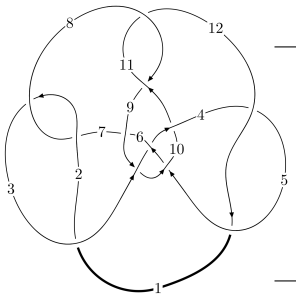
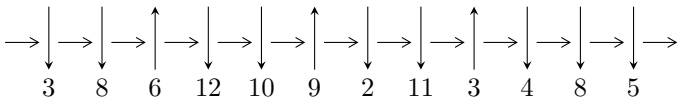
$12n_{0649}$ $(K12n_{0649})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3.75673 \times 10^{194} u^{68} - 1.58940 \times 10^{195} u^{67} + \cdots + 9.63648 \times 10^{193} b - 1.53579 \times 10^{195},$$
$$1.26586 \times 10^{195} u^{68} - 5.38237 \times 10^{195} u^{67} + \cdots + 9.63648 \times 10^{193} a - 5.24849 \times 10^{195},\ u^{69} - 4u^{68} + \cdots - 8u$$
$$I_2^u = \langle 6.02923 \times 10^{18} u^{30} - 1.34813 \times 10^{20} u^{29} + \cdots + 4.00441 \times 10^{19} b - 6.44459 \times 10^{19},$$
$$1.49489 \times 10^{20} u^{30} - 1.48284 \times 10^{21} u^{29} + \cdots + 4.00441 \times 10^{19} a + 2.33807 \times 10^{19},\ u^{31} - 11u^{30} + \cdots + u + 1$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 100 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. $\boldsymbol{I_1^u = \langle 3.76 \times 10^{194} u^{68} - 1.59 \times 10^{195} u^{67} + \cdots + 9.64 \times 10^{193} b - 1.54 \times 10^{195},\ 1.27 \times 10^{195} u^{68} - 5.38 \times 10^{195} u^{67} + \cdots + 9.64 \times 10^{193} a - 5.25 \times 10^{195},\ u^{69} - 4u^{68} + \cdots - 8u - 1 \rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -13.1361u^{68} + 55.8541u^{67} + \cdots + 202.166u + 54.4648 \\ -3.89844u^{68} + 16.4936u^{67} + \cdots + 59.7728u + 15.9372 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 10.3030u^{68} - 43.5171u^{67} + \cdots - 162.149u - 44.5391 \\ 2.44719u^{68} - 10.4597u^{67} + \cdots - 42.5909u - 11.6937 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -17.0346u^{68} + 72.3477u^{67} + \cdots + 261.938u + 70.4021 \\ -3.89844u^{68} + 16.4936u^{67} + \cdots + 59.7728u + 15.9372 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 12.2442u^{68} - 51.2281u^{67} + \cdots - 204.361u - 61.3466 \\ 2.63447u^{68} - 11.1419u^{67} + \cdots - 46.1582u - 13.3409 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 9.89356u^{68} - 41.1837u^{67} + \cdots - 163.968u - 50.2569 \\ 2.47796u^{68} - 10.4551u^{67} + \cdots - 43.3750u - 12.6991 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -13.5371u^{68} + 57.7238u^{67} + \cdots + 204.879u + 52.8631 \\ -3.08045u^{68} + 13.1709u^{67} + \cdots + 54.5833u + 13.6099 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -12.3892u^{68} + 52.8068u^{67} + \cdots + 186.100u + 48.4386 \\ -4.22829u^{68} + 18.0878u^{67} + \cdots + 73.3622u + 18.0344 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -11.8031u^{68} + 49.9636u^{67} + \cdots + 191.753u + 52.5886 \\ -4.36464u^{68} + 18.3517u^{67} + \cdots + 53.8331u + 17.0568 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 8.83213u^{68} - 38.7205u^{67} + \cdots - 158.969u - 40.1796$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{69}+93u^{68}+\cdots+5452015640u+242020249$
