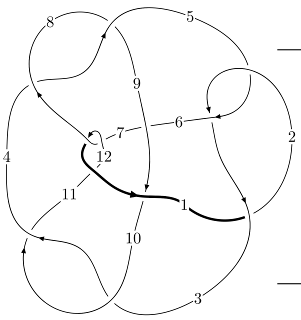
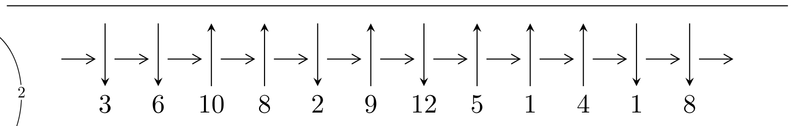
$12n_{0511}$ $(K12n_{0511})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{24} + 3u^{23} + \cdots + 2b + u,\ 2u^{24} + u^{23} + \cdots + 2a - 17,\ u^{25} + 5u^{24} + \cdots + 18u + 4\rangle$$

$$\begin{aligned}I_2^u = \langle &-u^{14} + 3u^{12} - u^{11} - 7u^{10} + 2u^9 + 9u^8 - 5u^7 - 9u^6 + 5u^5 + 6u^4 - 5u^3 - 3u^2 + b + 2u + 1,\\ &u^{11} - 3u^9 + u^8 + 6u^7 - 3u^6 - 7u^5 + 5u^4 + 5u^3 - 5u^2 + a - 3u + 3,\\ &u^{15} - 3u^{13} + u^{12} + 7u^{11} - 2u^{10} - 10u^9 + 5u^8 + 11u^7 - 6u^6 - 9u^5 + 6u^4 + 5u^3 - 4u^2 - 2u + 1\rangle\end{aligned}$$

$$\begin{aligned}I_3^u = \langle &-3393922u^7a^3 - 6147191u^7a^2 + \cdots + 12439448a + 20529116,\ 2u^7a^3 - 2u^7a^2 + \cdots - 23a + 17,\\ &u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1\rangle\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 72 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.

$$I^u_1 = \langle u^{24}+3u^{23}+\cdots+2b+u,\ 2u^{24}+u^{23}+\cdots+2a-17,\ u^{25}+5u^{24}+\cdots+18u+4\rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{24}-\frac{1}{2}u^{23}+\cdots+22u+\frac{17}{2} \\ -\frac{1}{2}u^{24}-\frac{3}{2}u^{23}+\cdots-u^2-\frac{1}{2}u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{3}{2}u^{24}-2u^{23}+\cdots+\frac{43}{2}u+\frac{17}{2} \\ -\frac{1}{2}u^{24}-\frac{3}{2}u^{23}+\cdots-u^2-\frac{1}{2}u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{9}{2}u^{24}+16u^{23}+\cdots+\frac{55}{2}u+\frac{9}{2} \\ \frac{3}{2}u^{24}+\frac{23}{2}u^{23}+\cdots+\frac{145}{2}u+22 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{7}{4}u^{24}+\frac{29}{4}u^{23}+\cdots+\frac{99}{4}u+7 \\ -\frac{1}{2}u^{24}-\frac{3}{2}u^{23}+\cdots-\frac{9}{2}u-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{3}{4}u^{24}-\frac{17}{4}u^{23}+\cdots-\frac{79}{4}u-6 \\ \frac{1}{2}u^{24}+\frac{1}{2}u^{23}+\cdots-\frac{17}{2}u-3 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{9}{4}u^{24}+\frac{31}{4}u^{23}+\cdots+\frac{45}{4}u+3 \\ -\frac{1}{2}u^{24}-\frac{1}{2}u^{23}+\cdots+\frac{17}{2}u+3 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{31}{4}u^{24}-\frac{117}{4}u^{23}+\cdots-\frac{255}{4}u-14 \\ \frac{3}{2}u^{24}-\frac{5}{2}u^{23}+\cdots-\frac{129}{2}u-21 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -u^{24}-9u^{23}-18u^{22}+8u^{21}+66u^{20}+40u^{19}-108u^{18}-139u^{17}+116u^{16}+307u^{15}+29u^{14}-388u^{13}-280u^{12}+239u^{11}+390u^{10}-41u^9-409u^8-217u^7+209u^6+339u^5+137u^4-74u^3-126u^2-72u-22$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{25}+9u^{24}+\cdots-36u+16$
