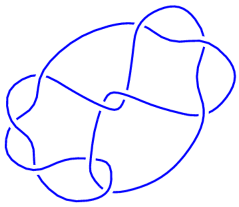
10_{24} $(K10a_{71})$



[1]

Arc Sequences

$\rightarrow \downarrow_{7} \rightarrow \downarrow_{5} \rightarrow \uparrow_{9} \rightarrow \downarrow_{3} \rightarrow \downarrow_{2} \rightarrow \downarrow_{10} \rightarrow \downarrow_{1} \rightarrow \uparrow_{4} \rightarrow \downarrow_{6} \rightarrow \downarrow_{8} \rightarrow$

7	5	9	3	2	10	1	4	6	8

Solving Sequence

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

Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{27} - u^{26} + \cdots - u^2 - 1 \rangle$$

There are 1 irreducible components with 27 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. $I_1^u = \langle u^{27} - u^{26} + \cdots - u^2 - 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^6 + u^4 + 2u^2 + 1 \\ u^6 + u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^8 + u^6 + 3u^4 + 2u^2 + 1 \\ u^8 + 2u^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{15} - 2u^{13} - 6u^{11} - 8u^9 - 10u^7 - 8u^5 - 4u^3 \\ -u^{15} - u^{13} - 4u^{11} - 3u^9 - 4u^7 - 2u^5 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^{15} - 2u^{13} - 6u^{11} - 8u^9 - 10u^7 - 8u^5 - 4u^3 \\ -u^{17} - 3u^{15} - 7u^{13} - 12u^{11} - 13u^9 - 12u^7 - 6u^5 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{22} - 3u^{20} + \cdots + 2u^2 + 1 \\ -u^{22} - 2u^{20} + \cdots + 4u^4 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{25} - 4u^{24} + 12u^{23} - 12u^{22} + 44u^{21} - 40u^{20} + 84u^{19} - 76u^{18} + 156u^{17} - 124u^{16} + 196u^{15} - 152u^{14} + 216u^{13} - 136u^{12} + 160u^{11} - 88u^{10} + 88u^9 - 24u^8 + 8u^7 + 16u^6 - 16u^5 + 16u^4 - 16u^3 - 4u^2 + 4u - 6$

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.849312 - 0.907405I$	$11.72203 + 3.15301I$	$1.82291 - 2.60032I$
$u = -0.849312 + 0.907405I$	$11.72203 - 3.15301I$	$1.82291 + 2.60032I$
$u = -0.834094 - 0.813675I$	$2.75404 - 0.96140I$	$-5.27084 + 1.18503I$
$u = -0.834094 + 0.813675I$	$2.75404 + 0.96140I$	$-5.27084 - 1.18503I$
$u = -0.788550 - 0.963250I$	$2.29246 + 7.02686I$	$-6.18454 - 6.08794I$
$u = -0.788550 + 0.963250I$	$2.29246 - 7.02686I$	$-6.18454 + 6.08794I$
$u = -0.611045 - 0.149463I$	$2.54425 - 3.27708I$	$-0.72206 + 2.87566I$
$u = -0.611045 + 0.149463I$	$2.54425 + 3.27708I$	$-0.72206 - 2.87566I$
$u = -0.334942 - 0.978682I$	$-0.01754 + 6.65682I$	$-6.80212 - 7.22011I$
$u = -0.334942 + 0.978682I$	$-0.01754 - 6.65682I$	$-6.80212 + 7.22011I$
$u = -0.213473 - 0.634883I$	$-0.352229 + 0.953640I$	$-6.23281 - 7.10310I$
$u = -0.213473 + 0.634883I$	$-0.352229 - 0.953640I$	$-6.23281 + 7.10310I$
$u = -0.195439 - 0.958891I$	$-0.823094 - 0.986974I$	$-8.82659 - 0.25321I$
$u = -0.195439 + 0.958891I$	$-0.823094 + 0.986974I$	$-8.82659 + 0.25321I$
$u = 0.276294 - 0.962998I$	$-4.29886 - 2.79673I$	$-12.25981 + 4.61920I$
$u = 0.276294 + 0.962998I$	$-4.29886 + 2.79673I$	$-12.25981 - 4.61920I$
$u = 0.542850$	-1.51171	-6.25830
$u = 0.544854 - 0.629227I$	$4.34194 - 2.01066I$	$0.08108 + 3.90758I$
$u = 0.544854 + 0.629227I$	$4.34194 + 2.01066I$	$0.08108 - 3.90758I$
$u = 0.770594 - 0.919853I$	$4.70022 - 3.05015I$	$-2.91169 + 1.99178I$
$u = 0.770594 + 0.919853I$	$4.70022 + 3.05015I$	$-2.91169 - 1.99178I$
$u = 0.790499 - 0.862813I$	$4.87925 - 2.83072I$	$-2.20196 + 3.74350I$
$u = 0.790499 + 0.862813I$	$4.87925 + 2.83072I$	$-2.20196 - 3.74350I$
$u = 0.805943 - 0.978114I$	$7.22305 - 10.97745I$	$-1.68833 + 7.27184I$
$u = 0.805943 + 0.978114I$	$7.22305 + 10.97745I$	$-1.68833 - 7.27184I$
$u = 0.867246 - 0.813948I$	$7.73615 + 4.75862I$	$-0.67410 - 2.41055I$
$u = 0.867246 + 0.813948I$	$7.73615 - 4.75862I$	$-0.67410 + 2.41055I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_7, c_{10}	$(u^{27} + u^{26} + \cdots + 2u - 1)$
c_2, c_4, c_5	$(u^{27} + 7u^{26} + \cdots - 2u - 1)$
c_3, c_8	$(u^{27} + u^{26} + \cdots + u^2 + 1)$
c_6, c_9	$(u^{27} + u^{26} + \cdots + 4u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_7, c_{10}	$(y^{27} + 23y^{26} + \cdots - 2y - 1)$
c_2, c_4, c_5	$(y^{27} + 27y^{26} + \cdots + 14y - 1)$
c_3, c_8	$(y^{27} + 7y^{26} + \cdots - 2y - 1)$
c_6, c_9	$(y^{27} - 13y^{26} + \cdots - 2y - 1)$