c_2, c_7	$u^{69}-u^{68}+\cdots+173530u-15557$
c_3	$u^{69}+5u^{68}+\cdots+20u-1$
c_4, c_{12}	$u^{69}+2u^{68}+\cdots-27u-1$
c_5	$u^{69}+4u^{68}+\cdots-28636u+15839$
c_6	$u^{69}+15u^{68}+\cdots+1134199439u+510193511$
c_8, c_{11}	$u^{69}+4u^{68}+\cdots-8u+1$
c_9	$u^{69}+2u^{68}+\cdots-137905545u-27775009$
c_{10}	$u^{69}-14u^{67}+\cdots-40553u+9503$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{69} - 229y^{68} + \cdots - 1.55 \times 10^{19}y - 5.86 \times 10^{16}$
c_2, c_7	$y^{69} - 93y^{68} + \cdots + 5452015640y - 242020249$
c_3	$y^{69} - 3y^{68} + \cdots + 574y - 1$
c_4, c_{12}	$y^{69} - 64y^{68} + \cdots - 109y - 1$
c_5	$y^{69} - 24y^{68} + \cdots + 7028148224y - 250873921$
c_6	$y^{69} + 41y^{68} + \cdots - 3357290919353259237y - 260297418666507121$
c_8, c_{11}	$y^{69} + 8y^{68} + \cdots + 40y - 1$
c_9	$y^{69} + 40y^{68} + \cdots - 1503105609784333y - 771451124950081$
c_{10}	$y^{69} - 28y^{68} + \cdots + 2430025777y - 90307009$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.620567 + 0.768614I$ $a = 0.295115 + 1.061520I$ $b = -0.266968 - 0.592280I$	$-0.27963 - 2.36978I$	0
$u = 0.620567 - 0.768614I$ $a = 0.295115 - 1.061520I$ $b = -0.266968 + 0.592280I$	$-0.27963 + 2.36978I$	0
$u = -0.528640 + 0.825985I$ $a = -0.91876 + 1.49913I$ $b = 0.651216 - 0.329173I$	$1.47908 + 6.26268I$	0
$u = -0.528640 - 0.825985I$ $a = -0.91876 - 1.49913I$ $b = 0.651216 + 0.329173I$	$1.47908 - 6.26268I$	0
$u = -0.137715 + 1.021690I$ $a = -0.661605 + 0.793353I$ $b = 0.197087 - 0.230137I$	$3.63675 - 1.09100I$	0
$u = -0.137715 - 1.021690I$ $a = -0.661605 - 0.793353I$ $b = 0.197087 + 0.230137I$	$3.63675 + 1.09100I$	0
$u = 0.107407 + 1.037840I$ $a = 0.587868 - 0.581010I$ $b = -0.884991 - 0.025674I$	$0.496579 - 0.663051I$	0
$u = 0.107407 - 1.037840I$ $a = 0.587868 + 0.581010I$ $b = -0.884991 + 0.025674I$	$0.496579 + 0.663051I$	0
$u = -0.222401 + 0.919615I$ $a = 2.37303 + 0.99586I$ $b = -1.122020 - 0.667341I$	$-4.14386 - 4.69997I$	$-6.00000 + 0.I$
$u = -0.222401 - 0.919615I$ $a = 2.37303 - 0.99586I$ $b = -1.122020 + 0.667341I$	$-4.14386 + 4.69997I$	$-6.00000 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.838105+0.648909I$ $a=\ \ 0.10341-1.55477I$ $b=-0.92630+1.43531I$	$-5.66829+9.07237I$	0
