068 - 0.799824I$ $a = 1.125740 + 0.036921I$ $b = -0.45145 - 2.59579I$	$-0.37727 + 12.19400I$	$-2.40584 - 6.91147I$
$u = 0.322943 + 0.804382I$ $a = -0.956715 - 0.093636I$ $b = 0.61338 + 2.12460I$	$0.97731 + 4.20187I$	$-0.27939 - 7.34151I$
$u = 0.322943 - 0.804382I$ $a = -0.956715 + 0.093636I$ $b = 0.61338 - 2.12460I$	$0.97731 - 4.20187I$	$-0.27939 + 7.34151I$
$u = -0.950417 + 0.625173I$ $a = 1.29330 + 0.99233I$ $b = -1.084190 - 0.511800I$	$0.16239 - 4.42235I$	0
$u = -0.950417 - 0.625173I$ $a = 1.29330 - 0.99233I$ $b = -1.084190 + 0.511800I$	$0.16239 + 4.42235I$	0
$u = 1.067680 + 0.392778I$ $a = 0.852018 + 0.414010I$ $b = -0.780612 - 0.671395I$	$-2.94524 - 4.81984I$	0
$u = 1.067680 - 0.392778I$ $a = 0.852018 - 0.414010I$ $b = -0.780612 + 0.671395I$	$-2.94524 + 4.81984I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.435068 + 0.737884I$ $a = -0.527799 - 0.057176I$ $b = 0.365706 + 0.271011I$	$2.69064 + 1.31991I$	$2.13735 + 0.80724I$
$u = 0.435068 - 0.737884I$ $a = -0.527799 + 0.057176I$ $b = 0.365706 - 0.271011I$	$2.69064 - 1.31991I$	$2.13735 - 0.80724I$
$u = -0.381093 + 0.751489I$ $a = 0.343576 - 0.594171I$ $b = 0.560845 - 0.405823I$	$3.42648 - 6.07271I$	$0.67730 + 5.78894I$
$u = -0.381093 - 0.751489I$ $a = 0.343576 + 0.594171I$ $b = 0.560845 + 0.405823I$	$3.42648 + 6.07271I$	$0.67730 - 5.78894I$
$u = -1.001240 + 0.581180I$ $a = -0.619113 + 0.338239I$ $b = -0.469007 - 0.810748I$	$3.04528 + 1.12254I$	0
$u = -1.001240 - 0.581180I$ $a = -0.619113 - 0.338239I$ $b = -0.469007 + 0.810748I$	$3.04528 - 1.12254I$	0
$u = -1.045000 + 0.507333I$ $a = -0.507155 + 0.270967I$ $b = -0.264182 + 0.152064I$	$-2.30319 + 1.88747I$	0
$u = -1.045000 - 0.507333I$ $a = -0.507155 - 0.270967I$ $b = -0.264182 - 0.152064I$	$-2.30319 - 1.88747I$	0
$u = 1.155910 + 0.191256I$ $a = 0.84276 + 2.60711I$ $b = 0.92267 - 1.69592I$	$-5.29538 + 9.47417I$	0
$u = 1.155910 - 0.191256I$ $a = 0.84276 - 2.60711I$ $b = 0.92267 + 1.69592I$	$-5.29538 - 9.47417I$	0



