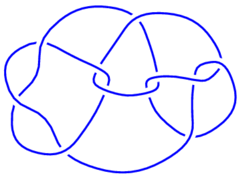
$11n_{26}$ $(K11n_{26})$



[1]

Arc Sequences

$$\rightarrow\downarrow_{4}\rightarrow\downarrow_{1}\rightarrow\downarrow_{6}\rightarrow\downarrow_{2}\rightarrow\downarrow_{10}\rightarrow\downarrow_{4}\rightarrow\uparrow_{5}\rightarrow\uparrow_{11}\rightarrow\downarrow_{6}\rightarrow\uparrow_{8}\rightarrow\uparrow_{9}\rightarrow$$

Solving Sequence

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

Representation Ideals

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

$$I_1^u = \langle b^5 - 2b^4 - b^3 + 2b^2 - 1,\ u - 1,\ b^3 - 2b^2 - b + a + 1\rangle$$
$$I_2^u = \langle u^3 + u^2 - 1,\ a,\ -u^2 + b - u - 1\rangle$$
$$I_3^u = \langle u^{28} + 7u^{27} + \cdots + 5u + 1,\ -201191203u^{27} - 1108083459u^{26} + \cdots + 533902792a - 71402890,$$
$$- 410351181u^{27} - 2261934046u^{26} + \cdots + 10678055584b + 861074247\rangle$$

There are 3 irreducible components with 36 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. $\boldsymbol{I^u_1 = \langle b^5 - 2b^4 - b^3 + 2b^2 - 1,\ u - 1,\ b^3 - 2b^2 - b + a + 1\rangle}$

(i) Arc colorings

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

(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
$u = 1.00000$ $a = -0.339110 + 0.822375I$ $b = -0.767660 - 0.216900I$	$-1.31583 + 1.53058I$	$-5.47076 - 5.40154I$
$u = 1.00000$ $a = -0.339110 - 0.822375I$ $b = -0.767660 + 0.216900I$	$-1.31583 - 1.53058I$	$-5.47076 + 5.40154I$
$u = 1.00000$ $a = 0.455697 - 1.200152I$ $b = 0.732208 - 0.471915I$	$4.22763 + 4.40083I$	$-0.88874 - 1.16747I$
$u = 1.00000$ $a = 0.455697 + 1.200152I$ $b = 0.732208 + 0.471915I$	$4.22763 - 4.40083I$	$-0.88874 + 1.16747I$
$u = 1.00000$ $a = 0.766826$ $b = 2.07090$	0.756147	−1.28099

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

(i) Arc colorings

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

(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
$u = -0.877439 - 0.744862I$ $a = 0$ $b = 0.337641 + 0.562280I$	$4.66906 - 2.82812I$	$4.21508 + 1.30714I$
$u = -0.877439 + 0.744862I$ $a = 0$ $b = 0.337641 - 0.562280I$	$4.66906 + 2.82812I$	$4.21508 - 1.30714I$
$u = 0.754878$ $a = 0$ $b = 2.32472$	0.531480	4.56984

III.

