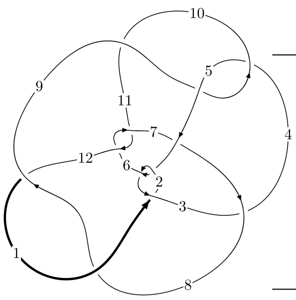
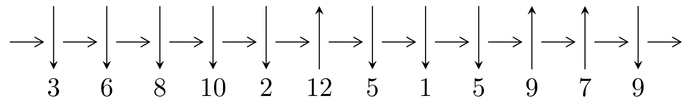
$12n_{0383}$ ($K12n_{0383}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4u^{23} + 14u^{22} + \cdots + b + 7,\ -5u^{24} + 13u^{23} + \cdots + 2a + 6,\ u^{25} - 5u^{24} + \cdots + 4u - 2\rangle$$

$$\begin{aligned} I_2^u = \langle & u^{15} - 5u^{13} - 3u^{12} + 11u^{11} + 10u^{10} - 11u^9 - 18u^8 + 3u^7 + 17u^6 + 8u^5 - 9u^4 - 10u^3 - 2u^2 + b + 5u + 3, \\ & u^{15} - 6u^{13} - 4u^{12} + 13u^{11} + 14u^{10} - 12u^9 - 24u^8 - u^7 + 22u^6 + 14u^5 - 10u^4 - 16u^3 - 3u^2 + 2a + 6u + 5, \\ & u^{16} + 2u^{15} + \cdots + 3u + 2\rangle \end{aligned}$$

$$\begin{aligned} I_3^u = \langle & -u^7a - 2u^7 + u^5a - u^6 + u^4a + 2u^5 - 2u^3a + 2u^4 - u^2a - 3u^3 - u^2 + b + a + u + 3, \\ & -2u^7a - u^6a - 3u^7 + 2u^5a - 2u^6 + 3u^4a + 4u^5 - 2u^3a + 5u^4 - 2u^2a - 5u^3 + a^2 - 5u^2 + 3a + 3u + 6, \\ & u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1\rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 57 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. $I_1^u =$
$\langle -4u^{23}+14u^{22}+\cdots+b+7,\ -5u^{24}+13u^{23}+\cdots+2a+6,\ u^{25}-5u^{24}+\cdots+4u-2\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^4\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}\frac{5}{2}u^{24}-\frac{13}{2}u^{23}+\cdots-\frac{7}{2}u-3\\4u^{23}-14u^{22}+\cdots+3u-7\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}\frac{7}{2}u^{24}-\frac{23}{2}u^{23}+\cdots-\frac{13}{2}u+1\\u^{24}-u^{23}+\cdots+5u^2-3\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-\frac{5}{2}u^{24}+\frac{21}{2}u^{23}+\cdots+\frac{13}{2}u-3\\-2u^{24}+10u^{23}+\cdots+7u-5\end{pmatrix}$$
$$a_8 = \begin{pmatrix}\frac{3}{2}u^{24}-\frac{17}{2}u^{23}+\cdots-\frac{13}{2}u+6\\-6u^{24}+24u^{23}+\cdots+13u-7\end{pmatrix}$$
$$a_7 = \begin{pmatrix}\frac{5}{2}u^{24}-\frac{11}{2}u^{23}+\cdots-\frac{3}{2}u-4\\-5u^{24}+27u^{23}+\cdots+18u-17\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-\frac{3}{2}u^{24}+\frac{7}{2}u^{23}+\cdots+\frac{1}{2}u+3\\-2u^{24}+5u^{23}+\cdots+2u+1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-3u^{24}+6u^{23}+\cdots+2u+6\\2u^{24}-16u^{23}+\cdots-11u+14\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -15u^{24}+60u^{23}-42u^{22}-200u^{21}+425u^{20}+33u^{19}-1003u^{18}+891u^{17}+934u^{16}-2122u^{15}+393u^{14}+2207u^{13}-1874u^{12}-878u^{11}+2018u^{10}-425u^{9}-1106u^{8}+819u^{7}+40u^{6}-235u^{5}+74u^{4}-34u^{3}+12u^{2}+32u-28$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{25} + 11u^{24} + \cdots + 12u + 4$
c_2, c_5	$u^{25} + 5u^{24} + \cdots + 4u + 2$
