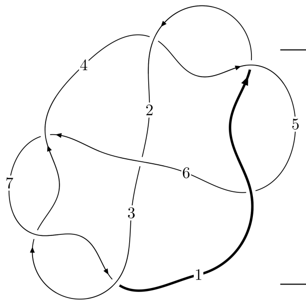
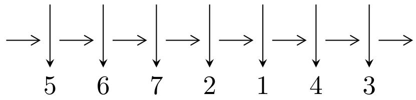
7_4 $(K7a_6)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^3 + 2u + 1 \rangle$$
$$I_2^u = \langle u^4 - u^3 + 2u^2 - 2u + 1 \rangle$$

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

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ -u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ -u - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7	$y^3 + 4y^2 + 4y - 1$
c_2	$y^3 + y^2 + 13y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.22670 + 1.46771I$	$9.44074 - 5.13794I$	$-0.68207 + 3.20902I$
$u = \quad 0.22670 - 1.46771I$	$9.44074 + 5.13794I$	$-0.68207 - 3.20902I$
$u = -0.453398$	-0.787199	-12.6360

II. $I_2^u = \langle u^4 - u^3 + 2u^2 - 2u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^3 + 4u - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7	$y^4 + 3y^3 + 2y^2 + 1$
c_2	$(y^2 + y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.621744 + 0.440597I$	$3.28987 - 2.02988I$	$-4.00000 + 3.46410I$
$u = \quad 0.621744 - 0.440597I$	$3.28987 + 2.02988I$	$-4.00000 - 3.46410I$
$u = -0.121744 + 1.306620I$	$3.28987 + 2.02988I$	$-4.00000 - 3.46410I$
$u = -0.121744 - 1.306620I$	$3.28987 - 2.02988I$	$-4.00000 + 3.46410I$

III. u-Polynomials

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

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7	$(y^3 + 4y^2 + 4y - 1)(y^4 + 3y^3 + 2y^2 + 1)$
c_2	$(y^2 + y + 1)^2(y^3 + y^2 + 13y - 4)$