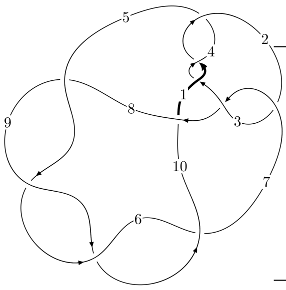
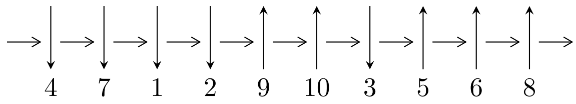
10_{48} $(K10a_{79})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle u^{25} - 14u^{23} + \cdots + b - 1,\ -u^{24} + u^{23} + \cdots + a + 2,\ u^{26} - 2u^{25} + \cdots + 3u + 1\rangle$$
$$I^u_2 = \langle b,\ a - u - 1,\ u^2 + u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 28 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.

$$\boldsymbol{I_1^u = \langle u^{25} - 14u^{23} + \cdots + b - 1,\ -u^{24} + u^{23} + \cdots + a + 2,\ u^{26} - 2u^{25} + \cdots + 3u + 1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4 - 3u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{24} - u^{23} + \cdots + 4u - 2 \\ -u^{25} + 14u^{23} + \cdots + 5u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 + 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{24} - u^{23} + \cdots + u - 3 \\ u^{25} - 14u^{23} + \cdots - 2u - 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{24} - u^{23} + \cdots + 2u - 2 \\ u^{14} - 8u^{12} + \cdots - u^2 + 2u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3u^{24} - u^{23} - 41u^{22} + 8u^{21} + 237u^{20} - 2u^{19} - 754u^{18} - 180u^{17} + 1435u^{16} + 802u^{15} - 1634u^{14} - 1608u^{13} + 954u^{12} + 1718u^{11} + 24u^{10} - 1034u^9 - 412u^8 + 379u^7 + 265u^6 - 70u^5 - 147u^4 + 10u^3 + 32u^2 + 18u - 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4	$u^{26} - 3u^{25} + \cdots - 9u^2 - 1$
c_2, c_7	$u^{26} - u^{25} + \cdots + 17u^2 - 4$
c_5, c_6, c_8 c_9	$u^{26} - 2u^{25} + \cdots + 3u + 1$
c_{10}	$u^{26} + 6u^{25} + \cdots + 57u - 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4	$y^{26} - 25y^{25} + \cdots + 18y + 1$
c_2, c_7	$y^{26} - 15y^{25} + \cdots - 136y + 16$
c_5, c_6, c_8 c_9	$y^{26} - 30y^{25} + \cdots - 19y + 1$
c_{10}	$y^{26} + 6y^{25} + \cdots - 3159y + 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.668864 + 0.598628I$ $a = -1.61808 + 1.14418I$ $b = -1.31336 - 0.55274I$	$-6.97144 - 7.45946I$	$-3.34661 + 6.43325I$
$u = -0.668864 - 0.598628I$ $a = -1.61808 - 1.14418I$ $b = -1.31336 + 0.55274I$	$-6.97144 + 7.45946I$	$-3.34661 - 6.43325I$
$u = 1.198900 + 0.140779I$ $a = -0.217750 - 0.235577I$ $b = -1.276500 - 0.100979I$	$-3.39138 - 0.04941I$	$-2.26185 - 0.23755I$
$u = 1.198900 - 0.140779I$ $a = -0.217750 + 0.235577I$ $b = -1.276500 + 0.100979I$	$-3.39138 + 0.04941I$	$-2.26185 + 0.23755I$
$u = -0.586941 + 0.484436I$ $a = 1.86292 - 1.18885I$ $b = 1.051360 + 0.358584I$	$-0.89453 - 3.84444I$	$-0.49259 + 7.28090I$
$u = -0.586941 - 0.484436I$ $a = 1.86292 + 1.18885I$ $b = 1.051360 - 0.358584I$	$-0.89453 + 3.84444I$	$-0.49259 - 7.28090I$
$u = -0.283620 + 0.683381I$ $a = 1.65331 - 0.64793I$ $b = 1.330650 - 0.398492I$	$-8.11148 + 3.15061I$	$-5.88075 - 0.93673I$
$u = -0.283620 - 0.683381I$ $a = 1.65331 + 0.64793I$ $b = 1.330650 + 0.398492I$	$-8.11148 - 3.15061I$	$-5.88075 + 0.93673I$
