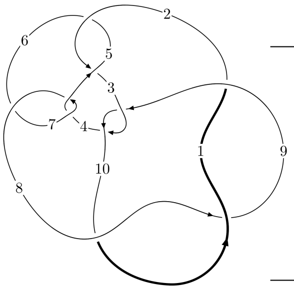
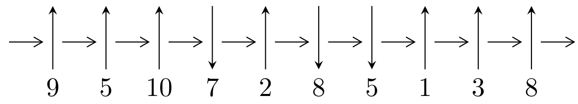
10_{148} $(K10n_{12})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4617u^{16} - 7857u^{15} + \cdots + 51929b + 5902,\ -25871u^{16} - 67713u^{15} + \cdots + 51929a + 130136,\ u^{17} + 2u^{16} + \cdots + u + 1\rangle$$

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

* 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. $\boldsymbol{I_1^u = \langle -4617u^{16} - 7857u^{15} + \cdots + 51929b + 5902,\ -2.59 \times 10^4 u^{16} - 6.77 \times 10^4 u^{15} + \cdots + 5.19 \times 10^4 a + 1.30 \times 10^5,\ u^{17} + 2u^{16} + \cdots + u + 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.498199u^{16} + 1.30395u^{15} + \cdots - 1.04462u - 2.50604 \\ 0.0889099u^{16} + 0.151303u^{15} + \cdots + 1.44389u - 0.113655 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.409290u^{16} + 1.15265u^{15} + \cdots - 2.48851u - 2.39238 \\ 0.0889099u^{16} + 0.151303u^{15} + \cdots + 1.44389u - 0.113655 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.392305u^{16} - 0.597431u^{15} + \cdots + 3.04310u + 0.331684 \\ -0.848871u^{16} - 1.42703u^{15} + \cdots - 0.126557u - 0.846213 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.189913u^{16} + 0.972308u^{15} + \cdots - 1.24568u - 2.24559 \\ -0.266730u^{16} - 0.453908u^{15} + \cdots + 1.66832u - 0.659034 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.388319u^{16} - 0.222227u^{15} + \cdots + 2.71407u + 0.521520 \\ -1.37763u^{16} - 1.94088u^{15} + \cdots - 0.892738u - 1.79559 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{237738}{51929}u^{16} + \frac{516629}{51929}u^{15} + \cdots + \frac{7520}{51929}u - \frac{55125}{51929}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8, c_{10}	$u^{17} + 2u^{16} + \cdots + u + 1$
c_2, c_5	$u^{17} + 3u^{16} + \cdots + 20u - 4$
c_3, c_9	$u^{17} - 2u^{16} + \cdots + u - 1$
c_4, c_7	$u^{17} - 3u^{16} + \cdots - 6u + 1$
c_6	$u^{17} + 19u^{16} + \cdots + 90u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8, c_{10}	$y^{17} - 12y^{16} + \cdots + 3y - 1$
c_2, c_5	$y^{17} + 15y^{16} + \cdots + 168y - 16$
c_3, c_9	$y^{17} + 18y^{15} + \cdots + 3y - 1$
c_4, c_7	$y^{17} - 19y^{16} + \cdots + 90y - 1$
c_6	$y^{17} - 39y^{16} + \cdots + 6538y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.060610 + 0.200554I$ $a = -1.100330 + 0.165877I$ $b = -0.126302 - 0.644532I$	$1.19150 + 0.82781I$	$6.36851 + 0.89620I$
$u = 1.060610 - 0.200554I$ $a = -1.100330 - 0.165877I$ $b = -0.126302 + 0.644532I$	$1.19150 - 0.82781I$	$6.36851 - 0.89620I$
$u = 0.886101$ $a = 4.18127$ $b = 0.394058$	-0.349343	37.8910
$u = -0.028909 + 1.130360I$ $a = -0.094574 - 0.284355I$ $b = -0.39410 - 1.60622I$	$-9.74801 + 4.21913I$	$0.41910 - 2.45985I$
$u = -0.028909 - 1.130360I$ $a = -0.094574 + 0.284355I$ $b = -0.39410 + 1.60622I$	$-9.74801 - 4.21913I$	$0.41910 + 2.45985I$
$u = -1.086970 + 0.371718I$ $a = 1.32093 - 0.74097I$ $b = 0.66882 - 1.55232I$	$0.79066 - 4.66548I$	$5.23718 + 7.00226I$
$u = -1.086970 - 0.371718I$ $a = 1.32093 + 0.74097I$ $b = 0.66882 + 1.55232I$	$0.79066 + 4.66548I$	$5.23718 - 7.00226I$
$u = -0.753939 + 0.337936I$ $a = -1.89995 - 1.01730I$ $b = -1.40441 - 0.70064I$	$-2.60021 - 1.61334I$	$-0.56805 + 3.90220I$
$u = -0.753939 - 0.337936I$ $a = -1.89995 + 1.01730I$ $b = -1.40441 + 0.70064I$	$-2.60021 + 1.61334I$	$-0.56805 - 3.90220I$
$u = -1.35486 + 0.58404I$ $a = -1.65394 + 0.65249I$ $b = -0.86824 + 1.50423I$	$-5.64268 - 10.26020I$	$3.51255 + 5.70568I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.35486 - 0.58404I$ $a = -1.65394 - 0.65249I$ $b = -0.86824 - 1.50423I$	$-5.64268 + 10.26020I$	$3.51255 - 5.70568I$
$u = 0.490972$ $a = -0.403318$ $b = 0.331229$	0.859712	11.9140
$u = 1.40843 + 0.58705I$ $a = 0.860646 + 1.071670I$ $b = 0.12824 + 1.41329I$	$-5.29829 + 1.87159I$	$2.27258 - 1.08933I$
$u = 1.40843 - 0.58705I$ $a = 0.860646 - 1.071670I$ $b = 0.12824 - 1.41329I$	$-5.29829 - 1.87159I$	$2.27258 + 1.08933I$
$u = -0.152522 + 0.439635I$ $a = -1.64573 - 0.72471I$ $b = -0.155264 + 1.014090I$	$-1.71156 + 1.29590I$	$-0.73837 - 2.68816I$
$u = -0.152522 - 0.439635I$ $a = -1.64573 + 0.72471I$ $b = -0.155264 - 1.014090I$	$-1.71156 - 1.29590I$	$-0.73837 + 2.68816I$
$u = -1.56075$ $a = 0.647938$ $b = 0.577229$	7.69334	17.1880