c_2, c_5	$u^{25}+5u^{24}+\cdots+18u+4$
c_3, c_4, c_8 c_{10}	$u^{25}-u^{24}+\cdots+u+1$
c_6, c_9	$u^{25}+5u^{24}+\cdots+19u-1$
c_7, c_{12}	$u^{25}-15u^{24}+\cdots+1280u-256$
c_{11}	$u^{25}+19u^{24}+\cdots+131072u+65536$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{25} + 15y^{24} + \cdots + 2544y - 256$
c_2, c_5	$y^{25} - 9y^{24} + \cdots - 36y - 16$
c_3, c_4, c_8 c_{10}	$y^{25} - y^{24} + \cdots + 7y - 1$
c_6, c_9	$y^{25} + 15y^{24} + \cdots + 395y - 1$
c_7, c_{12}	$y^{25} - 19y^{24} + \cdots + 131072y - 65536$
c_{11}	$y^{25} - 39y^{24} + \cdots + 31138512896y - 4294967296$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.022010 + 0.128401I$ $a = -0.46250 - 1.36086I$ $b = 0.463679 - 0.734252I$	$-3.37093 - 3.23509I$	$-5.61108 + 7.22985I$
$u = 1.022010 - 0.128401I$ $a = -0.46250 + 1.36086I$ $b = 0.463679 + 0.734252I$	$-3.37093 + 3.23509I$	$-5.61108 - 7.22985I$
$u = -0.607816 + 0.864536I$ $a = -1.47268 + 0.78689I$ $b = 1.19042 - 1.00082I$	$-3.85370 - 9.16879I$	$1.40851 + 4.09106I$
$u = -0.607816 - 0.864536I$ $a = -1.47268 - 0.78689I$ $b = 1.19042 + 1.00082I$	$-3.85370 + 9.16879I$	$1.40851 - 4.09106I$
$u = -0.701915 + 0.801942I$ $a = 1.143080 - 0.216154I$ $b = -0.667380 + 0.687693I$	$2.88462 - 2.98752I$	$1.24178 + 4.92994I$
$u = -0.701915 - 0.801942I$ $a = 1.143080 + 0.216154I$ $b = -0.667380 - 0.687693I$	$2.88462 + 2.98752I$	$1.24178 - 4.92994I$
$u = -0.907357 + 0.568454I$ $a = 0.534312 - 0.354050I$ $b = 0.130379 - 0.742012I$	$-1.07299 + 2.19225I$	$-2.62579 - 1.77817I$
$u = -0.907357 - 0.568454I$ $a = 0.534312 + 0.354050I$ $b = 0.130379 + 0.742012I$	$-1.07299 - 2.19225I$	$-2.62579 + 1.77817I$
$u = -0.332071 + 0.816286I$ $a = -1.186400 - 0.698523I$ $b = 0.916099 + 0.927578I$	$-5.43513 + 5.46912I$	$0.78254 - 4.99205I$
$u = -0.332071 - 0.816286I$ $a = -1.186400 + 0.698523I$ $b = 0.916099 - 0.927578I$	$-5.43513 - 5.46912I$	$0.78254 + 4.99205I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.771350 + 0.820157I$ $a = 1.190320 + 0.400479I$ $b = -0.775875 + 0.036362I$	$3.94043 - 0.14935I$	$4.83254 + 1.63894I$
$u = 0.771350 - 0.820157I$ $a = 1.190320 - 0.400479I$ $b = -0.775875 - 0.036362I$	$3.94043 + 0.14935I$	$4.83254 - 1.63894I$
$u = -1.14488$ $a = -0.0580320$ $b = 0.402484$	-2.58383	-9.25590
$u = 1.164980 + 0.105711I$ $a = 0.110899 + 0.971898I$ $b = -1.02874 + 1.10276I$	$-10.62140 - 8.07096I$	$-4.98343 + 5.16742I$
