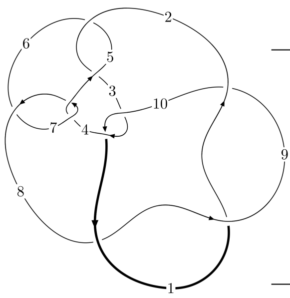
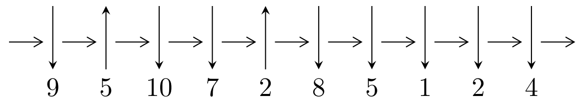
10_{149} ($K10n_{11}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u &= \langle -876201u^{21} - 2322990u^{20} + \cdots + 4026049b + 4761515, \\ &\quad 2437160u^{21} + 3033235u^{20} + \cdots + 4026049a - 11137406,\ u^{22} + 2u^{21} + \cdots - 5u + 1\rangle \\ I_2^u &= \langle b + 1,\ a - u - 1,\ u^2 + u - 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 24 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.

$\boldsymbol{I_1^u = \langle -8.76 \times 10^5 u^{21} - 2.32 \times 10^6 u^{20} + \cdots + 4.03 \times 10^6 b + 4.76 \times 10^6,\ 2.44 \times 10^6 u^{21} + 3.03 \times 10^6 u^{20} + \cdots + 4.03 \times 10^6 a - 1.11 \times 10^7,\ u^{22} + 2u^{21} + \cdots - 5u + 1 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.605348u^{21} - 0.753402u^{20} + \cdots + 2.33325u + 2.76634 \\ 0.217633u^{21} + 0.576990u^{20} + \cdots + 0.524775u - 1.18268 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.411423u^{21} - 1.40224u^{20} + \cdots - 0.181636u + 1.11034 \\ -0.245107u^{21} + 0.325510u^{20} + \cdots + 2.34715u - 0.644858 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.796242u^{21} - 1.56338u^{20} + \cdots + 1.14222u + 4.11733 \\ 0.129468u^{21} + 0.692040u^{20} + \cdots + 0.900899u - 1.26929 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.400579u^{21} + 1.80305u^{20} + \cdots + 4.09317u - 2.11533 \\ 0.823670u^{21} + 0.230100u^{20} + \cdots - 4.24775u + 0.826769 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.666774u^{21} - 0.871340u^{20} + \cdots + 2.04312u + 2.84804 \\ 0.129468u^{21} + 0.692040u^{20} + \cdots + 0.900899u - 1.26929 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{18273594}{4026049}u^{21} - \frac{33446853}{4026049}u^{20} + \cdots + \frac{47627074}{4026049}u - \frac{9739867}{4026049}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8, c_9	$u^{22} - 2u^{21} + \cdots + 5u + 1$
c_2, c_5	$u^{22} + 3u^{21} + \cdots + 28u + 4$
c_3, c_{10}	$u^{22} + 2u^{21} + \cdots + u + 1$
c_4, c_7	$u^{22} - 3u^{21} + \cdots - 12u + 1$
c_6	$u^{22} + 9u^{21} + \cdots + 120u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8, c_9	$y^{22} - 18y^{21} + \cdots - 9y + 1$
c_2, c_5	$y^{22} - 15y^{21} + \cdots - 264y + 16$
c_3, c_{10}	$y^{22} - 6y^{21} + \cdots - 9y + 1$
c_4, c_7	$y^{22} - 9y^{21} + \cdots - 120y + 1$
c_6	$y^{22} + 11y^{21} + \cdots - 12776y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.137382 + 0.980052I$ $a = -0.517949 - 1.178400I$ $b = 1.042580 + 0.734289I$	$3.27405 - 6.32540I$	$-5.56731 + 5.28995I$
$u = 0.137382 - 0.980052I$ $a = -0.517949 + 1.178400I$ $b = 1.042580 - 0.734289I$	$3.27405 + 6.32540I$	$-5.56731 - 5.28995I$
$u = 1.080880 + 0.106938I$ $a = -0.42141 + 2.53028I$ $b = -0.911911 - 0.168984I$	$-3.24923 - 0.58535I$	$-11.5610 - 9.1342I$
$u = 1.080880 - 0.106938I$ $a = -0.42141 - 2.53028I$ $b = -0.911911 + 0.168984I$	$-3.24923 + 0.58535I$	$-11.5610 + 9.1342I$
$u = -0.123407 + 0.853958I$ $a = 0.00757 + 1.42496I$ $b = 0.669484 - 0.874843I$	$4.43145 - 0.35468I$	$-3.17978 - 0.18562I$
$u = -0.123407 - 0.853958I$ $a = 0.00757 - 1.42496I$ $b = 0.669484 + 0.874843I$	$4.43145 + 0.35468I$	$-3.17978 + 0.18562I$
$u = -1.207460 + 0.170395I$ $a = -0.225304 - 1.032490I$ $b = -1.044530 + 0.860049I$	$-4.60553 + 3.49423I$	$-13.3144 - 6.3296I$
$u = -1.207460 - 0.170395I$ $a = -0.225304 + 1.032490I$ $b = -1.044530 - 0.860049I$	$-4.60553 - 3.49423I$	$-13.3144 + 6.3296I$
$u = -1.22419$ $a = -0.613520$ $b = -1.60485$	-6.34803	-16.5000
$u = 0.736463$ $a = 0.700417$ $b = 0.0940544$	-1.10354	-8.74830

