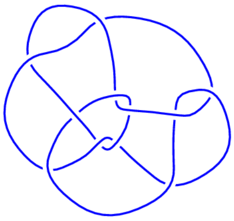
$11n_{134}$ ($K11n_{134}$)



1

Arc Sequences

↑	↓	↓	↑	↑	↑	↑	↑	↓	↑	↑
7	1	10	1	8	2	11	5	4	7	9

Solving Sequence

$$7,11 \xrightarrow[c_7]{} 2,8 \xrightarrow[c_1]{} 1 \xrightarrow[c_2]{} 3 \xrightarrow[c_6]{} 6 \xrightarrow[c_5]{} 5 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_3]{} 4 \xrightarrow[c_9]{} 9 \gg c_4, c_8, c_{11}$$

Representation Ideals

$$I = \bigcap_{i=1}^{3} I_i^u$$

$$I_1^u = \langle b^4 - 2b^3 + b + 1,\ b^2 - b + u,\ -b^2 + b + a + 1 \rangle$$

$$I_2^u = \langle u^7 + 3u^5 + u^4 + u^3 + 3u^2 - u + 1,\ u^5 + 2u^3 + u^2 + a - u + 2,\ -2u^6 - u^5 - 5u^4 - 4u^3 - u^2 + b - 4u \rangle$$

$$I_3^u = \langle u^{34} - u^{33} + \cdots + 223u + 11,$$

$$-2.32190 \times 10^{44}u^{33} + 5.14830 \times 10^{43}u^{32} + \cdots + 8.33489 \times 10^{45}b - 2.24805 \times 10^{45},$$

$$3.69177 \times 10^{45}u^{33} - 4.10987 \times 10^{45}u^{32} + \cdots + 4.58419 \times 10^{46}a + 7.72452 \times 10^{47} \rangle$$

There are 3 irreducible components with 45 representations.

[1]The knot diagram image is adapter from "C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, http://www.indiana.edu/ knotinfo"

I. $\boldsymbol{I_1^u = \langle b^4 - 2b^3 + b + 1,\ b^2 - b + u,\ -b^2 + b + a + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ -b^2 + b \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} b^2 - b - 1 \\ b \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} b^2 - b - 1 \\ -b^2 + 2b \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ b^2 - b - 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} b^2 - b \\ -b^2 + b \end{pmatrix}$$
$$a_6 = \begin{pmatrix} b^2 - b \\ -b^2 + b \end{pmatrix}$$
$$a_5 = \begin{pmatrix} b^2 - 2b + 1 \\ -b^3 + 2b^2 - 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} b^2 - b - 1 \\ -b^2 + 2b \end{pmatrix}$$
$$a_4 = \begin{pmatrix} b^2 - 2b + 1 \\ -b^3 + 2b^2 - 2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 2b^3 - 4b^2 + b + 1 \\ -b^3 + 2b^2 - b + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 2b^3 - 4b^2 + b + 1 \\ -b^3 + 2b^2 - b + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = -0.473561 - 0.444772I$	$1.64493 + 2.02988I$	$5.75416 - 8.47377I$
$u = -0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = -0.473561 + 0.444772I$	$1.64493 - 2.02988I$	$5.75416 + 8.47377I$
$u = -0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = \quad 1.47356 - 0.44477I$	$1.64493 - 2.02988I$	$13.74584 + 2.78456I$
$u = -0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = \quad 1.47356 + 0.44477I$	$1.64493 + 2.02988I$	$13.74584 - 2.78456I$