c_3, c_4, c_9	$u^{25} + 19u^{23} + \cdots + u + 1$
c_6, c_{11}	$u^{25} - 18u^{24} + \cdots - 1792u + 256$
c_7	$u^{25} - u^{24} + \cdots + 3881u + 1993$
c_8, c_{12}	$u^{25} + u^{24} + \cdots + 18u + 1$
c_{10}	$u^{25} - 38u^{24} + \cdots - 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{25} + 9y^{24} + \cdots + 232y - 16$
c_2, c_5	$y^{25} - 11y^{24} + \cdots + 12y - 4$
c_3, c_4, c_9	$y^{25} + 38y^{24} + \cdots - 7y - 1$
c_6, c_{11}	$y^{25} + 8y^{24} + \cdots + 393216y - 65536$
c_7	$y^{25} + 59y^{24} + \cdots + 49162391y - 3972049$
c_8, c_{12}	$y^{25} + 33y^{24} + \cdots + 88y - 1$
c_{10}	$y^{25} - 122y^{24} + \cdots + 73y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.825841 + 0.556794I$ $a = -0.402690 - 0.517828I$ $b = -0.906052 - 0.019110I$	$1.50077 + 2.23684I$	$-2.22810 - 4.30531I$
$u = -0.825841 - 0.556794I$ $a = -0.402690 + 0.517828I$ $b = -0.906052 + 0.019110I$	$1.50077 - 2.23684I$	$-2.22810 + 4.30531I$
$u = 0.816024 + 0.629187I$ $a = 0.710669 + 1.151560I$ $b = 1.101890 + 0.658711I$	$1.87514 + 0.07553I$	$-5.11439 + 0.60620I$
$u = 0.816024 - 0.629187I$ $a = 0.710669 - 1.151560I$ $b = 1.101890 - 0.658711I$	$1.87514 - 0.07553I$	$-5.11439 - 0.60620I$
$u = 0.479269 + 0.953467I$ $a = 1.46509 + 0.67711I$ $b = -0.248526 + 0.073771I$	$16.3921 - 2.3241I$	$-0.96077 + 1.78819I$
$u = 0.479269 - 0.953467I$ $a = 1.46509 - 0.67711I$ $b = -0.248526 - 0.073771I$	$16.3921 + 2.3241I$	$-0.96077 - 1.78819I$
$u = 0.533110 + 0.937237I$ $a = -1.23338 - 1.32849I$ $b = 0.216650 - 0.151554I$	$16.7595 + 7.3794I$	$-1.22017 - 2.27864I$
$u = 0.533110 - 0.937237I$ $a = -1.23338 + 1.32849I$ $b = 0.216650 + 0.151554I$	$16.7595 - 7.3794I$	$-1.22017 + 2.27864I$
$u = 0.884641 + 0.632548I$ $a = -1.15580 - 0.83468I$ $b = -1.61829 - 0.44614I$	$1.66131 - 5.01873I$	$-5.13335 + 4.42111I$
$u = 0.884641 - 0.632548I$ $a = -1.15580 + 0.83468I$ $b = -1.61829 + 0.44614I$	$1.66131 + 5.01873I$	$-5.13335 - 4.42111I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.130790 + 0.397647I$ $a = -0.250090 + 0.145886I$ $b = -0.517131 + 0.760870I$	$-3.90858 - 2.14605I$	$-13.03933 - 1.76915I$
$u = 1.130790 - 0.397647I$ $a = -0.250090 - 0.145886I$ $b = -0.517131 - 0.760870I$	$-3.90858 + 2.14605I$	$-13.03933 + 1.76915I$
$u = -1.106540 + 0.514773I$ $a = 0.501024 + 0.175726I$ $b = 0.976709 - 0.360023I$	$-3.10459 + 5.50284I$	$-10.38958 - 5.97916I$
$u = -1.106540 - 0.514773I$ $a = 0.501024 - 0.175726I$ $b = 0.976709 + 0.360023I$	$-3.10459 - 5.50284I$	$-10.38958 + 5.97916I$
$u = 0.751304$ $a = -0.162564$ $b = 0.399340$	-0.992382	-10.4670
$u = -1.287770 + 0.035273I$ $a = -0.330208 + 1.190730I$ $b = -0.61690 + 2.67578I$	$9.80615 + 5.07733I$	$-5.58280 - 2.54938I$
