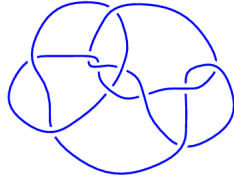
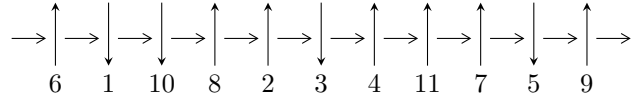


11a₇₉ (K11a₇₉)

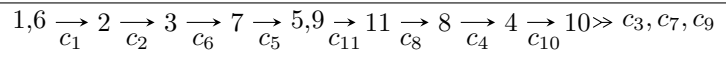


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{71} + 3u^{70} + \dots - 2u - 1, -1.23376 \times 10^{38}u^{70} - 2.60156 \times 10^{38}u^{69} + \dots + 3.74973 \times 10^{38}b - 3.48298 \times 10^{38} \\ 6.34585 \times 10^{38}u^{70} + 1.49012 \times 10^{39}u^{69} + \dots + 3.74973 \times 10^{38}a - 1.05045 \times 10^{39} \rangle$$

There are 1 irreducible components with 71 representations.

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

$$\begin{aligned} & \text{I. } I_1^u = \\ & \langle u^{71} + 3u^{70} + \dots - 2u - 1, -1.23 \times 10^{38} u^{70} - 2.60 \times 10^{38} u^{69} + \dots + 3.75 \times 10^{38} b - \\ & 3.48 \times 10^{38}, 6.35 \times 10^{38} u^{70} + 1.49 \times 10^{39} u^{69} + \dots + 3.75 \times 10^{38} a - 1.05 \times 10^{39} \rangle \end{aligned}$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

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

$$a_9 = \begin{pmatrix} -1.69235u^{70} - 3.97394u^{69} + \dots + 7.85819u + 2.80141 \\ 0.329027u^{70} + 0.693799u^{69} + \dots - 0.915774u + 0.928862 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.11052u^{70} - 2.65167u^{69} + \dots + 6.64700u + 3.19447 \\ 0.150451u^{70} + 0.130614u^{69} + \dots - 0.554244u + 1.09861 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.18217u^{70} - 2.67436u^{69} + \dots + 2.39442u + 0.613804 \\ 0.532697u^{70} + 1.43786u^{69} + \dots - 0.858566u - 0.377440 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.23342u^{70} - 2.50666u^{69} + \dots + 1.45164u + 0.570833 \\ 0.583955u^{70} + 1.27017u^{69} + \dots + 0.0842178u - 0.334469 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.85773u^{70} - 7.42029u^{69} + \dots + 8.03318u + 5.13869 \\ 0.662094u^{70} + 2.56292u^{69} + \dots - 1.13925u - 1.31864 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.85773u^{70} - 7.42029u^{69} + \dots + 8.03318u + 5.13869 \\ 0.662094u^{70} + 2.56292u^{69} + \dots - 1.13925u - 1.31864 \end{pmatrix}$$

