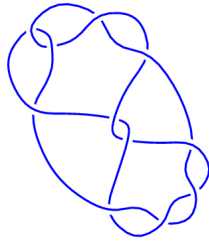
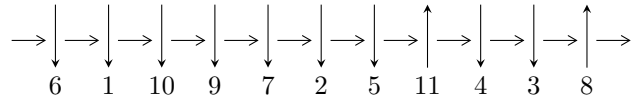


11a₂₂₉ (K11a₂₂₉)

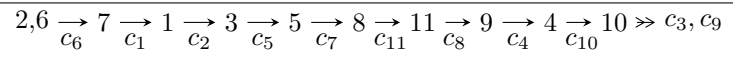


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{35} + u^{34} + \dots + u^2 - 1 \rangle$$

There are 1 irreducible components with 35 representations.

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

$$\text{I. } I_1^u = \langle u^{35} + u^{34} + \dots + u^2 - 1 \rangle$$

(i) Arc colorings

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

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

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

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

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

$$a_5 = \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u^{12} - u^{10} + 3u^8 - 2u^6 + 2u^4 - u^2 + 1 \\ -u^{12} + 2u^{10} - 4u^8 + 4u^6 - 3u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{19} + 2u^{17} - 6u^{15} + 8u^{13} - 11u^{11} + 10u^9 - 8u^7 + 4u^5 - 3u^3 \\ u^{19} - 3u^{17} + 8u^{15} - 13u^{13} + 17u^{11} - 15u^9 + 10u^7 - 2u^5 - u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{34} + 5u^{32} + \dots - u^2 + 1 \\ u^{34} + u^{33} + \dots + u - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{18} - 3u^{16} + 8u^{14} - 13u^{12} + 17u^{10} - 15u^8 + 10u^6 - 2u^4 - u^2 + 1 \\ -u^{20} + 2u^{18} - 6u^{16} + 8u^{14} - 11u^{12} + 10u^{10} - 8u^8 + 4u^6 - 3u^4 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{18} - 3u^{16} + 8u^{14} - 13u^{12} + 17u^{10} - 15u^8 + 10u^6 - 2u^4 - u^2 + 1 \\ -u^{20} + 2u^{18} - 6u^{16} + 8u^{14} - 11u^{12} + 10u^{10} - 8u^8 + 4u^6 - 3u^4 \end{pmatrix}$$

(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
$u = -0.979984 - 0.808991I$	$11.0850 - 11.4893I$	$-1.26828 + 6.96489I$
$u = -0.979984 + 0.808991I$	$11.0850 + 11.4893I$	$-1.26828 - 6.96489I$
$u = -0.966916 - 0.178086I$	$2.77604 + 1.42603I$	$-8.39342 + 0.40844I$
$u = -0.966916 + 0.178086I$	$2.77604 - 1.42603I$	$-8.39342 - 0.40844I$
$u = -0.962624 - 0.303218I$	$-3.18298 - 4.64820I$	$-10.32267 + 8.03074I$
$u = -0.962624 + 0.303218I$	$-3.18298 + 4.64820I$	$-10.32267 - 8.03074I$
$u = -0.950191 - 0.783875I$	$2.75474 - 4.93362I$	$-6.65730 + 2.46852I$
$u = -0.950191 + 0.783875I$	$2.75474 + 4.93362I$	$-6.65730 - 2.46852I$
$u = -0.909352 - 0.854322I$	$15.6759 - 3.1687I$	$1.84371 + 2.55774I$
$u = -0.909352 + 0.854322I$	$15.6759 + 3.1687I$	$1.84371 - 2.55774I$
$u = -0.826215 - 0.817094I$	$3.13686 - 1.06908I$	$-6.00348 + 2.72542I$
$u = -0.826215 + 0.817094I$	$3.13686 + 1.06908I$	$-6.00348 - 2.72542I$
$u = -0.815012 - 0.872021I$	$11.60155 + 5.24626I$	$-0.28520 - 2.12331I$
$u = -0.815012 + 0.872021I$	$11.60155 - 5.24626I$	$-0.28520 + 2.12331I$
$u = -0.616861 - 0.373834I$	$0.93698 - 1.48910I$	$-0.78415 + 6.55847I$
$u = -0.616861 + 0.373834I$	$0.93698 + 1.48910I$	$-0.78415 - 6.55847I$
$u = -0.084932 - 0.544457I$	$-0.58473 + 1.62274I$	$-4.08967 - 4.27499I$
$u = -0.084932 + 0.544457I$	$-0.58473 - 1.62274I$	$-4.08967 + 4.27499I$
$u = 0.163878 - 0.627930I$	$6.28325 - 3.67948I$	$-0.34607 + 2.46375I$
$u = 0.163878 + 0.627930I$	$6.28325 + 3.67948I$	$-0.34607 - 2.46375I$
$u = 0.621610$	-0.791732	-13.6738
$u = 0.625205 - 0.585600I$	$8.06862 + 2.14485I$	$0.03823 - 3.39579I$
$u = 0.625205 + 0.585600I$	$8.06862 - 2.14485I$	$0.03823 + 3.39579I$
$u = 0.815673 - 0.849045I$	$4.17141 - 2.71608I$	$-3.22921 + 3.46654I$
$u = 0.815673 + 0.849045I$	$4.17141 + 2.71608I$	$-3.22921 - 3.46654I$
$u = 0.895926 - 0.820169I$	$7.25366 + 3.06074I$	$0.53879 - 2.89823I$
$u = 0.895926 + 0.820169I$	$7.25366 - 3.06074I$	$0.53879 + 2.89823I$
$u = 0.899785 - 0.739431I$	$7.92591 + 2.80573I$	$-2.67118 - 2.92017I$
$u = 0.899785 + 0.739431I$	$7.92591 - 2.80573I$	$-2.67118 + 2.92017I$
$u = 0.949626 - 0.247846I$	$-3.51316 + 0.86929I$	$-12.03394 - 0.57851I$
Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.949626 + 0.247846I$	$-3.51316 - 0.86929I$	$-12.03394 + 0.57851I$
$u = 0.968524 - 0.797329I$	$3.69689 + 8.85353I$	$-4.28524 - 8.34437I$
$u = 0.968524 + 0.797329I$	$3.69689 - 8.85353I$	$-4.28524 + 8.34437I$
$u = 0.982664 - 0.344890I$	$3.73413 + 7.15489I$	$-6.21404 - 6.89294I$
$u = 0.982664 + 0.344890I$	$3.73413 - 7.15489I$	$-6.21404 + 6.89294I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_6	$(u^{35} + u^{34} + \dots + u^2 - 1)$
c_2, c_5, c_7	$(u^{35} + 9u^{34} + \dots + 2u + 1)$
c_3, c_4, c_9 c_{10}	$(u^{35} + u^{34} + \dots + 2u - 1)$
c_8, c_{11}	$(u^{35} + 7u^{34} + \dots + 8u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_6	$(y^{35} - 9y^{34} + \dots + 2y - 1)$
c_2, c_5, c_7	$(y^{35} + 35y^{34} + \dots + 18y - 1)$
c_3, c_4, c_9 c_{10}	$(y^{35} + 39y^{34} + \dots + 2y - 1)$
c_8, c_{11}	$(y^{35} + 15y^{34} + \dots - 14y - 1)$