$u = -1.287770 - 0.035273I$ $a = -0.330208 - 1.190730I$ $b = -0.61690 - 2.67578I$	$9.80615 - 5.07733I$	$-5.58280 + 2.54938I$
$u = -0.656789 + 0.222334I$ $a = 0.64095 + 1.30667I$ $b = 0.991318 + 0.792825I$	$-0.79508 - 1.66969I$	$-0.88932 + 1.84897I$
$u = -0.656789 - 0.222334I$ $a = 0.64095 - 1.30667I$ $b = 0.991318 - 0.792825I$	$-0.79508 + 1.66969I$	$-0.88932 - 1.84897I$
$u = 1.122380 + 0.708240I$ $a = 1.22419 + 0.85781I$ $b = 2.25460 + 1.97923I$	$14.9497 - 13.4134I$	$-3.26715 + 6.49403I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.122380 - 0.708240I$ $a = 1.22419 - 0.85781I$ $b = 2.25460 - 1.97923I$	$14.9497 + 13.4134I$	$-3.26715 - 6.49403I$
$u = 1.155240 + 0.691095I$ $a = -0.673625 - 0.975766I$ $b = -1.24536 - 2.26158I$	$14.3146 - 3.6962I$	$-2.96996 + 2.38083I$
$u = 1.155240 - 0.691095I$ $a = -0.673625 + 0.975766I$ $b = -1.24536 + 2.26158I$	$14.3146 + 3.6962I$	$-2.96996 - 2.38083I$
$u = -0.120160 + 0.530735I$ $a = -0.414841 + 0.873103I$ $b = 0.411425 + 0.199437I$	$-0.69000 - 1.30270I$	$-6.47181 + 4.99859I$
$u = -0.120160 - 0.530735I$ $a = -0.414841 - 0.873103I$ $b = 0.411425 - 0.199437I$	$-0.69000 + 1.30270I$	$-6.47181 - 4.99859I$

II.

$\boldsymbol{I_2^u = \langle u^{15} - 5u^{13} + \cdots + b + 3,\ u^{15} - 6u^{13} + \cdots + 2a + 5,\ u^{16} + 2u^{15} + \cdots + 3u + 2\rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -\frac{1}{2}u^{15} + 3u^{13} + \cdots - 3u - \frac{5}{2} \\ -u^{15} + 5u^{13} + \cdots - 5u - 3 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{2}u^{15} + u^{14} + \cdots - u - \frac{1}{2} \\ u^{14} + 2u^{13} + \cdots - 3u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{3}{2}u^{15} + 2u^{14} + \cdots + 2u + \frac{7}{2} \\ -u^{15} - u^{14} + \cdots - u - 3 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{2}u^{15} + u^{14} + \cdots - 2u - \frac{3}{2} \\ u^{14} + u^{13} + \cdots - 2u - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{3}{2}u^{15} - u^{14} + \cdots - 4u - \frac{7}{2} \\ -2u^{15} - u^{14} + \cdots - 4u - 3 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{3}{2}u^{15} + 2u^{14} + \cdots + u + \frac{5}{2} \\ 2u^{15} + 2u^{14} + \cdots + u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3u^{15} + 4u^{14} + \cdots + 2u + 5 \\ 4u^{15} + 4u^{14} + \cdots + 4u + 4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^{15} - 4u^{14} + 8u^{13} + 15u^{12} - 12u^{11} - 29u^{10} + 5u^9 + 35u^8 + 7u^7 - 27u^6 - 22u^5 + 10u^4 + 16u^3 + 3u^2 - 11u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 8u^{15} + \cdots - 17u + 4$
