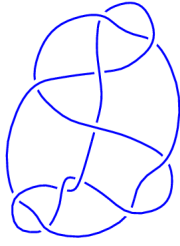
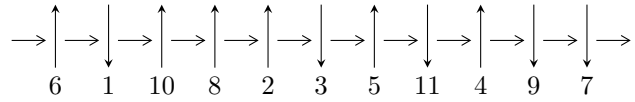


11a<sub>96</sub> (K11a<sub>96</sub>)

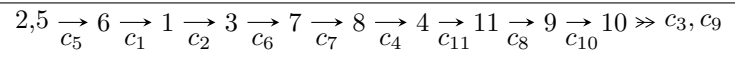


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = I_1^u$$

$$I_1^u = \langle u^{60} - u^{59} + \dots + u^2 + 1 \rangle$$

There are 1 irreducible components with 60 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>”

$$\text{I. } I_1^u = \langle u^{60} - u^{59} + \dots + u^2 + 1 \rangle$$

(i) Arc colorings

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

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

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

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

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

$$a_7 = \begin{pmatrix} -u^7 - 2u^5 - 2u^3 \\ -u^7 - u^5 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^7 - 2u^5 - 2u^3 \\ u^9 + u^7 + u^5 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{15} - 4u^{13} - 8u^{11} - 8u^9 - 4u^7 \\ u^{17} + 3u^{15} + 5u^{13} + 4u^{11} + 3u^9 + 2u^7 + 2u^5 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1 \\ u^{12} + 2u^{10} + 2u^8 - u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{33} - 8u^{31} + \dots - 4u^3 - u \\ -u^{33} - 7u^{31} + \dots + 2u^5 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{54} + 13u^{52} + \dots + 2u^2 + 1 \\ u^{54} + 12u^{52} + \dots - 2u^4 - u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{54} + 13u^{52} + \dots + 2u^2 + 1 \\ u^{54} + 12u^{52} + \dots - 2u^4 - u^2 \end{pmatrix}$$

(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
$u = -0.755668 - 0.307937I$	$0.80884 - 4.33115I$	$3.69848 + 2.33072I$
$u = -0.755668 + 0.307937I$	$0.80884 + 4.33115I$	$3.69848 - 2.33072I$
$u = -0.689013 - 0.265335I$	$-0.26353 - 1.99974I$	$2.67797 + 3.08609I$
$u = -0.689013 + 0.265335I$	$-0.26353 + 1.99974I$	$2.67797 - 3.08609I$
$u = -0.679575 - 0.445417I$	$4.87624 - 3.78274I$	$7.16156 + 3.71379I$
$u = -0.679575 + 0.445417I$	$4.87624 + 3.78274I$	$7.16156 - 3.71379I$
$u = -0.622652 - 0.677380I$	$1.38479 + 7.95567I$	$3.11940 - 8.08739I$
$u = -0.622652 + 0.677380I$	$1.38479 - 7.95567I$	$3.11940 + 8.08739I$
$u = -0.562904 - 1.061080I$	$3.07462 + 8.59241I$	$3.64813 - 8.65392I$
$u = -0.562904 + 1.061080I$	$3.07462 - 8.59241I$	$3.64813 + 8.65392I$
$u = -0.561245 - 0.222030I$	$-0.23326 - 1.74631I$	$0.21628 + 4.30130I$
$u = -0.561245 + 0.222030I$	$-0.23326 + 1.74631I$	$0.21628 - 4.30130I$
$u = -0.558377 - 1.131914I$	$-1.60310 + 9.28831I$	$0.50504 - 5.92934I$
$u = -0.558377 + 1.131914I$	$-1.60310 - 9.28831I$	$0.50504 + 5.92934I$
$u = -0.552672 - 0.728082I$	$-3.08637 + 2.17441I$	$-2.78142 - 3.98454I$
$u = -0.552672 + 0.728082I$	$-3.08637 - 2.17441I$	$-2.78142 + 3.98454I$
$u = -0.544109 - 0.871535I$	$0.80579 - 3.33102I$	$2.01338 + 1.91534I$
$u = -0.544109 + 0.871535I$	$0.80579 + 3.33102I$	$2.01338 - 1.91534I$
$u = -0.533131 - 1.124394I$	$-2.71521 + 6.69056I$	$-0.45788 - 6.47967I$
$u = -0.533131 + 1.124394I$	$-2.71521 - 6.69056I$	$-0.45788 + 6.47967I$
$u = -0.487828 - 1.088330I$	$-2.57613 + 5.90818I$	$-4.18127 - 8.03076I$
$u = -0.487828 + 1.088330I$	$-2.57613 - 5.90818I$	$-4.18127 + 8.03076I$
$u = -0.381105 - 1.041636I$	$-3.34743 + 1.08708I$	$-6.46120 + 0.24297I$
$u = -0.381105 + 1.041636I$	$-3.34743 - 1.08708I$	$-6.46120 - 0.24297I$
$u = -0.313837 - 1.128653I$	$-4.20665 + 1.05171I$	$-3.19652 - 0.53275I$
$u = -0.313837 + 1.128653I$	$-4.20665 - 1.05171I$	$-3.19652 + 0.53275I$
$u = -0.260652 - 1.137701I$	$-3.60470 - 1.42729I$	$-2.52246 - 0.00877I$
$u = -0.260652 + 1.137701I$	$-3.60470 + 1.42729I$	$-2.52246 + 0.00877I$
$u = -0.074861 - 0.899343I$	$0.55103 - 2.51832I$	$-0.80649 + 3.33072I$
$u = -0.074861 + 0.899343I$	$0.55103 + 2.51832I$	$-0.80649 - 3.33072I$

