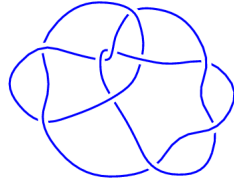
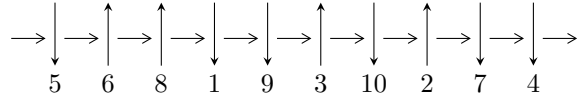


10₉₄ (K10a₉₁)

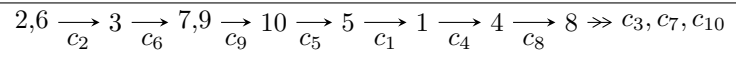


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{35} + u^{34} + \dots + 3u^2 - 1, -1.92548 \times 10^{23}u^{34} + 4.50591 \times 10^{24}u^{33} + \dots + 1.94056 \times 10^{26}b + 5.00911 \times 10^{26} \\ - 1.47187 \times 10^{25}u^{34} - 5.55497 \times 10^{25}u^{33} + \dots + 1.94056 \times 10^{26}a + 1.26325 \times 10^{26} \rangle$$

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>”

$$\begin{aligned} & \mathbf{I. } I_1^u = \\ & \langle u^{35} + u^{34} + \dots + 3u^2 - 1, -1.93 \times 10^{23} u^{34} + 4.51 \times 10^{24} u^{33} + \dots + 1.94 \times 10^{26} b + \\ & 5.01 \times 10^{25}, -1.47 \times 10^{25} u^{34} - 5.55 \times 10^{25} u^{33} + \dots + 1.94 \times 10^{26} a + 1.26 \times 10^{26} \rangle \end{aligned}$$

(i) Arc colorings

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

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

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

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

$$a_9 = \begin{pmatrix} 0.0758476u^{34} + 0.286255u^{33} + \dots - 2.05345u - 0.650973 \\ 0.000992225u^{34} - 0.0232196u^{33} + \dots + 1.94515u - 0.258127 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.207071u^{34} + 0.496531u^{33} + \dots - 2.86737u - 0.313795 \\ -u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 4.17860u^{34} + 10.2576u^{33} + \dots + 6.57083u + 7.30621 \\ 0.0762066u^{34} + 0.0320312u^{33} + \dots - 0.719210u + 0.551477 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 6.68171u^{34} + 13.7176u^{33} + \dots + 6.41454u + 8.47300 \\ -0.378893u^{34} - 0.258591u^{33} + \dots - 0.386101u - 0.293395 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -6.53158u^{34} - 10.3927u^{33} + \dots - 5.31388u - 1.03456 \\ -0.143069u^{34} - 0.242790u^{33} + \dots + 0.233712u - 0.348632 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0748554u^{34} + 0.309475u^{33} + \dots - 3.99860u - 0.392847 \\ 0.000992225u^{34} - 0.0232196u^{33} + \dots + 1.94515u - 0.258127 \end{pmatrix}$$

(ii) Obstruction class = -1

$$\begin{aligned} \text{(iii) Cusp Shapes} &= \frac{685604431393501191149801996}{194056291140393639670155049} u^{34} + \frac{1265614220419500138897629840}{194056291140393639670155049} u^{33} + \\ & \dots + \frac{1347136378071411012980246724}{194056291140393639670155049} u + \frac{476504741445014011926263206}{194056291140393639670155049} \end{aligned}$$