II. $\boldsymbol{I_2^u = \langle u^7 + 3u^5 + u^4 + u^3 + 3u^2 - u + 1,\ u^5 + 2u^3 + u^2 + a - u + 2,\ -2u^6 - u^5 - 5u^4 - 4u^3 - u^2 + b - 4u \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^5 - 2u^3 - u^2 + u - 2 \\ 2u^6 + u^5 + 5u^4 + 4u^3 + u^2 + 4u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^6 + 2u^5 + 3u^4 + 5u^3 + 2u^2 + u + 2 \\ -2u^6 - u^5 - 5u^4 - 3u^3 - 2u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^5 - u^4 - 3u^3 - 3u^2 - 2u - 1 \\ -u^6 - 2u^4 - u^3 + u^2 - 2u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^5 - 2u^3 - u^2 + u - 2 \\ 2u^6 + 2u^5 + 5u^4 + 6u^3 + 2u^2 + 3u + 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^5 - u^4 - 3u^3 - 2u^2 - u \\ -u^6 - u^4 + 2u^2 - 2u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 2u^6 + u^5 + 5u^4 + 4u^3 + 4u - 1 \\ -u^6 - 2u^4 + u^2 + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 2u^6 + u^5 + 5u^4 + 4u^3 + 4u - 1 \\ -u^6 - 2u^4 + u^2 + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.05920$ $a = -0.471275$ $b = -0.0837912$	2.66082	22.3155
$u = -0.01853 - 1.56068I$ $a = 0.695549 + 0.028024I$ $b = -1.71879 + 0.41737I$	$-5.24144 + 3.67154I$	$2.26281 - 7.80389I$
$u = -0.01853 + 1.56068I$ $a = 0.695549 - 0.028024I$ $b = -1.71879 - 0.41737I$	$-5.24144 - 3.67154I$	$2.26281 + 7.80389I$
$u = 0.257656 - 0.546312I$ $a = -1.147929 - 0.420828I$ $b = -0.03261 - 1.59526I$	$-0.57687 - 5.05320I$	$8.58977 + 8.09248I$
$u = 0.257656 + 0.546312I$ $a = -1.147929 + 0.420828I$ $b = -0.03261 + 1.59526I$	$-0.57687 + 5.05320I$	$8.58977 - 8.09248I$
$u = 0.290472 - 0.988874I$ $a = -0.31198 - 1.68286I$ $b = 0.793294 + 0.932250I$	$4.48789 - 1.14089I$	$4.48970 - 0.40326I$
$u = 0.290472 + 0.988874I$ $a = -0.31198 + 1.68286I$ $b = 0.793294 - 0.932250I$	$4.48789 + 1.14089I$	$4.48970 + 0.40326I$

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle u^{34} - u^{33} + \cdots + 223u + 11,\ -2.32\times10^{44}u^{33} + 5.15\times10^{43}u^{32} + \cdots + 8.33\times10^{45}b - 2.25\times10^{45},\ 3.69\times10^{45}u^{33} - 4.11\times10^{45}u^{32} + \cdots + 4.58\times10^{46}a + 7.72\times10^{47}\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0805326u^{33} + 0.0896531u^{32} + \cdots - 58.8143u - 16.8504 \\ 0.0278576u^{33} - 0.00617680u^{32} + \cdots + 15.2706u + 0.269715 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -0.0699058u^{33} + 0.0645796u^{32} + \cdots - 54.0427u - 14.6112 \\ -0.0418675u^{33} + 0.0709545u^{32} + \cdots + 1.56185u - 0.354007 \end{pmatrix}$$

