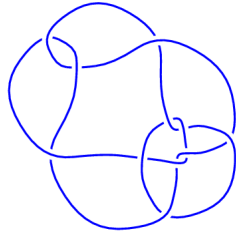
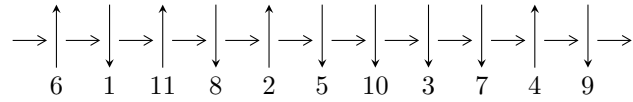


11a₁₄₉ (K11a₁₄₉)

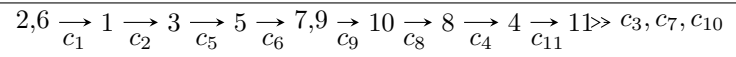


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{63} + 3u^{62} + \dots + 2u - 1, -5.18869 \times 10^{30}u^{62} - 4.60084 \times 10^{31}u^{61} + \dots + 1.51632 \times 10^{32}a + 4.89769 \times 10^{33}b - 6.13231 \times 10^{33} \rangle$$

There are 1 irreducible components with 63 representations.

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

$$\begin{aligned} & \mathbf{I. } I_1^u = \\ & \langle u^{63} + 3u^{62} + \dots + 2u - 1, -5.19 \times 10^{30}u^{62} - 4.60 \times 10^{31}u^{61} + \dots + 1.52 \times 10^{32}a + \\ & 4.90 \times 10^{32}, 6.59 \times 10^{33}u^{62} + 1.27 \times 10^{34}u^{61} + \dots + 9.15 \times 10^{33}b - 6.13 \times 10^{33} \rangle \end{aligned}$$

(i) Arc colorings

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

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

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

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

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

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

$$a_9 = \begin{pmatrix} 0.0342190u^{62} + 0.303422u^{61} + \dots - 0.970526u - 3.22999 \\ -0.720560u^{62} - 1.38403u^{61} + \dots + 0.258985u + 0.670312 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.163991u^{62} + 0.735688u^{61} + \dots - 0.518791u - 3.41101 \\ -0.940033u^{62} - 1.90438u^{61} + \dots - 0.942790u + 0.713453 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.167447u^{62} + 0.652868u^{61} + \dots + 1.09284u - 3.15598 \\ -0.702143u^{62} - 1.31297u^{61} + \dots + 0.508662u + 0.602596 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.53220u^{62} - 5.33133u^{61} + \dots - 6.95145u + 3.31985 \\ 0.408926u^{62} + 1.90611u^{61} + \dots - 1.94941u + 0.452963 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.489880u^{62} - 1.42153u^{61} + \dots + 3.35861u + 3.51142 \\ -0.552392u^{62} - 2.69530u^{61} + \dots + 2.86212u - 1.33768 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.489880u^{62} - 1.42153u^{61} + \dots + 3.35861u + 3.51142 \\ -0.552392u^{62} - 2.69530u^{61} + \dots + 2.86212u - 1.33768 \end{pmatrix}$$

