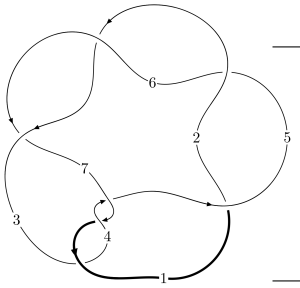
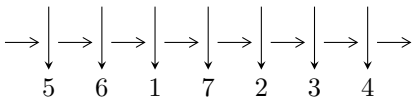
7_3 $(K7a_5)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$1,3 \xrightarrow[c_3]{} 4 \xrightarrow[c_7]{} 7 \xrightarrow[c_4]{} 5 \xrightarrow[c_6]{} 6 \xrightarrow[c_2]{} 2 \longrightarrow\!\!\!\!\!\rightarrow c_1, c_5$$

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

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

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

(i) Arc colorings

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

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^5 - 2u^3 - u \\ -u^5 + u^4 - 2u^3 + u^2 - u - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^5 - 2u^3 - u \\ -u^5 + u^4 - 2u^3 + u^2 - u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^4 + 4u^3 - 8u^2 + 4u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6	$y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1$
c_3, c_4, c_7	$y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.873214$	-7.66009	-12.2690
$u = -0.138835 + 1.234450I$	$2.96024 + 1.97241I$	$-4.57572 - 3.68478I$
$u = -0.138835 - 1.234450I$	$2.96024 - 1.97241I$	$-4.57572 + 3.68478I$
$u = \quad 0.408802 + 1.276380I$	$-3.69558 - 4.59213I$	$-8.58114 + 3.20482I$
$u = \quad 0.408802 - 1.276380I$	$-3.69558 + 4.59213I$	$-8.58114 - 3.20482I$
$u = -0.413150$	-0.738851	-13.4170

II. u-Polynomials

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

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6	$y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1$
c_3, c_4, c_7	$y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1$