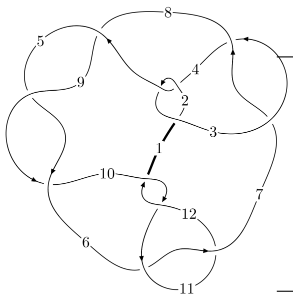
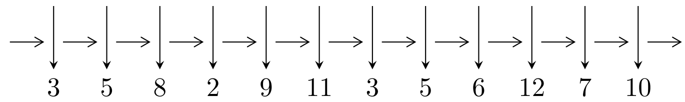
$12n_{0153}$ $(K12n_{0153})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I^u_1 = \langle & -u^{13} - u^{12} + 2u^{11} + 3u^{10} - 2u^9 - 4u^8 + 4u^6 + 2u^5 - 2u^4 - u^3 + 2u^2 + b + u - 1, \\
& -2u^{13} - 2u^{12} + 4u^{11} + 7u^{10} - 4u^9 - 11u^8 - u^7 + 12u^6 + 6u^5 - 6u^4 - 4u^3 + 4u^2 + a + 3u - 1, \\
& u^{14} + 2u^{13} - u^{12} - 6u^{11} - 2u^{10} + 8u^9 + 7u^8 - 6u^7 - 10u^6 + 6u^4 - 4u^2 - u + 1\rangle \\
I^u_2 = \langle & u^7 - u^5 + 2u^3 + b - u + 1,\ u^7 - u^5 + u^4 + 2u^3 - u^2 + a + 2,\ u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1\rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 22 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.

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$$\boldsymbol{I_1^u = \langle -u^{13}-u^{12}+\cdots+b-1,\ -2u^{13}-2u^{12}+\cdots+a-1,\ u^{14}+2u^{13}+\cdots-u+1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $=-1$

(iii) Cusp Shapes
$=-7u^{13}-6u^{12}+18u^{11}+25u^{10}-24u^9-44u^8+9u^7+53u^6+13u^5-35u^4-13u^3+23u^2+7u-21$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{14} + 35u^{13} + \cdots + 57u + 1$
c_2, c_4	$u^{14} - 9u^{13} + \cdots + u - 1$
c_3, c_7	$u^{14} - 7u^{13} + \cdots - 640u - 256$
c_5, c_8, c_9	$u^{14} + 2u^{13} + \cdots + 3u + 1$
c_6, c_{11}	$u^{14} - 2u^{13} + \cdots + u + 1$
c_{10}, c_{12}	$u^{14} + 6u^{13} + \cdots + 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{14} - 215y^{13} + \cdots - 1173y + 1$
c_2, c_4	$y^{14} - 35y^{13} + \cdots - 57y + 1$
c_3, c_7	$y^{14} - 75y^{13} + \cdots + 16384y + 65536$
c_5, c_8, c_9	$y^{14} - 30y^{13} + \cdots - 9y + 1$
c_6, c_{11}	$y^{14} - 6y^{13} + \cdots - 9y + 1$
c_{10}, c_{12}	$y^{14} + 6y^{13} + \cdots - 25y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.959410 + 0.328783I$ $a = 2.22180 + 0.56610I$ $b = 1.191800 + 0.163474I$	$-3.28458 + 1.19495I$	$-18.0412 - 3.1465I$
$u = -0.959410 - 0.328783I$ $a = 2.22180 - 0.56610I$ $b = 1.191800 - 0.163474I$	$-3.28458 - 1.19495I$	$-18.0412 + 3.1465I$
$u = -0.501889 + 0.920209I$ $a = 0.725724 + 0.027363I$ $b = 3.28288 - 0.17435I$	$18.7096 - 2.3664I$	$-13.94239 + 0.06300I$
$u = -0.501889 - 0.920209I$ $a = 0.725724 - 0.027363I$ $b = 3.28288 + 0.17435I$	$18.7096 + 2.3664I$	$-13.94239 - 0.06300I$
$u = -0.853744 + 0.641916I$ $a = -0.410449 - 0.466723I$ $b = -0.596688 - 0.171568I$	$1.83462 + 2.50408I$	$-6.20303 - 3.70135I$
$u = -0.853744 - 0.641916I$ $a = -0.410449 + 0.466723I$ $b = -0.596688 + 0.171568I$	$1.83462 - 2.50408I$	$-6.20303 + 3.70135I$
$u = 1.014210 + 0.562829I$ $a = 1.61553 - 1.07680I$ $b = 1.036730 + 0.627532I$	$-1.62931 - 4.65799I$	$-15.4888 + 5.2954I$
$u = 1.014210 - 0.562829I$ $a = 1.61553 + 1.07680I$ $b = 1.036730 - 0.627532I$	$-1.62931 + 4.65799I$	$-15.4888 - 5.2954I$
$u = 0.589347 + 0.525928I$ $a = -0.333608 + 0.150120I$ $b = 0.644384 - 0.529402I$	$-0.335782 + 0.137583I$	$-12.53131 - 0.75433I$
$u = 0.589347 - 0.525928I$ $a = -0.333608 - 0.150120I$ $b = 0.644384 + 0.529402I$	$-0.335782 - 0.137583I$	$-12.53131 + 0.75433I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.25934$ $a = 4.69391$ $b = 3.12501$	12.1268	−18.9430
$u = -1.128420 + 0.686699I$ $a = 2.14185 + 3.38010I$ $b = 3.21915 + 0.28216I$	$16.7915 + 8.2751I$	$-16.0152 - 4.1669I$
$u = -1.128420 - 0.686699I$ $a = 2.14185 - 3.38010I$ $b = 3.21915 - 0.28216I$	$16.7915 - 8.2751I$	$-16.0152 + 4.1669I$
$u = 0.420479$ $a = -0.615608$ $b = 0.318491$	−0.632046	−15.6130

