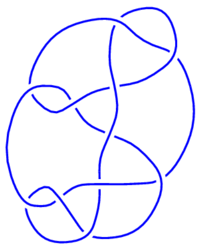
$11n_{54}$ ($K11n_{54}$)



[1]

Arc Sequences

$\rightarrow$	$\downarrow$	$\downarrow$	$\downarrow$	$\downarrow$	$\uparrow$	$\downarrow$	$\downarrow$	$\uparrow$	$\downarrow$	$\downarrow$	$\uparrow$ $\rightarrow$
	4	1	7	2	9	10	3	1	11	7	6

Solving Sequence

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

Representation Ideals

$$I = I_1^u \bigcap I_1^v$$

$$I_1^u = \langle u^{27} + u^{26} + \cdots + 128u + 64,\ 2.25883 \times 10^{34}u^{26} + 6.71521 \times 10^{34}u^{25} + \cdots + 4.81127 \times 10^{36}b - 1.68358 \times 10$$
$$- 3.23949 \times 10^{35}u^{26} - 1.41213 \times 10^{35}u^{25} + \cdots + 9.62254 \times 10^{36}a + 1.69205 \times 10^{37}\rangle$$

$$I_1^v = \langle v^4 - v^2 + b + 1,\ v^6 + v^5 - v^4 - 2v^3 + v + 1,\ a\rangle$$

There are 2 irreducible components with 33 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. $I_1^u =$
$\langle u^{27}+u^{26}+\cdots+128u+64,\ 2.26\times10^{34}u^{26}+6.72\times10^{34}u^{25}+\cdots+4.81\times10^{36}b-1.68\times10^{36},\ -3.24\times10^{35}u^{26}-1.41\times10^{35}u^{25}+\cdots+9.62\times10^{36}a+1.69\times10^{37}\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.0336657u^{26} + 0.0146752u^{25} + \cdots + 0.158474u - 1.75842 \\ -0.00469488u^{26} - 0.0139573u^{25} + \cdots + 4.87475u + 0.349924 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.0336657u^{26} + 0.0146752u^{25} + \cdots + 0.158474u - 1.75842 \\ -0.0142207u^{26} - 0.0154764u^{25} + \cdots + 5.15092u + 1.56531 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.0371213u^{26} - 0.0414337u^{25} + \cdots - 10.4975u - 2.60349 \\ -0.0413740u^{26} - 0.0246607u^{25} + \cdots + 2.44720u + 2.28218 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0118157u^{26} + 0.0162794u^{25} + \cdots + 4.26934u + 2.02994 \\ -0.00887124u^{26} + 0.00394903u^{25} + \cdots + 5.49294u + 2.17103 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0206870u^{26} + 0.0123303u^{25} + \cdots - 1.22360u - 0.141092 \\ -0.00887124u^{26} + 0.00394903u^{25} + \cdots + 5.49294u + 2.17103 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.00426849u^{26} + 0.0131278u^{25} + \cdots + 8.43473u + 3.91529 \\ 0.0160842u^{26} + 0.00315151u^{25} + \cdots - 4.16539u - 1.88536 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.00661984u^{26} - 0.00830158u^{25} + \cdots - 2.05650u - 1.94409 \\ -0.00835665u^{26} - 0.0259380u^{25} + \cdots - 2.78903u - 1.32397 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

