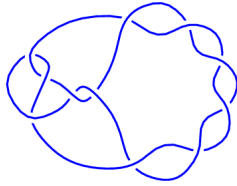
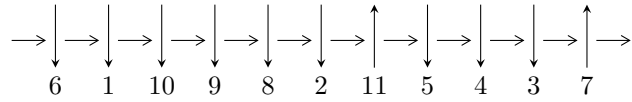


11a₂₃₀ (K11a₂₃₀)

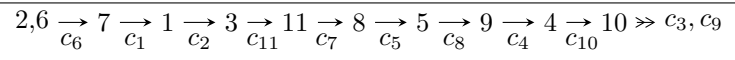


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{25} + u^{24} + \dots - u - 1 \rangle$$

There are 1 irreducible components with 25 representations.

¹The knot diagram image is adapter from “C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, <http://www.indiana.edu/~knotinfo>”

$$\mathbf{I. } I_1^u = \langle u^{25} + u^{24} + \dots - u - 1 \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^7 + 2u^5 - 2u^3 \\ u^7 - u^5 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{15} - 4u^{13} + 8u^{11} - 8u^9 + 4u^7 \\ -u^{15} + 3u^{13} - 4u^{11} + u^9 + 2u^7 - 2u^5 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{23} + 6u^{21} - 18u^{19} + 32u^{17} - 36u^{15} + 24u^{13} - 8u^{11} - u^7 + 2u^5 - 2u^3 \\ u^{23} - 5u^{21} + 12u^{19} - 15u^{17} + 8u^{15} + 4u^{13} - 8u^{11} + 3u^9 + 3u^7 - 3u^5 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{18} + 5u^{16} - 12u^{14} + 15u^{12} - 9u^{10} - u^8 + 4u^6 - 2u^4 - u^2 + 1 \\ u^{20} - 4u^{18} + 8u^{16} - 8u^{14} + 5u^{12} - 2u^{10} + 2u^8 + u^4 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{10} - 3u^8 + 4u^6 - u^4 - u^2 + 1 \\ -u^{12} + 2u^{10} - 2u^8 - u^4 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{10} - 3u^8 + 4u^6 - u^4 - u^2 + 1 \\ -u^{12} + 2u^{10} - 2u^8 - u^4 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.164695 - 0.548434I$	$11.9587 - 9.2744I$	$-3.33794 + 5.54787I$
$u = -1.164695 + 0.548434I$	$11.9587 + 9.2744I$	$-3.33794 - 5.54787I$
$u = -1.147102 - 0.473379I$	$-3.57874 - 5.59583I$	$-8.74632 + 7.67577I$
$u = -1.147102 + 0.473379I$	$-3.57874 + 5.59583I$	$-8.74632 - 7.67577I$
$u = -1.143525 - 0.340046I$	$0.133925 - 0.085472I$	$-5.86002 - 0.34875I$
$u = -1.143525 + 0.340046I$	$0.133925 + 0.085472I$	$-5.86002 + 0.34875I$
$u = -0.779045 - 0.639863I$	$17.3947 - 2.4684I$	$0.82696 + 3.09489I$
$u = -0.779045 + 0.639863I$	$17.3947 + 2.4684I$	$0.82696 - 3.09489I$
$u = -0.738513 - 0.360257I$	$0.77592 - 1.63253I$	$-1.50081 + 6.32590I$
$u = -0.738513 + 0.360257I$	$0.77592 + 1.63253I$	$-1.50081 - 6.32590I$
$u = -0.245615 - 0.802005I$	$14.6751 + 4.2594I$	$-0.24448 - 2.05504I$
$u = -0.245615 + 0.802005I$	$14.6751 - 4.2594I$	$-0.24448 + 2.05504I$
$u = -0.098501 - 0.642338I$	$-0.67035 + 1.33734I$	$-5.73536 - 4.96479I$
$u = -0.098501 + 0.642338I$	$-0.67035 - 1.33734I$	$-5.73536 + 4.96479I$
$u = 0.212747 - 0.739529I$	$4.10003 - 3.28234I$	$-0.69331 + 3.26169I$
$u = 0.212747 + 0.739529I$	$4.10003 + 3.28234I$	$-0.69331 - 3.26169I$
$u = 0.712530$	-0.882258	-12.9060
$u = 0.763751 - 0.563111I$	$6.42429 + 2.24483I$	$0.87739 - 3.73001I$
$u = 0.763751 + 0.563111I$	$6.42429 - 2.24483I$	$0.87739 + 3.73001I$
$u = 1.140979 - 0.421501I$	$-3.95366 + 2.40561I$	$-10.55936 - 0.02824I$
$u = 1.140979 + 0.421501I$	$-3.95366 - 2.40561I$	$-10.55936 + 0.02824I$
$u = 1.153706 - 0.519862I$	$1.36392 + 8.01588I$	$-4.14152 - 6.75012I$
$u = 1.153706 + 0.519862I$	$1.36392 - 8.01588I$	$-4.14152 + 6.75012I$
$u = 1.189548 - 0.291950I$	$10.21241 - 0.84057I$	$-5.43221 - 0.40339I$
$u = 1.189548 + 0.291950I$	$10.21241 + 0.84057I$	$-5.43221 + 0.40339I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_6	$(u^{25} + u^{24} + \dots - u - 1)$
c_2	$(u^{25} + 13u^{24} + \dots + u + 1)$
c_3, c_4, c_5 c_8, c_9, c_{10}	$(u^{25} + u^{24} + \dots + u - 1)$
c_7, c_{11}	$(u^{25} + 3u^{24} + \dots - 7u - 8)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_6	$(y^{25} - 13y^{24} + \dots + y - 1)$
c_2	$(y^{25} - y^{24} + \dots + 13y - 1)$
c_3, c_4, c_5 c_8, c_9, c_{10}	$(y^{25} + 35y^{24} + \dots + y - 1)$
c_7, c_{11}	$(y^{25} + 15y^{24} + \dots + 241y - 64)$