$u = 0.486887 + 0.485193I$ $a = 0.722742 - 0.089263I$ $b = -0.151101 - 1.041920I$	$-3.27468 + 1.70414I$	$-2.66466 - 3.89699I$
$u = 0.486887 - 0.485193I$ $a = 0.722742 + 0.089263I$ $b = -0.151101 + 1.041920I$	$-3.27468 - 1.70414I$	$-2.66466 + 3.89699I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.622264 + 0.175930I$ $a = -0.280102 - 0.073287I$ $b = 0.338732 + 0.457385I$	$1.166700 + 0.399409I$	$7.28789 - 1.42640I$
$u = 0.622264 - 0.175930I$ $a = -0.280102 + 0.073287I$ $b = 0.338732 - 0.457385I$	$1.166700 - 0.399409I$	$7.28789 + 1.42640I$
$u = -0.345528 + 0.459270I$ $a = -2.06279 + 0.67901I$ $b = -0.939749 + 0.103171I$	$-1.59551 + 0.48344I$	$-4.02832 + 0.08458I$
$u = -0.345528 - 0.459270I$ $a = -2.06279 - 0.67901I$ $b = -0.939749 - 0.103171I$	$-1.59551 - 0.48344I$	$-4.02832 - 0.08458I$
$u = 1.51750 + 0.08533I$ $a = 1.165270 + 0.679850I$ $b = 1.069430 - 0.265042I$	$4.66926 + 1.10360I$	$0.162083 - 0.384354I$
$u = 1.51750 - 0.08533I$ $a = 1.165270 - 0.679850I$ $b = 1.069430 + 0.265042I$	$4.66926 - 1.10360I$	$0.162083 + 0.384354I$
$u = -1.53355 + 0.12553I$ $a = -0.351346 + 0.586908I$ $b = 0.393229 - 1.143620I$	$3.48759 - 3.82064I$	$0.89607 + 2.40126I$
$u = -1.53355 - 0.12553I$ $a = -0.351346 - 0.586908I$ $b = 0.393229 + 1.143620I$	$3.48759 + 3.82064I$	$0.89607 - 2.40126I$
$u = 1.56506 + 0.13930I$ $a = -0.92214 - 1.07989I$ $b = -1.134790 + 0.523946I$	$6.35171 + 6.10679I$	$2.97747 - 5.14405I$
$u = 1.56506 - 0.13930I$ $a = -0.92214 + 1.07989I$ $b = -1.134790 - 0.523946I$	$6.35171 - 6.10679I$	$2.97747 + 5.14405I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.58442 + 0.05231I$ $a = 0.214222 - 0.374662I$ $b = -0.346659 + 0.743600I$	$8.75625 - 1.27302I$	$7.34031 + 0.88258I$
$u = -1.58442 - 0.05231I$ $a = 0.214222 + 0.374662I$ $b = -0.346659 - 0.743600I$	$8.75625 + 1.27302I$	$7.34031 - 0.88258I$
$u = 1.59031 + 0.18503I$ $a = 0.687931 + 1.166390I$ $b = 1.28311 - 0.68193I$	$0.59945 + 10.37890I$	$-0.23306 - 5.66856I$
$u = 1.59031 - 0.18503I$ $a = 0.687931 - 1.166390I$ $b = 1.28311 + 0.68193I$	$0.59945 - 10.37890I$	$-0.23306 + 5.66856I$
$u = -1.67318$ $a = -0.394205$ $b = 0.856853$	6.22196	-3.01540
$u = -0.282820$ $a = -3.31419$ $b = -0.465579$	-1.22611	-10.4970

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 1.61803$ $b = 0$	-0.657974	5.00000
$u = -1.61803$ $a = -0.618034$ $b = 0$	7.23771	5.00000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^{26}-3u^{25}+\cdots-9u^2-1)$
c_2, c_7	$u^2(u^{26}-u^{25}+\cdots+17u^2-4)$
c_3, c_4	$((u+1)^2)(u^{26}-3u^{25}+\cdots-9u^2-1)$
c_5, c_6	$(u^2-u-1)(u^{26}-2u^{25}+\cdots+3u+1)$
c_8, c_9	$(u^2+u-1)(u^{26}-2u^{25}+\cdots+3u+1)$
c_{10}	$(u^2+u-1)(u^{26}+6u^{25}+\cdots+57u-9)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4	$((y-1)^2)(y^{26} - 25y^{25} + \cdots + 18y + 1)$
c_2, c_7	$y^2(y^{26} - 15y^{25} + \cdots - 136y + 16)$
c_5, c_6, c_8 c_9	$(y^2 - 3y + 1)(y^{26} - 30y^{25} + \cdots - 19y + 1)$
c_{10}	$(y^2 - 3y + 1)(y^{26} + 6y^{25} + \cdots - 3159y + 81)$