$u=-0.838105-0.648909I$ $a=\ \ 0.10341+1.55477I$ $b=-0.92630-1.43531I$	$-5.66829-9.07237I$	0
$u=-0.154687+0.918736I$ $a=-1.55788+0.16959I$ $b=\ \ 0.687623+0.445092I$	$4.18696-1.28541I$	$4.01474+6.95872I$
$u=-0.154687-0.918736I$ $a=-1.55788-0.16959I$ $b=\ \ 0.687623-0.445092I$	$4.18696+1.28541I$	$4.01474-6.95872I$
$u=-0.423890+0.826363I$ $a=\ \ 2.24030-0.37878I$ $b=-0.803942-0.617723I$	$-4.08802+2.79371I$	$-8.40346-4.46288I$
$u=-0.423890-0.826363I$ $a=\ \ 2.24030+0.37878I$ $b=-0.803942+0.617723I$	$-4.08802-2.79371I$	$-8.40346+4.46288I$
$u=\ \ 0.656203+0.537024I$ $a=\ \ 0.144124+0.951973I$ $b=\ \ 0.825256-0.762240I$	$-2.03049-2.42372I$	$-11.88014+4.36849I$
$u=\ \ 0.656203-0.537024I$ $a=\ \ 0.144124-0.951973I$ $b=\ \ 0.825256+0.762240I$	$-2.03049+2.42372I$	$-11.88014-4.36849I$
$u=\ \ 1.038170+0.518343I$ $a=\ \ 0.23203-1.56133I$ $b=\ \ 0.439658+0.706676I$	$-3.81805-0.77158I$	0
$u=\ \ 1.038170-0.518343I$ $a=\ \ 0.23203+1.56133I$ $b=\ \ 0.439658-0.706676I$	$-3.81805+0.77158I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.122030 + 0.330033I$ $a = 0.114862 - 0.612138I$ $b = 0.576498 + 0.200119I$	$-4.73007 - 1.38642I$	0
$u = 1.122030 - 0.330033I$ $a = 0.114862 + 0.612138I$ $b = 0.576498 - 0.200119I$	$-4.73007 + 1.38642I$	0
$u = -0.656371 + 0.374675I$ $a = 0.165470 - 1.147450I$ $b = -1.01885 + 1.46354I$	$-5.47683 + 0.81547I$	$-13.9925 - 5.3930I$
$u = -0.656371 - 0.374675I$ $a = 0.165470 + 1.147450I$ $b = -1.01885 - 1.46354I$	$-5.47683 - 0.81547I$	$-13.9925 + 5.3930I$
$u = -0.542753 + 0.502674I$ $a = 0.47992 + 1.35362I$ $b = 1.123720 - 0.847412I$	$2.52282 + 3.93536I$	$-13.9900 + 7.9927I$
$u = -0.542753 - 0.502674I$ $a = 0.47992 - 1.35362I$ $b = 1.123720 + 0.847412I$	$2.52282 - 3.93536I$	$-13.9900 - 7.9927I$
$u = 0.312047 + 1.275650I$ $a = 0.180263 - 0.021396I$ $b = 0.452384 - 0.381957I$	$1.11192 - 5.74822I$	0
$u = 0.312047 - 1.275650I$ $a = 0.180263 + 0.021396I$ $b = 0.452384 + 0.381957I$	$1.11192 + 5.74822I$	0
$u = 0.646566 + 1.153950I$ $a = -0.555296 - 0.470204I$ $b = 0.742815 + 0.036632I$	$-1.99427 - 4.75078I$	0
$u = 0.646566 - 1.153950I$ $a = -0.555296 + 0.470204I$ $b = 0.742815 - 0.036632I$	$-1.99427 + 4.75078I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.002330+0.964404I$ $a=-0.466181+1.322550I$ $b=\ \ 1.81745-0.51237I$	$-14.0164+8.1710I$	0
$u=-1.002330-0.964404I$ $a=-0.466181-1.322550I$ $b=\ \ 1.81745+0.51237I$	$-14.0164-8.1710I$	0
$u=-0.946562+1.030510I$ $a=-0.868148+0.716705I$ $b=\ \ 1.83104+0.18522I$	$-13.77790-0.97383I$	0