(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
$u = -0.951977 - 0.256619I$ $a = 1.43488 + 0.20483I$ $b = -1.126816 - 0.034203I$	$4.89801 + 0.93678I$	$19.9883 - 4.7371I$
$u = -0.951977 + 0.256619I$ $a = 1.43488 - 0.20483I$ $b = -1.126816 + 0.034203I$	$4.89801 - 0.93678I$	$19.9883 + 4.7371I$
$u = -0.841330 - 0.286074I$ $a = 1.92284 + 0.21858I$ $b = -1.40306 + 0.54314I$	$6.14527 - 11.63856I$	$7.86088 + 6.21696I$
$u = -0.841330 + 0.286074I$ $a = 1.92284 - 0.21858I$ $b = -1.40306 - 0.54314I$	$6.14527 + 11.63856I$	$7.86088 - 6.21696I$
$u = -0.786218 - 0.782111I$ $a = 1.74704 - 0.57747I$ $b = -1.145382 - 0.086197I$	$3.75200 + 2.89679I$	$14.1451 - 8.4405I$
$u = -0.786218 + 0.782111I$ $a = 1.74704 + 0.57747I$ $b = -1.145382 + 0.086197I$	$3.75200 - 2.89679I$	$14.1451 + 8.4405I$
$u = -0.719893 - 0.254367I$ $a = -0.115852 + 0.661368I$ $b = 0.073358 - 1.223212I$	$1.50533 - 5.54441I$	$6.15324 + 5.81731I$
$u = -0.719893 + 0.254367I$ $a = -0.115852 - 0.661368I$ $b = 0.073358 + 1.223212I$	$1.50533 + 5.54441I$	$6.15324 - 5.81731I$
$u = -0.625953 - 1.188267I$ $a = 0.96793 - 1.10206I$ $b = -1.106354 - 0.106102I$	$2.12005 + 4.76886I$	$12.1942 - 11.7378I$
$u = -0.625953 + 1.188267I$ $a = 0.96793 + 1.10206I$ $b = -1.106354 + 0.106102I$	$2.12005 - 4.76886I$	$12.1942 + 11.7378I$