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -1$

(iv) u-Polynomials at the component

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

(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
$u = 0.618034$ $a = 2.61803$ $b = 0$	-0.657974	-1.00000
$u = -1.61803$ $a = 0.381966$ $b = 0$	7.23771	-1.00000

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_5	$u^2(u^{17}+3u^{16}+\cdots+20u-4)$
c_3	$(u^2+u-1)(u^{17}-2u^{16}+\cdots+u-1)$
c_4	$((u-1)^2)(u^{17}-3u^{16}+\cdots-6u+1)$
c_6	$((u-1)^2)(u^{17}+19u^{16}+\cdots+90u+1)$
c_7	$((u+1)^2)(u^{17}-3u^{16}+\cdots-6u+1)$
c_8	$(u^2-u-1)(u^{17}+2u^{16}+\cdots+u+1)$
c_9	$(u^2-u-1)(u^{17}-2u^{16}+\cdots+u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8, c_{10}	$(y^2 - 3y + 1)(y^{17} - 12y^{16} + \cdots + 3y - 1)$
c_2, c_5	$y^2(y^{17} + 15y^{16} + \cdots + 168y - 16)$
c_3, c_9	$(y^2 - 3y + 1)(y^{17} + 18y^{15} + \cdots + 3y - 1)$
c_4, c_7	$((y-1)^2)(y^{17} - 19y^{16} + \cdots + 90y - 1)$
c_6	$((y-1)^2)(y^{17} - 39y^{16} + \cdots + 6538y - 1)$