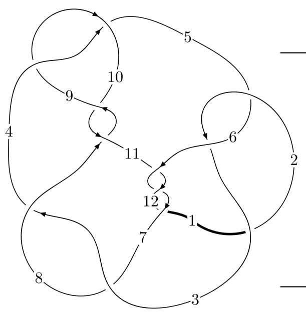
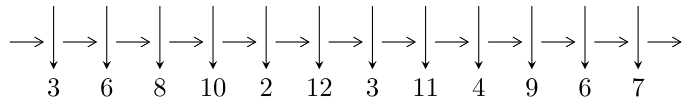
$12n_{0386}$ $(K12n_{0386})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{11} - 3u^{10} - 13u^9 + 39u^8 + 46u^7 - 146u^6 + 10u^5 - 54u^4 - 15u^3 - 91u^2 + 32b + 3u - 1,\ a - 1,$$
$$u^{13} - 3u^{12} - 14u^{11} + 42u^{10} + 59u^9 - 185u^8 - 36u^7 + 92u^6 - 25u^5 - 5u^4 + 18u^3 - 6u^2 - 3u + 1\rangle$$
$$I_2^u = \langle b^4 - b^2 + 2,\ a + 1,\ u - 1\rangle$$
$$I_3^u = \langle b - 1,\ a + 1,\ u - 1\rangle$$
$$I_4^u = \langle b + 1,\ a + 1,\ u - 1\rangle$$
$$I_5^u = \langle b - 1,\ a,\ u + 1\rangle$$
$$I_6^u = \langle b,\ a + 1,\ u + 1\rangle$$
$$I_7^u = \langle b^4 + 1,\ a + 1,\ u + 1\rangle$$