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

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

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

$$a_5 = \begin{pmatrix} 0.0681426u^{33} - 0.0884559u^{32} + \cdots + 43.2625u + 11.3413 \\ 0.0327994u^{33} - 0.0141026u^{32} + \cdots + 24.7789u + 1.59675 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0805326u^{33} + 0.0896531u^{32} + \cdots - 58.8143u - 16.8504 \\ 0.0253178u^{33} - 0.00597640u^{32} + \cdots + 14.1226u + 0.169390 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0559432u^{33} - 0.101198u^{32} + \cdots + 22.2639u + 9.96804 \\ 0.0425057u^{33} - 0.0183210u^{32} + \cdots + 30.4752u + 1.87111 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.167638u^{33} + 0.192459u^{32} + \cdots - 103.012u - 24.1298 \\ 0.00860991u^{33} - 0.00519110u^{32} + \cdots + 5.05582u - 0.502284 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.167638u^{33} + 0.192459u^{32} + \cdots - 103.012u - 24.1298 \\ 0.00860991u^{33} - 0.00519110u^{32} + \cdots + 5.05582u - 0.502284 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.20680$ $a=\ \ 0.0229102$ $b=-0.309082$	2.39902	-9.40475
$u=-0.563765-1.003299I$ $a=\ \ 0.346581+0.213718I$ $b=-1.061007-0.721232I$	$-0.24666+2.01770I$	$4.06600-3.01899I$
$u=-0.563765+1.003299I$ $a=\ \ 0.346581-0.213718I$ $b=-1.061007+0.721232I$	$-0.24666-2.01770I$	$4.06600+3.01899I$
$u=-0.507321-0.832042I$ $a=\ \ 0.59647-1.40947I$ $b=-0.430828+0.791426I$	$5.26138+1.82293I$	$12.08014-4.65351I$
$u=-0.507321+0.832042I$ $a=\ \ 0.59647+1.40947I$ $b=-0.430828-0.791426I$	$5.26138-1.82293I$	$12.08014+4.65351I$
$u=-0.424431-0.480697I$ $a=-1.29745+0.87860I$ $b=-0.360469-0.623058I$	$1.94989+1.48394I$	$11.56368+0.88523I$
$u=-0.424431+0.480697I$ $a=-1.29745-0.87860I$ $b=-0.360469+0.623058I$	$1.94989-1.48394I$	$11.56368-0.88523I$
$u=-0.321774-0.391240I$ $a=-0.843663-0.126792I$ $b=\ \ 0.088896-0.631993I$	$0.417699+1.309314I$	$4.01409-5.53427I$
$u=-0.321774+0.391240I$ $a=-0.843663+0.126792I$ $b=\ \ 0.088896+0.631993I$	$0.417699-1.309314I$	$4.01409+5.53427I$
$u=-0.25509-1.72919I$ $a=\ \ 0.521499-0.195573I$ $b=-1.54407+0.28780I$	$-4.70800+5.46166I$	$4.56324-8.11055I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.25509+1.72919I$ $a=\ \ 0.521499+0.195573I$ $b=-1.54407-0.28780I$	$-4.70800-5.46166I$	$4.56324+8.11055I$
$u=-0.218497-0.654411I$ $a=-1.076141-0.331238I$ $b=\ \ 0.63419+1.67208I$	$-1.19710-4.22413I$	$2.51642+1.58423I$
$u=-0.218497+0.654411I$ $a=-1.076141+0.331238I$ $b=\ \ 0.63419-1.67208I$	$-1.19710+4.22413I$	$2.51642-1.58423I$
$u=-0.12009-1.49407I$ $a=-0.705285-0.090250I$ $b=\ \ 1.99892-0.19745I$	$-5.69136+2.93128I$	$-2.16566+0.03766I$
$u=-0.12009+1.49407I$ $a=-0.705285+0.090250I$ $b=\ \ 1.99892+0.19745I$	$-5.69136-2.93128I$	$-2.16566-0.03766I$
$u=-0.0612607$ $a=-14.0023$ $b=-0.515132$	1.42028	5.52282
$u=-0.03541-1.72852I$ $a=-0.857507+0.779137I$ $b=\ \ 1.79251-0.47467I$	$-10.20856-2.99636I$	$2.11867+2.22916I$
$u=-0.03541+1.72852I$ $a=-0.857507-0.779137I$ $b=\ \ 1.79251+0.47467I$	$-10.20856+2.99636I$	$2.11867-2.22916I$
$u=-0.03451-1.58243I$ $a=-0.856086+0.124269I$ $b=\ \ 1.74222-0.39783I$	$-4.73573+2.86800I$	$6.77612-0.77716I$
$u=-0.03451+1.58243I$ $a=-0.856086-0.124269I$ $b=\ \ 1.74222+0.39783I$	$-4.73573-2.86800I$	$6.77612+0.77716I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.00268-1.76509I$ $a=0.728771-0.653862I$ $b=-1.77297+0.49209I$	$-11.55113+3.90804I$	$1.18914-2.96330I$