(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
$u = -0.933450 - 0.887239I$ $a = 0.182597 - 0.083461I$ $b = 0.164371 + 0.473416I$	$0.88299 + 3.37440I$	$6.74962 - 9.74842I$
$u = -0.933450 + 0.887239I$ $a = 0.182597 + 0.083461I$ $b = 0.164371 - 0.473416I$	$0.88299 - 3.37440I$	$6.74962 + 9.74842I$
$u = -0.888598 - 0.712739I$ $a = 1.23888 + 1.07985I$ $b = -2.21959 + 0.66956I$	$-1.25936 - 10.13508I$	$-3.75902 + 4.84314I$
$u = -0.888598 + 0.712739I$ $a = 1.23888 - 1.07985I$ $b = -2.21959 - 0.66956I$	$-1.25936 + 10.13508I$	$-3.75902 - 4.84314I$
$u = -0.810251 - 0.764677I$ $a = -0.614704 - 1.099302I$ $b = 2.27585 + 0.14042I$	$2.66441 - 3.76429I$	$-1.67925 + 3.07969I$
$u = -0.810251 + 0.764677I$ $a = -0.614704 + 1.099302I$ $b = 2.27585 - 0.14042I$	$2.66441 + 3.76429I$	$-1.67925 - 3.07969I$
$u = -0.765933 - 1.033725I$ $a = -0.51162 - 2.20505I$ $b = 2.40984 + 1.47160I$	$-2.2561 + 16.2663I$	$-5.20830 - 9.28107I$
$u = -0.765933 + 1.033725I$ $a = -0.51162 + 2.20505I$ $b = 2.40984 - 1.47160I$	$-2.2561 - 16.2663I$	$-5.20830 + 9.28107I$
$u = -0.765357 - 0.893742I$ $a = -0.888237 + 0.881040I$ $b = 0.160327 - 1.374950I$	$1.42211 + 2.89988I$	$-2.18116 - 2.48836I$
$u = -0.765357 + 0.893742I$ $a = -0.888237 - 0.881040I$ $b = 0.160327 + 1.374950I$	$1.42211 - 2.89988I$	$-2.18116 + 2.48836I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.763248 - 0.536252I$ $a = -0.200295 + 0.850847I$ $b = -0.612392 - 0.572188I$	$1.08095 + 1.39801I$	$4.18188 - 0.71132I$
$u = -0.763248 + 0.536252I$ $a = -0.200295 - 0.850847I$ $b = -0.612392 + 0.572188I$	$1.08095 - 1.39801I$	$4.18188 + 0.71132I$
$u = -0.750069 - 0.975450I$ $a = 0.85338 + 2.02212I$ $b = -2.24959 - 0.46334I$	$2.01737 + 9.62566I$	$-3.22852 - 8.33620I$
$u = -0.750069 + 0.975450I$ $a = 0.85338 - 2.02212I$ $b = -2.24959 + 0.46334I$	$2.01737 - 9.62566I$	$-3.22852 + 8.33620I$
$u = -0.730193 - 1.099425I$ $a = -0.467025 - 0.660302I$ $b = 1.157576 + 0.273573I$	$-0.60454 + 4.40493I$	$-3.93826 - 13.44002I$
$u = -0.730193 + 1.099425I$ $a = -0.467025 + 0.660302I$ $b = 1.157576 - 0.273573I$	$-0.60454 - 4.40493I$	$-3.93826 + 13.44002I$
$u = -0.726705 - 0.811867I$ $a = -1.18396 - 1.72005I$ $b = 2.18880 - 0.14253I$	$1.35473 + 0.62400I$	$-0.404349 + 0.028611I$
$u = -0.726705 + 0.811867I$ $a = -1.18396 + 1.72005I$ $b = 2.18880 + 0.14253I$	$1.35473 - 0.62400I$	$-0.404349 - 0.028611I$
$u = -0.716350 - 0.922760I$ $a = 0.58105 + 1.92526I$ $b = -2.53241 - 1.12922I$	$1.01466 + 4.89030I$	$-1.24692 - 5.54870I$
$u = -0.716350 + 0.922760I$ $a = 0.58105 - 1.92526I$ $b = -2.53241 + 1.12922I$	$1.01466 - 4.89030I$	$-1.24692 + 5.54870I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.693016 - 0.315312I$ $a = -0.289428 + 0.730127I$ $b = -0.310255 - 0.482151I$	$1.05806 + 1.32640I$	$4.87847 - 4.20428I$
$u = -0.693016 + 0.315312I$ $a = -0.289428 - 0.730127I$ $b = -0.310255 + 0.482151I$	$1.05806 - 1.32640I$	$4.87847 + 4.20428I$
$u = -0.643524 - 0.884288I$ $a = -0.670137 - 0.681552I$ $b = -0.214774 - 0.538469I$	$-4.63310 + 2.49365I$	$-9.98533 - 3.12247I$
$u = -0.643524 + 0.884288I$ $a = -0.670137 + 0.681552I$ $b = -0.214774 + 0.538469I$	$-4.63310 - 2.49365I$	$-9.98533 + 3.12247I$
$u = -0.309755 - 0.275620I$ $a = 1.19826 - 2.47111I$ $b = -0.692520 - 0.579657I$	$-4.36178 + 1.13101I$	$-3.69450 - 1.07714I$
$u = -0.309755 + 0.275620I$ $a = 1.19826 + 2.47111I$ $b = -0.692520 + 0.579657I$	$-4.36178 - 1.13101I$	$-3.69450 + 1.07714I$
$u = -0.247037 - 0.849494I$ $a = -1.142117 - 0.110784I$ $b = 0.398886 - 0.218053I$	$-0.62170 + 1.75556I$	$-1.86458 - 4.77709I$
$u = -0.247037 + 0.849494I$ $a = -1.142117 + 0.110784I$ $b = 0.398886 + 0.218053I$	$-0.62170 - 1.75556I$	$-1.86458 + 4.77709I$
$u = -0.213920 - 1.163890I$ $a = 0.446939 + 0.170107I$ $b = 0.032442 - 0.590549I$	$-3.79459 + 4.37631I$	$-8.37474 - 9.44329I$
$u = -0.213920 + 1.163890I$ $a = 0.446939 - 0.170107I$ $b = 0.032442 + 0.590549I$	$-3.79459 - 4.37631I$	$-8.37474 + 9.44329I$