c_2	$u^{16} + 2u^{15} + \cdots + 3u + 2$
c_3, c_9	$u^{16} + 9u^{14} + \cdots - 4u + 1$
c_4	$u^{16} + 9u^{14} + \cdots + 4u + 1$
c_5	$u^{16} - 2u^{15} + \cdots - 3u + 2$
c_6	$u^{16} - u^{15} + \cdots - u + 1$
c_7	$u^{16} + u^{15} + \cdots - u^2 + 1$
c_8	$u^{16} + u^{15} + \cdots + u + 1$
c_{10}	$u^{16} - 18u^{15} + \cdots + 4u + 1$
c_{11}	$u^{16} + u^{15} + \cdots + u + 1$
c_{12}	$u^{16} - u^{15} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} + 4y^{15} + \cdots - 17y + 16$
c_2, c_5	$y^{16} - 8y^{15} + \cdots - 17y + 4$
c_3, c_4, c_9	$y^{16} + 18y^{15} + \cdots - 4y + 1$
c_6, c_{11}	$y^{16} + 9y^{15} + \cdots + 5y + 1$
c_7	$y^{16} + 15y^{15} + \cdots - 2y + 1$
c_8, c_{12}	$y^{16} + 5y^{15} + \cdots + 9y + 1$
c_{10}	$y^{16} - 38y^{15} + \cdots - 60y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.656997 + 0.743635I$ $a = -0.775458 + 1.141130I$ $b = -0.435041 + 0.316889I$	$3.25303 - 1.48953I$	$-2.71099 + 1.52251I$
$u = -0.656997 - 0.743635I$ $a = -0.775458 - 1.141130I$ $b = -0.435041 - 0.316889I$	$3.25303 + 1.48953I$	$-2.71099 - 1.52251I$
$u = -0.874191 + 0.334550I$ $a = -0.878721 - 0.189370I$ $b = -0.20139 - 1.91357I$	$5.81030 + 1.43838I$	$-3.56257 - 4.86268I$
$u = -0.874191 - 0.334550I$ $a = -0.878721 + 0.189370I$ $b = -0.20139 + 1.91357I$	$5.81030 - 1.43838I$	$-3.56257 + 4.86268I$
$u = 0.864296 + 0.625602I$ $a = 0.975538 - 0.892188I$ $b = 1.96131 + 0.43343I$	$7.59435 - 2.44938I$	$-5.19072 + 2.76813I$
$u = 0.864296 - 0.625602I$ $a = 0.975538 + 0.892188I$ $b = 1.96131 - 0.43343I$	$7.59435 + 2.44938I$	$-5.19072 - 2.76813I$
$u = 0.901146 + 0.140958I$ $a = -0.503170 + 1.005270I$ $b = -0.93293 + 1.12841I$	$-1.44134 + 1.66902I$	$-13.69558 - 2.63152I$
$u = 0.901146 - 0.140958I$ $a = -0.503170 - 1.005270I$ $b = -0.93293 - 1.12841I$	$-1.44134 - 1.66902I$	$-13.69558 + 2.63152I$
$u = -0.218755 + 0.798974I$ $a = 0.953181 - 0.233826I$ $b = -0.138155 + 0.327234I$	$0.924346 - 0.806526I$	$-1.176197 + 0.589571I$
$u = -0.218755 - 0.798974I$ $a = 0.953181 + 0.233826I$ $b = -0.138155 - 0.327234I$	$0.924346 + 0.806526I$	$-1.176197 - 0.589571I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.002050 + 0.665576I$ $a = \quad 1.051270 - 0.691243I$ $b = \quad 1.76255 - 0.90512I$	$2.21180 + 6.86626I$	$-5.48184 - 7.08918I$
$u = -1.002050 - 0.665576I$ $a = \quad 1.051270 + 0.691243I$ $b = \quad 1.76255 + 0.90512I$	$2.21180 - 6.86626I$	$-5.48184 + 7.08918I$
$u = \quad 1.165520 + 0.342736I$ $a = -0.333649 - 0.493333I$ $b = -0.168076 - 1.173650I$	$-3.25196 - 2.70217I$	$-4.91112 + 4.04086I$
$u = \quad 1.165520 - 0.342736I$ $a = -0.333649 + 0.493333I$ $b = -0.168076 + 1.173650I$	$-3.25196 + 2.70217I$	$-4.91112 - 4.04086I$