$u=-0.946562-1.030510I$ $a=-0.868148-0.716705I$ $b=\ \ 1.83104-0.18522I$	$-13.77790+0.97383I$	0
$u=-0.591069+0.013145I$ $a=-0.515476-1.061590I$ $b=\ \ 0.966070+0.361777I$	$0.02321+3.30644I$	$-5.31577-0.65285I$
$u=-0.591069-0.013145I$ $a=-0.515476+1.061590I$ $b=\ \ 0.966070-0.361777I$	$0.02321-3.30644I$	$-5.31577+0.65285I$
$u=\ \ 1.10514+0.89184I$ $a=\ \ 0.164136+1.174890I$ $b=-1.62723-0.15806I$	$-12.28980-3.04790I$	0
$u=\ \ 1.10514-0.89184I$ $a=\ \ 0.164136-1.174890I$ $b=-1.62723+0.15806I$	$-12.28980+3.04790I$	0
$u=-1.11441+0.88592I$ $a=\ \ 0.530643-0.904741I$ $b=-1.80094+0.20722I$	$-9.46729-0.43830I$	0
$u=-1.11441-0.88592I$ $a=\ \ 0.530643+0.904741I$ $b=-1.80094-0.20722I$	$-9.46729+0.43830I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.516405 + 0.186599I$ $a = 0.640636 + 1.173020I$ $b = -0.388056 - 0.459140I$	$-0.958480 - 0.805455I$	$-7.77105 + 4.82174I$
$u = 0.516405 - 0.186599I$ $a = 0.640636 - 1.173020I$ $b = -0.388056 + 0.459140I$	$-0.958480 + 0.805455I$	$-7.77105 - 4.82174I$
$u = 0.147481 + 0.503422I$ $a = -0.36096 - 1.70078I$ $b = 1.252360 + 0.364532I$	$0.68981 - 3.79739I$	$-6.01075 + 6.87866I$
$u = 0.147481 - 0.503422I$ $a = -0.36096 + 1.70078I$ $b = 1.252360 - 0.364532I$	$0.68981 + 3.79739I$	$-6.01075 - 6.87866I$
$u = -0.95922 + 1.13812I$ $a = 0.794182 - 1.019950I$ $b = -1.83758 + 0.14472I$	$-8.62794 + 7.99769I$	0
$u = -0.95922 - 1.13812I$ $a = 0.794182 + 1.019950I$ $b = -1.83758 - 0.14472I$	$-8.62794 - 7.99769I$	0
$u = 1.03201 + 1.14811I$ $a = 0.487442 + 0.669822I$ $b = -1.75842 - 0.02454I$	$-11.52020 - 4.73562I$	0
$u = 1.03201 - 1.14811I$ $a = 0.487442 - 0.669822I$ $b = -1.75842 + 0.02454I$	$-11.52020 + 4.73562I$	0
$u = 1.34349 + 0.76930I$ $a = 0.943902 + 0.462742I$ $b = -2.02719 - 0.08295I$	$-13.45390 - 2.79174I$	0
$u = 1.34349 - 0.76930I$ $a = 0.943902 - 0.462742I$ $b = -2.02719 + 0.08295I$	$-13.45390 + 2.79174I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.04079+1.14862I$ $a=-0.62713+1.30220I$ $b=\ \ 1.82368-0.48099I$	$-14.2539+16.3836I$	0
$u=-1.04079-1.14862I$ $a=-0.62713-1.30220I$ $b=\ \ 1.82368+0.48099I$	$-14.2539-16.3836I$	0
$u=\ \ 1.31236+0.85608I$ $a=-0.165829-0.631740I$ $b=\ \ 1.40725+0.17549I$	$-6.75937-3.17506I$	0
$u=\ \ 1.31236-0.85608I$ $a=-0.165829+0.631740I$ $b=\ \ 1.40725-0.17549I$	$-6.75937+3.17506I$	0
$u=-1.21210+0.99408I$ $a=-0.786829+0.482506I$ $b=\ \ 1.81955+0.16961I$	$-14.8655-8.2485I$	0
$u=-1.21210-0.99408I$ $a=-0.786829-0.482506I$ $b=\ \ 1.81955-0.16961I$	$-14.8655+8.2485I$	0