II. $I_2^u = \langle u^7 - u^5 + 2u^3 + b - u + 1,\ u^7 - u^5 + u^4 + 2u^3 - u^2 + a + 2,\ u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^7 - u^6 + 5u^5 - 5u^3 + u^2 + 4u - 17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_7	y^8
c_5, c_8, c_9	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_6, c_{11}	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_{10}, c_{12}	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.570868 + 0.730671I$ $a = -0.805639 - 0.183365I$ $b = 0.320534 - 0.633953I$	$-2.68559 + 1.13123I$	$-13.47926 - 0.84929I$
$u = 0.570868 - 0.730671I$ $a = -0.805639 + 0.183365I$ $b = 0.320534 + 0.633953I$	$-2.68559 - 1.13123I$	$-13.47926 + 0.84929I$
$u = -0.855237 + 0.665892I$ $a = -0.189481 - 1.310380I$ $b = -1.54709 - 0.16160I$	$0.51448 + 2.57849I$	$-14.5054 - 3.2330I$
$u = -0.855237 - 0.665892I$ $a = -0.189481 + 1.310380I$ $b = -1.54709 + 0.16160I$	$0.51448 - 2.57849I$	$-14.5054 + 3.2330I$
$u = -1.09818$ $a = 0.729394$ $b = 0.879647$	-8.14766	-19.4520
$u = 1.031810 + 0.655470I$ $a = 0.708845 - 0.169402I$ $b = 0.679246 + 0.851242I$	$-4.02461 - 6.44354I$	$-15.2754 + 5.9053I$
$u = 1.031810 - 0.655470I$ $a = 0.708845 + 0.169402I$ $b = 0.679246 - 0.851242I$	$-4.02461 + 6.44354I$	$-15.2754 - 5.9053I$
$u = 0.603304$ $a = -2.15684$ $b = -0.785038$	-2.48997	-15.0280

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^8)(u^{14}+35u^{13}+\cdots+57u+1)$
c_2	$((u-1)^8)(u^{14}-9u^{13}+\cdots+u-1)$
c_3, c_7	$u^8(u^{14}-7u^{13}+\cdots-640u-256)$
c_4	$((u+1)^8)(u^{14}-9u^{13}+\cdots+u-1)$
c_5	$(u^8+u^7-3u^6-2u^5+3u^4+2u-1)(u^{14}+2u^{13}+\cdots+3u+1)$
c_6	$(u^8-u^7+\cdots+2u-1)(u^{14}-2u^{13}+\cdots+u+1)$
c_8, c_9	$(u^8-u^7-3u^6+2u^5+3u^4-2u-1)(u^{14}+2u^{13}+\cdots+3u+1)$
c_{10}	$(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{14}+6u^{13}+\cdots+9u+1)$
c_{11}	$(u^8+u^7+\cdots-2u-1)(u^{14}-2u^{13}+\cdots+u+1)$
c_{12}	$(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)$ $\cdot(u^{14}+6u^{13}+\cdots+9u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^8)(y^{14} - 215y^{13} + \cdots - 1173y + 1)$
c_2, c_4	$((y-1)^8)(y^{14} - 35y^{13} + \cdots - 57y + 1)$
c_3, c_7	$y^8(y^{14} - 75y^{13} + \cdots + 16384y + 65536)$
c_5, c_8, c_9	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)$ $\cdot\,(y^{14} - 30y^{13} + \cdots - 9y + 1)$
c_6, c_{11}	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)$ $\cdot\,(y^{14} - 6y^{13} + \cdots - 9y + 1)$
c_{10}, c_{12}	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)$ $\cdot\,(y^{14} + 6y^{13} + \cdots - 25y + 1)$