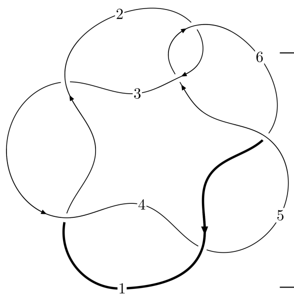
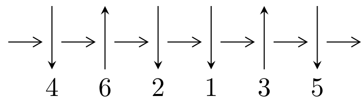
6_1 ($K6a_3$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

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

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_1 = \begin{pmatrix} -u^3 \\ u^3 + u^2 + 1 \end{pmatrix}$$

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_2, c_5	$y^4 + y^3 + 3y^2 + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.351808 + 0.720342I$	$-0.21101 + 1.41510I$	$-1.82674 - 4.90874I$
$u = 0.351808 - 0.720342I$	$-0.21101 - 1.41510I$	$-1.82674 + 4.90874I$
$u = -0.851808 + 0.911292I$	$6.79074 - 3.16396I$	$1.82674 + 2.56480I$
$u = -0.851808 - 0.911292I$	$6.79074 + 3.16396I$	$1.82674 - 2.56480I$

II. u-Polynomials

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

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_2, c_5	$y^4 + y^3 + 3y^2 + 2y + 1$