(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
$u=-0.916936-0.740217I$ $a=-0.978245+0.140900I$ $b=\ \ 1.94712+0.16829I$	$1.53114-4.74698I$	$-2.05877+5.37624I$
$u=-0.916936+0.740217I$ $a=-0.978245-0.140900I$ $b=\ \ 1.94712-0.16829I$	$1.53114+4.74698I$	$-2.05877-5.37624I$
$u=-0.756621-0.053719I$ $a=\ \ 0.947761+0.339256I$ $b=-1.280090-0.221628I$	$-1.077413-0.093546I$	$-6.21440-0.06252I$
$u=-0.756621+0.053719I$ $a=\ \ 0.947761-0.339256I$ $b=-1.280090+0.221628I$	$-1.077413+0.093546I$	$-6.21440+0.06252I$
$u=-0.591296$ $a=\ \ 0.672828$ $b=-0.867515$	-1.09734	-8.57437
$u=-0.52916-1.90711I$ $a=\ \ 0.462320-0.451922I$ $b=-2.81680-2.09025I$	$9.8976-11.4401I$	$-3.60368+6.65783I$
$u=-0.52916+1.90711I$ $a=\ \ 0.462320+0.451922I$ $b=-2.81680+2.09025I$	$9.8976+11.4401I$	$-3.60368-6.65783I$
$u=-0.31974-1.83076I$ $a=-0.087922+0.626844I$ $b=\ \ 0.92863+2.70225I$	$5.98407-3.79755I$	$-6.46791+2.18250I$
$u=-0.31974+1.83076I$ $a=-0.087922-0.626844I$ $b=\ \ 0.92863-2.70225I$	$5.98407+3.79755I$	$-6.46791-2.18250I$
$u=-0.14157-2.04029I$ $a=-0.286400-0.546539I$ $b=\ \ 1.41202-2.19032I$	$10.52734+3.36992I$	$-2.71394-2.50695I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.14157 + 2.04029I$ $a = -0.286400 + 0.546539I$ $b = 1.41202 + 2.19032I$	$10.52734 - 3.36992I$	$-2.71394 + 2.50695I$
$u = -0.099608 - 0.648052I$ $a = 0.67781 - 1.53140I$ $b = 0.014762 - 1.397672I$	$-2.30226 - 0.55935I$	$-5.41913 - 0.15707I$
$u = -0.099608 + 0.648052I$ $a = 0.67781 + 1.53140I$ $b = 0.014762 + 1.397672I$	$-2.30226 + 0.55935I$	$-5.41913 + 0.15707I$
$u = -0.065099 - 0.869686I$ $a = 0.521552 + 1.307380I$ $b = -0.62639 + 1.84157I$	$-0.58075 + 6.65503I$	$-3.43691 - 7.46005I$
$u = -0.065099 + 0.869686I$ $a = 0.521552 - 1.307380I$ $b = -0.62639 - 1.84157I$	$-0.58075 - 6.65503I$	$-3.43691 + 7.46005I$
$u = 0.210916 - 0.867503I$ $a = 0.837971 + 0.172931I$ $b = 0.285706 - 0.077541I$	$1.66847 - 1.93992I$	$0.12713 + 2.72762I$
$u = 0.210916 + 0.867503I$ $a = 0.837971 - 0.172931I$ $b = 0.285706 + 0.077541I$	$1.66847 + 1.93992I$	$0.12713 - 2.72762I$
$u = 0.24190 - 2.02768I$ $a = -0.434808 - 0.207968I$ $b = 0.506970 - 0.092441I$	$12.17430 + 2.19817I$	$-0.63423 - 2.08830I$
$u = 0.24190 + 2.02768I$ $a = -0.434808 + 0.207968I$ $b = 0.506970 + 0.092441I$	$12.17430 - 2.19817I$	$-0.63423 + 2.08830I$
$u = 0.247086 - 0.712064I$ $a = 0.909883 + 0.972277I$ $b = -1.87921 - 0.63112I$	$-2.84916 + 1.60658I$	$-4.88146 - 5.04321I$

Solution to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.247086 + 0.712064I$ $a = 0.909883 - 0.972277I$ $b = -1.87921 + 0.63112I$	$-2.84916 - 1.60658I$	$-4.88146 + 5.04321I$
$u = 0.45786 - 1.94824I$ $a = 0.356806 - 0.323757I$ $b = -0.086723 + 0.461433I$	$11.82207 + 5.91141I$	$-1.03607 - 2.33228I$
$u = 0.45786 + 1.94824I$ $a = 0.356806 + 0.323757I$ $b = -0.086723 - 0.461433I$	$11.82207 - 5.91141I$	$-1.03607 + 2.33228I$
$u = 0.682025 - 0.833060I$ $a = -0.129773 + 0.803497I$ $b = 0.052629 + 0.131638I$	$2.76848 - 0.13713I$	$0.773547 + 0.780119I$
$u = 0.682025 + 0.833060I$ $a = -0.129773 - 0.803497I$ $b = 0.052629 - 0.131638I$	$2.76848 + 0.13713I$	$0.773547 - 0.780119I$
$u = 0.784593 - 0.468587I$ $a = -0.633364 - 1.013310I$ $b = 1.47514 + 0.10710I$	$-2.13464 - 3.70052I$	$-7.14700 + 4.32876I$
$u = 0.784593 + 0.468587I$ $a = -0.633364 + 1.013310I$ $b = 1.47514 - 0.10710I$	$-2.13464 + 3.70052I$	$-7.14700 - 4.32876I$

