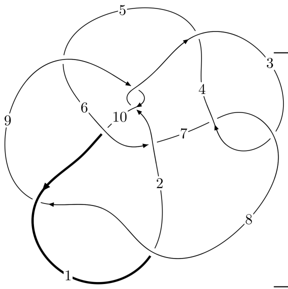
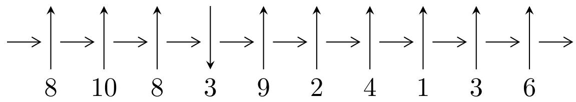
10_{145} $(K10n_{14})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3u^4 - 9u^3 + 31u^2 + 118b - 54u + 26,\ 17u^4 + 8u^3 + 215u^2 + 236a - 70u + 167,$$
$$u^5 + 2u^4 + 15u^3 + 14u^2 + 17u + 4\rangle$$
$$I_2^u = \langle b - a + u + 1,\ a^2 - 2au - 2a + u + 1,\ u^2 + u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 9 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. $\boldsymbol{I_1^u = \langle 3u^4 - 9u^3 + 31u^2 + 118b - 54u + 26,\ 17u^4 + 8u^3 + 215u^2 + 236a - 70u + 167,\ u^5 + 2u^4 + 15u^3 + 14u^2 + 17u + 4\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_5 = \begin{pmatrix}u^2+1\\-u^2\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-0.0720339u^4 - 0.0338983u^3 + \cdots + 0.296610u - 0.707627\\-0.0254237u^4 + 0.0762712u^3 + \cdots + 0.457627u - 0.220339\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.0550847u^4 + 0.0847458u^3 + \cdots + 0.508475u + 1.39407\\-0.0169492u^4 + 0.0508475u^3 + \cdots + 0.305085u + 0.186441\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.0550847u^4 + 0.0847458u^3 + \cdots + 0.508475u + 1.39407\\0.110169u^4 + 0.169492u^3 + \cdots + 0.516949u + 0.288136\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0.0720339u^4 + 0.0338983u^3 + \cdots - 0.296610u + 0.707627\\-0.110169u^4 - 0.169492u^3 + \cdots - 0.516949u - 0.288136\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-0.0466102u^4 - 0.110169u^3 + \cdots - 0.161017u - 0.487288\\-0.0254237u^4 + 0.0762712u^3 + \cdots + 0.457627u - 0.220339\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{33}{59}u^4 + \frac{78}{59}u^3 + \frac{518}{59}u^2 + \frac{645}{59}u + \frac{994}{59}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_8 c_9	$u^5 + u^4 + 8u^3 - 4u^2 + 3u - 1$
c_3, c_7	$u^5 - 2u^4 + 15u^3 - 14u^2 + 17u - 4$
c_4	$u^5 + 26u^4 + 203u^3 + 298u^2 + 177u - 16$
c_5, c_6	$u^5 + u^4 + 26u^3 + 18u^2 - 4u - 4$
c_{10}	$u^5 + 4u^4 + 7u^3 + 4u^2 - u - 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_8 c_9	$y^5 + 15y^4 + 78y^3 + 34y^2 + y - 1$
c_3, c_7	$y^5 + 26y^4 + 203y^3 + 298y^2 + 177y - 16$
c_4	$y^5 - 270y^4 + 26067y^3 - 16110y^2 + 40865y - 256$
c_5, c_6	$y^5 + 51y^4 + 632y^3 - 524y^2 + 160y - 16$
c_{10}	$y^5 - 2y^4 + 15y^3 - 14y^2 + 17y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.345349+1.000390I$ $a=-0.062320+0.860264I$ $b=-0.078472+0.559300I$	$-1.59932-2.36167I$	$6.81651+4.70099I$
$u=-0.345349-1.000390I$ $a=-0.062320-0.860264I$ $b=-0.078472-0.559300I$	$-1.59932+2.36167I$	$6.81651-4.70099I$
$u=-0.281507$ $a=-0.863015$ $b=-0.371844$	0.702837	14.4400
$u=-0.51390+3.52451I$ $a=-0.131172-0.610069I$ $b=\ \ 0.76439-2.80121I$	$15.2298-5.0449I$	$4.96361+1.80446I$
$u=-0.51390-3.52451I$ $a=-0.131172+0.610069I$ $b=\ \ 0.76439+2.80121I$	$15.2298+5.0449I$	$4.96361-1.80446I$

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

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} a \\ a-u-1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} au+a-u \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} au+a-u \\ -au-2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -a \\ au+2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u+1 \\ a-u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_8 c_9	$(y+1)^4$
c_3, c_4, c_7	$(y^2+y+1)^2$
c_5, c_6	y^4-4y^2+16
c_{10}	$(y^2-y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0.500000 - 0.133975I$ $b = -1.000000I$	$-3.28987 - 2.02988I$	$2.00000 + 3.46410I$
$u = -0.500000 + 0.866025I$ $a = 0.50000 + 1.86603I$ $b = 1.000000I$	$-3.28987 - 2.02988I$	$2.00000 + 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 0.500000 + 0.133975I$ $b = 1.000000I$	$-3.28987 + 2.02988I$	$2.00000 - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 0.50000 - 1.86603I$ $b = -1.000000I$	$-3.28987 + 2.02988I$	$2.00000 - 3.46410I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_8 c_9	$(u^2+1)^2(u^5+u^4+8u^3-4u^2+3u-1)$
c_3	$(u^2+u+1)^2(u^5-2u^4+15u^3-14u^2+17u-4)$
c_4	$(u^2+u+1)^2(u^5+26u^4+203u^3+298u^2+177u-16)$
c_5	$(u^4-2u^3+2u^2-4u+4)(u^5+u^4+26u^3+18u^2-4u-4)$
c_6	$(u^4+2u^3+2u^2+4u+4)(u^5+u^4+26u^3+18u^2-4u-4)$
c_7	$(u^2-u+1)^2(u^5-2u^4+15u^3-14u^2+17u-4)$
c_{10}	$(u^4-u^2+1)(u^5+4u^4+7u^3+4u^2-u-2)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_8 c_9	$(y+1)^4(y^5+15y^4+78y^3+34y^2+y-1)$
c_3, c_7	$(y^2+y+1)^2(y^5+26y^4+203y^3+298y^2+177y-16)$
c_4	$(y^2+y+1)^2(y^5-270y^4+26067y^3-16110y^2+40865y-256)$
c_5, c_6	$(y^4-4y^2+16)(y^5+51y^4+632y^3-524y^2+160y-16)$
c_{10}	$(y^2-y+1)^2(y^5-2y^4+15y^3-14y^2+17y-4)$