$u = 1.164980 - 0.105711I$ $a = 0.110899 - 0.971898I$ $b = -1.02874 - 1.10276I$	$-10.62140 + 8.07096I$	$-4.98343 - 5.16742I$
$u = -1.003900 + 0.721068I$ $a = -1.77847 + 0.86765I$ $b = 0.663062 + 0.750145I$	$1.96585 + 8.72477I$	$-0.55953 - 10.18504I$
$u = -1.003900 - 0.721068I$ $a = -1.77847 - 0.86765I$ $b = 0.663062 - 0.750145I$	$1.96585 - 8.72477I$	$-0.55953 + 10.18504I$
$u = -1.108570 + 0.552402I$ $a = -0.613758 - 0.766814I$ $b = -0.745695 + 0.996770I$	$-7.80108 - 0.44100I$	$-3.37024 + 0.98535I$
$u = -1.108570 - 0.552402I$ $a = -0.613758 + 0.766814I$ $b = -0.745695 - 0.996770I$	$-7.80108 + 0.44100I$	$-3.37024 - 0.98535I$
$u = 0.970256 + 0.774295I$ $a = -1.083210 - 0.441322I$ $b = 0.817211 - 0.103305I$	$3.34163 - 5.81240I$	$4.36911 + 4.55947I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.970256 - 0.774295I$ $a = -1.083210 + 0.441322I$ $b = 0.817211 + 0.103305I$	$3.34163 + 5.81240I$	$4.36911 - 4.55947I$
$u = -1.065260 + 0.710865I$ $a = 2.12764 - 1.03485I$ $b = -1.23337 - 1.05815I$	$-5.2477 + 15.0268I$	$-0.46984 - 8.38163I$
$u = -1.065260 - 0.710865I$ $a = 2.12764 + 1.03485I$ $b = -1.23337 + 1.05815I$	$-5.2477 - 15.0268I$	$-0.46984 + 8.38163I$
$u = -0.129278 + 0.516797I$ $a = 1.019780 + 0.018690I$ $b = -0.431034 - 0.465642I$	$0.243380 + 1.219270I$	$2.61337 - 5.64120I$
$u = -0.129278 - 0.516797I$ $a = 1.019780 - 0.018690I$ $b = -0.431034 + 0.465642I$	$0.243380 - 1.219270I$	$2.61337 + 5.64120I$

II.

$\boldsymbol{I_2^u = \langle -u^{14}+3u^{12}+\cdots+b+1,\ u^{11}-3u^9+\cdots+a+3,\ u^{15}-3u^{13}+\cdots-2u+1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{11}+3u^9-u^8-6u^7+3u^6+7u^5-5u^4-5u^3+5u^2+3u-3 \\ u^{14}-3u^{12}+\cdots-2u-1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{14}-3u^{12}+7u^{10}+u^9-10u^8-u^7+12u^6+2u^5-11u^4+8u^2+u-4 \\ u^{14}-3u^{12}+\cdots-2u-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{14}+u^{13}+\cdots+2u-4 \\ u^{14}-4u^{12}+\cdots-2u-1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{14}+2u^{12}-5u^{10}-u^9+7u^8-8u^6-u^5+9u^4-u^3-5u^2+u+3 \\ -u^{14}+3u^{12}+\cdots+2u+1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{14}+2u^{12}+\cdots+5u-1 \\ -u^{13}+2u^{11}-u^{10}-4u^9+u^8+4u^7-3u^6-3u^5+2u^4+2u^3-2u^2+1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{14}+u^{13}+\cdots+2u^2-4u \\ u^{13}-2u^{11}+u^{10}+4u^9-u^8-4u^7+3u^6+3u^5-2u^4-2u^3+2u^2-1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{14}+u^{13}+\cdots+6u-1 \\ -u^{13}-u^{12}+\cdots-u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -11u^{14}-2u^{13}+30u^{12}-6u^{11}-65u^{10}+8u^9+82u^8-35u^7-82u^6+37u^5+60u^4-36u^3-29u^2+19u+10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} - 6u^{14} + \cdots + 12u - 1$