$u=-0.00268+1.76509I$ $a=0.728771+0.653862I$ $b=-1.77297-0.49209I$	$-11.55113-3.90804I$	$1.18914+2.96330I$
$u=0.106891-0.794920I$ $a=0.440312-1.192643I$ $b=0.031368-0.880258I$	$-1.76083+4.62537I$	$1.34288-4.38948I$
$u=0.106891+0.794920I$ $a=0.440312+1.192643I$ $b=0.031368+0.880258I$	$-1.76083-4.62537I$	$1.34288+4.38948I$
$u=0.42724-1.62646I$ $a=-0.877338-0.522648I$ $b=2.11076+0.33915I$	$-11.26852-5.15956I$	$1.46171+2.86631I$
$u=0.42724+1.62646I$ $a=-0.877338+0.522648I$ $b=2.11076-0.33915I$	$-11.26852+5.15956I$	$1.46171-2.86631I$
$u=0.45939-1.70921I$ $a=0.915268+0.479980I$ $b=-2.07741-0.45415I$	$-10.3471-13.0489I$	$2.99134+6.41926I$
$u=0.45939+1.70921I$ $a=0.915268-0.479980I$ $b=-2.07741+0.45415I$	$-10.3471+13.0489I$	$2.99134-6.41926I$
$u=0.515707-0.964004I$ $a=0.522904+1.019360I$ $b=-1.379550+0.157107I$	$1.03541-1.94405I$	$-0.403250+0.742376I$
$u=0.515707+0.964004I$ $a=0.522904-1.019360I$ $b=-1.379550-0.157107I$	$1.03541+1.94405I$	$-0.403250-0.742376I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.867297 - 0.660290I$ $a = -0.902246 + 0.520939I$ $b = 0.648010 - 0.185694I$	$-4.16665 - 0.08364I$	$1.19426 + 1.11998I$
$u = 0.867297 + 0.660290I$ $a = -0.902246 - 0.520939I$ $b = 0.648010 + 0.185694I$	$-4.16665 + 0.08364I$	$1.19426 - 1.11998I$
$u = 1.241064 - 0.526290I$ $a = 0.651812 - 0.637629I$ $b = -0.508462 + 0.155388I$	$-3.08759 - 6.63875I$	$2.63219 + 6.12497I$
$u = 1.241064 + 0.526290I$ $a = 0.651812 + 0.637629I$ $b = -0.508462 - 0.155388I$	$-3.08759 + 6.63875I$	$2.63219 - 6.12497I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(u^2+u+1)^2(u^7+3u^5+u^4+u^3+3u^2-u+1)$ $(u^{34}+u^{33}+\cdots-223u+11)$
c_2	$(u^2+u+1)^2(u^7+6u^6+11u^5+3u^4-11u^3-13u^2-5u-1)$ $(u^{34}+39u^{33}+\cdots-30545u+121)$
c_3	$(u^4+u^3+3u^2+u+1)(u^7+2u^5+u^3+u^2+u+1)$ $(u^{34}+2u^{32}+\cdots-30u+11)$
c_4	$u^4(u^7-u^6+2u^5-4u^4+13u^3-28u^2+37u-21)$ $(u^{34}+6u^{33}+\cdots+88u-16)$
c_5	$(u^4+u^3+3u^2+u+1)(u^7+u^6+u^5+u^4+2u^2+1)$ $(u^{34}+3u^{33}+\cdots+73u+11)$
c_6	$(u^2-u+1)^2(u^7+3u^5-u^4+u^3-3u^2-u-1)$ $(u^{34}+u^{33}+\cdots-223u+11)$
c_7	$(u+1)^4(u^7-4u^6+6u^5-6u^4+5u^3-u^2-u+1)$ $(u^{34}+u^{33}+\cdots+33u-1)$
c_8	$(u^4-u^3+3u^2-u+1)(u^7-u^6+u^5-u^4-2u^2-1)$ $(u^{34}+3u^{33}+\cdots+73u+11)$
c_9	$(u^4-u^3+3u^2-u+1)(u^7+2u^5+u^3-u^2+u-1)$ $(u^{34}+2u^{32}+\cdots-30u+11)$
c_{10}	$(u-1)^4(u^7+4u^6+6u^5+6u^4+5u^3+u^2-u-1)$ $(u^{34}+u^{33}+\cdots+33u-1)$
c_{11}	$(u^4-2u^3+u+1)(u^7-u^6-u^5+4u^4-u^3-3u^2+3u-1)$ $(u^{34}-4u^{32}+\cdots+8u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_6	$(y^2+y+1)^2(y^7+6y^6+11y^5+3y^4-11y^3-13y^2-5y-1)$ $(y^{34}+39y^{33}+\cdots-30545y+121)$
c_2	$(y^2+y+1)^2(y^7-14y^6+63y^5-105y^4+101y^3-53y^2-y-1)$ $(y^{34}-89y^{33}+\cdots-1039040457y+14641)$
c_3, c_9	$(y^4+5y^3+9y^2+5y+1)(y^7+4y^6+6y^5+6y^4+5y^3+y^2-y-1)$ $(y^{34}+4y^{33}+\cdots-1054y+121)$
c_4	$y^4(y^7+3y^6+22y^5+54y^4+51y^3+10y^2+193y-441)$ $(y^{34}+18y^{33}+\cdots-5440y+256)$
c_5, c_8	$(y^4+5y^3+9y^2+5y+1)(y^7+y^6-y^5-5y^4-6y^3-6y^2-4y-1)$ $(y^{34}+29y^{33}+\cdots+1513y+121)$
c_7, c_{10}	$(y-1)^4(y^7-4y^6-2y^5+14y^4+9y^3+y^2+3y-1)$ $(y^{34}+3y^{33}+\cdots-1291y+1)$
c_{11}	$(y^4-4y^3+6y^2-y+1)(y^7-3y^6+\cdots+3y-1)$ $(y^{34}-8y^{33}+\cdots-28y+1)$