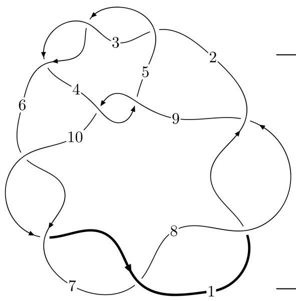
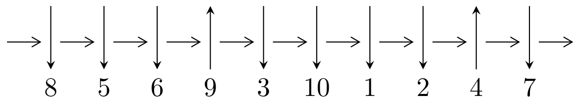
10_{46} $(K10a_{81})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{16} + u^{15} + \cdots + b + u,\ -u^{16} - u^{15} + \cdots + a + 1,\ u^{17} + 2u^{16} + \cdots - u - 1\rangle$$
$$I_2^u = \langle b + 1,\ a,\ u^2 + u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 19 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.

$$\boldsymbol{I_1^u = \langle u^{16}+u^{15}+\cdots+b+u,\ -u^{16}-u^{15}+\cdots+a+1,\ u^{17}+2u^{16}+\cdots-u-1\rangle}$$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{16}+u^{15}+\cdots-5u-1 \\ -u^{16}-u^{15}+\cdots-8u^2-u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^2+1 \\ -u^4+2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{10}+7u^8-16u^6-2u^5+13u^4+8u^3-3u^2-6u-1 \\ -u^{16}-u^{15}+\cdots-8u^2-u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{16}-u^{15}+\cdots-8u^2-5u \\ -u^{16}-u^{15}+\cdots-8u^2-2u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^3-2u \\ u^5-3u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^4+3u^2-1 \\ -u^6+4u^4-3u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{16}+7u^{15}-39u^{14}-68u^{13}+147u^{12}+260u^{11}-262u^{10}-506u^9+183u^8+536u^7+82u^6-286u^5-192u^4+52u^3+74u^2+6u-9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_7 c_8, c_{10}	$y^{17} - 24y^{16} + \cdots + 15y - 1$
c_2, c_3, c_5	$y^{17} - 19y^{16} + \cdots + 26y - 1$
c_4, c_9	$y^{17} + 15y^{16} + \cdots + 72y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.061550 + 0.132627I$ $a = -0.032032 + 1.057310I$ $b = -0.560836 - 0.704658I$	$-4.50346 - 2.40856I$	$-13.38977 + 3.98608I$
$u = 1.061550 - 0.132627I$ $a = -0.032032 - 1.057310I$ $b = -0.560836 + 0.704658I$	$-4.50346 + 2.40856I$	$-13.38977 - 3.98608I$
$u = -1.10417$ $a = -1.02988$ $b = -1.38948$	-6.53818	-13.8720
$u = 1.160740 + 0.369892I$ $a = -0.033674 - 1.270360I$ $b = 1.55782 + 0.20538I$	$-11.54310 - 5.69036I$	$-14.9028 + 4.0871I$
$u = 1.160740 - 0.369892I$ $a = -0.033674 + 1.270360I$ $b = 1.55782 - 0.20538I$	$-11.54310 + 5.69036I$	$-14.9028 - 4.0871I$
$u = -0.389835 + 0.662254I$ $a = -1.45018 + 1.06769I$ $b = 1.50356 - 0.06755I$	$-6.67400 + 2.15086I$	$-12.06720 - 3.08735I$
$u = -0.389835 - 0.662254I$ $a = -1.45018 - 1.06769I$ $b = 1.50356 + 0.06755I$	$-6.67400 - 2.15086I$	$-12.06720 + 3.08735I$
$u = -0.726749$ $a = 0.648394$ $b = 0.235031$	-1.27609	-7.02090
$u = -0.245709 + 0.306515I$ $a = 1.04586 - 1.37638I$ $b = -0.353541 + 0.303071I$	$-0.413031 + 0.944940I$	$-7.13539 - 7.21571I$
$u = -0.245709 - 0.306515I$ $a = 1.04586 + 1.37638I$ $b = -0.353541 - 0.303071I$	$-0.413031 - 0.944940I$	$-7.13539 + 7.21571I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.64837$ $a = 0.374676$ $b = 0.532039$	-9.71406	-6.33030
$u = 0.288922$ $a = -1.61818$ $b = -1.09525$	-2.06625	-1.61000
$u = -1.74789 + 0.03164I$ $a = -0.112337 - 0.821992I$ $b = -0.626661 + 0.929444I$	$-14.6712 + 3.0771I$	$-13.60428 - 2.54829I$
$u = -1.74789 - 0.03164I$ $a = -0.112337 + 0.821992I$ $b = -0.626661 - 0.929444I$	$-14.6712 - 3.0771I$	$-13.60428 + 2.54829I$
$u = 1.75801$ $a = -0.853301$ $b = -1.56221$	-16.9433	-14.4070
$u = -1.77104 + 0.09789I$ $a = 0.321515 + 0.925880I$ $b = 1.61959 - 0.31356I$	$17.4178 + 7.7170I$	$-15.2806 - 3.2820I$
$u = -1.77104 - 0.09789I$ $a = 0.321515 - 0.925880I$ $b = 1.61959 + 0.31356I$	$17.4178 - 7.7170I$	$-15.2806 + 3.2820I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.618034$ $a = \qquad 0$ $b = -1.00000$	-2.63189	-17.0000
$u = -1.61803$ $a = \qquad 0$ $b = -1.00000$	-10.5276	-17.0000

III. u-Polynomials

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

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_7 c_8, c_{10}	$(y^2 - 3y + 1)(y^{17} - 24y^{16} + \cdots + 15y - 1)$
c_2, c_3, c_5	$((y-1)^2)(y^{17} - 19y^{16} + \cdots + 26y - 1)$
c_4, c_9	$y^2(y^{17} + 15y^{16} + \cdots + 72y - 16)$