c_2	$u^{15} - 3u^{13} + \cdots - 2u - 1$
c_3, c_8	$u^{15} + u^{14} + \cdots - 2u - 1$
c_4, c_{10}	$u^{15} - u^{14} + \cdots - 2u + 1$
c_5	$u^{15} - 3u^{13} + \cdots - 2u + 1$
c_6, c_9	$u^{15} - u^{14} + \cdots + 4u - 1$
c_7	$u^{15} - 4u^{14} + \cdots + u - 1$
c_{11}	$u^{15} - 16u^{14} + \cdots + 11u - 1$
c_{12}	$u^{15} + 4u^{14} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} + 10y^{14} + \cdots + 48y - 1$
c_2, c_5	$y^{15} - 6y^{14} + \cdots + 12y - 1$
c_3, c_4, c_8 c_{10}	$y^{15} - 11y^{14} + \cdots + 4y - 1$
c_6, c_9	$y^{15} - 15y^{14} + \cdots + 84y - 1$
c_7, c_{12}	$y^{15} - 16y^{14} + \cdots + 11y - 1$
c_{11}	$y^{15} - 32y^{14} + \cdots + 19y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.610459 + 0.818977I$ $a = 0.845782 + 0.040690I$ $b = -0.828532 - 0.288942I$	$4.08493 + 1.50545I$	$8.35754 - 2.89339I$
$u = 0.610459 - 0.818977I$ $a = 0.845782 - 0.040690I$ $b = -0.828532 + 0.288942I$	$4.08493 - 1.50545I$	$8.35754 + 2.89339I$
$u = -0.769013 + 0.725023I$ $a = 2.33071 - 0.73449I$ $b = -1.393460 - 0.182294I$	$6.41341 + 0.87585I$	$5.46284 + 0.51162I$
$u = -0.769013 - 0.725023I$ $a = 2.33071 + 0.73449I$ $b = -1.393460 + 0.182294I$	$6.41341 - 0.87585I$	$5.46284 - 0.51162I$
$u = 0.926602$ $a = 0.105302$ $b = 1.43340$	1.68940	-5.69740
$u = 0.865065 + 0.641915I$ $a = 0.325602 + 1.317420I$ $b = 0.034258 + 0.919510I$	$-2.70696 - 2.50359I$	$-7.46265 + 2.73240I$
$u = 0.865065 - 0.641915I$ $a = 0.325602 - 1.317420I$ $b = 0.034258 - 0.919510I$	$-2.70696 + 2.50359I$	$-7.46265 - 2.73240I$
$u = -0.841141 + 0.268178I$ $a = -2.21555 - 0.38844I$ $b = 0.099804 + 0.728419I$	$-4.83754 + 1.17574I$	$-4.66883 - 5.44721I$
$u = -0.841141 - 0.268178I$ $a = -2.21555 + 0.38844I$ $b = 0.099804 - 0.728419I$	$-4.83754 - 1.17574I$	$-4.66883 + 5.44721I$
$u = -0.948405 + 0.696988I$ $a = -1.67918 + 1.38536I$ $b = 1.44517 - 0.15870I$	$5.86123 + 4.56895I$	$3.18547 - 5.68185I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.948405 - 0.696988I$ $a = -1.67918 - 1.38536I$ $b = 1.44517 + 0.15870I$	$5.86123 - 4.56895I$	$3.18547 + 5.68185I$
$u = -1.23026$ $a = 0.155877$ $b = 0.554784$	-2.29287	19.0230
$u = 1.047680 + 0.712038I$ $a = -0.996406 - 0.863353I$ $b = 0.745668 - 0.399900I$	$2.79145 - 7.25376I$	$4.27394 + 8.38512I$