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.32253 - 0.58471I$		
$a = 0.555617 - 1.083367I$	$-7.4557 + 13.3116I$	$-5.56191 - 7.05476I$
$b = -1.16179 - 1.18148I$		
$u = -1.32253 + 0.58471I$		
$a = 0.555617 + 1.083367I$	$-7.4557 - 13.3116I$	$-5.56191 + 7.05476I$
$b = -1.16179 + 1.18148I$		
$u = -1.28980 - 0.70883I$		
$a = 0.085002 - 0.663986I$	$0.51201 + 4.13357I$	$-2.56649 - 6.25203I$
$b = -0.675701 - 0.598517I$		
$u = -1.28980 + 0.70883I$		
$a = 0.085002 + 0.663986I$	$0.51201 - 4.13357I$	$-2.56649 + 6.25203I$
$b = -0.675701 + 0.598517I$		
$u = -1.239282 - 0.234249I$		
$a = -0.406708 + 0.513046I$	$2.98343 + 0.70642I$	$1.79862 + 1.96555I$
$b = 0.780134 + 0.364822I$		
$u = -1.239282 + 0.234249I$		
$a = -0.406708 - 0.513046I$	$2.98343 - 0.70642I$	$1.79862 - 1.96555I$
$b = 0.780134 - 0.364822I$		
$u = -1.153346 - 0.400330I$		
$a = -0.560318 + 0.975567I$	$-2.83088 + 6.77803I$	$-3.49538 - 6.10276I$
$b = 1.33659 + 1.39229I$		
$u = -1.153346 + 0.400330I$		
$a = -0.560318 - 0.975567I$	$-2.83088 - 6.77803I$	$-3.49538 + 6.10276I$
$b = 1.33659 - 1.39229I$		
$u = -0.925847 - 0.149168I$		
$a = 0.69237 + 1.98607I$	$-0.118043 + 0.668153I$	$2.12828 + 10.66433I$
$b = -0.343369 + 0.493773I$		
$u = -0.925847 + 0.149168I$		
$a = 0.69237 - 1.98607I$	$-0.118043 - 0.668153I$	$2.12828 - 10.66433I$
$b = -0.343369 - 0.493773I$		

Solution to I_1^μ	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.886211 - 0.403329I$ $a = -0.395589 + 0.026121I$ $b = -1.09496 + 1.70151I$	$-7.88737 + 3.84000I$	$-8.41305 - 5.49307I$
$u = -0.886211 + 0.403329I$ $a = -0.395589 - 0.026121I$ $b = -1.09496 - 1.70151I$	$-7.88737 - 3.84000I$	$-8.41305 + 5.49307I$
$u = -0.508893 - 0.400402I$ $a = 1.31387 - 1.37047I$ $b = -1.57728 - 0.56731I$	$-8.87322 - 0.26521I$	$-9.98023 - 1.43782I$
$u = -0.508893 + 0.400402I$ $a = 1.31387 + 1.37047I$ $b = -1.57728 + 0.56731I$	$-8.87322 + 0.26521I$	$-9.98023 + 1.43782I$
$u = -0.093357 - 1.125481I$ $a = -0.601295 + 0.969793I$ $b = -0.735626 + 1.123217I$	$-11.27947 - 7.30532I$	$-9.07114 + 4.61200I$
$u = -0.093357 + 1.125481I$ $a = -0.601295 - 0.969793I$ $b = -0.735626 - 1.123217I$	$-11.27947 + 7.30532I$	$-9.07114 - 4.61200I$
$u = -0.082503 - 0.452801I$ $a = -0.841430 - 0.897374I$ $b = -0.348083 - 0.564419I$	$-0.134869 + 1.085583I$	$-2.08723 - 6.10429I$
$u = -0.082503 + 0.452801I$ $a = -0.841430 + 0.897374I$ $b = -0.348083 + 0.564419I$	$-0.134869 - 1.085583I$	$-2.08723 + 6.10429I$
$u = -0.064302 - 0.587556I$ $a = 1.58195 - 1.12504I$ $b = 0.504472 - 1.180242I$	$-5.91469 - 2.99202I$	$-7.69164 + 2.94469I$
$u = -0.064302 + 0.587556I$ $a = 1.58195 + 1.12504I$ $b = 0.504472 + 1.180242I$	$-5.91469 + 2.99202I$	$-7.69164 - 2.94469I$