$u = -1.178970 + 0.529446I$ $a = -0.238992 + 0.463717I$ $b = -0.84826 + 1.13723I$	$-1.94104 + 5.74574I$	$-3.77099 - 5.59852I$
$u = -1.178970 - 0.529446I$ $a = -0.238992 - 0.463717I$ $b = -0.84826 - 1.13723I$	$-1.94104 - 5.74574I$	$-3.77099 + 5.59852I$

III. $\boldsymbol{I^u_3 = \langle -u^7a - 2u^7 + \cdots + a + 3,\ -2u^7a - 3u^7 + \cdots + 3a + 6,\ u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1\rangle}$

(i) Arc colorings

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

(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	$(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^2$
c_2, c_5	$(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)^2$
c_3, c_4, c_9	$u^{16}+u^{15}+\cdots+344u+313$
c_6, c_{11}	$(u+1)^{16}$
c_7	$u^{16}-u^{15}+\cdots-400u+617$
c_8, c_{12}	$u^{16}-9u^{15}+\cdots+62u+23$
c_{10}	$u^{16}-27u^{15}+\cdots-600312u+97969$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)^2$
c_2, c_5	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)^2$
c_3, c_4, c_9	$y^{16} + 27y^{15} + \cdots + 600312y + 97969$
c_6, c_{11}	$(y - 1)^{16}$
c_7	$y^{16} + 39y^{15} + \cdots + 950600y + 380689$
c_8, c_{12}	$y^{16} + 7y^{15} + \cdots + 3424y + 529$
c_{10}	$y^{16} - 53y^{15} + \cdots - 13866765616y + 9597924961$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.570868 + 0.730671I$ $a = \ \ 0.748660 - 1.136300I$ $b = \ \ 0.218417 + 0.534766I$	$5.53908 - 1.13123I$	$0.584775 + 0.510791I$
$u = -0.570868 + 0.730671I$ $a = -1.73857 + 0.97979I$ $b = -0.653022 + 0.489982I$	$5.53908 - 1.13123I$	$0.584775 + 0.510791I$
$u = -0.570868 - 0.730671I$ $a = \ \ 0.748660 + 1.136300I$ $b = \ \ 0.218417 - 0.534766I$	$5.53908 + 1.13123I$	$0.584775 - 0.510791I$
$u = -0.570868 - 0.730671I$ $a = -1.73857 - 0.97979I$ $b = -0.653022 - 0.489982I$	$5.53908 + 1.13123I$	$0.584775 - 0.510791I$
$u = \ \ 0.855237 + 0.665892I$ $a = -0.019462 + 0.209322I$ $b = -1.39721 - 1.40003I$	$8.73915 - 2.57849I$	$3.72292 + 3.56796I$
$u = \ \ 0.855237 + 0.665892I$ $a = \ \ 1.78204 - 1.77063I$ $b = \ \ 2.65743 - 0.64416I$	$8.73915 - 2.57849I$	$3.72292 + 3.56796I$
$u = \ \ 0.855237 - 0.665892I$ $a = -0.019462 - 0.209322I$ $b = -1.39721 + 1.40003I$	$8.73915 + 2.57849I$	$3.72292 - 3.56796I$
$u = \ \ 0.855237 - 0.665892I$ $a = \ \ 1.78204 + 1.77063I$ $b = \ \ 2.65743 + 0.64416I$	$8.73915 + 2.57849I$	$3.72292 - 3.56796I$
$u = \ \ 1.09818$ $a = \ \ 0.054797 + 1.006860I$ $b = \ \ 0.67901 + 1.74126I$	0.0770056	-5.86400
$u = \ \ 1.09818$ $a = \ \ 0.054797 - 1.006860I$ $b = \ \ 0.67901 - 1.74126I$	0.0770056	-5.86400