$u=\ \ 0.62481+1.44175I$ $a=-0.659114+0.373702I$ $b=\ \ 1.020270-0.315614I$	$-0.62961-5.82441I$	0
$u=\ \ 0.62481-1.44175I$ $a=-0.659114-0.373702I$ $b=\ \ 1.020270+0.315614I$	$-0.62961+5.82441I$	0
$u=-0.406118+0.105873I$ $a=-3.09068+4.20680I$ $b=-0.848456+0.276599I$	$-4.21394+5.94658I$	$-15.8228-7.9885I$
$u=-0.406118-0.105873I$ $a=-3.09068-4.20680I$ $b=-0.848456-0.276599I$	$-4.21394-5.94658I$	$-15.8228+7.9885I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.116165 + 0.397349I$ $a = 0.27470 - 4.41535I$ $b = -0.446135 + 0.421163I$	$-1.97541 - 0.27152I$	$-0.85009 - 1.43136I$
$u = 0.116165 - 0.397349I$ $a = 0.27470 + 4.41535I$ $b = -0.446135 - 0.421163I$	$-1.97541 + 0.27152I$	$-0.85009 + 1.43136I$
$u = 1.02872 + 1.31167I$ $a = 1.01833 + 1.19464I$ $b = -1.80440 - 0.35029I$	$-11.72610 - 5.67856I$	0
$u = 1.02872 - 1.31167I$ $a = 1.01833 - 1.19464I$ $b = -1.80440 + 0.35029I$	$-11.72610 + 5.67856I$	0
$u = 1.14131 + 1.22151I$ $a = -0.329605 - 0.788330I$ $b = 1.42012 + 0.24581I$	$-5.65420 - 5.51638I$	0
$u = 1.14131 - 1.22151I$ $a = -0.329605 + 0.788330I$ $b = 1.42012 - 0.24581I$	$-5.65420 + 5.51638I$	0
$u = 0.321634$ $a = 0.533210$ $b = -2.72013$	-7.29217	-53.2230
$u = -0.285159$ $a = -2.97082$ $b = -0.913830$	-1.37319	-7.60330
$u = -0.223928$ $a = 6.02391$ $b = 1.64889$	-8.93621	-10.9880

II.

$\boldsymbol{I_2^u = \langle 6.03\times 10^{18}u^{30} - 1.35\times 10^{20}u^{29} + \cdots + 4.00\times 10^{19}b - 6.44\times 10^{19},\ 1.49\times 10^{20}u^{30} - 1.48\times 10^{21}u^{29} + \cdots + 4.00\times 10^{19}a + 2.34\times 10^{19},\ u^{31} - 11u^{30} + \cdots + u + 1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -3.73310u^{30} + 37.0302u^{29} + \cdots + 4.71974u - 0.583873 \\ -0.150565u^{30} + 3.36662u^{29} + \cdots + 11.8844u + 1.60937 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 2.54892u^{30} - 25.5143u^{29} + \cdots + 12.7710u - 2.09884 \\ -1.37595u^{30} + 14.0827u^{29} + \cdots + 12.2042u - 2.17546 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -3.88367u^{30} + 40.3968u^{29} + \cdots + 16.6041u + 1.02550 \\ -0.150565u^{30} + 3.36662u^{29} + \cdots + 11.8844u + 1.60937 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.779209u^{30} - 10.5172u^{29} + \cdots + 20.0097u - 8.34541 \\ -2.94589u^{30} + 29.8552u^{29} + \cdots + 7.87539u - 2.77921 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.17546u^{30} - 13.3060u^{29} + \cdots + 13.3010u - 3.62031 \\ -1.44902u^{30} + 13.8980u^{29} + \cdots + 5.90919u - 4.34915 