Solution to I_1^μ	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.575118 - 1.166632I$ $a = 1.44257 - 1.87148I$ $b = -1.41933 - 0.58854I$	$3.5170 + 16.8714I$	$4.80747 - 9.65980I$
$u = -0.575118 + 1.166632I$ $a = 1.44257 + 1.87148I$ $b = -1.41933 + 0.58854I$	$3.5170 - 16.8714I$	$4.80747 + 9.65980I$
$u = -0.563914 - 0.238552I$ $a = 1.178276 - 0.450091I$ $b = 0.112264 + 0.124633I$	$1.74562 + 0.37740I$	$6.30964 - 0.12141I$
$u = -0.563914 + 0.238552I$ $a = 1.178276 + 0.450091I$ $b = 0.112264 - 0.124633I$	$1.74562 - 0.37740I$	$6.30964 + 0.12141I$
$u = -0.559742 - 0.499569I$ $a = -2.33180 + 0.07414I$ $b = 1.61703 + 0.42922I$	$6.60638 + 1.38759I$	$13.61185 - 2.69699I$
$u = -0.559742 + 0.499569I$ $a = -2.33180 - 0.07414I$ $b = 1.61703 - 0.42922I$	$6.60638 - 1.38759I$	$13.61185 + 2.69699I$
$u = -0.557121 - 0.298889I$ $a = -1.74606 - 1.17248I$ $b = 1.009524 - 0.310743I$	$1.90959 - 1.23782I$	$5.72103 + 1.19948I$
$u = -0.557121 + 0.298889I$ $a = -1.74606 + 1.17248I$ $b = 1.009524 + 0.310743I$	$1.90959 + 1.23782I$	$5.72103 - 1.19948I$
$u = -0.532609 - 1.135779I$ $a = -1.331489 + 0.302716I$ $b = 0.018216 + 1.337320I$	$-1.03978 + 10.29638I$	$2.98642 - 9.08671I$
$u = -0.532609 + 1.135779I$ $a = -1.331489 - 0.302716I$ $b = 0.018216 - 1.337320I$	$-1.03978 - 10.29638I$	$2.98642 + 9.08671I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.504241 - 1.025468I$ $a = -0.61602 + 1.87132I$ $b = 1.75797 - 0.25690I$	$5.06700 + 2.91128I$	$10.02396 - 3.39589I$
$u = -0.504241 + 1.025468I$ $a = -0.61602 - 1.87132I$ $b = 1.75797 + 0.25690I$	$5.06700 - 2.91128I$	$10.02396 + 3.39589I$
$u = -0.501403 - 1.092267I$ $a = -1.12867 + 2.17659I$ $b = 1.033037 + 0.441324I$	$-0.32050 + 5.52962I$	$1.05814 - 5.98622I$
$u = -0.501403 + 1.092267I$ $a = -1.12867 - 2.17659I$ $b = 1.033037 - 0.441324I$	$-0.32050 - 5.52962I$	$1.05814 + 5.98622I$
$u = -0.473510 - 1.118310I$ $a = 0.782398 + 0.360085I$ $b = 0.0538522 + 0.0763981I$	$-0.74430 + 3.76429I$	$2.15699 - 3.19971I$
$u = -0.473510 + 1.118310I$ $a = 0.782398 - 0.360085I$ $b = 0.0538522 - 0.0763981I$	$-0.74430 - 3.76429I$	$2.15699 + 3.19971I$
$u = -0.396737 - 1.050829I$ $a = 0.611889 - 0.451445I$ $b = 0.763773 - 0.472136I$	$-1.12945 + 1.48616I$	$-0.376750 - 0.719505I$
$u = -0.396737 + 1.050829I$ $a = 0.611889 + 0.451445I$ $b = 0.763773 + 0.472136I$	$-1.12945 - 1.48616I$	$-0.376750 + 0.719505I$
$u = -0.384067 - 0.705673I$ $a = 0.241639 + 0.229841I$ $b = 0.224870 + 0.394609I$	$0.01309 + 1.53015I$	$0.80636 - 5.17000I$