Solution to I_1^μ	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.058839 - 0.948485I$ $a = -1.17043 - 1.85637I$ $b = 0.45196 + 1.56324I$	$-7.69919 + 2.07381I$	$-15.2166 - 3.4603I$
$u = -0.058839 + 0.948485I$ $a = -1.17043 + 1.85637I$ $b = 0.45196 - 1.56324I$	$-7.69919 - 2.07381I$	$-15.2166 + 3.4603I$
$u = 0.057802 - 0.865842I$ $a = 1.039559 - 0.717759I$ $b = 0.212381 + 1.286123I$	$-3.45347 - 0.91963I$	$-7.53722 - 0.57993I$
$u = 0.057802 + 0.865842I$ $a = 1.039559 + 0.717759I$ $b = 0.212381 - 1.286123I$	$-3.45347 + 0.91963I$	$-7.53722 + 0.57993I$
$u = 0.171535 - 0.833363I$ $a = 0.472085 - 1.258502I$ $b = 0.192482 - 0.304858I$	$-3.56857 + 0.47654I$	$-9.76423 + 1.75847I$
$u = 0.171535 + 0.833363I$ $a = 0.472085 + 1.258502I$ $b = 0.192482 + 0.304858I$	$-3.56857 - 0.47654I$	$-9.76423 - 1.75847I$
$u = 0.202849 - 0.946044I$ $a = 1.94722 - 0.19778I$ $b = -0.928613 + 0.106351I$	$-3.81545 - 5.01176I$	$-9.09327 + 7.69438I$
$u = 0.202849 + 0.946044I$ $a = 1.94722 + 0.19778I$ $b = -0.928613 - 0.106351I$	$-3.81545 + 5.01176I$	$-9.09327 - 7.69438I$
$u = 0.223288$ $a = -3.73067$ $b = 0.429527$	-1.26040	-8.85591
$u = 0.249599 - 1.117335I$ $a = -0.933405 + 0.391979I$ $b = 0.083836 - 0.726791I$	$-8.93201 - 10.19934I$	$-10.07246 + 7.51418I$

Solution to I_1^μ	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.249599 + 1.117335I$ $a = -0.933405 - 0.391979I$ $b = 0.083836 + 0.726791I$	$-8.93201 + 10.19934I$	$-10.07246 - 7.51418I$
$u = 0.330834 - 1.132939I$ $a = 0.122863 + 0.871157I$ $b = -0.389791 - 0.792565I$	$-8.44469 + 2.66782I$	$-11.30635 - 2.81358I$
$u = 0.330834 + 1.132939I$ $a = 0.122863 - 0.871157I$ $b = -0.389791 + 0.792565I$	$-8.44469 - 2.66782I$	$-11.30635 + 2.81358I$
$u = 0.516941 - 0.032452I$ $a = -0.286237 + 1.236946I$ $b = 0.641012 - 0.482457I$	$-1.03804 + 2.55802I$	$-0.30006 - 3.39194I$
$u = 0.516941 + 0.032452I$ $a = -0.286237 - 1.236946I$ $b = 0.641012 + 0.482457I$	$-1.03804 - 2.55802I$	$-0.30006 + 3.39194I$
$u = 0.693599 - 0.946330I$ $a = 0.34808 + 1.75912I$ $b = 1.94341 - 1.34022I$	$-3.28750 - 6.79142I$	$-8.41138 + 7.80519I$
$u = 0.693599 + 0.946330I$ $a = 0.34808 - 1.75912I$ $b = 1.94341 + 1.34022I$	$-3.28750 + 6.79142I$	$-8.41138 - 7.80519I$
$u = 0.695239 - 0.763843I$ $a = 0.75961 - 1.41295I$ $b = -1.63934 - 0.73836I$	$-2.73449 + 1.42844I$	$-6.93697 - 2.22951I$
$u = 0.695239 + 0.763843I$ $a = 0.75961 + 1.41295I$ $b = -1.63934 + 0.73836I$	$-2.73449 - 1.42844I$	$-6.93697 + 2.22951I$
$u = 0.702468 - 0.874127I$ $a = -1.37569 - 1.38479I$ $b = 0.83063 + 1.81611I$	$-0.03120 - 2.69612I$	$2.81780 + 3.40772I$