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2.21570u^{30} + 23.4388u^{29} + \cdots - 8.43029u + 5.95342 \\ 1.64393u^{30} - 19.9690u^{29} + \cdots - 25.1574u - 2.39360 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.230196u^{30} + 1.55171u^{29} + \cdots - 11.8217u + 3.13375 \\ -0.341574u^{30} + 1.91808u^{29} + \cdots - 21.7660u + 0.426069 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.558080u^{30} + 2.66742u^{29} + \cdots - 33.7718u - 0.202014 \\ -3.76215u^{30} + 40.3788u^{29} + \cdots - 19.6251u + 10.7116 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{307207196923443676437}{40044125180651709809}u^{30} - \frac{2526478116728013948319}{40044125180651709809}u^{29} + \cdots + \frac{1322961892115776663297}{40044125180651709809}u + \frac{123997046537388272314 7}{40044125180651709809}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{31} - 34u^{30} + \cdots + 39u - 1$
c_2	$u^{31} - 17u^{29} + \cdots + 9u - 1$
c_3	$u^{31} + 6u^{30} + \cdots + 7u - 1$
c_4	$u^{31} + u^{30} + \cdots - 2u + 1$
c_5	$u^{31} - u^{30} + \cdots - u - 1$
c_6	$u^{31} - 4u^{30} + \cdots - 142u - 29$
c_7	$u^{31} - 17u^{29} + \cdots + 9u + 1$
c_8	$u^{31} - 11u^{30} + \cdots + u + 1$
c_9	$u^{31} - u^{30} + \cdots + 2u + 1$
c_{10}	$u^{31} - u^{30} + \cdots + 4u^2 - 1$
c_{11}	$u^{31} + 11u^{30} + \cdots + u - 1$
c_{12}	$u^{31} - u^{30} + \cdots - 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{31} - 70y^{30} + \cdots + 139y - 1$
c_2, c_7	$y^{31} - 34y^{30} + \cdots + 39y - 1$
c_3	$y^{31} - 8y^{30} + \cdots + 5y - 1$
c_4, c_{12}	$y^{31} - 17y^{30} + \cdots + 14y - 1$
c_5	$y^{31} + 7y^{30} + \cdots + 19y - 1$
c_6	$y^{31} - 28y^{30} + \cdots - 7154y - 841$
c_8, c_{11}	$y^{31} + 11y^{30} + \cdots + 35y - 1$
c_9	$y^{31} - 5y^{30} + \cdots + 2y - 1$
c_{10}	$y^{31} - y^{30} + \cdots + 8y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.281205+0.971174I$ $a=-0.615943-0.339244I$ $b=\ \ 1.174390+0.263468I$	$1.03034-2.56329I$	$-6.19586+1.48742I$
$u=-0.281205-0.971174I$ $a=-0.615943+0.339244I$ $b=\ \ 1.174390-0.263468I$	$1.03034+2.56329I$	$-6.19586-1.48742I$
$u=-0.573029+0.856248I$ $a=-0.86482+1.67406I$ $b=\ \ 0.915126-0.246275I$	$0.72514+6.24923I$	$-9.80523-7.59292I$
$u=-0.573029-0.856248I$ $a=-0.86482-1.67406I$ $b=\ \ 0.915126+0.246275I$	$0.72514-6.24923I$	$-9.80523+7.59292I$
$u=\ \ 0.283950+0.922959I$ $a=-1.50623-0.23020I$ $b=\ \ 0.841182-0.556865I$	$3.80218+1.04414I$	$-12.13425+2.68369I$
$u=\ \ 0.283950-0.922959I$ $a=-1.50623+0.23020I$ $b=\ \ 0.841182+0.556865I$	$3.80218-1.04414I$	$-12.13425-2.68369I$
