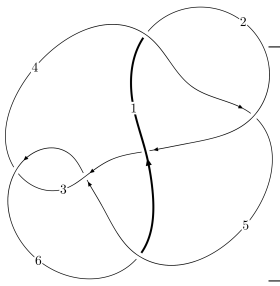
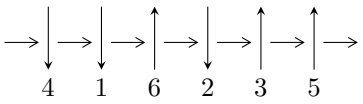
6_3 $(K6a_1)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

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

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

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$	$-1.89061 - 0.92430I$	$-3.71672 + 0.79423I$
$u = 1.002190 - 0.295542I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$
$u = -0.428243 + 0.664531I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = -0.428243 - 0.664531I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = -1.073950 + 0.558752I$	$5.69302I$	$0. - 5.51057I$
$u = -1.073950 - 0.558752I$	$-5.69302I$	$0. + 5.51057I$

II. u-Polynomials

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

III. Riley Polynomials

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