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.031810+0.655470I$ $a=-0.842370+0.591433I$ $b=-2.18592+0.93071I$	$4.20006+6.44354I$	$-1.42845-5.29417I$
$u=-1.031810+0.655470I$ $a=\quad 0.99429-1.31993I$ $b=\quad 1.27643-2.02437I$	$4.20006+6.44354I$	$-1.42845-5.29417I$
$u=-1.031810-0.655470I$ $a=-0.842370-0.591433I$ $b=-2.18592-0.93071I$	$4.20006-6.44354I$	$-1.42845+5.29417I$
$u=-1.031810-0.655470I$ $a=\quad 0.99429+1.31993I$ $b=\quad 1.27643+2.02437I$	$4.20006-6.44354I$	$-1.42845+5.29417I$
$u=-0.603304$ $a=-1.47939+1.27008I$ $b=-1.09513-1.46928I$	5.73470	−3.89450
$u=-0.603304$ $a=-1.47939-1.27008I$ $b=-1.09513+1.46928I$	5.73470	−3.89450

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^2$ $\cdot(u^{16}-8u^{15}+\cdots-17u+4)(u^{25}+11u^{24}+\cdots+12u+4)$
c_2	$((u^8-u^7+\cdots+2u-1)^2)(u^{16}+2u^{15}+\cdots+3u+2)$ $\cdot(u^{25}+5u^{24}+\cdots+4u+2)$
c_3, c_9	$(u^{16}+9u^{14}+\cdots-4u+1)(u^{16}+u^{15}+\cdots+344u+313)$ $\cdot(u^{25}+19u^{23}+\cdots+u+1)$
c_4	$(u^{16}+9u^{14}+\cdots+4u+1)(u^{16}+u^{15}+\cdots+344u+313)$ $\cdot(u^{25}+19u^{23}+\cdots+u+1)$
c_5	$((u^8-u^7+\cdots+2u-1)^2)(u^{16}-2u^{15}+\cdots-3u+2)$ $\cdot(u^{25}+5u^{24}+\cdots+4u+2)$
c_6	$((u+1)^{16})(u^{16}-u^{15}+\cdots-u+1)(u^{25}-18u^{24}+\cdots-1792u+256)$
c_7	$(u^{16}-u^{15}+\cdots-400u+617)(u^{16}+u^{15}+\cdots-u^2+1)$ $\cdot(u^{25}-u^{24}+\cdots+3881u+1993)$
c_8	$(u^{16}-9u^{15}+\cdots+62u+23)(u^{16}+u^{15}+\cdots+u+1)$ $\cdot(u^{25}+u^{24}+\cdots+18u+1)$
c_{10}	$(u^{16}-27u^{15}+\cdots-600312u+97969)(u^{16}-18u^{15}+\cdots+4u+1)$ $\cdot(u^{25}-38u^{24}+\cdots-7u+1)$
c_{11}	$((u+1)^{16})(u^{16}+u^{15}+\cdots+u+1)(u^{25}-18u^{24}+\cdots-1792u+256)$
c_{12}	$(u^{16}-9u^{15}+\cdots+62u+23)(u^{16}-u^{15}+\cdots-u+1)$ $\cdot(u^{25}+u^{24}+\cdots+18u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^2$ $\cdot(y^{16}+4y^{15}+\cdots-17y+16)(y^{25}+9y^{24}+\cdots+232y-16)$
c_2, c_5	$(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)^2$ $\cdot(y^{16}-8y^{15}+\cdots-17y+4)(y^{25}-11y^{24}+\cdots+12y-4)$
c_3, c_4, c_9	$(y^{16}+18y^{15}+\cdots-4y+1)(y^{16}+27y^{15}+\cdots+600312y+97969)$ $\cdot(y^{25}+38y^{24}+\cdots-7y-1)$
c_6, c_{11}	$((y-1)^{16})(y^{16}+9y^{15}+\cdots+5y+1)$ $\cdot(y^{25}+8y^{24}+\cdots+393216y-65536)$
c_7	$(y^{16}+15y^{15}+\cdots-2y+1)(y^{16}+39y^{15}+\cdots+950600y+380689)$ $\cdot(y^{25}+59y^{24}+\cdots+49162391y-3972049)$
c_8, c_{12}	$(y^{16}+5y^{15}+\cdots+9y+1)(y^{16}+7y^{15}+\cdots+3424y+529)$ $\cdot(y^{25}+33y^{24}+\cdots+88y-1)$
c_{10}	$(y^{16}-53y^{15}+\cdots-13866765616y+9597924961)$ $\cdot(y^{16}-38y^{15}+\cdots-60y+1)(y^{25}-122y^{24}+\cdots+73y-1)$