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.257348 - 1.151704I$	$-4.93303 + 6.89109I$	$-4.51137 - 4.67034I$
$u = 0.257348 + 1.151704I$	$-4.93303 - 6.89109I$	$-4.51137 + 4.67034I$
$u = 0.288034 - 1.152760I$	$-9.39383 + 0.41865I$	$-9.17340 + 0.06534I$
$u = 0.288034 + 1.152760I$	$-9.39383 - 0.41865I$	$-9.17340 - 0.06534I$
$u = 0.321894 - 1.149488I$	$-5.68245 - 6.13484I$	$-5.47893 + 5.73776I$
$u = 0.321894 + 1.149488I$	$-5.68245 + 6.13484I$	$-5.47893 - 5.73776I$
$u = 0.484539 - 1.021163I$	$-0.56534 - 3.02304I$	$3.22803 + 2.88316I$
$u = 0.484539 + 1.021163I$	$-0.56534 + 3.02304I$	$3.22803 - 2.88316I$
$u = 0.493299 - 0.552242I$	$0.862519 - 1.026217I$	$5.84285 + 4.48468I$
$u = 0.493299 + 0.552242I$	$0.862519 + 1.026217I$	$5.84285 - 4.48468I$
$u = 0.523358 - 1.138225I$	$-4.31649 - 1.84933I$	$-3.63751 + 0.92497I$
$u = 0.523358 + 1.138225I$	$-4.31649 + 1.84933I$	$-3.63751 - 0.92497I$
$u = 0.525209 - 0.910684I$	$1.69680 - 2.03222I$	$3.90722 + 3.29370I$
$u = 0.525209 + 0.910684I$	$1.69680 + 2.03222I$	$3.90722 - 3.29370I$
$u = 0.545235 - 1.140193I$	$-7.65214 - 8.43403I$	$-6.54713 + 6.45708I$
$u = 0.545235 + 1.140193I$	$-7.65214 + 8.43403I$	$-6.54713 - 6.45708I$
$u = 0.560154 - 1.046521I$	$3.31782 - 3.01457I$	$4.46627 + 2.78585I$
$u = 0.560154 + 1.046521I$	$3.31782 + 3.01457I$	$4.46627 - 2.78585I$
$u = 0.560770 - 1.137601I$	$-2.8910 - 14.8744I$	$-1.51520 + 10.45417I$
$u = 0.560770 + 1.137601I$	$-2.8910 + 14.8744I$	$-1.51520 - 10.45417I$
$u = 0.610444 - 0.652587I$	$2.44765 - 2.49685I$	$5.32046 + 3.18664I$
$u = 0.610444 + 0.652587I$	$2.44765 + 2.49685I$	$5.32046 - 3.18664I$
$u = 0.666201 - 0.472083I$	$5.00152 - 1.75323I$	$7.65668 + 2.62236I$
$u = 0.666201 + 0.472083I$	$5.00152 + 1.75323I$	$7.65668 - 2.62236I$
$u = 0.719744 - 0.218682I$	$-1.68268 - 2.83631I$	$-0.28832 + 2.76871I$
$u = 0.719744 + 0.218682I$	$-1.68268 + 2.83631I$	$-0.28832 - 2.76871I$
$u = 0.751525 - 0.268257I$	$-5.11292 + 3.55390I$	$-3.52030 - 2.87156I$
$u = 0.751525 + 0.268257I$	$-5.11292 - 3.55390I$	$-3.52030 + 2.87156I$
$u = 0.769876 - 0.302697I$	$-0.43983 + 9.87486I$	$1.61763 - 6.92341I$
$u = 0.769876 + 0.302697I$	$-0.43983 - 9.87486I$	$1.61763 + 6.92341I$

## II. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1, c_5$	$(u^{60} + u^{59} + \dots + u^2 + 1)$
$c_2$	$(u^{60} + 29u^{59} + \dots + 2u + 1)$
$c_3, c_9$	$(u^{60} + u^{59} + \dots + u^2 + 1)$
$c_4, c_7$	$(u^{60} + 5u^{59} + \dots + 122u + 13)$
$c_6$	$(u^{60} + u^{59} + \dots - 118u + 37)$
$c_8, c_{10}$	$(u^{60} + 21u^{59} + \dots + 2u + 1)$
$c_{11}$	$(u^{60} + 5u^{59} + \dots + 12u + 1)$

### III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1, c_5$	$(y^{60} + 29y^{59} + \dots + 2y + 1)$
$c_2$	$(y^{60} + 5y^{59} + \dots + 14y + 1)$
$c_3, c_9$	$(y^{60} + 21y^{59} + \dots + 2y + 1)$
$c_4, c_7$	$(y^{60} + 41y^{59} + \dots + 4330y + 169)$
$c_6$	$(y^{60} - 19y^{59} + \dots + 12050y + 1369)$
$c_8, c_{10}$	$(y^{60} + 37y^{59} + \dots + 22y + 1)$
$c_{11}$	$(y^{60} + y^{59} + \dots + 38y + 1)$