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.17701$ $a = -0.658231$ $b = -0.350023$	$-2.75709$	0
$u = 1.059010 + 0.544082I$ $a = 2.90298 - 0.23263I$ $b = -1.80671 - 1.04197I$	$-1.35793 - 4.93977I$	0
$u = 1.059010 - 0.544082I$ $a = 2.90298 + 0.23263I$ $b = -1.80671 + 1.04197I$	$-1.35793 + 4.93977I$	0
$u = 1.027730 + 0.623923I$ $a = 0.067095 + 0.674046I$ $b = 0.550499 - 0.967599I$	$1.55978 - 6.58436I$	0
$u = 1.027730 - 0.623923I$ $a = 0.067095 - 0.674046I$ $b = 0.550499 + 0.967599I$	$1.55978 + 6.58436I$	0
$u = -1.191150 + 0.227672I$ $a = -1.19083 + 2.01827I$ $b = -0.48127 - 1.42841I$	$-3.84602 - 1.16588I$	0
$u = -1.191150 - 0.227672I$ $a = -1.19083 - 2.01827I$ $b = -0.48127 + 1.42841I$	$-3.84602 + 1.16588I$	0
$u = -1.092080 + 0.530795I$ $a = 1.39607 - 1.94234I$ $b = 0.28338 + 2.77059I$	$-4.75974 + 4.95618I$	0
$u = -1.092080 - 0.530795I$ $a = 1.39607 + 1.94234I$ $b = 0.28338 - 2.77059I$	$-4.75974 - 4.95618I$	0
$u = 1.086100 + 0.555013I$ $a = -4.94326 - 3.14688I$ $b = 1.11810 + 5.15447I$	$-1.91081 - 6.16425I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.086100 - 0.555013I$ $a = -4.94326 + 3.14688I$ $b = 1.11810 - 5.15447I$	$-1.91081 + 6.16425I$	0
$u = -0.349116 + 0.697052I$ $a = -0.850598 - 0.586037I$ $b = 0.15313 - 1.96985I$	$-1.57621 - 3.96915I$	$-5.87435 + 6.27693I$
$u = -0.349116 - 0.697052I$ $a = -0.850598 + 0.586037I$ $b = 0.15313 + 1.96985I$	$-1.57621 + 3.96915I$	$-5.87435 - 6.27693I$
$u = 0.393973 + 0.671200I$ $a = 1.57723 + 0.77061I$ $b = 0.38961 - 3.89569I$	$0.103983 + 1.397740I$	$2.4292 + 14.3351I$
$u = 0.393973 - 0.671200I$ $a = 1.57723 - 0.77061I$ $b = 0.38961 + 3.89569I$	$0.103983 - 1.397740I$	$2.4292 - 14.3351I$
$u = 0.457682 + 0.625241I$ $a = 0.565879 - 1.280020I$ $b = -1.18834 + 1.90703I$	$0.412068 + 0.321069I$	$-4.01206 - 8.91676I$
$u = 0.457682 - 0.625241I$ $a = 0.565879 + 1.280020I$ $b = -1.18834 - 1.90703I$	$0.412068 - 0.321069I$	$-4.01206 + 8.91676I$
$u = -0.527849 + 0.562689I$ $a = -1.116260 + 0.212682I$ $b = 0.123198 + 0.451359I$	$-0.74428 + 2.39884I$	$-3.80212 - 6.62818I$
$u = -0.527849 - 0.562689I$ $a = -1.116260 - 0.212682I$ $b = 0.123198 - 0.451359I$	$-0.74428 - 2.39884I$	$-3.80212 + 6.62818I$
$u = 1.087300 + 0.584528I$ $a = -0.135380 + 0.626345I$ $b = 0.248701 - 0.450700I$	$0.75605 - 6.35925I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.087300 - 0.584528I$ $a = -0.135380 - 0.626345I$ $b = 0.248701 + 0.450700I$	$0.75605 + 6.35925I$	0
$u = 1.165950 + 0.406590I$ $a = 1.22632 + 2.77362I$ $b = 1.06424 - 2.33151I$	$-7.89762 - 8.83460I$	0
$u = 1.165950 - 0.406590I$ $a = 1.22632 - 2.77362I$ $b = 1.06424 + 2.33151I$	$-7.89762 + 8.83460I$	0
$u = -1.103750 + 0.554364I$ $a = 2.12163 - 1.90495I$ $b = 0.24110 + 2.88334I$	$-3.76245 + 8.78286I$	0
$u = -1.103750 - 0.554364I$ $a = 2.12163 + 1.90495I$ $b = 0.24110 - 2.88334I$	$-3.76245 - 8.78286I$	0
$u = -1.107910 + 0.578539I$ $a = 0.099912 - 0.828642I$ $b = 0.979490 + 0.450273I$	$1.28682 + 11.11430I$	0
$u = -1.107910 - 0.578539I$ $a = 0.099912 + 0.828642I$ $b = 0.979490 - 0.450273I$	$1.28682 - 11.11430I$	0
$u = -0.042883 + 0.748508I$ $a = 0.389740 + 0.269401I$ $b = 0.15170 + 2.06876I$	$-4.35199 + 4.81540I$	$-6.00555 - 5.45939I$
$u = -0.042883 - 0.748508I$ $a = 0.389740 - 0.269401I$ $b = 0.15170 - 2.06876I$	$-4.35199 - 4.81540I$	$-6.00555 + 5.45939I$
$u = -1.169170 + 0.443646I$ $a = -1.65396 + 2.53789I$ $b = -0.39135 - 2.65142I$	$-7.65032 - 0.52064I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.169170 - 0.443646I$ $a = -1.65396 - 2.53789I$ $b = -0.39135 + 2.65142I$	$-7.65032 + 0.52064I$	0
$u = -1.130220 + 0.587955I$ $a = -2.32464 + 2.60165I$ $b = -0.18193 - 3.46366I$	$-2.6682 + 17.3873I$	0
$u = -1.130220 - 0.587955I$ $a = -2.32464 - 2.60165I$ $b = -0.18193 + 3.46366I$	$-2.6682 - 17.3873I$	0
$u = 1.142030 + 0.580131I$ $a = 1.67421 + 2.51891I$ $b = 0.39837 - 2.90345I$	$-1.44455 - 9.36809I$	0
$u = 1.142030 - 0.580131I$ $a = 1.67421 - 2.51891I$ $b = 0.39837 + 2.90345I$	$-1.44455 + 9.36809I$	0
$u = -0.325329 + 0.604214I$ $a = -1.70297 - 0.69757I$ $b = 0.284162 - 1.334030I$	$-2.59935 - 0.42981I$	$-7.94943 + 0.49689I$
$u = -0.325329 - 0.604214I$ $a = -1.70297 + 0.69757I$ $b = 0.284162 + 1.334030I$	$-2.59935 + 0.42981I$	$-7.94943 - 0.49689I$
$u = 0.022176 + 0.470783I$ $a = -0.873811 - 0.515901I$ $b = -0.268577 + 0.473782I$	$-0.24724 + 1.52128I$	$-2.36985 - 4.33953I$
$u = 0.022176 - 0.470783I$ $a = -0.873811 + 0.515901I$ $b = -0.268577 - 0.473782I$	$-0.24724 - 1.52128I$	$-2.36985 + 4.33953I$
$u = -0.363856$ $a = -3.77464$ $b = 0.0649355$	$-2.38530$	$-2.53010$