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.195650 + 0.411381I$ $a = -0.358621 - 0.478444I$ $b = 0.384535 + 1.127130I$	$1.13790 + 4.89828I$	$-6.90240 - 4.82636I$
$u = -1.195650 - 0.411381I$ $a = -0.358621 + 0.478444I$ $b = 0.384535 - 1.127130I$	$1.13790 - 4.89828I$	$-6.90240 + 4.82636I$
$u = 1.154470 + 0.562023I$ $a = -0.253567 + 0.037384I$ $b = 0.770295 - 0.637284I$	$0.148418 + 0.912400I$	$-7.06168 - 2.22739I$
$u = 1.154470 - 0.562023I$ $a = -0.253567 - 0.037384I$ $b = 0.770295 + 0.637284I$	$0.148418 - 0.912400I$	$-7.06168 + 2.22739I$
$u = 1.38990 + 0.37870I$ $a = 0.880502 - 0.916687I$ $b = 0.934548 + 0.639349I$	$-0.37121 - 4.08988I$	$-7.66142 + 3.87499I$
$u = 1.38990 - 0.37870I$ $a = 0.880502 + 0.916687I$ $b = 0.934548 - 0.639349I$	$-0.37121 + 4.08988I$	$-7.66142 - 3.87499I$
$u = -1.38743 + 0.45171I$ $a = 0.618352 + 1.212720I$ $b = 1.23888 - 0.71737I$	$-1.50863 + 11.44270I$	$-9.41507 - 7.02258I$
$u = -1.38743 - 0.45171I$ $a = 0.618352 - 1.212720I$ $b = 1.23888 + 0.71737I$	$-1.50863 - 11.44270I$	$-9.41507 + 7.02258I$
$u = 0.096382 + 0.403421I$ $a = 2.25348 + 0.77227I$ $b = -0.685093 - 0.393126I$	$-0.85664 - 1.35693I$	$-6.38441 + 4.83589I$
$u = 0.096382 - 0.403421I$ $a = 2.25348 - 0.77227I$ $b = -0.685093 + 0.393126I$	$-0.85664 + 1.35693I$	$-6.38441 - 4.83589I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.66272$ $a = 0.642487$ $b = 0.825081$	-10.1504	0.707930
$u = 0.260308$ $a = 3.30452$ $b = -1.11185$	-2.22827	0.635130

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -21$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^2 - u - 1$
c_2, c_5	u^2
c_4, c_6	$(u-1)^2$
c_7	$(u+1)^2$
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_8 c_9, c_{10}	$y^2 - 3y + 1$
c_2, c_5	y^2
c_4, c_6, c_7	$(y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 1.61803$ $b = -1.00000$	-2.63189	-21.0000
$u = -1.61803$ $a = -0.618034$ $b = -1.00000$	-10.5276	-21.0000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2 - u - 1)(u^{22} - 2u^{21} + \cdots + 5u + 1)$
c_2, c_5	$u^2(u^{22} + 3u^{21} + \cdots + 28u + 4)$
c_3	$(u^2 - u - 1)(u^{22} + 2u^{21} + \cdots + u + 1)$
c_4	$((u-1)^2)(u^{22} - 3u^{21} + \cdots - 12u + 1)$
c_6	$((u-1)^2)(u^{22} + 9u^{21} + \cdots + 120u + 1)$
c_7	$((u+1)^2)(u^{22} - 3u^{21} + \cdots - 12u + 1)$
c_8, c_9	$(u^2 + u - 1)(u^{22} - 2u^{21} + \cdots + 5u + 1)$
c_{10}	$(u^2 + u - 1)(u^{22} + 2u^{21} + \cdots + u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8, c_9	$(y^2-3y+1)(y^{22}-18y^{21}+\cdots-9y+1)$
c_2, c_5	$y^2(y^{22}-15y^{21}+\cdots-264y+16)$
c_3, c_{10}	$(y^2-3y+1)(y^{22}-6y^{21}+\cdots-9y+1)$
c_4, c_7	$((y-1)^2)(y^{22}-9y^{21}+\cdots-120y+1)$
c_6	$((y-1)^2)(y^{22}+11y^{21}+\cdots-12776y+1)$