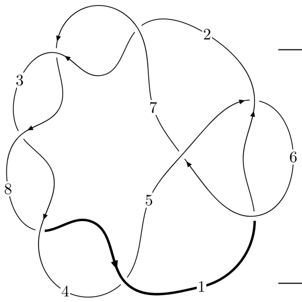
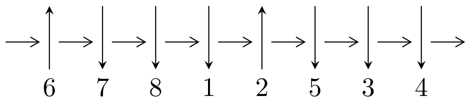
8_2 $(K8a_8)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

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

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

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^7 - u^6 - 2u^5 - u^4 - 2u^3 + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^7 - 4u^6 - 8u^5 - 4u^4 - 4u^3 - 4u^2 + 4u - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^8 + 5y^7 + 11y^6 + 10y^5 - y^4 - 10y^3 - 6y^2 + 1$
c_2, c_3, c_4 c_7, c_8	$y^8 - 11y^7 + 47y^6 - 98y^5 + 103y^4 - 50y^3 + 6y^2 + 1$
c_6	$y^8 - 3y^7 + 19y^6 - 34y^5 + 71y^4 - 66y^3 + 34y^2 - 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.914675$	-10.1759	-7.82210
$u = -0.252896 + 0.819281I$	$-0.491278 - 1.275320I$	$-5.18053 + 5.08518I$
$u = -0.252896 - 0.819281I$	$-0.491278 + 1.275320I$	$-5.18053 - 5.08518I$
$u = 0.394459 + 1.112500I$	$-4.34520 + 3.63283I$	$-10.42240 - 4.51802I$
$u = 0.394459 - 1.112500I$	$-4.34520 - 3.63283I$	$-10.42240 + 4.51802I$
$u = -0.473514 + 1.273020I$	$-14.0724 - 4.9352I$	$-10.98443 + 2.99422I$
$u = -0.473514 - 1.273020I$	$-14.0724 + 4.9352I$	$-10.98443 - 2.99422I$
$u = 0.578577$	-1.35429	-7.00320

II. u-Polynomials

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

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^8 + 5y^7 + 11y^6 + 10y^5 - y^4 - 10y^3 - 6y^2 + 1$
c_2, c_3, c_4 c_7, c_8	$y^8 - 11y^7 + 47y^6 - 98y^5 + 103y^4 - 50y^3 + 6y^2 + 1$
c_6	$y^8 - 3y^7 + 19y^6 - 34y^5 + 71y^4 - 66y^3 + 34y^2 - 12y + 1$