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.167144 - 1.250920I$		
$a = 0.353770 + 0.562838I$	$-3.73588 + 3.17966I$	$-9.01884 - 7.80623I$
$b = 0.399400 + 0.679964I$		
$u = 0.167144 + 1.250920I$		
$a = 0.353770 - 0.562838I$	$-3.73588 - 3.17966I$	$-9.01884 + 7.80623I$
$b = 0.399400 - 0.679964I$		
$u = 0.463958 - 0.092112I$		
$a = -2.27468 - 0.41119I$	$-2.28660 + 0.00327I$	$-6.71199 + 0.85350I$
$b = 0.845374 - 0.090842I$		
$u = 0.463958 + 0.092112I$		
$a = -2.27468 + 0.41119I$	$-2.28660 - 0.00327I$	$-6.71199 - 0.85350I$
$b = 0.845374 + 0.090842I$		
$u = 0.911512 - 0.305208I$		
$a = 0.076946 + 0.554057I$	$-1.17815 - 2.75086I$	$-5.83679 + 7.59594I$
$b = 0.605384 + 1.144651I$		
$u = 0.911512 + 0.305208I$		
$a = 0.076946 - 0.554057I$	$-1.17815 + 2.75086I$	$-5.83679 - 7.59594I$
$b = 0.605384 - 1.144651I$		
$u = 0.917235 - 0.218298I$		
$a = 1.198315 - 0.162879I$	$-3.14805 + 0.11237I$	$-1.93831 + 1.19079I$
$b = 0.322177 + 0.266185I$		
$u = 0.917235 + 0.218298I$		
$a = 1.198315 + 0.162879I$	$-3.14805 - 0.11237I$	$-1.93831 - 1.19079I$
$b = 0.322177 - 0.266185I$		
$u = 1.03793$		
$a = 14.7138$	-4.96247	155.292
$b = -0.161473$		
$u = 1.185871 - 0.342420I$		
$a = 0.441712 + 0.819560I$	$3.42076 - 4.23935I$	$1.57284 + 6.50170I$
$b = -1.111956 + 0.867646I$		

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.185871 + 0.342420I$	$3.42076 + 4.23935I$	$1.57284 - 6.50170I$
$a = 0.441712 - 0.819560I$		
$b = -1.111956 - 0.867646I$		
$u = 1.30365 - 0.61580I$	$-0.17363 - 9.53352I$	$-2.89594 + 8.02980I$
$a = -0.319124 - 0.958070I$		
$b = 0.995035 - 0.894449I$		
$u = 1.30365 + 0.61580I$	$-0.17363 + 9.53352I$	$-2.89594 - 8.02980I$
$a = -0.319124 + 0.958070I$		
$b = 0.995035 + 0.894449I$		
$u = 1.59774 - 0.61668I$	$-6.16860 + 1.10468I$	$-14.8768 - 5.2183I$
$a = -0.257294 - 0.089867I$		
$b = -0.159067 - 0.606648I$		
$u = 1.59774 + 0.61668I$	$-6.16860 - 1.10468I$	$-14.8768 + 5.2183I$
$a = -0.257294 + 0.089867I$		
$b = -0.159067 + 0.606648I$		

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_4, c_{10}	$(u^{35} + 3u^{34} + \dots + 3u^2 - 1)$
c_2, c_6	$(u^{35} + u^{34} + \dots + 3u^2 - 1)$
c_3	$(u^{35} + 17u^{34} + \dots + 214u + 23)$
c_5	$(u^{35} + 13u^{34} + \dots + 12u + 7)$
c_7, c_9	$(u^{35} + u^{34} + \dots - 2u - 1)$
c_8	$(u^{35} + 3u^{34} + \dots + 4u + 1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_4, c_{10}	$(y^{35} - 37y^{34} + \dots + 6y - 1)$
c_2, c_6	$(y^{35} - 21y^{34} + \dots + 6y - 1)$
c_3	$(y^{35} - 233y^{34} + \dots + 5914y - 529)$
c_5	$(y^{35} - 237y^{34} + \dots + 942y - 49)$
c_7, c_9	$(y^{35} - 25y^{34} + \dots - 70y - 1)$
c_8	$(y^{35} + 3y^{34} + \dots + 34y - 1)$