$$I_1^v = \langle a,\ b - 1,\ v - 1\rangle$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 26 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. $I_1^u = \langle u^{11} - 3u^{10} + \cdots + 32b - 1,\ a - 1,\ u^{13} - 3u^{12} + \cdots - 3u + 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -0.0312500u^{11} + 0.0937500u^{10} + \cdots - 0.0937500u + 0.0312500 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0312500u^{12} - 0.0937500u^{11} + \cdots + 0.0937500u^2 - 2.03125u \\ \frac{7}{32}u^{12} - \frac{11}{16}u^{11} + \cdots + \frac{5}{8}u + \frac{1}{32} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.187500u^{12} + 0.593750u^{11} + \cdots - 2.65625u - 0.0312500 \\ \frac{7}{32}u^{12} - \frac{11}{16}u^{11} + \cdots + \frac{5}{8}u + \frac{1}{32} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -0.0312500u^{11} + 0.0937500u^{10} + \cdots - 0.0937500u + 0.0312500 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ -0.0312500u^{12} + 0.0937500u^{11} + \cdots - 0.0937500u^2 + 1.03125u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{9}{16}u^{12} - \frac{31}{16}u^{11} + \cdots - 4u + 2 \\ -0.812500u^{12} + 3.31250u^{11} + \cdots + 7.50000u - 2.06250 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.0312500u^{12} + 0.281250u^{11} + \cdots + 0.781250u + 0.750000 \\ -0.218750u^{12} + 1.09375u^{11} + \cdots + 2.71875u - 0.812500 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{35}{16}u^{12} + \frac{145}{16}u^{11} + \frac{353}{16}u^{10} - \frac{1973}{16}u^9 - \frac{21}{2}u^8 + \frac{4023}{8}u^7 - \frac{3425}{8}u^6 - \frac{643}{8}u^5 + \frac{3897}{16}u^4 - \frac{2063}{16}u^3 + \frac{161}{16}u^2 + \frac{651}{16}u - \frac{231}{8}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} + 37u^{12} + \cdots + 21u + 1$
c_2, c_5, c_6 c_{11}, c_{12}	$u^{13} + 3u^{12} + \cdots - 3u - 1$
c_3, c_7	$u^{13} - 5u^{12} + \cdots + 36u + 26$
c_4, c_9	$u^{13} + 3u^{12} + \cdots + 8u + 2$
c_8, c_{10}	$u^{13} + 5u^{12} + \cdots + 32u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 237y^{12} + \cdots + 173y - 1$
c_2, c_5, c_6 c_{11}, c_{12}	$y^{13} - 37y^{12} + \cdots + 21y - 1$
c_3, c_7	$y^{13} - 65y^{12} + \cdots - 5360y - 676$
c_4, c_9	$y^{13} - 5y^{12} + \cdots + 32y - 4$
c_8, c_{10}	$y^{13} + 7y^{12} + \cdots + 480y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.584997 + 0.104914I$ $a = 1.00000$ $b = 1.224250 - 0.653734I$	$-0.88948 + 5.75156I$	$-12.6714 - 7.2274I$
$u = -0.584997 - 0.104914I$ $a = 1.00000$ $b = 1.224250 + 0.653734I$	$-0.88948 - 5.75156I$	$-12.6714 + 7.2274I$
$u = 0.140736 + 0.561263I$ $a = 1.00000$ $b = -0.773695 + 0.343562I$	$1.39701 - 2.29590I$	$-8.94612 + 4.81765I$
$u = 0.140736 - 0.561263I$ $a = 1.00000$ $b = -0.773695 - 0.343562I$	$1.39701 + 2.29590I$	$-8.94612 - 4.81765I$
$u = -0.571799$ $a = 1.00000$ $b = 1.29852$	-4.92305	-18.0630
$u = 0.530717 + 0.126593I$ $a = 1.00000$ $b = 0.900850 + 0.616546I$	$0.109607 - 0.527741I$	$-11.42537 + 2.37191I$
$u = 0.530717 - 0.126593I$ $a = 1.00000$ $b = 0.900850 - 0.616546I$	$0.109607 + 0.527741I$	$-11.42537 - 2.37191I$
$u = 0.297204$ $a = 1.00000$ $b = 0.282107$	-0.561817	-17.7590
$u = 2.49582 + 0.80059I$ $a = 1.00000$ $b = 3.34031 + 4.21214I$	$16.3066 - 9.5421I$	$-15.4017 + 4.1459I$
$u = 2.49582 - 0.80059I$ $a = 1.00000$ $b = 3.34031 - 4.21214I$	$16.3066 + 9.5421I$	$-15.4017 - 4.1459I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -2.63506 + 0.50378I$ $a = 1.00000$ $b = 4.40111 - 2.78969I$	$18.2542 + 3.1219I$	$-13.76946 - 0.20883I$
$u = -2.63506 - 0.50378I$ $a = 1.00000$ $b = 4.40111 + 2.78969I$	$18.2542 - 3.1219I$	$-13.76946 + 0.20883I$
$u = 3.38017$ $a = 1.00000$ $b = 9.23373$	10.7959	-17.7500

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

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ b \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} b-1 \\ -b^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} b^2+b-1 \\ -b^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ b+1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -b \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} b^3-1 \\ -b^2+2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} b^2-b-1 \\ -b^3+b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4b^2 - 20$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.00000$ $b = 0.978318 + 0.676097I$	$-2.46740 - 5.33349I$	$-18.0000 + 5.2915I$
$u = 1.00000$ $a = -1.00000$ $b = 0.978318 - 0.676097I$	$-2.46740 + 5.33349I$	$-18.0000 - 5.2915I$
$u = 1.00000$ $a = -1.00000$ $b = -0.978318 + 0.676097I$	$-2.46740 + 5.33349I$	$-18.0000 - 5.2915I$
$u = 1.00000$ $a = -1.00000$ $b = -0.978318 - 0.676097I$	$-2.46740 - 5.33349I$	$-18.0000 + 5.2915I$

III. $I_3^u = \langle b-1,\ a+1,\ u-1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ 2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -24$

