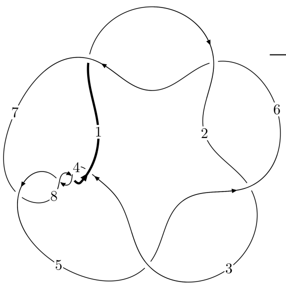
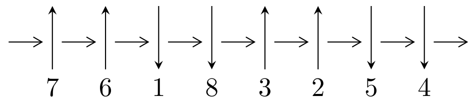
8_3 $(K8a_{18})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^8 - u^7 + 5u^6 - 4u^5 + 7u^4 - 4u^3 + 2u^2 + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 8 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. $\boldsymbol{I_1^u = \langle u^8 - u^7 + 5u^6 - 4u^5 + 7u^4 - 4u^3 + 2u^2 + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^5 - 2u^3 + u \\ u^5 + 3u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^6 + 3u^4 + 2u^2 + 1 \\ u^7 - u^6 + 4u^5 - 3u^4 + 4u^3 - 2u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5 c_6	$u^8 + u^7 + 5u^6 + 4u^5 + 7u^4 + 4u^3 + 2u^2 + 1$
c_3, c_4, c_7 c_8	$u^8 - u^7 + 5u^6 - 4u^5 + 7u^4 - 4u^3 + 2u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_6 c_7, c_8	$y^8 + 9y^7 + 31y^6 + 50y^5 + 39y^4 + 22y^3 + 18y^2 + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.647085 + 0.502738I$	$6.60959 + 2.18536I$	$3.58319 - 3.14055I$
$u = \quad 0.647085 - 0.502738I$	$6.60959 - 2.18536I$	$3.58319 + 3.14055I$
$u = -0.283060 + 0.443755I$	$- 1.04600I$	$0. + 6.68545I$
$u = -0.283060 - 0.443755I$	$1.04600I$	$0. - 6.68545I$
$u = -0.06382 + 1.51723I$	$-6.60959 - 2.18536I$	$-3.58319 + 3.14055I$
$u = -0.06382 - 1.51723I$	$-6.60959 + 2.18536I$	$-3.58319 - 3.14055I$
$u = \quad 0.19980 + 1.51366I$	$5.23868I$	$0. - 3.04258I$
$u = \quad 0.19980 - 1.51366I$	$- 5.23868I$	$0. + 3.04258I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5 c_6	$u^8 + u^7 + 5u^6 + 4u^5 + 7u^4 + 4u^3 + 2u^2 + 1$
c_3, c_4, c_7 c_8	$u^8 - u^7 + 5u^6 - 4u^5 + 7u^4 - 4u^3 + 2u^2 + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_6 c_7, c_8	$y^8 + 9y^7 + 31y^6 + 50y^5 + 39y^4 + 22y^3 + 18y^2 + 4y + 1$