$u = 1.047680 - 0.712038I$ $a = -0.996406 + 0.863353I$ $b = 0.745668 + 0.399900I$	$2.79145 + 7.25376I$	$4.27394 - 8.38512I$
$u = 0.374372$ $a = -1.48310$ $b = -1.19401$	3.70935	12.3780

III. $\boldsymbol{I_3^u = \langle -3.39\times 10^6 a^3u^7 - 6.15\times 10^6 a^2u^7 + \cdots + 1.24\times 10^7 a + 2.05\times 10^7,\ 2u^7a^3 - 2u^7a^2 + \cdots - 23a + 17,\ u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ 0.283764a^3u^7 + 0.513963a^2u^7 + \cdots - 1.04005a - 1.71643 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.283764a^3u^7 + 0.513963a^2u^7 + \cdots - 0.0400540a - 1.71643 \\ 0.283764a^3u^7 + 0.513963a^2u^7 + \cdots - 1.04005a - 1.71643 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.440437a^3u^7 + 1.12437a^2u^7 + \cdots + 0.166168a - 1.95484 \\ -0.247023a^3u^7 - 0.0629067a^2u^7 + \cdots - 0.465339a - 0.571361 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.324332a^3u^7 + 0.395429a^2u^7 + \cdots + 3.89099a - 2.79578 \\ -0.141400a^3u^7 - 0.123061a^2u^7 + \cdots - 0.426253a + 1.88661 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.152786a^3u^7 - 0.260932a^2u^7 + \cdots - 0.651322a + 0.714680 \\ -0.168076a^3u^7 + 0.726751a^2u^7 + \cdots + 2.04153a - 2.64032 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.229339a^3u^7 - 0.0567257a^2u^7 + \cdots - 0.549412a + 0.851419 \\ -0.401302a^3u^7 + 0.320549a^2u^7 + \cdots + 1.93722a - 2.26518 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0762339a^3u^7 - 0.465138a^2u^7 + \cdots - 0.753232a + 0.577941 \\ 0.0651496a^3u^7 + 1.13295a^2u^7 + \cdots + 2.14585a - 3.01547 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^4$
c_2, c_5	$(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)^4$
c_3, c_4, c_8 c_{10}	$u^{32}-u^{31}+\cdots-18u-1$
c_6, c_9	$u^{32}+9u^{31}+\cdots-634u-1$
c_7, c_{12}	$(u^2+u-1)^{16}$
c_{11}	$(u^2+3u+1)^{16}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^4$
c_2, c_5	$(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)^4$
c_3, c_4, c_8 c_{10}	$y^{32}-9y^{31}+\cdots-76y+1$
c_6, c_9	$y^{32}-9y^{31}+\cdots-398532y+1$
c_7, c_{12}	$(y^2-3y+1)^{16}$
c_{11}	$(y^2-7y+1)^{16}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.570868 + 0.730671I$ $a = 1.258650 + 0.162631I$ $b = -1.118500 - 0.297335I$	$2.90719 + 1.13123I$	$0.584775 - 0.510791I$
$u = 0.570868 + 0.730671I$ $a = 0.187278 - 0.136386I$ $b = 0.389150 + 0.463337I$	$2.90719 + 1.13123I$	$0.584775 - 0.510791I$
$u = 0.570868 + 0.730671I$ $a = -1.69178 + 0.62542I$ $b = 0.84962 - 1.25909I$	$-4.98850 + 1.13123I$	$0.584775 - 0.510791I$