(iv) u-Polynomials at the component

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

(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_9 c_{10}, c_{11}, c_{12}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.00000$ $a = -1.00000$ $b = \ \ 1.00000$	-6.57974	-24.0000

IV. $I_4^u = \langle b+1,\ a+1,\ u-1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -24$

(iv) u-Polynomials at the component

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

(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_9 c_{10}, c_{11}, c_{12}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.00000$ $a = -1.00000$ $b = -1.00000$	-6.57974	-24.0000

V. $I_5^u = \langle b-1,\ a,\ u+1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	y
c_3, c_4, c_6 c_7, c_8, c_9 c_{10}, c_{11}, c_{12}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 0$ $b = 1.00000$	-4.93480	-18.0000

VI. $\boldsymbol{I_6^u = \langle b,\ a+1,\ u+1 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_{11}, c_{12}	$y - 1$
c_3, c_4, c_7 c_8, c_9, c_{10}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = 0$	-3.28987	-12.0000

VII. $I^u_7 = \langle b^4 + 1,\ a + 1,\ u + 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ b \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -b + 1 \\ b^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -b^2 - b + 1 \\ b^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ b + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1 \\ b \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} b^3 - b^2 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} b^2 - b - 1 \\ -b^3 + b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -16$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = \quad 0.707107 + 0.707107I$	-1.64493	-16.0000
$u = -1.00000$ $a = -1.00000$ $b = \quad 0.707107 - 0.707107I$	-1.64493	-16.0000
$u = -1.00000$ $a = -1.00000$ $b = -0.707107 + 0.707107I$	-1.64493	-16.0000
$u = -1.00000$ $a = -1.00000$ $b = -0.707107 - 0.707107I$	-1.64493	-16.0000

VIII. $I_1^v = \langle a,\ b-1,\ v-1 \rangle$

(i) Arc colorings

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

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

$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

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

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

$a_5 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

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

$a_4 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_7 c_8, c_9, c_{10}	$y - 1$
c_6, c_{11}, c_{12}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v =$	1.00000		
$a =$	0	-4.93480	-18.0000
$b =$	1.00000		

IX. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u-1)^{11}(u+1)(u^{13}+37u^{12}+\cdots+21u+1)$
c_2, c_6	$u(u-1)^6(u+1)^6(u^{13}+3u^{12}+\cdots-3u-1)$
c_3, c_7	$u(u-1)^3(u+1)(u^4+1)(u^4-u^2+2)(u^{13}-5u^{12}+\cdots+36u+26)$
c_4, c_9	$u(u-1)^3(u+1)(u^4+1)(u^4-u^2+2)(u^{13}+3u^{12}+\cdots+8u+2)$
c_5, c_{11}, c_{12}	$u(u-1)^7(u+1)^5(u^{13}+3u^{12}+\cdots-3u-1)$
c_8	$u(u-1)^2(u+1)^2(u^2+1)^2(u^2-u+2)^2(u^{13}+5u^{12}+\cdots+32u+4)$
c_{10}	$u(u+1)^4(u^2+1)^2(u^2+u+2)^2(u^{13}+5u^{12}+\cdots+32u+4)$

X. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y-1)^{12}(y^{13}-237y^{12}+\cdots+173y-1)$
c_2, c_5, c_6 c_{11}, c_{12}	$y(y-1)^{12}(y^{13}-37y^{12}+\cdots+21y-1)$
c_3, c_7	$y(y-1)^4(y^2+1)^2(y^2-y+2)^2(y^{13}-65y^{12}+\cdots-5360y-676)$
c_4, c_9	$y(y-1)^4(y^2+1)^2(y^2-y+2)^2(y^{13}-5y^{12}+\cdots+32y-4)$
c_8, c_{10}	$y(y-1)^4(y+1)^4(y^2+3y+4)^2(y^{13}+7y^{12}+\cdots+480y-16)$