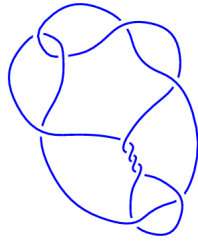
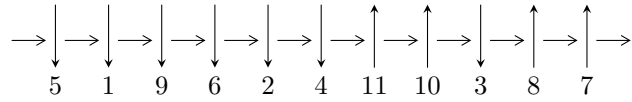


11a<sub>154</sub> (K11a<sub>154</sub>)

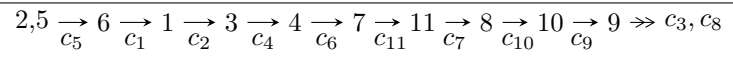


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = I_1^u$$

$$I_1^u = \langle u^{33} + u^{32} + \dots - u + 1 \rangle$$

There are 1 irreducible components with 33 representations.

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

$$\mathbf{I. } I_1^u = \langle u^{33} + u^{32} + \dots - u + 1 \rangle$$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

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

$$a_4 = \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^5 - u \\ u^5 - u^3 + u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -u^{19} + 2u^{17} - 6u^{15} + 8u^{13} - 11u^{11} + 10u^9 - 8u^7 + 4u^5 - 3u^3 \\ u^{19} - 3u^{17} + 8u^{15} - 13u^{13} + 17u^{11} - 15u^9 + 10u^7 - 2u^5 - u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{26} - 3u^{24} + \dots - u^2 + 1 \\ -u^{26} + 4u^{24} + \dots - 6u^4 + u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{32} - 5u^{30} + \dots - 10u^4 + 1 \\ -u^{32} - u^{31} + \dots + 2u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{32} - 5u^{30} + \dots - 10u^4 + 1 \\ -u^{32} - u^{31} + \dots + 2u - 1 \end{pmatrix}$$

(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
$u = -1.033968 - 0.263939I$	$-11.01938 + 0.06168I$	$-9.88848 + 1.08911I$
$u = -1.033968 + 0.263939I$	$-11.01938 - 0.06168I$	$-9.88848 - 1.08911I$
$u = -0.995422 - 0.779242I$	$-4.14461 - 11.54623I$	$-4.60672 + 7.46871I$
$u = -0.995422 + 0.779242I$	$-4.14461 + 11.54623I$	$-4.60672 - 7.46871I$
$u = -0.948058 - 0.795570I$	$4.50867 - 8.17465I$	$-0.67620 + 8.47838I$
$u = -0.948058 + 0.795570I$	$4.50867 + 8.17465I$	$-0.67620 - 8.47838I$
$u = -0.896054 - 0.201411I$	$-2.78816 - 0.30049I$	$-10.41364 + 0.78013I$
$u = -0.896054 + 0.201411I$	$-2.78816 + 0.30049I$	$-10.41364 - 0.78013I$
$u = -0.895296 - 0.816889I$	$7.27301 - 3.05112I$	$4.25923 + 2.85680I$
$u = -0.895296 + 0.816889I$	$7.27301 + 3.05112I$	$4.25923 - 2.85680I$
$u = -0.833187 - 0.831443I$	$4.86391 + 2.09612I$	$0.30900 - 3.39492I$
$u = -0.833187 + 0.831443I$	$4.86391 - 2.09612I$	$0.30900 + 3.39492I$
$u = -0.767767 - 0.857685I$	$-3.44108 + 5.45030I$	$-3.45886 - 2.65691I$
$u = -0.767767 + 0.857685I$	$-3.44108 - 5.45030I$	$-3.45886 + 2.65691I$
$u = -0.681698$	$-0.925837$	$-11.3921$
$u = 0.015081 - 0.694170I$	$-7.65546 - 3.22231I$	$-3.72780 + 2.45721I$
$u = 0.015081 + 0.694170I$	$-7.65546 + 3.22231I$	$-3.72780 - 2.45721I$
$u = 0.142887 - 0.471023I$	$0.00215 - 1.65753I$	$-0.44649 + 4.30187I$
$u = 0.142887 + 0.471023I$	$0.00215 + 1.65753I$	$-0.44649 - 4.30187I$
$u = 0.597521 - 0.358270I$	$1.09758 + 1.45110I$	$2.34671 - 6.18390I$
$u = 0.597521 + 0.358270I$	$1.09758 - 1.45110I$	$2.34671 + 6.18390I$
$u = 0.758684 - 0.845837I$	$-3.73457 + 0.99486I$	$-3.97712 - 2.18288I$
$u = 0.758684 + 0.845837I$	$-3.73457 - 0.99486I$	$-3.97712 + 2.18288I$
$u = 0.842798 - 0.784397I$	$3.06985 + 1.87561I$	$-4.30897 - 2.69437I$
$u = 0.842798 + 0.784397I$	$3.06985 - 1.87561I$	$-4.30897 + 2.69437I$
$u = 0.901499 - 0.311480I$	$-2.15523 + 4.53843I$	$-7.17107 - 8.79463I$
$u = 0.901499 + 0.311480I$	$-2.15523 - 4.53843I$	$-7.17107 + 8.79463I$
$u = 0.924838 - 0.768111I$	$2.81758 + 3.97777I$	$-4.79341 - 2.84216I$
$u = 0.924838 + 0.768111I$	$2.81758 - 3.97777I$	$-4.79341 + 2.84216I$
$u = 0.993657 - 0.770217I$	$-4.45571 + 5.03491I$	$-5.18044 - 2.78598I$
Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.993657 + 0.770217I$	$-4.45571 - 5.03491I$	$-5.18044 + 2.78598I$
$u = 1.033638 - 0.281003I$	$-10.91704 + 6.49427I$	$-9.56969 - 5.96659I$
$u = 1.033638 + 0.281003I$	$-10.91704 - 6.49427I$	$-9.56969 + 5.96659I$

## II. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1, c_5$	$(u^{33} + u^{32} + \dots - u + 1)$
$c_2, c_4, c_6$	$(u^{33} + 9u^{32} + \dots + u + 1)$
$c_3, c_9$	$(u^{33} + u^{32} + \dots + 3u + 1)$
$c_7, c_8, c_{10}$ $c_{11}$	$(u^{33} + 7u^{32} + \dots + u - 1)$

### III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1, c_5$	$(y^{33} - 9y^{32} + \dots + y - 1)$
$c_2, c_4, c_6$	$(y^{33} + 31y^{32} + \dots + 17y - 1)$
$c_3, c_9$	$(y^{33} + 7y^{32} + \dots + y - 1)$
$c_7, c_8, c_{10}$ $c_{11}$	$(y^{33} + 39y^{32} + \dots + 49y - 1)$