$u = 0.570868 + 0.730671I$ $a = -2.09371 - 0.69413I$ $b = 1.059860 + 0.824486I$	$-4.98850 + 1.13123I$	$0.584775 - 0.510791I$
$u = 0.570868 - 0.730671I$ $a = 1.258650 - 0.162631I$ $b = -1.118500 + 0.297335I$	$2.90719 - 1.13123I$	$0.584775 + 0.510791I$
$u = 0.570868 - 0.730671I$ $a = 0.187278 + 0.136386I$ $b = 0.389150 - 0.463337I$	$2.90719 - 1.13123I$	$0.584775 + 0.510791I$
$u = 0.570868 - 0.730671I$ $a = -1.69178 - 0.62542I$ $b = 0.84962 + 1.25909I$	$-4.98850 - 1.13123I$	$0.584775 + 0.510791I$
$u = 0.570868 - 0.730671I$ $a = -2.09371 + 0.69413I$ $b = 1.059860 - 0.824486I$	$-4.98850 - 1.13123I$	$0.584775 + 0.510791I$
$u = -0.855237 + 0.665892I$ $a = 0.754057 - 0.275844I$ $b = 0.044917 - 1.261120I$	$-1.78843 + 2.57849I$	$3.72292 - 3.56796I$
$u = -0.855237 + 0.665892I$ $a = -0.53860 - 2.07817I$ $b = 0.1299760 + 0.0516291I$	$-1.78843 + 2.57849I$	$3.72292 - 3.56796I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.855237+0.665892I$ $a=\ \ 2.08459-0.77588I$ $b=-1.48784+0.18074I$	$6.10726+2.57849I$	$3.72292-3.56796I$
$u=-0.855237+0.665892I$ $a=-2.16688+1.67503I$ $b=\ \ 1.42104+0.28124I$	$6.10726+2.57849I$	$3.72292-3.56796I$
$u=-0.855237-0.665892I$ $a=\ \ 0.754057+0.275844I$ $b=\ \ 0.044917+1.261120I$	$-1.78843-2.57849I$	$3.72292+3.56796I$
$u=-0.855237-0.665892I$ $a=-0.53860+2.07817I$ $b=\ \ 0.1299760-0.0516291I$	$-1.78843-2.57849I$	$3.72292+3.56796I$
$u=-0.855237-0.665892I$ $a=\ \ 2.08459+0.77588I$ $b=-1.48784-0.18074I$	$6.10726-2.57849I$	$3.72292+3.56796I$
$u=-0.855237-0.665892I$ $a=-2.16688-1.67503I$ $b=\ \ 1.42104-0.28124I$	$6.10726-2.57849I$	$3.72292+3.56796I$
$u=-1.09818$ $a=\ \ 0.108721+1.087540I$ $b=-1.10916+1.12580I$	-10.4506	-5.86400
$u=-1.09818$ $a=\ \ 0.108721-1.087540I$ $b=-1.10916-1.12580I$	-10.4506	-5.86400
$u=-1.09818$ $a=-0.041528+0.276829I$ $b=\ \ 0.423663+0.286570I$	-2.55489	-5.86400
$u=-1.09818$ $a=-0.041528-0.276829I$ $b=\ \ 0.423663-0.286570I$	-2.55489	-5.86400

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.031810 + 0.655470I$ $a = -0.518841 + 1.172810I$ $b = -0.94630 - 1.36074I$	$-6.32752 - 6.44354I$	$-1.42845 + 5.29417I$
$u = 1.031810 + 0.655470I$ $a = 0.498106 + 0.337320I$ $b = -0.249218 + 0.680436I$	$1.56816 - 6.44354I$	$-1.42845 + 5.29417I$
$u = 1.031810 + 0.655470I$ $a = -1.23125 - 1.24773I$ $b = 1.074000 - 0.483326I$	$1.56816 - 6.44354I$	$-1.42845 + 5.29417I$
$u = 1.031810 + 0.655470I$ $a = 2.43825 + 1.21067I$ $b = -1.21301 + 0.84470I$	$-6.32752 - 6.44354I$	$-1.42845 + 5.29417I$
