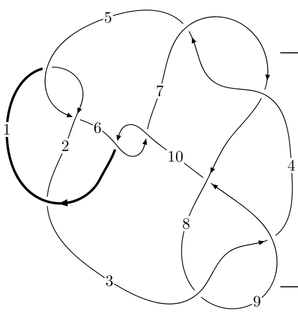
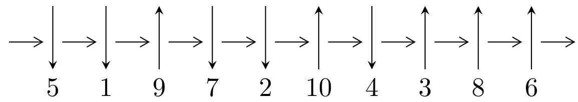
10_{43} $(K10a_{52})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{36} - u^{35} + \cdots - u^2 + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 36 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. $I_1^u = \langle u^{36} - u^{35} + \cdots - u^2 + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{11} + 2u^9 - 2u^7 - u^3 \\ u^{11} - 3u^9 + 4u^7 - u^5 - u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{19} - 4u^{17} + 8u^{15} - 8u^{13} + 5u^{11} - 2u^9 + 2u^7 + u^3 \\ -u^{19} + 5u^{17} - 12u^{15} + 15u^{13} - 9u^{11} - u^9 + 4u^7 - 2u^5 - u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{33} + 8u^{31} + \cdots + 2u^3 - u \\ u^{35} - 9u^{33} + \cdots - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{35} + 40u^{33} - 4u^{32} - 192u^{31} + 36u^{30} + 564u^{29} - 156u^{28} - 1092u^{27} + 412u^{26} + 1380u^{25} - 712u^{24} - 980u^{23} + 792u^{22} + 16u^{21} - 480u^{20} + 732u^{19} - 16u^{18} - 680u^{17} + 280u^{16} + 112u^{15} - 188u^{14} + 272u^{13} - 12u^{12} - 216u^{11} + 80u^{10} - 36u^8 + 80u^7 - 8u^6 - 32u^5 + 8u^4 - 4u^3 + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{36} + u^{35} + \cdots - u^2 + 1$
c_2	$u^{36} + 19u^{35} + \cdots + 2u + 1$
c_3, c_8	$u^{36} - u^{35} + \cdots - u^2 + 1$
c_4, c_7	$u^{36} - 3u^{35} + \cdots - 22u + 5$
c_6, c_{10}	$u^{36} + 3u^{35} + \cdots + 22u + 5$
c_9	$u^{36} - 19u^{35} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_8	$y^{36} - 19y^{35} + \cdots - 2y + 1$
c_2, c_9	$y^{36} - 3y^{35} + \cdots + 2y + 1$
c_4, c_6, c_7 c_{10}	$y^{36} + 25y^{35} + \cdots - 154y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.805609 + 0.585926I$	$-5.78512 + 6.60899I$	$-5.22618 - 6.99003I$
$u = \quad 0.805609 - 0.585926I$	$-5.78512 - 6.60899I$	$-5.22618 + 6.99003I$
$u = -0.973666 + 0.342560I$	$-\ 3.75301I$	$0. + 6.73664I$
$u = -0.973666 - 0.342560I$	$3.75301I$	$0. - 6.73664I$
$u = -0.771553 + 0.550437I$	$-2.48653 - 2.21040I$	$-2.18679 + 3.72055I$
$u = -0.771553 - 0.550437I$	$-2.48653 + 2.21040I$	$-2.18679 - 3.72055I$
$u = \quad 0.733643 + 0.592284I$	$-5.99129 - 1.96554I$	$-6.00564 + 0.22737I$
$u = \quad 0.733643 - 0.592284I$	$-5.99129 + 1.96554I$	$-6.00564 - 0.22737I$
$u = \quad 0.879174 + 0.103222I$	$1.48890 + 0.27307I$	$6.50261 - 0.38004I$
$u = \quad 0.879174 - 0.103222I$	$1.48890 - 0.27307I$	$6.50261 + 0.38004I$
