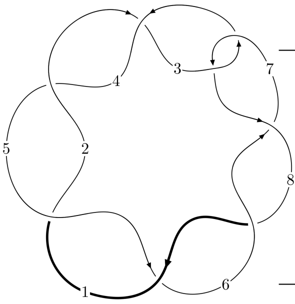
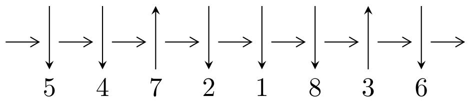
8_1 $(K8a_{11})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

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

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

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

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

$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^5 - 4u^4 - 20u^3 - 16u^2 - 24u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_8	$y^6 + 9y^5 + 29y^4 + 40y^3 + 22y^2 + 3y + 1$
c_3, c_7	$y^6 + y^5 + 5y^4 + 4y^3 + 6y^2 + 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.142924 + 1.159520I$	$4.64282 + 2.65597I$	$1.58115 - 3.39809I$
$u = -0.142924 - 1.159520I$	$4.64282 - 2.65597I$	$1.58115 + 3.39809I$
$u = -0.321608 + 0.359079I$	$-0.258090 + 1.108710I$	$-3.53615 - 6.18117I$
$u = -0.321608 - 0.359079I$	$-0.258090 - 1.108710I$	$-3.53615 + 6.18117I$
$u = -0.03547 + 1.77530I$	$15.3545 + 3.4272I$	$1.95500 - 2.25224I$
$u = -0.03547 - 1.77530I$	$15.3545 - 3.4272I$	$1.95500 + 2.25224I$

II. u-Polynomials

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

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_8	$y^6 + 9y^5 + 29y^4 + 40y^3 + 22y^2 + 3y + 1$
c_3, c_7	$y^6 + y^5 + 5y^4 + 4y^3 + 6y^2 + 3y + 1$