II. $I_1^v = \langle v^4 - v^2 + b + 1,\ v^6 + v^5 - v^4 - 2v^3 + v + 1,\ a\rangle$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ -v^4 + v^2 - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -v^5 + 2v^3 + v^2 - v - 1 \\ -v^4 + v^2 - 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} v \\ -v^2 + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -v^5 + v^3 + v^2 - v - 1 \\ -1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -v^5 + v^3 + v^2 - v \\ -1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} v^5 - v^3 - v^2 + v + 1 \\ 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} v^5 - v^3 - v^2 + v + 1 \\ -v \end{pmatrix}$$

$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -1.073950 - 0.558752I$ $a = 0$ $b = 0.573950 - 0.818891I$	$-1.64493 + 5.69302I$	$-6.76721 - 4.86918I$
$v = -1.073950 + 0.558752I$ $a = 0$ $b = 0.573950 + 0.818891I$	$-1.64493 - 5.69302I$	$-6.76721 + 4.86918I$
$v = -0.428243 - 0.664531I$ $a = 0$ $b = -1.000936 + 0.863088I$	$-3.53554 - 0.92430I$	$-12.63596 - 0.09369I$
$v = -0.428243 + 0.664531I$ $a = 0$ $b = -1.000936 - 0.863088I$	$-3.53554 + 0.92430I$	$-12.63596 + 0.09369I$
$v = 1.002193 - 0.295542I$ $a = 0$ $b = -0.573013 + 0.494098I$	$0.245672 - 0.924305I$	$-2.59683 + 0.69886I$
$v = 1.002193 + 0.295542I$ $a = 0$ $b = -0.573013 - 0.494098I$	$0.245672 + 0.924305I$	$-2.59683 - 0.69886I$

III. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(u-1)^6(u^{27}+7u^{26}+\cdots-5u-1)$
c_2	$(u+1)^6(u^{27}+3u^{26}+\cdots+5u+1)$
c_3, c_7	$u^6(u^{27}+u^{26}+\cdots+128u+64)$
c_4	$(u+1)^6(u^{27}+7u^{26}+\cdots-5u-1)$
c_5	$(u^6-u^5+\cdots-u+1)(u^{27}+2u^{26}+\cdots+2u-1)$
c_6	$(u^6+u^5+\cdots+u+1)(u^{27}+2u^{26}+\cdots+4u+1)$
c_8	$(u^6-u^5+\cdots-u+1)(u^{27}+8u^{26}+\cdots+16990u+565)$
c_9	$(u^6-3u^5+\cdots-u+1)(u^{27}+12u^{26}+\cdots+12u+1)$
c_{10}	$(u^6-u^5+\cdots-u+1)(u^{27}+2u^{26}+\cdots+4u+1)$
c_{11}	$(u^6-3u^5+\cdots-u+1)(u^{27}+6u^{26}+\cdots+48u+5)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_4	$(y-1)^6(y^{27}-3y^{26}+\cdots+5y-1)$
c_2	$(y-1)^6(y^{27}+49y^{26}+\cdots-23y-1)$
c_3, c_7	$y^6(y^{27}+39y^{26}+\cdots-28672y-4096)$
c_5	$(y^6-3y^5+\cdots-y+1)(y^{27}-36y^{26}+\cdots+12y-1)$
c_6, c_{10}	$(y^6-3y^5+\cdots-y+1)(y^{27}-12y^{26}+\cdots+12y-1)$
c_8	$(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $(y^{27}-72y^{26}+\cdots+171458760y-319225)$
c_9	$(y^6+y^5+\cdots+3y+1)(y^{27}+8y^{26}+\cdots+32y-1)$
c_{11}	$(y^6+y^5+\cdots+3y+1)(y^{27}-4y^{26}+\cdots+504y-25)$