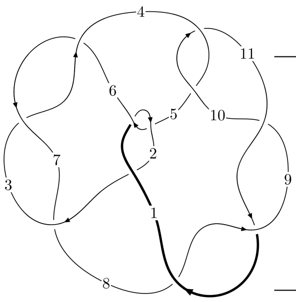
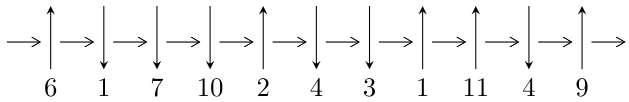
$11n_{100}$ ($K11n_{100}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$I_1^u = \langle 3u^{20} + 3u^{19} + \cdots + 4b + 4,\ -2u^{21} - 4u^{20} + \cdots + 4a - 8,\ u^{22} + 2u^{21} + \cdots + u + 2\rangle$$
$$I_2^u = \langle u^5 + u^3 + b + u - 1,\ -u^5 - u^4 - u^3 - u^2 + a - 2u - 1,\ u^6 + u^4 + 2u^2 + 1\rangle$$
$$I_3^u = \langle b + a - u + 1,\ a^2 - au + 2a + 1,\ u^2 - u + 1\rangle$$
$$I_4^u = \langle b + u - 2,\ a - u,\ u^2 - u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 34 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$\boldsymbol{I_1^u = \langle 3u^{20}+3u^{19}+\cdots+4b+4,\ -2u^{21}-4u^{20}+\cdots+4a-8,\ u^{22}+2u^{21}+\cdots+u+2\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{2}u^{21} + u^{20} + \cdots + \frac{5}{4}u + 2 \\ -\frac{3}{4}u^{20} - \frac{3}{4}u^{19} + \cdots + \frac{3}{2}u - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{4}u^{21} + u^{19} + \cdots + \frac{1}{4}u - 1 \\ -\frac{3}{4}u^{21} - u^{20} + \cdots + \frac{1}{2}u - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{1}{4}u^{21} + u^{19} + \cdots + \frac{1}{4}u - 1 \\ -\frac{1}{4}u^{21} - \frac{3}{4}u^{19} + \cdots + \frac{3}{2}u^2 + \frac{1}{2}u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{1}{4}u^{18} + \frac{3}{4}u^{16} + \cdots + \frac{1}{2}u + \frac{1}{2} \\ -\frac{1}{4}u^{18} - \frac{3}{4}u^{16} + \cdots - \frac{3}{4}u^2 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^6 - u^4 - 2u^2 - 1 \\ u^6 + u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -2u^{21} - 4u^{20} - 8u^{19} - 12u^{18} - 18u^{17} - 30u^{16} - 32u^{15} - 46u^{14} - 36u^{13} - 54u^{12} - 44u^{11} - 64u^{10} - 38u^9 - 42u^8 - 26u^7 - 46u^6 - 24u^5 - 18u^4 + 10u^3 + 6u^2 + 8u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{22} - u^{21} + \cdots + 4u + 1$
c_2	$u^{22} + 3u^{21} + \cdots + 24u + 1$
c_3, c_6, c_7	$u^{22} - u^{21} + \cdots + 10u + 1$
c_4, c_{10}	$u^{22} - 2u^{21} + \cdots - u + 2$
c_8, c_9, c_{11}	$u^{22} - 8u^{21} + \cdots - 19u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{22} + 3y^{21} + \cdots + 24y + 1$
c_2	$y^{22} + 39y^{21} + \cdots + 112y + 1$
c_3, c_6, c_7	$y^{22} + 31y^{21} + \cdots + 56y + 1$
c_4, c_{10}	$y^{22} + 8y^{21} + \cdots + 19y + 4$
c_8, c_9, c_{11}	$y^{22} + 12y^{21} + \cdots + 623y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.100185 + 1.004210I$ $a = 0.599236 + 0.939946I$ $b = -0.636317 - 0.511584I$	$3.57528 - 1.09357I$	$5.97662 + 1.94696I$
$u = -0.100185 - 1.004210I$ $a = 0.599236 - 0.939946I$ $b = -0.636317 + 0.511584I$	$3.57528 + 1.09357I$	$5.97662 - 1.94696I$
$u = -0.871760 + 0.414642I$ $a = -0.620508 - 0.603007I$ $b = 0.833056 - 0.720277I$	$7.32664 + 1.36370I$	$-0.05052 - 1.94758I$
$u = -0.871760 - 0.414642I$ $a = -0.620508 + 0.603007I$ $b = 0.833056 + 0.720277I$	$7.32664 - 1.36370I$	$-0.05052 + 1.94758I$
$u = 0.898472 + 0.557159I$ $a = 1.76169 + 0.04754I$ $b = -1.32483 - 1.39331I$	$6.44298 + 5.66281I$	$-0.84387 - 2.45088I$
$u = 0.898472 - 0.557159I$ $a = 1.76169 - 0.04754I$ $b = -1.32483 + 1.39331I$	$6.44298 - 5.66281I$	$-0.84387 + 2.45088I$
$u = -0.665247 + 0.564550I$ $a = 1.49996 - 0.51683I$ $b = -0.16586 + 1.42901I$	$-0.94737 - 2.13228I$	$-3.49508 + 3.26961I$
$u = -0.665247 - 0.564550I$ $a = 1.49996 + 0.51683I$ $b = -0.16586 - 1.42901I$	$-0.94737 + 2.13228I$	$-3.49508 - 3.26961I$
$u = -0.733981 + 0.868553I$ $a = -0.907314 - 0.753290I$ $b = 0.983819 + 0.049852I$	$-4.65093 + 2.79195I$	$-9.45575 - 3.06805I$
$u = -0.733981 - 0.868553I$ $a = -0.907314 + 0.753290I$ $b = 0.983819 - 0.049852I$	$-4.65093 - 2.79195I$	$-9.45575 + 3.06805I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.765248 + 0.888811I$ $a = -0.797359 + 0.717329I$ $b = 1.52476 + 0.32014I$	$-1.42494 - 2.89189I$	$2.45935 + 2.97630I$
$u = 0.765248 - 0.888811I$ $a = -0.797359 - 0.717329I$ $b = 1.52476 - 0.32014I$	$-1.42494 + 2.89189I$	$2.45935 - 2.97630I$
$u = -0.616205 + 1.023520I$ $a = -0.42505 + 1.35805I$ $b = -1.31664 - 1.90123I$	$0.39802 + 7.14623I$	$-0.40139 - 7.68801I$
$u = -0.616205 - 1.023520I$ $a = -0.42505 - 1.35805I$ $b = -1.31664 + 1.90123I$	$0.39802 - 7.14623I$	$-0.40139 + 7.68801I$
$u = -0.057721 + 1.217230I$ $a = 0.180750 - 1.262320I$ $b = -0.541329 + 0.344642I$	$13.19150 + 3.89903I$	$4.72901 - 2.42961I$
$u = -0.057721 - 1.217230I$ $a = 0.180750 + 1.262320I$ $b = -0.541329 - 0.344642I$	$13.19150 - 3.89903I$	$4.72901 + 2.42961I$
$u = -0.623287 + 1.124510I$ $a = -0.138066 - 0.552037I$ $b = 1.74630 + 0.37098I$	$9.48603 + 4.13683I$	$2.53393 - 2.55439I$
$u = -0.623287 - 1.124510I$ $a = -0.138066 + 0.552037I$ $b = 1.74630 - 0.37098I$	$9.48603 - 4.13683I$	$2.53393 + 2.55439I$
$u = 0.700819 + 1.100120I$ $a = 0.07522 - 1.65631I$ $b = -2.18014 + 1.42172I$	$8.10703 - 11.57360I$	$0.88963 + 6.62056I$
$u = 0.700819 - 1.100120I$ $a = 0.07522 + 1.65631I$ $b = -2.18014 - 1.42172I$	$8.10703 + 11.57360I$	$0.88963 - 6.62056I$

