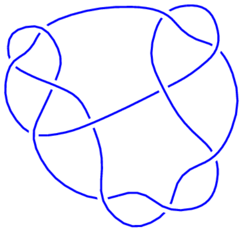
$11a_{111}$ ($K11a_{111}$)



1

Arc Sequences

$$\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\uparrow\rightarrow$$

5 1 10 9 2 11 3 4 8 7 6

Solving Sequence

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

Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{51} - u^{50} + \cdots - u^2 + 1 \rangle$$

There are 1 irreducible components with 51 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. $I_1^u = \langle u^{51} - u^{50} + \cdots - u^2 + 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{11} + 2u^9 - 2u^7 + u^3 \\ -u^{11} + 3u^9 - 4u^7 + 3u^5 - u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{19} + 4u^{17} - 8u^{15} + 8u^{13} - 3u^{11} - 2u^9 + 2u^7 - u^3 \\ -u^{19} + 5u^{17} - 12u^{15} + 17u^{13} - 15u^{11} + 9u^9 - 4u^7 + 2u^5 - u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{27} + 6u^{25} + \cdots - 4u^7 + u^3 \\ -u^{27} + 7u^{25} + \cdots - u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^{35} + 8u^{33} + \cdots + 4u^7 - u^3 \\ -u^{35} + 9u^{33} + \cdots - u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{37} + 8u^{35} + \cdots - 5u^5 - u \\ -u^{39} + 9u^{37} + \cdots - 2u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{37} + 8u^{35} + \cdots - 5u^5 - u \\ -u^{39} + 9u^{37} + \cdots - 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.175802 - 0.297245I$	$-12.85550 - 4.06120I$	$-10.53017 + 3.50922I$
$u = -1.175802 + 0.297245I$	$-12.85550 + 4.06120I$	$-10.53017 - 3.50922I$
$u = -1.175079 - 0.276781I$	$-12.60202 + 5.44150I$	$-10.14237 - 2.80061I$
$u = -1.175079 + 0.276781I$	$-12.60202 - 5.44150I$	$-10.14237 + 2.80061I$
$u = -1.148381 - 0.547870I$	$-7.17725 - 8.76370I$	$-4.62718 + 5.86372I$
$u = -1.148381 + 0.547870I$	$-7.17725 + 8.76370I$	$-4.62718 - 5.86372I$
$u = -1.110656 - 0.491079I$	$-4.56731 - 3.82886I$	$-9.37121 + 3.42519I$
$u = -1.110656 + 0.491079I$	$-4.56731 + 3.82886I$	$-9.37121 - 3.42519I$
$u = -1.103300 - 0.546986I$	$-2.26947 - 9.85775I$	$-3.99323 + 10.36767I$
$u = -1.103300 + 0.546986I$	$-2.26947 + 9.85775I$	$-3.99323 - 10.36767I$
$u = -1.008148 - 0.341556I$	$-1.92663 - 1.10660I$	$-3.70247 + 0.77639I$
$u = -1.008148 + 0.341556I$	$-1.92663 + 1.10660I$	$-3.70247 - 0.77639I$
$u = -0.984903 - 0.502820I$	$-0.270561 - 0.850318I$	$-0.462815 - 0.737967I$
$u = -0.984903 + 0.502820I$	$-0.270561 + 0.850318I$	$-0.462815 + 0.737967I$
$u = -0.750085 - 0.586351I$	$-2.30918 - 2.29408I$	$-0.51230 + 3.47946I$
$u = -0.750085 + 0.586351I$	$-2.30918 + 2.29408I$	$-0.51230 - 3.47946I$
$u = -0.673527$	-1.34152	-6.99065
$u = -0.572731 - 0.578590I$	$0.92869 - 3.49340I$	$1.60875 + 7.12715I$
$u = -0.572731 + 0.578590I$	$0.92869 + 3.49340I$	$1.60875 - 7.12715I$
$u = -0.341001 - 0.693598I$	$-0.06113 + 5.08804I$	$-0.46068 - 6.66773I$
$u = -0.341001 + 0.693598I$	$-0.06113 - 5.08804I$	$-0.46068 + 6.66773I$
$u = -0.262245 - 0.771031I$	$-4.58264 + 3.82645I$	$-1.55259 - 2.33220I$
$u = -0.262245 + 0.771031I$	$-4.58264 - 3.82645I$	$-1.55259 + 2.33220I$
$u = -0.174204 - 0.594309I$	$-2.03194 - 0.41812I$	$-5.90669 + 0.63067I$
$u = -0.174204 + 0.594309I$	$-2.03194 + 0.41812I$	$-5.90669 - 0.63067I$
$u = 0.243572 - 0.776626I$	$-8.51754 + 0.71518I$	$-5.30843 - 0.85943I$
$u = 0.243572 + 0.776626I$	$-8.51754 - 0.71518I$	$-5.30843 + 0.85943I$
$u = 0.270313 - 0.785172I$	$-8.12762 - 8.67382I$	$-4.55851 + 5.32583I$
$u = 0.270313 + 0.785172I$	$-8.12762 + 8.67382I$	$-4.55851 - 5.32583I$
$u = 0.372112 - 0.627953I$	$1.52817 - 1.07520I$	$3.83656 + 1.33985I$