$$\text{II. } I_2^u = \langle b - 1, a + 1, u + 1 \rangle$$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = -12

(iv) **u-Polynomials at the component**

Crossings	u-Polynomials at each crossing
$c_1, c_8$	$u - 1$
$c_2, c_3, c_4$ $c_5, c_6, c_7$ $c_{10}$	$u + 1$
$c_9, c_{11}$	$u$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_2, c_3$ $c_4, c_5, c_6$ $c_7, c_8, c_{10}$	$y - 1$
$c_9, c_{11}$	$y$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$		
$a = -1.00000$	-3.28987	-12.0000
$b = 1.00000$		



### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u - 1)(u^{80} + 2u^{79} + \dots + 5u + 1)$
$c_2$	$(u + 1)(u^{80} + 38u^{79} + \dots + 5u + 1)$
$c_3$	$(u + 1)(u^{80} + 35u^{78} + \dots + 27u - 1)$
$c_4$	$(u + 1)(u^{80} + 2u^{79} + \dots + 89u + 19)$
$c_5$	$(u + 1)(u^{80} + 2u^{79} + \dots + 5u + 1)$
$c_6$	$(u + 1)(u^{80} - 15u^{78} + \dots + 56453u + 8017)$
$c_7$	$(u + 1)(u^{80} + 4u^{79} + \dots - u - 1)$
$c_8$	$(u - 1)(u^{80} - 2u^{79} + \dots + 5u - 1)$
$c_9$	$u(u^{80} + 13u^{79} + \dots + 6u + 2)$
$c_{10}$	$(u + 1)(u^{80} - 2u^{79} + \dots + 5u - 1)$
$c_{11}$	$u(u^{80} + 3u^{79} + \dots - 1824u - 288)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1, c_5$	$(y - 1)(y^{80} - 38y^{79} + \dots - 5y + 1)$
$c_2$	$(y - 1)(y^{80} + 10y^{79} + \dots - 73y + 1)$
$c_3$	$(y - 1)(y^{80} + 70y^{79} + \dots - 129y + 1)$
$c_4$	$(y - 1)(y^{80} + 78y^{79} + \dots + 10547y + 361)$
$c_6$	$(y - 1)(y^{80} - 30y^{79} + \dots - 2.16019 \times 10^9 y + 6.42723 \times 10^7)$
$c_7$	$(y - 1)(y^{80} - 14y^{79} + \dots - 5y + 1)$
$c_8, c_{10}$	$(y - 1)(y^{80} - 50y^{79} + \dots + 55y + 1)$
$c_9$	$y(y^{80} - 9y^{79} + \dots - 64y + 4)$
$c_{11}$	$y(y^{80} + 15y^{79} + \dots + 2084544y + 82944)$