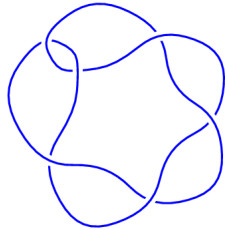
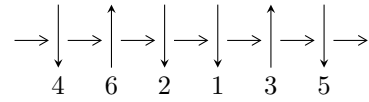


6<sub>1</sub> (K6a<sub>3</sub>)

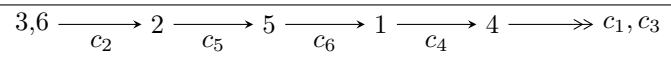


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = I_1^u$$

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

There are 1 irreducible components with 4 representations.

<sup>1</sup>The knot diagram image is adapter from “C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, <http://www.indiana.edu/~knotinfo>”

$$\mathbf{I. } I_1^u = \langle u^4 - u^3 + u^2 + 1 \rangle$$

**(i) Arc colorings**

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

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

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

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

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

$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

**(ii) Obstruction class = -1**

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

(iv) Complex Volumes and Cusp Shapes

Solution 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 crossings
$c_1, c_3, c_4$ $c_6$	$(u^4 + u^3 + 3u^2 + 2u + 1)$
$c_2, c_5$	$(u^4 + u^3 + u^2 + 1)$

### III. Riley Polynomials

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