$$\boldsymbol{I_3^u = \langle u^{28} + 7u^{27} + \cdots + 5u + 1,\ -2.01 \times 10^8 u^{27} - 1.11 \times 10^9 u^{26} + \cdots + 5.34 \times 10^8 a - 7.14 \times 10^7,\ -4.10 \times 10^8 u^{27} - 2.26 \times 10^9 u^{26} + \cdots + 1.07 \times 10^9 b + 8.61 \times 10^8 \rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.376831u^{27} + 2.07544u^{26} + \cdots + 3.81852u + 0.133738 \\ 0.384294u^{27} + 2.11830u^{26} + \cdots - 1.74330u - 0.806396 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -1.25986u^{27} - 7.66743u^{26} + \cdots - 2.89643u - 0.200716 \\ -0.691498u^{27} - 4.38940u^{26} + \cdots - 3.69213u - 0.804996 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1.50549u^{27} - 9.60132u^{26} + \cdots - 5.83056u - 0.901213 \\ -0.937133u^{27} - 6.32329u^{26} + \cdots - 6.62625u - 1.50549 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.50549u^{27} - 9.60132u^{26} + \cdots - 5.83056u - 0.901213 \\ -0.700497u^{27} - 4.65784u^{26} + \cdots - 3.44608u - 0.568361 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} 1.98352u^{27} + 13.0710u^{26} + \cdots + 21.1333u + 4.92136 \\ -0.0464332u^{27} - 0.509563u^{26} + \cdots - 0.750264u + 0.0699424 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0496820u^{27} - 0.221917u^{26} + \cdots + 9.10463u + 2.37366 \\ -0.339712u^{27} - 2.56601u^{26} + \cdots - 3.10113u - 0.544675 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0496820u^{27} - 0.221917u^{26} + \cdots + 9.10463u + 2.37366 \\ -0.339712u^{27} - 2.56601u^{26} + \cdots - 3.10113u - 0.544675 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.21166 - 0.95824I$ $a = -0.992665 - 0.493458I$ $b = -2.40331 + 0.30645I$	$15.7181 - 11.7289I$	$1.85525 + 5.52053I$
$u = -1.21166 + 0.95824I$ $a = -0.992665 + 0.493458I$ $b = -2.40331 - 0.30645I$	$15.7181 + 11.7289I$	$1.85525 - 5.52053I$
$u = -1.08042 - 0.99381I$ $a = 0.826721 + 0.565549I$ $b = 2.27480 - 0.57676I$	$8.71794 - 6.87707I$	$0.35894 + 4.81213I$
$u = -1.08042 + 0.99381I$ $a = 0.826721 - 0.565549I$ $b = 2.27480 + 0.57676I$	$8.71794 + 6.87707I$	$0.35894 - 4.81213I$
$u = -1.03272 - 1.05137I$ $a = -0.661202 + 0.788679I$ $b = -0.635607 + 0.580507I$	$11.20706 - 3.83748I$	$1.59779 + 2.22620I$
$u = -1.03272 + 1.05137I$ $a = -0.661202 - 0.788679I$ $b = -0.635607 - 0.580507I$	$11.20706 + 3.83748I$	$1.59779 - 2.22620I$
$u = -0.95494 - 1.07229I$ $a = -0.706388 - 0.731921I$ $b = -1.85864 + 0.72430I$	$9.13873 - 0.66915I$	$1.241168 - 0.226691I$
$u = -0.95494 + 1.07229I$ $a = -0.706388 + 0.731921I$ $b = -1.85864 - 0.72430I$	$9.13873 + 0.66915I$	$1.241168 + 0.226691I$
$u = -0.894453 - 0.824309I$ $a = 0.381171 - 0.361966I$ $b = 0.335788 - 0.244659I$	$3.90340 - 3.06304I$	$-6.04954 + 3.66902I$
$u = -0.894453 + 0.824309I$ $a = 0.381171 + 0.361966I$ $b = 0.335788 + 0.244659I$	$3.90340 + 3.06304I$	$-6.04954 - 3.66902I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.84120 - 1.23310I$ $a = 0.705663 + 0.965443I$ $b = 1.43671 - 0.43273I$	$16.9931 + 3.8383I$	$3.05153 - 1.22806I$
$u = -0.84120 + 1.23310I$ $a = 0.705663 - 0.965443I$ $b = 1.43671 + 0.43273I$	$16.9931 - 3.8383I$	$3.05153 + 1.22806I$
$u = -0.744635 - 0.318856I$ $a = 1.04254 + 1.00447I$ $b = 0.743836 + 0.653886I$	$4.82268 - 5.10002I$	$4.96882 + 7.61668I$
$u = -0.744635 + 0.318856I$ $a = 1.04254 - 1.00447I$ $b = 0.743836 - 0.653886I$	$4.82268 + 5.10002I$	$4.96882 - 7.61668I$
$u = -0.414733 - 0.266521I$ $a = -1.76186 - 0.85665I$ $b = -0.816071 - 0.434174I$	$-0.04395 - 1.99045I$	$-0.01306 + 4.61620I$
$u = -0.414733 + 0.266521I$ $a = -1.76186 + 0.85665I$ $b = -0.816071 + 0.434174I$	$-0.04395 + 1.99045I$	$-0.01306 - 4.61620I$
$u = -0.136281 - 0.404052I$ $a = -0.05147 - 2.09880I$ $b = 0.515428 + 0.118133I$	$2.62794 - 0.46347I$	$2.20728 - 0.53901I$
$u = -0.136281 + 0.404052I$ $a = -0.05147 + 2.09880I$ $b = 0.515428 - 0.118133I$	$2.62794 + 0.46347I$	$2.20728 + 0.53901I$
$u = 0.220238 - 0.502777I$ $a = 1.54836 - 0.65502I$ $b = 1.107366 + 0.858066I$	$1.30841 + 1.56433I$	$2.39227 - 4.63205I$
$u = 0.220238 + 0.502777I$ $a = 1.54836 + 0.65502I$ $b = 1.107366 - 0.858066I$	$1.30841 - 1.56433I$	$2.39227 + 4.63205I$