$u=\ \ 0.890141+0.283894I$ $a=-0.445686+1.267980I$ $b=-0.422997-0.724172I$	$-3.35676-0.35087I$	$-8.98621-1.63860I$
$u=\ \ 0.890141-0.283894I$ $a=-0.445686-1.267980I$ $b=-0.422997+0.724172I$	$-3.35676+0.35087I$	$-8.98621+1.63860I$
$u=-0.207980+1.101240I$ $a=-0.89328+1.11876I$ $b=\ \ 0.764646-0.190260I$	$2.66272-0.74440I$	$-5.63363-0.02997I$
$u=-0.207980-1.101240I$ $a=-0.89328-1.11876I$ $b=\ \ 0.764646+0.190260I$	$2.66272+0.74440I$	$-5.63363+0.02997I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.583039 + 0.642975I$ $a = 0.00720 + 1.82335I$ $b = -0.301590 - 0.060396I$	$-2.55773 - 0.83625I$	$-9.77903 + 4.79038I$
$u = 0.583039 - 0.642975I$ $a = 0.00720 - 1.82335I$ $b = -0.301590 + 0.060396I$	$-2.55773 + 0.83625I$	$-9.77903 - 4.79038I$
$u = 0.504326 + 0.591959I$ $a = 0.30187 - 1.48735I$ $b = 1.038170 + 0.856899I$	$2.68272 - 4.15399I$	$3.9077 + 15.6446I$
$u = 0.504326 - 0.591959I$ $a = 0.30187 + 1.48735I$ $b = 1.038170 - 0.856899I$	$2.68272 + 4.15399I$	$3.9077 - 15.6446I$
$u = 0.650361 + 1.066090I$ $a = -0.095057 - 0.394554I$ $b = -0.386904 + 0.206027I$	$-1.14707 - 4.11229I$	$-7.80297 + 3.79379I$
$u = 0.650361 - 1.066090I$ $a = -0.095057 + 0.394554I$ $b = -0.386904 - 0.206027I$	$-1.14707 + 4.11229I$	$-7.80297 - 3.79379I$
$u = -0.664749 + 0.251063I$ $a = -0.027910 - 0.580826I$ $b = 1.350950 + 0.276294I$	$-0.56828 + 3.88777I$	$-12.3622 - 8.2948I$
$u = -0.664749 - 0.251063I$ $a = -0.027910 + 0.580826I$ $b = 1.350950 - 0.276294I$	$-0.56828 - 3.88777I$	$-12.3622 + 8.2948I$
$u = 0.333446 + 1.364760I$ $a = 0.124901 + 0.542190I$ $b = -0.960760 - 0.264065I$	$0.27850 - 7.38615I$	$-6.00000 + 10.55289I$
$u = 0.333446 - 1.364760I$ $a = 0.124901 - 0.542190I$ $b = -0.960760 + 0.264065I$	$0.27850 + 7.38615I$	$-6.00000 - 10.55289I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.498231 + 1.318270I$ $a = 0.778422 - 0.077820I$ $b = -0.969866 + 0.394187I$	$0.18887 - 4.88085I$	$-6.00000 + 0.I$
$u = 0.498231 - 1.318270I$ $a = 0.778422 + 0.077820I$ $b = -0.969866 - 0.394187I$	$0.18887 + 4.88085I$	$-6.00000 + 0.I$
$u = -0.006802 + 0.524481I$ $a = 5.16988 + 0.51549I$ $b = -0.815852 + 0.430370I$	$-3.66986 + 5.87361I$	$-1.07131 - 6.71665I$
$u = -0.006802 - 0.524481I$ $a = 5.16988 - 0.51549I$ $b = -0.815852 - 0.430370I$	$-3.66986 - 5.87361I$	$-1.07131 + 6.71665I$
$u = 1.10454 + 1.05740I$ $a = -0.566076 - 0.883920I$ $b = 1.77304 + 0.13717I$	$-11.82570 - 4.00133I$	0
$u = 1.10454 - 1.05740I$ $a = -0.566076 + 0.883920I$ $b = 1.77304 - 0.13717I$	$-11.82570 + 4.00133I$	0
