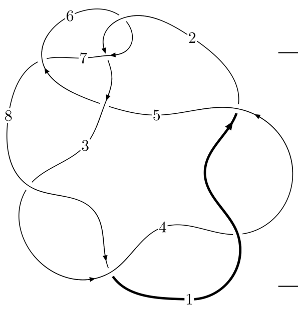
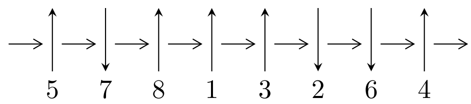
8_7 $(K8a_6)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{11} + u^{10} - 2u^9 - 3u^8 + 2u^7 + 4u^6 - 3u^4 - u^3 + u^2 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 11 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. $I_1^u = \langle u^{11} + u^{10} - 2u^9 - 3u^8 + 2u^7 + 4u^6 - 3u^4 - u^3 + u^2 - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ u^{10} - 2u^8 + 3u^6 - 2u^4 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{10} - 12u^8 - 4u^7 + 16u^6 + 8u^5 - 8u^4 - 8u^3 + 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_8	$u^{11} - u^{10} - 6u^9 + 5u^8 + 12u^7 - 6u^6 - 10u^5 - u^4 + 5u^3 + u^2 - 1$
c_2, c_6	$u^{11} + u^{10} - 2u^9 - 3u^8 + 2u^7 + 4u^6 - 3u^4 - u^3 + u^2 - 1$
c_5	$u^{11} + 3u^{10} + 4u^9 + u^8 + 2u^7 + 8u^6 + 8u^5 - 5u^4 - 3u^3 + u^2 + 4u + 1$
c_7	$u^{11} + 5u^{10} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_8	$y^{11} - 13y^{10} + \cdots + 2y - 1$
c_2, c_6	$y^{11} - 5y^{10} + \cdots + 2y - 1$
c_5	$y^{11} - y^{10} + \cdots + 14y - 1$
c_7	$y^{11} + 3y^{10} + \cdots - 10y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.959860 + 0.351396I$	$-1.63627 + 1.27541I$	$-1.47945 - 0.80097I$
$u = -0.959860 - 0.351396I$	$-1.63627 - 1.27541I$	$-1.47945 + 0.80097I$
$u = -0.488025 + 0.800566I$	$9.03866 - 1.64593I$	$8.04988 + 0.24481I$
$u = -0.488025 - 0.800566I$	$9.03866 + 1.64593I$	$8.04988 - 0.24481I$
$u = 1.11640$	3.38257	2.18570
$u = 1.031510 + 0.521913I$	$-0.37669 - 4.75030I$	$2.64109 + 6.77690I$
$u = 1.031510 - 0.521913I$	$-0.37669 + 4.75030I$	$2.64109 - 6.77690I$
$u = -1.081080 + 0.631709I$	$7.26485 + 7.02220I$	$5.50054 - 4.88619I$
$u = -1.081080 - 0.631709I$	$7.26485 - 7.02220I$	$5.50054 + 4.88619I$
$u = 0.439259 + 0.522038I$	$1.289960 + 0.454766I$	$7.19508 - 1.36957I$
$u = 0.439259 - 0.522038I$	$1.289960 - 0.454766I$	$7.19508 + 1.36957I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_8	$u^{11} - u^{10} - 6u^9 + 5u^8 + 12u^7 - 6u^6 - 10u^5 - u^4 + 5u^3 + u^2 - 1$
c_2, c_6	$u^{11} + u^{10} - 2u^9 - 3u^8 + 2u^7 + 4u^6 - 3u^4 - u^3 + u^2 - 1$
c_5	$u^{11} + 3u^{10} + 4u^9 + u^8 + 2u^7 + 8u^6 + 8u^5 - 5u^4 - 3u^3 + u^2 + 4u + 1$
c_7	$u^{11} + 5u^{10} + \cdots + 2u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_8	$y^{11} - 13y^{10} + \cdots + 2y - 1$
c_2, c_6	$y^{11} - 5y^{10} + \cdots + 2y - 1$
c_5	$y^{11} - y^{10} + \cdots + 14y - 1$
c_7	$y^{11} + 3y^{10} + \cdots - 10y - 1$