$u = -1.079360 + 0.331184I$	$-\ 3.70794I$	$0. + 4.78665I$
$u = -1.079360 - 0.331184I$	$3.70794I$	$0. - 4.78665I$
$u = \quad 0.193860 + 0.787757I$	$-2.88545 - 7.72472I$	$-3.24945 + 5.61903I$
$u = \quad 0.193860 - 0.787757I$	$-2.88545 + 7.72472I$	$-3.24945 - 5.61903I$
$u = \quad 1.169940 + 0.367759I$	$3.90881 + 0.64400I$	$5.19682 - 0.84878I$
$u = \quad 1.169940 - 0.367759I$	$3.90881 - 0.64400I$	$5.19682 + 0.84878I$
$u = -0.176866 + 0.751609I$	$2.99647I$	$0. - 2.49060I$
$u = -0.176866 - 0.751609I$	$-\ 2.99647I$	$0. + 2.49060I$
$u = \quad 0.241156 + 0.725408I$	$-3.90881 + 0.64400I$	$-5.19682 - 0.84878I$
$u = \quad 0.241156 - 0.725408I$	$-3.90881 - 0.64400I$	$-5.19682 + 0.84878I$
$u = -1.188280 + 0.342283I$	$1.27958 + 4.07135I$	$1.88452 - 2.88119I$
$u = -1.188280 - 0.342283I$	$1.27958 - 4.07135I$	$1.88452 + 2.88119I$
$u = -0.038116 + 0.743633I$	$2.48653 + 2.21040I$	$2.18679 - 3.72055I$
$u = -0.038116 - 0.743633I$	$2.48653 - 2.21040I$	$2.18679 + 3.72055I$
$u = \quad 1.143830 + 0.521070I$	$-1.27958 + 4.07135I$	$-1.88452 - 2.88119I$
$u = \quad 1.143830 - 0.521070I$	$-1.27958 - 4.07135I$	$-1.88452 + 2.88119I$
$u = \quad 1.184710 + 0.434081I$	$5.99129 + 1.96554I$	$6.00564 - 0.22737I$
$u = \quad 1.184710 - 0.434081I$	$5.99129 - 1.96554I$	$6.00564 + 0.22737I$
$u = -1.184420 + 0.463218I$	$5.78512 - 6.60899I$	$5.22618 + 6.99003I$
$u = -1.184420 - 0.463218I$	$5.78512 + 6.60899I$	$5.22618 - 6.99003I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.168380 + 0.513346I$	$2.88545 - 7.72472I$	$3.24945 + 5.61903I$
$u = -1.168380 - 0.513346I$	$2.88545 + 7.72472I$	$3.24945 - 5.61903I$
$u = \quad 1.175040 + 0.526945I$	$12.6026I$	$0. - 8.81146I$
$u = \quad 1.175040 - 0.526945I$	$-\ 12.6026I$	$0. + 8.81146I$
$u = -0.446315 + 0.412227I$	$-1.48890 + 0.27307I$	$-6.50261 - 0.38004I$
$u = -0.446315 - 0.412227I$	$-1.48890 - 0.27307I$	$-6.50261 + 0.38004I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{36} + u^{35} + \cdots - u^2 + 1$
c_2	$u^{36} + 19u^{35} + \cdots + 2u + 1$
c_3, c_8	$u^{36} - u^{35} + \cdots - u^2 + 1$
c_4, c_7	$u^{36} - 3u^{35} + \cdots - 22u + 5$
c_6, c_{10}	$u^{36} + 3u^{35} + \cdots + 22u + 5$
c_9	$u^{36} - 19u^{35} + \cdots - 2u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_8	$y^{36} - 19y^{35} + \cdots - 2y + 1$
c_2, c_9	$y^{36} - 3y^{35} + \cdots + 2y + 1$
c_4, c_6, c_7 c_{10}	$y^{36} + 25y^{35} + \cdots - 154y + 25$