Solution to I_1^μ	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.702468 + 0.874127I$ $a = -1.37569 + 1.38479I$ $b = 0.83063 - 1.81611I$	$-0.03120 + 2.69612I$	$2.81780 - 3.40772I$
$u = 0.737082 - 0.871113I$ $a = -4.8258 - 13.5054I$ $b = -5.4391 + 15.0888I$	$-0.27910 - 2.80205I$	$48.3421 + 114.9176I$
$u = 0.737082 + 0.871113I$ $a = -4.8258 + 13.5054I$ $b = -5.4391 - 15.0888I$	$-0.27910 + 2.80205I$	$48.3421 - 114.9176I$
$u = 0.754175 - 1.039688I$ $a = 0.72880 - 1.66445I$ $b = -2.16012 + 0.87201I$	$2.59510 - 10.79479I$	$-2.21209 + 8.36039I$
$u = 0.754175 + 1.039688I$ $a = 0.72880 + 1.66445I$ $b = -2.16012 - 0.87201I$	$2.59510 + 10.79479I$	$-2.21209 - 8.36039I$
$u = 0.769036 - 0.963922I$ $a = -0.64711 + 1.44598I$ $b = 1.56684 - 0.33213I$	$5.52656 - 5.67817I$	$2.27475 + 4.12326I$
$u = 0.769036 + 0.963922I$ $a = -0.64711 - 1.44598I$ $b = 1.56684 + 0.33213I$	$5.52656 + 5.67817I$	$2.27475 - 4.12326I$
$u = 0.818503 - 0.071595I$ $a = 0.947693 + 0.595880I$ $b = -0.190373 - 0.433337I$	$-4.90960 - 6.71055I$	$-4.57662 + 5.93806I$
$u = 0.818503 + 0.071595I$ $a = 0.947693 - 0.595880I$ $b = -0.190373 + 0.433337I$	$-4.90960 + 6.71055I$	$-4.57662 - 5.93806I$
$u = 0.825588 - 0.794026I$ $a = 0.471370 - 0.782650I$ $b = -1.65611 + 0.24031I$	$6.05392 - 0.28945I$	$3.34113 + 1.43339I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.825588 + 0.794026I$		
$a = 0.471370 + 0.782650I$	$6.05392 + 0.28945I$	$3.34113 - 1.43339I$
$b = -1.65611 - 0.24031I$		
$u = 0.879352 - 0.689382I$		
$a = -0.766895 + 1.133880I$	$3.67279 + 4.73223I$	$-0.16562 - 4.08320I$
$b = 1.80952 + 0.12559I$		
$u = 0.879352 + 0.689382I$		
$a = -0.766895 - 1.133880I$	$3.67279 - 4.73223I$	$-0.16562 + 4.08320I$
$b = 1.80952 - 0.12559I$		

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_5	$(u^{63} + 3u^{62} + \dots + 2u - 1)$
c_2, c_6	$(u^{63} + 19u^{62} + \dots + 16u - 1)$
c_3, c_{10}	$(u^{63} + 3u^{62} + \dots + 4u + 1)$
c_4	$(u^{63} + 11u^{62} + \dots + 26u + 529)$
c_7, c_9	$(u^{63} + u^{62} + \dots - 18u - 1)$
c_8	$(u^{63} + u^{62} + \dots - 10u + 1)$
c_{11}	$(u^{63} + 23u^{62} + \dots - 22u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_5	$(y^{63} + 19y^{62} + \dots + 16y - 1)$
c_2, c_6	$(y^{63} + 51y^{62} + \dots + 360y - 1)$
c_3, c_{10}	$(y^{63} + 47y^{62} + \dots + 16y - 1)$
c_4	$(y^{63} + 127y^{62} + \dots - 1368376y - 279841)$
c_7, c_9	$(y^{63} - 41y^{62} + \dots - 184y - 1)$
c_8	$(y^{63} + 3y^{62} + \dots - 48y - 1)$
c_{11}	$(y^{63} - 177y^{62} + \dots - 84y - 1)$