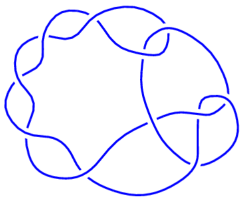
$11a_{13}$ $(K11a_{13})$



[1]

Arc Sequences

5	1	9	2	3	11	10	4	8	7	6
$\uparrow$	$\downarrow$	$\uparrow$	$\uparrow$	$\downarrow$	$\downarrow$	$\downarrow$	$\uparrow$	$\downarrow$	$\downarrow$	$\downarrow$

Solving Sequence

$$4,9 \xrightarrow[c_3]{} 3 \xrightarrow[c_8]{} 8 \xrightarrow[c_9]{} 10 \xrightarrow[c_7]{} 7 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_6]{} 6 \xrightarrow[c_{11}]{} 1 \xrightarrow[c_2]{} 2 \xrightarrow[c_5]{} 5 \twoheadrightarrow c_1, c_4$$

Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{30} + u^{29} + \cdots + u + 1 \rangle$$

There are 1 irreducible components with 30 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. $I_1^u = \langle u^{30} + u^{29} + \cdots + u + 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^5 - u \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^7 - 2u^3 \\ u^7 + u^5 + 2u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^9 - 3u^5 - u \\ u^9 + u^7 + 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^{11} - 4u^7 - 3u^3 \\ u^{11} + u^9 + 4u^7 + 3u^5 + 3u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{24} + u^{22} + \cdots + 3u^4 + 1 \\ -u^{24} - 2u^{22} + \cdots - 18u^6 - 6u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{11} + 4u^7 + 3u^3 \\ u^{13} + u^{11} + 5u^9 + 4u^7 + 6u^5 + 3u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{11} + 4u^7 + 3u^3 \\ u^{13} + u^{11} + 5u^9 + 4u^7 + 6u^5 + 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{28} - 4u^{27} - 12u^{26} - 8u^{25} - 56u^{24} - 44u^{23} - 120u^{22} - 72u^{21} - 288u^{20} - 184u^{19} - 448u^{18} - 240u^{17} - 688u^{16} - 372u^{15} - 772u^{14} - 376u^{13} - 784u^{12} - 392u^{11} - 616u^{10} - 300u^9 - 392u^8 - 220u^7 - 196u^6 - 112u^5 - 64u^4 - 52u^3 - 16u^2 - 12u - 6$

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.939027 - 0.928155I$	$13.7360 - 3.9165I$	$1.75197 + 2.34228I$
$u = -0.939027 + 0.928155I$	$13.7360 + 3.9165I$	$1.75197 - 2.34228I$
$u = -0.916401 - 0.967754I$	$13.6047 + 10.7354I$	$1.48227 - 6.83107I$
$u = -0.916401 + 0.967754I$	$13.6047 - 10.7354I$	$1.48227 + 6.83107I$
$u = -0.911746 - 0.940114I$	$9.51868 + 3.35799I$	$-1.73657 - 2.30059I$
$u = -0.911746 + 0.940114I$	$9.51868 - 3.35799I$	$-1.73657 + 2.30059I$
$u = -0.734724 - 0.748106I$	$5.14265 + 1.49049I$	$4.17557 - 2.85810I$
$u = -0.734724 + 0.748106I$	$5.14265 - 1.49049I$	$4.17557 + 2.85810I$
$u = -0.685664 - 0.853521I$	$4.78950 + 3.76974I$	$3.14381 - 3.88461I$
$u = -0.685664 + 0.853521I$	$4.78950 - 3.76974I$	$3.14381 + 3.88461I$
$u = -0.510769 - 0.183576I$	$-0.23650 - 2.48738I$	$1.65273 + 3.25175I$
$u = -0.510769 + 0.183576I$	$-0.23650 + 2.48738I$	$1.65273 - 3.25175I$
$u = -0.287305 - 0.847959I$	$-2.28263 + 5.27377I$	$-6.56092 - 8.94909I$
$u = -0.287305 + 0.847959I$	$-2.28263 - 5.27377I$	$-6.56092 + 8.94909I$
$u = -0.115414 - 0.820064I$	$-3.15838 - 1.07159I$	$-10.31816 + 0.17759I$
$u = -0.115414 + 0.820064I$	$-3.15838 + 1.07159I$	$-10.31816 - 0.17759I$
$u = 0.290049 - 0.709988I$	$-0.316552 - 1.365596I$	$-2.18848 + 5.41625I$
$u = 0.290049 + 0.709988I$	$-0.316552 + 1.365596I$	$-2.18848 - 5.41625I$
$u = 0.459289 - 0.421277I$	$0.49693 - 1.38708I$	$2.54940 + 4.49142I$
$u = 0.459289 + 0.421277I$	$0.49693 + 1.38708I$	$2.54940 - 4.49142I$
$u = 0.576972 - 0.788172I$	$0.12621 - 2.18606I$	$-3.44242 + 4.00116I$
$u = 0.576972 + 0.788172I$	$0.12621 + 2.18606I$	$-3.44242 - 4.00116I$
$u = 0.664026 - 0.894813I$	$2.98040 - 8.73007I$	$-0.24401 + 8.71246I$
$u = 0.664026 + 0.894813I$	$2.98040 + 8.73007I$	$-0.24401 - 8.71246I$
$u = 0.753269 - 0.693656I$	$3.64770 + 3.48747I$	$1.74738 - 2.61442I$
$u = 0.753269 + 0.693656I$	$3.64770 - 3.48747I$	$1.74738 + 2.61442I$
$u = 0.922373 - 0.959915I$	$15.4175 - 5.2269I$	$3.92816 + 2.38623I$
$u = 0.922373 + 0.959915I$	$15.4175 + 5.2269I$	$3.92816 - 2.38623I$
$u = 0.935072 - 0.937925I$	$15.4906 - 1.5996I$	$4.05928 + 2.15774I$
$u = 0.935072 + 0.937925I$	$15.4906 + 1.5996I$	$4.05928 - 2.15774I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_4	$(u^{30} + u^{29} + \cdots + 3u + 1)$
c_2	$(u^{30} + 13u^{29} + \cdots + 3u + 1)$
c_3, c_8	$(u^{30} + u^{29} + \cdots + u + 1)$
c_5	$(u^{30} + u^{29} + \cdots + 9u + 1)$
c_6, c_7, c_9 c_{10}, c_{11}	$(u^{30} + 5u^{29} + \cdots + 3u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_4	$(y^{30} + 13y^{29} + \cdots + 3y + 1)$
c_2	$(y^{30} + 9y^{29} + \cdots + 23y + 1)$
c_3, c_8	$(y^{30} + 5y^{29} + \cdots + 3y + 1)$
c_5	$(y^{30} + 5y^{29} + \cdots - 29y + 1)$
c_6, c_7, c_9 c_{10}, c_{11}	$(y^{30} + 41y^{29} + \cdots + 15y + 1)$