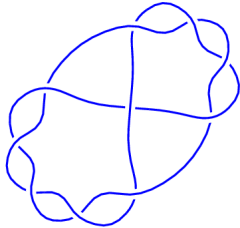
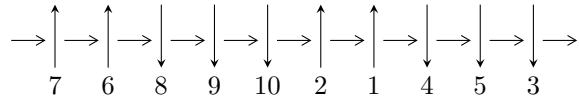


10₈ (K10a₁₁₄)

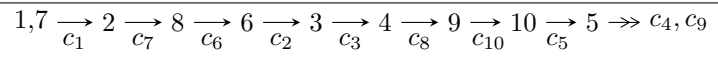


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{14} + u^{13} + 9u^{12} + 8u^{11} + 30u^{10} + 23u^9 + 45u^8 + 28u^7 + 30u^6 + 14u^5 + 8u^4 + 4u^3 - 2u^2 - u - 1 \rangle$$

There are 1 irreducible components with 14 representations.

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

$$\mathbf{I. } I_1^u = \langle u^{14} + u^{13} + 9u^{12} + 8u^{11} + 30u^{10} + 23u^9 + 45u^8 + 28u^7 + 30u^6 + 14u^5 + 8u^4 + 4u^3 - 2u^2 - u - 1 \rangle$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

$$a_3 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^6 + 3u^4 + 2u^2 + 1 \\ u^6 + 2u^4 - u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{11} - 6u^9 - 12u^7 - 10u^5 - 5u^3 \\ -u^{11} - 5u^9 - 6u^7 + u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^6 + 3u^4 + 2u^2 + 1 \\ -u^8 - 4u^6 - 4u^4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{11} + 6u^9 + 12u^7 + 10u^5 + 5u^3 \\ -u^{13} - 7u^{11} - 17u^9 - 16u^7 - 4u^5 + u^3 + u \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =

$$-4u^{13} - 4u^{12} - 36u^{11} - 32u^{10} - 116u^9 - 88u^8 - 156u^7 - 92u^6 - 76u^5 - 28u^4 - 8u^3 - 8u^2 + 12u - 2$$

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.668115$	-10.7537	-6.14499
$u = -0.466133 - 0.837667I$	$-13.27984 + 3.79315I$	$-10.02102 - 3.81094I$
$u = -0.466133 + 0.837667I$	$-13.27984 - 3.79315I$	$-10.02102 + 3.81094I$
$u = -0.232589 - 0.483305I$	$-0.154017 + 0.948871I$	$-3.14842 - 7.14990I$
$u = -0.232589 + 0.483305I$	$-0.154017 - 0.948871I$	$-3.14842 + 7.14990I$
$u = -0.13102 - 1.65283I$	$17.6407 + 6.0832I$	$-11.74201 - 2.65432I$
$u = -0.13102 + 1.65283I$	$17.6407 - 6.0832I$	$-11.74201 + 2.65432I$
$u = -0.03708 - 1.56997I$	$-7.27107 + 1.74781I$	$-6.82316 - 3.51408I$
$u = -0.03708 + 1.56997I$	$-7.27107 - 1.74781I$	$-6.82316 + 3.51408I$
$u = 0.09589 - 1.61475I$	$-11.72400 - 4.55664I$	$-11.05347 + 3.73465I$
$u = 0.09589 + 1.61475I$	$-11.72400 + 4.55664I$	$-11.05347 - 3.73465I$
$u = 0.364866 - 0.728988I$	$-3.69538 - 2.85844I$	$-9.69586 + 5.54876I$
$u = 0.364866 + 0.728988I$	$-3.69538 + 2.85844I$	$-9.69586 - 5.54876I$
$u = 0.480254$	-1.62716	-4.88715

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_2, c_6 c_7	$(u^{14} + u^{13} + \dots - u - 1)$
c_3, c_4, c_5 c_8, c_9	$(u^{14} + u^{13} + \dots + u - 1)$
c_{10}	$(u^{14} + 5u^{13} + \dots + 9u + 11)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_2, c_6 c_7	$(y^{14} + 17y^{13} + \dots + 3y + 1)$
c_3, c_4, c_5 c_8, c_9	$(y^{14} - 19y^{13} + \dots + 3y + 1)$
c_{10}	$(y^{14} - 11y^{13} + \dots - 873y + 121)$