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.423937 - 0.981765I$ $a = -1.43972 + 0.31762I$ $b = -1.60951 - 0.53420I$	$8.83250 + 3.91759I$	$2.90293 - 3.10234I$
$u = 0.423937 + 0.981765I$ $a = -1.43972 - 0.31762I$ $b = -1.60951 + 0.53420I$	$8.83250 - 3.91759I$	$2.90293 + 3.10234I$
$u = 0.668462$ $a = 0.455572$ $b = -0.336502$	-1.01341	-10.2409
$u = 0.917213$ $a = 0.380776$ $b = 4.19808$	0.303143	-47.2617
$u = 1.051397 - 0.149533I$ $a = -0.176815 + 0.574305I$ $b = -1.305116 - 0.429518I$	$-1.169037 + 0.736496I$	$-2.56323 + 2.93619I$
$u = 1.051397 + 0.149533I$ $a = -0.176815 - 0.574305I$ $b = -1.305116 + 0.429518I$	$-1.169037 - 0.736496I$	$-2.56323 - 2.93619I$
$u = 1.322623 - 0.396919I$ $a = 0.367492 - 0.981366I$ $b = 1.283548 - 0.368371I$	$5.47968 + 1.56446I$	$1.30115 - 0.62804I$
$u = 1.322623 + 0.396919I$ $a = 0.367492 + 0.981366I$ $b = 1.283548 + 0.368371I$	$5.47968 - 1.56446I$	$1.30115 + 0.62804I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(u-1)^5(u^3+u^2-1)(u^{28}+7u^{27}+\cdots+5u+1)$
c_2	$(u+1)^5(u^3+u^2+2u+1)(u^{28}+5u^{27}+\cdots-3u+1)$
c_3, c_6	$u^5(u^3-u^2+2u-1)(u^{28}+2u^{27}+\cdots-24u^2-32)$
c_4	$(u+1)^5(u^3+u^2-1)(u^{28}+7u^{27}+\cdots+5u+1)$
c_5	$u^3(u^5+u^4+\cdots+u+1)(u^{28}+2u^{27}+\cdots+20u+8)$
c_7	$(u^3-3u^2+2u+1)(u^5-3u^4+\cdots-u+1)(u^{28}+3u^{27}+\cdots-u-1)$
c_8	$(u+1)^3(u^5-u^4+\cdots+u+1)(u^{28}+5u^{27}+\cdots-8u-1)$
c_9	$u^3(u^5-u^4+\cdots+u-1)(u^{28}+2u^{27}+\cdots+20u+8)$
c_{10}	$(u+1)^3(u^5+u^4+\cdots+u-1)(u^{28}+5u^{27}+\cdots-8u-1)$
c_{11}	$(u-1)^3(u^5+u^4+\cdots+u-1)(u^{28}+5u^{27}+\cdots-8u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_4	$(y-1)^5(y^3-y^2+2y-1)(y^{28}-5y^{27}+\cdots+3y+1)$
c_2	$(y-1)^5(y^3+3y^2+2y-1)(y^{28}+43y^{27}+\cdots+3y+1)$
c_3, c_6	$y^5(y^3+3y^2+2y-1)(y^{28}+36y^{27}+\cdots+1536y+1024)$
c_5, c_9	$y^3(y^5+3y^4+\cdots-y-1)(y^{28}+24y^{27}+\cdots-848y+64)$
c_7	$(y^3-5y^2+10y-1)(y^5-y^4+8y^3-3y^2+3y-1)$ $(y^{28}-37y^{27}+\cdots-35y+1)$
c_8, c_{10}, c_{11}	$(y-1)^3(y^5-5y^4+\cdots-y-1)(y^{28}-31y^{27}+\cdots-128y+1)$