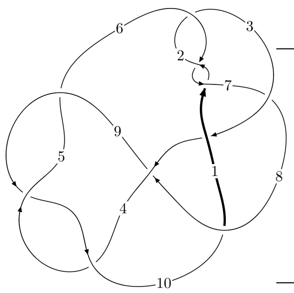
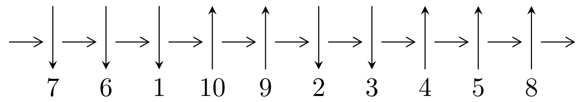
10_{33} $(K10a_{109})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{32} - u^{31} + \cdots - 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 32 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. $I_1^u = \langle u^{32} - u^{31} + \cdots - 2u + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^6 - 3u^4 - 2u^2 + 1 \\ u^8 + 4u^6 + 4u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{17} - 8u^{15} - 25u^{13} - 36u^{11} - 19u^9 + 4u^7 + 2u^5 - 4u^3 - u \\ u^{19} + 9u^{17} + 32u^{15} + 55u^{13} + 43u^{11} + 9u^9 + 4u^5 + u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{28} + 13u^{26} + \cdots - u^2 + 1 \\ -u^{28} - 12u^{26} + \cdots - 2u^6 + 3u^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{10} + 5u^8 + 8u^6 + 3u^4 - u^2 + 1 \\ -u^{10} - 4u^8 - 5u^6 - 2u^4 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{31} - 4u^{30} + 60u^{29} - 52u^{28} + 392u^{27} - 292u^{26} + 1448u^{25} - 908u^{24} + 3260u^{23} - 1640u^{22} + 4412u^{21} - 1548u^{20} + 3076u^{19} - 248u^{18} + 220u^{17} + 888u^{16} - 924u^{15} + 580u^{14} + 60u^{13} - 204u^{12} + 616u^{11} - 212u^{10} + 144u^9 + 72u^8 - 108u^7 + 60u^6 - 12u^5 - 8u^4 + 20u^3 - 8u^2 + 8u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6	$u^{32} + u^{31} + \cdots + 2u + 1$
c_3	$u^{32} - 7u^{31} + \cdots - 104u + 17$
c_4, c_5, c_9	$u^{32} - u^{31} + \cdots - 2u + 1$
c_7	$u^{32} - u^{31} + \cdots + 20u^3 + 1$
c_8	$u^{32} + u^{31} + \cdots - 20u^3 + 1$
c_{10}	$u^{32} + 7u^{31} + \cdots + 104u + 17$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_9	$y^{32} + 29y^{31} + \cdots + 4y^2 + 1$
c_3, c_{10}	$y^{32} + 9y^{31} + \cdots + 3056y + 289$
c_7, c_8	$y^{32} + y^{31} + \cdots + 56y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.209460 + 1.051390I$	$-4.41658 + 4.25629I$	$-3.47389 - 4.09777I$
$u = -0.209460 - 1.051390I$	$-4.41658 - 4.25629I$	$-3.47389 + 4.09777I$
$u = 0.089089 + 1.108640I$	$1.25663 - 1.65846I$	$0.43981 + 4.42001I$
$u = 0.089089 - 1.108640I$	$1.25663 + 1.65846I$	$0.43981 - 4.42001I$
$u = 0.714631 + 0.281038I$	$-5.41367 - 7.91274I$	$-4.55825 + 6.96002I$
$u = 0.714631 - 0.281038I$	$-5.41367 + 7.91274I$	$-4.55825 - 6.96002I$
$u = 0.339557 + 0.664733I$	$-3.94538 + 4.07051I$	$-1.91410 - 1.89651I$
$u = 0.339557 - 0.664733I$	$-3.94538 - 4.07051I$	$-1.91410 + 1.89651I$
$u = -0.672202 + 0.282270I$	$4.49550I$	$0. - 7.21172I$
$u = -0.672202 - 0.282270I$	$- 4.49550I$	$0. + 7.21172I$
$u = -0.694439 + 0.142847I$	$-7.11727 - 0.78256I$	$-7.62681 - 0.59259I$
$u = -0.694439 - 0.142847I$	$-7.11727 + 0.78256I$	$-7.62681 + 0.59259I$
$u = 0.515560 + 0.370610I$	$-1.25663 - 1.65846I$	$-0.43981 + 4.42001I$
$u = 0.515560 - 0.370610I$	$-1.25663 + 1.65846I$	$-0.43981 - 4.42001I$
$u = 0.598306 + 0.209645I$	$-1.19944 - 1.01594I$	$-3.95412 + 1.45531I$
$u = 0.598306 - 0.209645I$	$-1.19944 + 1.01594I$	$-3.95412 - 1.45531I$
$u = -0.265495 + 1.341380I$	$-2.44890 + 2.68301I$	$-2.52130 - 2.36594I$
$u = -0.265495 - 1.341380I$	$-2.44890 - 2.68301I$	$-2.52130 + 2.36594I$
$u = -0.323417 + 0.508294I$	$1.19944 - 1.01594I$	$3.95412 + 1.45531I$
$u = -0.323417 - 0.508294I$	$1.19944 + 1.01594I$	$3.95412 - 1.45531I$
$u = 0.235723 + 1.392280I$	$3.94538 - 4.07051I$	$1.91410 + 1.89651I$
$u = 0.235723 - 1.392280I$	$3.94538 + 4.07051I$	$1.91410 - 1.89651I$
$u = -0.14428 + 1.41797I$	$7.11727 + 0.78256I$	$7.62681 + 0.59259I$
$u = -0.14428 - 1.41797I$	$7.11727 - 0.78256I$	$7.62681 - 0.59259I$
$u = 0.19271 + 1.41648I$	$4.41658 - 4.25629I$	$3.47389 + 4.09777I$
$u = 0.19271 - 1.41648I$	$4.41658 + 4.25629I$	$3.47389 - 4.09777I$
$u = 0.10594 + 1.42756I$	$2.44890 + 2.68301I$	$2.52130 - 2.36594I$
$u = 0.10594 - 1.42756I$	$2.44890 - 2.68301I$	$2.52130 + 2.36594I$
$u = -0.26371 + 1.41237I$	$5.41367 + 7.91274I$	$4.55825 - 6.96002I$
$u = -0.26371 - 1.41237I$	$5.41367 - 7.91274I$	$4.55825 + 6.96002I$

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.28148 + 1.41481I$	$-11.5357I$	$0. + 7.26982I$
$u =$	$0.28148 - 1.41481I$	$11.5357I$	$0. - 7.26982I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6	$u^{32} + u^{31} + \cdots + 2u + 1$
c_3	$u^{32} - 7u^{31} + \cdots - 104u + 17$
c_4, c_5, c_9	$u^{32} - u^{31} + \cdots - 2u + 1$
c_7	$u^{32} - u^{31} + \cdots + 20u^3 + 1$
c_8	$u^{32} + u^{31} + \cdots - 20u^3 + 1$
c_{10}	$u^{32} + 7u^{31} + \cdots + 104u + 17$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_9	$y^{32} + 29y^{31} + \cdots + 4y^2 + 1$
c_3, c_{10}	$y^{32} + 9y^{31} + \cdots + 3056y + 289$
c_7, c_8	$y^{32} + y^{31} + \cdots + 56y^2 + 1$