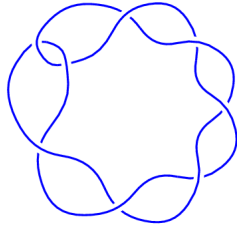
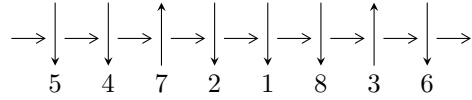


$8_1 (K8a_{11})$

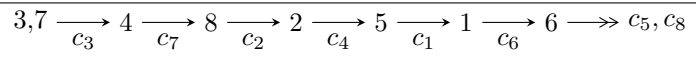


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = I_1^u$$

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

There are 1 irreducible components with 6 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>”

$$\text{I. } I_1^u = \langle u^6 - u^5 + u^4 + 2u^2 - u + 1 \rangle$$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^5 + u^4 + u^2 - u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^5 + u \\ u^5 + u^3 + u \end{pmatrix}$$

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

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-4u^5 - 4u^2 - 8u - 2$

(iv) Complex Volumes and Cusp Shapes

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.716019 - 0.809696I$	$4.64282 + 2.65597I$	$1.58115 - 3.39809I$
$u = -0.716019 + 0.809696I$	$4.64282 - 2.65597I$	$1.58115 + 3.39809I$
$u = 0.283231 - 0.633899I$	$-0.258090 - 1.108706I$	$-3.53615 + 6.18117I$
$u = 0.283231 + 0.633899I$	$-0.258090 + 1.108706I$	$-3.53615 - 6.18117I$
$u = 0.932789 - 0.951611I$	$15.3545 - 3.4272I$	$1.95500 + 2.25224I$
$u = 0.932789 + 0.951611I$	$15.3545 + 3.4272I$	$1.95500 - 2.25224I$

## II. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1, c_2, c_4$ $c_5, c_6, c_8$	$(u^6 + u^5 + 5u^4 + 4u^3 + 6u^2 + 3u + 1)$
$c_3, c_7$	$(u^6 + u^5 + u^4 + 2u^2 + u + 1)$

### III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1, c_2, c_4$ $c_5, c_6, c_8$	$(y^6 + 9y^5 + 29y^4 + 40y^3 + 22y^2 + 3y + 1)$
$c_3, c_7$	$(y^6 + y^5 + 5y^4 + 4y^3 + 6y^2 + 3y + 1)$