$u = -0.384067 + 0.705673I$ $a = 0.241639 - 0.229841I$ $b = 0.224870 - 0.394609I$	$0.01309 - 1.53015I$	$0.80636 + 5.17000I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.350099 - 1.280167I$ $a = 0.231862 - 0.485291I$ $b = -1.013306 - 0.202385I$	$-0.03586 + 5.23290I$	$1.89543 - 12.57183I$
$u = -0.350099 + 1.280167I$ $a = 0.231862 + 0.485291I$ $b = -1.013306 + 0.202385I$	$-0.03586 - 5.23290I$	$1.89543 + 12.57183I$
$u = -0.315619 - 1.134620I$ $a = 0.830681 - 0.958758I$ $b = -0.128589 - 1.134404I$	$-2.52331 - 2.41202I$	$-0.04040 + 2.40524I$
$u = -0.315619 + 1.134620I$ $a = 0.830681 + 0.958758I$ $b = -0.128589 + 1.134404I$	$-2.52331 + 2.41202I$	$-0.04040 - 2.40524I$
$u = -0.247127 - 1.219381I$ $a = -0.116676 + 0.268220I$ $b = -1.31519 + 0.54925I$	$1.27336 - 8.27174I$	$2.51656 + 4.64497I$
$u = -0.247127 + 1.219381I$ $a = -0.116676 - 0.268220I$ $b = -1.31519 - 0.54925I$	$1.27336 + 8.27174I$	$2.51656 - 4.64497I$
$u = -0.224116 - 1.050255I$ $a = 0.669798 + 0.252970I$ $b = -0.370664 + 0.446189I$	$-1.70053 + 2.56932I$	$-2.56601 - 2.81775I$
$u = -0.224116 + 1.050255I$ $a = 0.669798 - 0.252970I$ $b = -0.370664 - 0.446189I$	$-1.70053 - 2.56932I$	$-2.56601 + 2.81775I$
$u = 0.211142 - 1.205463I$ $a = 0.162294 - 0.244515I$ $b = -1.013052 - 0.457090I$	$-3.82831 + 2.87392I$	$-1.89969 - 4.58625I$
$u = 0.211142 + 1.205463I$ $a = 0.162294 + 0.244515I$ $b = -1.013052 + 0.457090I$	$-3.82831 - 2.87392I$	$-1.89969 + 4.58625I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.335026 - 0.710399I$	$2.84065 + 0.69325I$	$7.34055 + 2.28046I$
$a = 1.72207 - 1.23343I$		
$b = 0.657840 + 0.399802I$		
$u = 0.335026 + 0.710399I$	$2.84065 - 0.69325I$	$7.34055 - 2.28046I$
$a = 1.72207 + 1.23343I$		
$b = 0.657840 - 0.399802I$		
$u = 0.346372 - 1.161379I$	$-5.73112 - 1.67042I$	$-4.83541 + 2.54634I$
$a = 0.593679 + 0.777762I$		
$b = -0.392677 + 0.759378I$		
$u = 0.346372 + 1.161379I$	$-5.73112 + 1.67042I$	$-4.83541 - 2.54634I$
$a = 0.593679 - 0.777762I$		
$b = -0.392677 - 0.759378I$		
$u = 0.366345 - 0.963903I$	$2.67401 + 0.67928I$	$6.04529 - 0.95119I$
$a = 1.251292 - 0.322417I$		
$b = 0.962476 + 0.815520I$		
$u = 0.366345 + 0.963903I$	$2.67401 - 0.67928I$	$6.04529 + 0.95119I$
$a = 1.251292 + 0.322417I$		
$b = 0.962476 - 0.815520I$		
$u = 0.436090 - 0.450755I$	$2.35203 - 0.54203I$	$3.52424 - 2.42131I$
$a = -3.04281 - 1.18729I$		
$b = 1.112596 - 0.136483I$		
$u = 0.436090 + 0.450755I$	$2.35203 + 0.54203I$	$3.52424 + 2.42131I$
$a = -3.04281 + 1.18729I$		
$b = 1.112596 + 0.136483I$		
$u = 0.444751 - 1.090507I$	$0.78414 - 3.63001I$	$59.1809 + 44.2903I$
$a = -1.01329 + 6.86779I$		
$b = 0.976673 + 0.016014I$		
$u = 0.444751 + 1.090507I$	$0.78414 + 3.63001I$	$59.1809 - 44.2903I$
$a = -1.01329 - 6.86779I$		
$b = 0.976673 - 0.016014I$		