$u = 1.35707 + 0.73346I$ $a = 0.037472 + 0.616561I$ $b = -1.344490 - 0.217373I$	$-7.10048 - 2.84738I$	0
$u = 1.35707 - 0.73346I$ $a = 0.037472 - 0.616561I$ $b = -1.344490 + 0.217373I$	$-7.10048 + 2.84738I$	0
$u = 1.10264 + 1.27051I$ $a = 0.384930 + 0.743191I$ $b = -1.42330 - 0.19564I$	$-5.51939 - 5.81662I$	0
$u = 1.10264 - 1.27051I$ $a = 0.384930 - 0.743191I$ $b = -1.42330 + 0.19564I$	$-5.51939 + 5.81662I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.147953$		
$a=-2.57936$	-7.17813	18.1280
$b=-2.46350$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{31}-34u^{30}+\cdots+39u-1)$ $\cdot(u^{69}+93u^{68}+\cdots+5452015640u+242020249)$
c_2	$(u^{31}-17u^{29}+\cdots+9u-1)(u^{69}-u^{68}+\cdots+173530u-15557)$
c_3	$(u^{31}+6u^{30}+\cdots+7u-1)(u^{69}+5u^{68}+\cdots+20u-1)$
c_4	$(u^{31}+u^{30}+\cdots-2u+1)(u^{69}+2u^{68}+\cdots-27u-1)$
c_5	$(u^{31}-u^{30}+\cdots-u-1)(u^{69}+4u^{68}+\cdots-28636u+15839)$
c_6	$(u^{31}-4u^{30}+\cdots-142u-29)$ $\cdot(u^{69}+15u^{68}+\cdots+1134199439u+510193511)$
c_7	$(u^{31}-17u^{29}+\cdots+9u+1)(u^{69}-u^{68}+\cdots+173530u-15557)$
c_8	$(u^{31}-11u^{30}+\cdots+u+1)(u^{69}+4u^{68}+\cdots-8u+1)$
c_9	$(u^{31}-u^{30}+\cdots+2u+1)$ $\cdot(u^{69}+2u^{68}+\cdots-137905545u-27775009)$
c_{10}	$(u^{31}-u^{30}+\cdots+4u^2-1)(u^{69}-14u^{67}+\cdots-40553u+9503)$
c_{11}	$(u^{31}+11u^{30}+\cdots+u-1)(u^{69}+4u^{68}+\cdots-8u+1)$
c_{12}	$(u^{31}-u^{30}+\cdots-2u-1)(u^{69}+2u^{68}+\cdots-27u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{31} - 70y^{30} + \cdots + 139y - 1)$ $\cdot (y^{69} - 229y^{68} + \cdots - 1.55 \times 10^{19} y - 5.86 \times 10^{16})$
c_2, c_7	$(y^{31} - 34y^{30} + \cdots + 39y - 1)$ $\cdot (y^{69} - 93y^{68} + \cdots + 5452015640y - 242020249)$
c_3	$(y^{31} - 8y^{30} + \cdots + 5y - 1)(y^{69} - 3y^{68} + \cdots + 574y - 1)$
c_4, c_{12}	$(y^{31} - 17y^{30} + \cdots + 14y - 1)(y^{69} - 64y^{68} + \cdots - 109y - 1)$
c_5	$(y^{31} + 7y^{30} + \cdots + 19y - 1)$ $\cdot (y^{69} - 24y^{68} + \cdots + 7028148224y - 250873921)$
c_6	$(y^{31} - 28y^{30} + \cdots - 7154y - 841)$ $\cdot (y^{69} + 41y^{68} + \cdots - 3357290919353259237y - 260297418666507121)$
c_8, c_{11}	$(y^{31} + 11y^{30} + \cdots + 35y - 1)(y^{69} + 8y^{68} + \cdots + 40y - 1)$
c_9	$(y^{31} - 5y^{30} + \cdots + 2y - 1)$ $\cdot (y^{69} + 40y^{68} + \cdots - 1503105609784333y - 771451124950081)$
c_{10}	$(y^{31} - y^{30} + \cdots + 8y - 1)$ $\cdot (y^{69} - 28y^{68} + \cdots + 2430025777y - 90307009)$