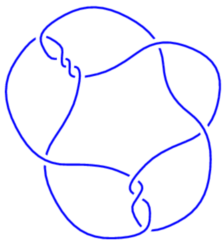
10_{11} $(K10a_{116})$



[1]

Arc Sequences

$\uparrow$	$\uparrow$	$\downarrow$	$\downarrow$	$\downarrow$	$\uparrow$	$\uparrow$	$\downarrow$	$\downarrow$	$\downarrow$
8	7	1	9	10	3	2	6	5	4

Solving Sequence

$$6,10 \xrightarrow[c_5]{} 5 \xrightarrow[c_9]{} 9 \xrightarrow[c_4]{} 4 \xrightarrow[c_{10}]{} 1 \xrightarrow[c_3]{} 3 \xrightarrow[c_8]{} 8 \xrightarrow[c_1]{} 2 \xrightarrow[c_7]{} 7 \twoheadrightarrow c_2, c_6$$

Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{21} - u^{20} + \cdots + u - 1 \rangle$$

There are 1 irreducible components with 21 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. $I_1^u = \langle u^{21} - u^{20} + \cdots + u - 1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^8 + 3u^6 - 3u^4 + 1 \\ u^{10} - 4u^8 + 5u^6 - 3u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^3 + 2u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{13} - 6u^{11} + 13u^9 - 10u^7 - 4u^5 + 8u^3 - u \\ u^{13} - 5u^{11} + 9u^9 - 4u^7 - 6u^5 + 5u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{18} - 7u^{16} + 20u^{14} - 27u^{12} + 11u^{10} + 13u^8 - 14u^6 + 3u^2 + 1 \\ -u^{20} + 8u^{18} - 26u^{16} + 40u^{14} - 19u^{12} - 24u^{10} + 30u^8 - 9u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{18} - 28u^{16} - 4u^{15} + 80u^{14} + 24u^{13} - 104u^{12} - 56u^{11} + 24u^{10} + 52u^9 + 88u^8 + 8u^7 - 76u^6 - 44u^5 - 12u^4 + 12u^3 + 24u^2 + 12u - 2$

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.291056 - 0.376139I$	$1.39230 - 6.45770I$	$-2.54644 + 6.39068I$
$u = -1.291056 + 0.376139I$	$1.39230 + 6.45770I$	$-2.54644 - 6.39068I$
$u = -1.281128 - 0.111157I$	$-4.56809 - 2.45481I$	$-8.82608 + 5.13736I$
$u = -1.281128 + 0.111157I$	$-4.56809 + 2.45481I$	$-8.82608 - 5.13736I$
$u = -1.178892 - 0.386444I$	$-4.45765 + 0.58948I$	$-5.04554 + 0.27365I$
$u = -1.178892 + 0.386444I$	$-4.45765 - 0.58948I$	$-5.04554 - 0.27365I$
$u = -0.430693 - 0.459647I$	$-6.58253 - 1.66521I$	$-5.55767 + 3.90994I$
$u = -0.430693 + 0.459647I$	$-6.58253 + 1.66521I$	$-5.55767 - 3.90994I$
$u = -0.086113 - 0.839589I$	$-1.10589 - 5.00460I$	$-1.84652 + 3.34739I$
$u = -0.086113 + 0.839589I$	$-1.10589 + 5.00460I$	$-1.84652 - 3.34739I$
$u = 0.027961 - 0.833462I$	$5.50220 + 2.11040I$	$1.91245 - 3.38979I$
$u = 0.027961 + 0.833462I$	$5.50220 - 2.11040I$	$1.91245 + 3.38979I$
$u = 0.205500 - 0.333164I$	$-0.091241 + 0.864455I$	$-2.17207 - 8.05526I$
$u = 0.205500 + 0.333164I$	$-0.091241 - 0.864455I$	$-2.17207 + 8.05526I$
$u = 1.18427$	-2.46649	-1.74061
$u = 1.245843 - 0.377074I$	$1.73723 + 2.23968I$	$-1.50234 - 0.17506I$
$u = 1.245843 + 0.377074I$	$1.73723 - 2.23968I$	$-1.50234 + 0.17506I$
$u = 1.328509 - 0.374285I$	$-5.53903 + 9.37044I$	$-6.11943 - 5.65030I$
$u = 1.328509 + 0.374285I$	$-5.53903 - 9.37044I$	$-6.11943 + 5.65030I$
$u = 1.367932 - 0.126822I$	$-12.19547 + 3.59224I$	$-10.42606 - 3.20950I$
$u = 1.367932 + 0.126822I$	$-12.19547 - 3.59224I$	$-10.42606 + 3.20950I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_2, c_6 c_7	$(u^{21} + u^{20} + \cdots - u - 1)$
c_3, c_8, c_{10}	$(u^{21} + 3u^{20} + \cdots + 5u + 3)$
c_4, c_5, c_9	$(u^{21} + u^{20} + \cdots + u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_2, c_6 c_7	$(y^{21} + 23y^{20} + \cdots - 5y - 1)$
c_3, c_8, c_{10}	$(y^{21} + 19y^{20} + \cdots + 7y - 9)$
c_4, c_5, c_9	$(y^{21} - 17y^{20} + \cdots - 5y - 1)$