Solution to I_1^u		$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.372112 + 0.627953I$	$1.52817 + 1.07520I$	$3.83656 - 1.33985I$
$u =$	$0.476425 - 0.580805I$	$1.91457 - 0.33323I$	$4.99514 + 0.71543I$
$u =$	$0.476425 + 0.580805I$	$1.91457 + 0.33323I$	$4.99514 - 0.71543I$
$u =$	$0.742309 - 0.619267I$	$-5.81085 + 6.89215I$	$-3.61592 - 6.56537I$
$u =$	$0.742309 + 0.619267I$	$-5.81085 - 6.89215I$	$-3.61592 + 6.56537I$
$u =$	$0.787968 - 0.597157I$	$-5.95571 - 2.15027I$	$-4.11692 + 0.03300I$
$u =$	$0.787968 + 0.597157I$	$-5.95571 + 2.15027I$	$-4.11692 - 0.03300I$
$u =$	$1.035902 - 0.521068I$	$0.27984 + 4.75284I$	$0.98705 - 6.79611I$
$u =$	$1.035902 + 0.521068I$	$0.27984 - 4.75284I$	$0.98705 + 6.79611I$
$u =$	$1.058893 - 0.260076I$	$-4.14364 - 2.64621I$	$-7.99299 + 4.07353I$
$u =$	$1.058893 + 0.260076I$	$-4.14364 + 2.64621I$	$-7.99299 - 4.07353I$
$u =$	$1.083472 - 0.531474I$	$-0.52649 + 5.64440I$	$-0.46144 - 5.74990I$
$u =$	$1.083472 + 0.531474I$	$-0.52649 - 5.64440I$	$-0.46144 + 5.74990I$
$u =$	$1.098901 - 0.375353I$	$-5.35579 + 3.64528I$	$-10.51815 - 4.55101I$
$u =$	$1.098901 + 0.375353I$	$-5.35579 - 3.64528I$	$-10.51815 + 4.55101I$
$u =$	$1.151308 - 0.554050I$	$-10.7190 + 13.6745I$	$-7.57507 - 8.83471I$
$u =$	$1.151308 + 0.554050I$	$-10.7190 - 13.6745I$	$-7.57507 + 8.83471I$
$u =$	$1.154498 - 0.542374I$	$-11.18685 + 4.20609I$	$-8.43093 - 2.72624I$
$u =$	$1.154498 + 0.542374I$	$-11.18685 - 4.20609I$	$-8.43093 + 2.72624I$
$u =$	$1.167626 - 0.286663I$	$-8.95121 - 0.59562I$	$-7.09212 - 0.32730I$
$u =$	$1.167626 + 0.286663I$	$-8.95121 + 0.59562I$	$-7.09212 + 0.32730I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_5	$(u^{51} + u^{50} + \cdots + 2u + 1)$
c_2	$(u^{51} + 29u^{50} + \cdots + 2u + 1)$
c_3	$(u^{51} + 3u^{50} + \cdots + 96u - 77)$
c_4, c_8	$(u^{51} + u^{50} + \cdots + u^2 - 1)$
c_6, c_{10}, c_{11}	$(u^{51} + 3u^{50} + \cdots + 38u + 5)$
c_7	$(u^{51} + u^{50} + \cdots - 15u^2 + 25)$
c_9	$(u^{51} + 25u^{50} + \cdots + 2u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_5	$(y^{51} - 29y^{50} + \cdots + 2y - 1)$
c_2	$(y^{51} - 13y^{50} + \cdots - 6y - 1)$
c_3	$(y^{51} + 19y^{50} + \cdots - 47918y - 5929)$
c_4, c_8	$(y^{51} - 25y^{50} + \cdots + 2y - 1)$
c_6, c_{10}, c_{11}	$(y^{51} + 55y^{50} + \cdots - 386y - 25)$
c_7	$(y^{51} + 7y^{50} + \cdots + 750y - 625)$
c_9	$(y^{51} + 3y^{50} + \cdots - 6y - 1)$