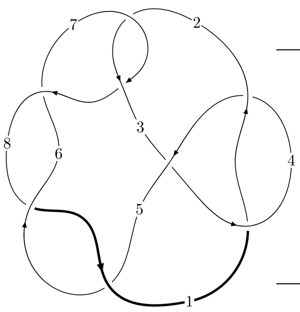
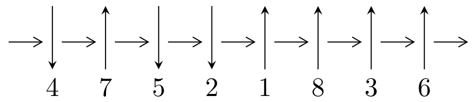
8_8 $(K8a_4)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{12} - u^{11} - 3u^{10} + 4u^9 + 3u^8 - 6u^7 + 2u^6 + 2u^5 - 4u^4 + 3u^3 + u^2 - 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 12 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.

$$\boldsymbol{I_1^u = \langle u^{12} - u^{11} - 3u^{10} + 4u^9 + 3u^8 - 6u^7 + 2u^6 + 2u^5 - 4u^4 + 3u^3 + u^2 - 2u + 1\rangle}$$

(i) Arc colorings

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

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_6 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -u^9 + 2u^7 - u^5 - 2u^3 + u \\ -u^9 + 3u^7 - 3u^5 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{12} - 7y^{11} + \cdots - 2y + 1$
c_2, c_7	$y^{12} - 3y^{11} + \cdots - 2y + 1$
c_3	$y^{12} - 3y^{11} + \cdots + 6y + 1$
c_5, c_6, c_8	$y^{12} + 13y^{11} + \cdots + 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.961384 + 0.208970I$	$-1.73974 + 0.71593I$	$-3.95647 - 0.64874I$
$u = -0.961384 - 0.208970I$	$-1.73974 - 0.71593I$	$-3.95647 + 0.64874I$
$u = \quad 0.958024 + 0.460561I$	$0.07674 - 4.24921I$	$2.17649 + 6.98310I$
$u = \quad 0.958024 - 0.460561I$	$0.07674 + 4.24921I$	$2.17649 - 6.98310I$
$u = \quad 0.049813 + 0.844037I$	$-4.04018 + 3.01307I$	$0.63175 - 2.63251I$
$u = \quad 0.049813 - 0.844037I$	$-4.04018 - 3.01307I$	$0.63175 + 2.63251I$
$u = -1.238640 + 0.435356I$	$-7.91518 + 1.48234I$	$-3.15258 - 0.67542I$
$u = -1.238640 - 0.435356I$	$-7.91518 - 1.48234I$	$-3.15258 + 0.67542I$
$u = \quad 1.228550 + 0.484706I$	$-7.55816 - 7.80134I$	$-2.36611 + 5.63981I$
$u = \quad 1.228550 - 0.484706I$	$-7.55816 + 7.80134I$	$-2.36611 - 5.63981I$
$u = \quad 0.463636 + 0.458719I$	$1.43731 + 0.35310I$	$6.66692 - 0.62981I$
$u = \quad 0.463636 - 0.458719I$	$1.43731 - 0.35310I$	$6.66692 + 0.62981I$

II. u-Polynomials

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

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{12} - 7y^{11} + \cdots - 2y + 1$
c_2, c_7	$y^{12} - 3y^{11} + \cdots - 2y + 1$
c_3	$y^{12} - 3y^{11} + \cdots + 6y + 1$
c_5, c_6, c_8	$y^{12} + 13y^{11} + \cdots + 6y + 1$