$u = 1.031810 - 0.655470I$ $a = -0.518841 - 1.172810I$ $b = -0.94630 + 1.36074I$	$-6.32752 + 6.44354I$	$-1.42845 - 5.29417I$
$u = 1.031810 - 0.655470I$ $a = 0.498106 - 0.337320I$ $b = -0.249218 - 0.680436I$	$1.56816 + 6.44354I$	$-1.42845 - 5.29417I$
$u = 1.031810 - 0.655470I$ $a = -1.23125 + 1.24773I$ $b = 1.074000 + 0.483326I$	$1.56816 + 6.44354I$	$-1.42845 - 5.29417I$
$u = 1.031810 - 0.655470I$ $a = 2.43825 - 1.21067I$ $b = -1.21301 - 0.84470I$	$-6.32752 + 6.44354I$	$-1.42845 - 5.29417I$
$u = 0.603304$ $a = 0.700053$ $b = -1.33642$	3.10281	-3.89450
$u = 0.603304$ $a = 1.83024$ $b = 1.04987$	3.10281	-3.89450

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.603304$ $a = -3.31220 + 0.39407I$ $b = 0.375093 + 0.832047I$	-4.79288	-3.89450
$u = 0.603304$ $a = -3.31220 - 0.39407I$ $b = 0.375093 - 0.832047I$	-4.79288	-3.89450

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^4$ $\cdot(u^{15}-6u^{14}+\cdots+12u-1)(u^{25}+9u^{24}+\cdots-36u+16)$
c_2	$((u^8-u^7+\cdots+2u-1)^4)(u^{15}-3u^{13}+\cdots-2u-1)$ $\cdot(u^{25}+5u^{24}+\cdots+18u+4)$
c_3, c_8	$(u^{15}+u^{14}+\cdots-2u-1)(u^{25}-u^{24}+\cdots+u+1)$ $\cdot(u^{32}-u^{31}+\cdots-18u-1)$
c_4, c_{10}	$(u^{15}-u^{14}+\cdots-2u+1)(u^{25}-u^{24}+\cdots+u+1)$ $\cdot(u^{32}-u^{31}+\cdots-18u-1)$
c_5	$((u^8-u^7+\cdots+2u-1)^4)(u^{15}-3u^{13}+\cdots-2u+1)$ $\cdot(u^{25}+5u^{24}+\cdots+18u+4)$
c_6, c_9	$(u^{15}-u^{14}+\cdots+4u-1)(u^{25}+5u^{24}+\cdots+19u-1)$ $\cdot(u^{32}+9u^{31}+\cdots-634u-1)$
c_7	$((u^2+u-1)^{16})(u^{15}-4u^{14}+\cdots+u-1)$ $\cdot(u^{25}-15u^{24}+\cdots+1280u-256)$
c_{11}	$((u^2+3u+1)^{16})(u^{15}-16u^{14}+\cdots+11u-1)$ $\cdot(u^{25}+19u^{24}+\cdots+131072u+65536)$
c_{12}	$((u^2+u-1)^{16})(u^{15}+4u^{14}+\cdots+u+1)$ $\cdot(u^{25}-15u^{24}+\cdots+1280u-256)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^4$ $\cdot(y^{15}+10y^{14}+\cdots+48y-1)(y^{25}+15y^{24}+\cdots+2544y-256)$
c_2, c_5	$(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)^4$ $\cdot(y^{15}-6y^{14}+\cdots+12y-1)(y^{25}-9y^{24}+\cdots-36y-16)$
c_3, c_4, c_8 c_{10}	$(y^{15}-11y^{14}+\cdots+4y-1)(y^{25}-y^{24}+\cdots+7y-1)$ $\cdot(y^{32}-9y^{31}+\cdots-76y+1)$
c_6, c_9	$(y^{15}-15y^{14}+\cdots+84y-1)(y^{25}+15y^{24}+\cdots+395y-1)$ $\cdot(y^{32}-9y^{31}+\cdots-398532y+1)$
c_7, c_{12}	$((y^2-3y+1)^{16})(y^{15}-16y^{14}+\cdots+11y-1)$ $\cdot(y^{25}-19y^{24}+\cdots+131072y-65536)$
c_{11}	$((y^2-7y+1)^{16})(y^{15}-32y^{14}+\cdots+19y-1)$ $\cdot(y^{25}-39y^{24}+\cdots+31138512896y-4294967296)$