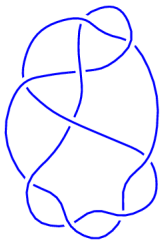
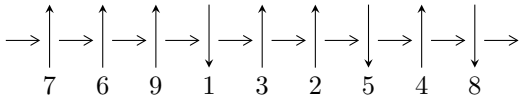
9_{14} $(K9a_{17})$



[1]

Arc Sequences



Solving Sequence

$$3,9 \xrightarrow[c_3]{} 4 \xrightarrow[c_8]{} 8 \xrightarrow[c_9]{} 1 \xrightarrow[c_4]{} 5 \xrightarrow[c_5]{} 6 \xrightarrow[c_2]{} 2 \xrightarrow[c_7]{} 7 \twoheadrightarrow c_1, c_6$$

Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{18} - u^{17} + \cdots - u + 1 \rangle$$

There are 1 irreducible components with 18 representations.

[1] The knot diagram image is adapter from "C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, http://www.indiana.edu/ knotinfo"

I. $I_1^u = \langle u^{18} - u^{17} + 5u^{16} - 4u^{15} + 12u^{14} - 9u^{13} + 17u^{12} - 12u^{11} + 15u^{10} - 11u^9 + 9u^8 - 6u^7 + 4u^6 - 2u^5 + 2u^4 + u^2 - u + 1\rangle$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^8 + 2u^6 + 2u^4 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^8 + 2u^6 + 2u^4 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{16} + 3u^{14} + 5u^{12} + 4u^{10} + 3u^8 + 2u^6 + 2u^4 + 1 \\ u^{16} + 4u^{14} + 8u^{12} + 8u^{10} + 4u^8 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{13} + 3u^{11} + 5u^9 + 4u^7 + 2u^5 + u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{13} + 3u^{11} + 5u^9 + 4u^7 + 2u^5 + u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{17} + 4u^{16} - 16u^{15} + 12u^{14} - 32u^{13} + 24u^{12} - 36u^{11} + 28u^{10} - 24u^9 + 28u^8 - 12u^7 + 16u^6 - 8u^5 + 8u^4 - 8u^3 - 4u + 6$

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.646907-0.309141I$	$0.09541-2.06052I$	$3.02279+4.27827I$
$u=-0.646907+0.309141I$	$0.09541+2.06052I$	$3.02279-4.27827I$
$u=-0.606951-0.762732I$	$-4.94755+2.36433I$	$0.96106-3.34702I$
$u=-0.606951+0.762732I$	$-4.94755-2.36433I$	$0.96106+3.34702I$
$u=-0.527745-1.103189I$	$-2.17182+6.64525I$	$-0.64041-7.71274I$
$u=-0.527745+1.103189I$	$-2.17182-6.64525I$	$-0.64041+7.71274I$
$u=-0.320154-1.065081I$	$-3.58935+0.58479I$	$-4.18494+0.42463I$
$u=-0.320154+1.065081I$	$-3.58935-0.58479I$	$-4.18494-0.42463I$
$u=0.286599-1.176036I$	$-11.79046+0.69909I$	$-5.38255+0.31146I$
$u=0.286599+1.176036I$	$-11.79046-0.69909I$	$-5.38255-0.31146I$
$u=0.483861-1.030975I$	$-0.60821-3.09151I$	$3.11493+2.77317I$
$u=0.483861+1.030975I$	$-0.60821+3.09151I$	$3.11493-2.77317I$
$u=0.500651-0.525564I$	$0.917728-0.973282I$	$6.11395+4.55184I$
$u=0.500651+0.525564I$	$0.917728+0.973282I$	$6.11395-4.55184I$
$u=0.548853-1.153158I$	$-10.00659-8.95499I$	$-3.02415+5.84784I$
$u=0.548853+1.153158I$	$-10.00659+8.95499I$	$-3.02415-5.84784I$
$u=0.781793-0.257942I$	$-7.37756+3.98828I$	$0.01934-2.30410I$
$u=0.781793+0.257942I$	$-7.37756-3.98828I$	$0.01934+2.30410I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_2, c_5 c_6	$(u^{18} + u^{17} + \cdots + u + 1)$
c_3, c_8	$(u^{18} + u^{17} + \cdots + u + 1)$
c_4	$(u^{18} + u^{17} + \cdots + u + 5)$
c_7	$(u^{18} + 5u^{17} + \cdots + 13u + 3)$
c_9	$(u^{18} + 9u^{17} + \cdots + u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_2, c_5 c_6	$(y^{18} + 21y^{17} + \cdots + y + 1)$
c_3, c_8	$(y^{18} + 9y^{17} + \cdots + y + 1)$
c_4	$(y^{18} - 7y^{17} + \cdots - 91y + 25)$
c_7	$(y^{18} - 3y^{17} + \cdots + 5y + 9)$
c_9	$(y^{18} + y^{17} + \cdots + 9y + 1)$