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.470433 - 1.061194I$ $a = -1.87151 - 0.91795I$ $b = 1.208492 + 0.064583I$	$0.50502 - 3.35540I$	$-2.63473 + 4.84404I$
$u = 0.470433 + 1.061194I$ $a = -1.87151 + 0.91795I$ $b = 1.208492 - 0.064583I$	$0.50502 + 3.35540I$	$-2.63473 - 4.84404I$
$u = 0.489141$ $a = 7.66462$ $b = 1.04131$	3.44799	-43.6265
$u = 0.514985 - 0.680903I$ $a = -0.579773 + 0.461872I$ $b = 0.420336 - 1.009301I$	$3.23927 - 4.44956I$	$8.25775 + 7.58067I$
$u = 0.514985 + 0.680903I$ $a = -0.579773 - 0.461872I$ $b = 0.420336 + 1.009301I$	$3.23927 + 4.44956I$	$8.25775 - 7.58067I$
$u = 0.516306 - 1.147188I$ $a = -0.673430 - 0.126282I$ $b = -0.183109 - 0.870034I$	$-4.55999 - 6.45506I$	$-2.83924 + 5.04688I$
$u = 0.516306 + 1.147188I$ $a = -0.673430 + 0.126282I$ $b = -0.183109 + 0.870034I$	$-4.55999 + 6.45506I$	$-2.83924 - 5.04688I$
$u = 0.528068 - 1.083238I$ $a = -1.54121 - 1.95012I$ $b = 1.46024 - 0.88757I$	$4.03427 - 7.29529I$	$8.41284 + 8.16453I$
$u = 0.528068 + 1.083238I$ $a = -1.54121 + 1.95012I$ $b = 1.46024 + 0.88757I$	$4.03427 + 7.29529I$	$8.41284 - 8.16453I$
$u = 0.584181 - 1.160177I$ $a = 1.41110 + 1.54314I$ $b = -1.217140 + 0.473437I$	$-1.33313 - 11.33617I$	$2.10689 + 8.80278I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.584181 + 1.160177I$ $a = 1.41110 - 1.54314I$ $b = -1.217140 - 0.473437I$	$-1.33313 + 11.33617I$	$2.10689 - 8.80278I$
$u = 0.628529 - 0.365318I$ $a = -1.89811 - 0.16062I$ $b = 1.46936 + 0.72031I$	$6.10269 + 2.74373I$	$12.45226 - 3.77694I$
$u = 0.628529 + 0.365318I$ $a = -1.89811 + 0.16062I$ $b = 1.46936 - 0.72031I$	$6.10269 - 2.74373I$	$12.45226 + 3.77694I$
$u = 0.705586 - 0.829208I$ $a = 1.62621 + 1.10681I$ $b = -1.356995 - 0.278209I$	$8.66688 + 3.69608I$	$9.86468 - 2.04824I$
$u = 0.705586 + 0.829208I$ $a = 1.62621 - 1.10681I$ $b = -1.356995 + 0.278209I$	$8.66688 - 3.69608I$	$9.86468 + 2.04824I$
$u = 0.713273 - 0.766402I$ $a = 2.20075 + 0.64025I$ $b = -1.39436 + 0.36803I$	$8.84556 - 9.04187I$	$9.46130 + 7.31574I$
$u = 0.713273 + 0.766402I$ $a = 2.20075 - 0.64025I$ $b = -1.39436 - 0.36803I$	$8.84556 + 9.04187I$	$9.46130 - 7.31574I$
$u = 0.718324 - 0.192214I$ $a = 0.343599 - 0.323507I$ $b = -0.189188 + 0.732728I$	$-1.82969 + 1.80347I$	$-0.10246 - 1.52246I$
$u = 0.718324 + 0.192214I$ $a = 0.343599 + 0.323507I$ $b = -0.189188 - 0.732728I$	$-1.82969 - 1.80347I$	$-0.10246 + 1.52246I$
$u = 0.846818 - 0.313214I$ $a = 1.80160 - 0.13026I$ $b = -1.177357 - 0.405721I$	$1.20494 + 6.04817I$	$5.22565 - 5.84091I$
Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.846818 + 0.313214I$ $a = 1.80160 + 0.13026I$ $b = -1.177357 + 0.405721I$	$1.20494 - 6.04817I$	$5.22565 + 5.84091I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_5	$(u^{71} + 3u^{70} + \dots - 2u - 1)$
c_2	$(u^{71} + 35u^{70} + \dots - 6u^2 - 1)$
c_3	$(u^{71} + 3u^{70} + \dots + 4u + 1)$
c_4	$(u^{71} + u^{70} + \dots - 6u^3 + 1)$
c_6	$(u^{71} + 3u^{70} + \dots + 6566u + 1721)$
c_7	$(u^{71} + u^{70} + \dots - 6u^3 + 1)$
c_8	$(u^{71} + u^{70} + \dots + 20u - 1)$
c_9	$(u^{71} + 5u^{70} + \dots + 2242u - 127)$
c_{10}	$(u^{71} + 15u^{70} + \dots + 22856u + 7097)$
c_{11}	$(u^{71} + u^{70} + \dots + 20u - 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_5	$(y^{71} + 35y^{70} + \dots - 6y^2 - 1)$
c_2	$(y^{71} + 3y^{70} + \dots - 12y - 1)$
c_3	$(y^{71} + 3y^{70} + \dots - 52y - 1)$
c_4	$(y^{71} - 53y^{70} + \dots - 46y^2 - 1)$
c_6	$(y^{71} - 29y^{70} + \dots + 37791024y - 2961841)$
c_7	$(y^{71} - 53y^{70} + \dots - 46y^2 - 1)$
c_8	$(y^{71} - 49y^{70} + \dots - 76y - 1)$
c_9	$(y^{71} + 43y^{70} + \dots + 525684y - 16129)$
c_{10}	$(y^{71} + 91y^{70} + \dots - 2991356352y - 50367409)$
c_{11}	$(y^{71} - 49y^{70} + \dots - 76y - 1)$