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.303847+0.375828I$		
$a=$	$0.521447+0.925816I$	$-0.380875-1.140110I$	$-4.34193+6.22750I$
$b=$	$0.577176+0.274527I$		
$u=$	$0.303847-0.375828I$		
$a=$	$0.521447-0.925816I$	$-0.380875+1.140110I$	$-4.34193-6.22750I$
$b=$	$0.577176-0.274527I$		

II.

$$\boldsymbol{I^u_2 = \langle u^5 + u^3 + b + u - 1,\ -u^5 - u^4 - u^3 - u^2 + a - 2u - 1,\ u^6 + u^4 + 2u^2 + 1\rangle}$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^5 + u^4 + u^3 + u^2 + 2u + 1 \\ -u^5 - u^3 - u + 1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -u^4 - 1 \\ u^5 + u^3 - u^2 + 2u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^4 - 1 \\ u^5 + u^4 + u^3 + 2u + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^5 + u^3 + 2u \\ -u^5 + u^4 - u^3 - u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u^4 + u^2 + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^4 + 4u^2 + 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_6, c_7	$(u^2+1)^3$
c_2	$(u+1)^6$
c_4, c_{10}	$u^6+u^4+2u^2+1$
c_8, c_9	$(u^3+u^2+2u+1)^2$
c_{11}	$(u^3-u^2+2u-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_6, c_7	$(y+1)^6$
c_2	$(y-1)^6$
c_4, c_{10}	$(y^3+y^2+2y+1)^2$
c_8, c_9, c_{11}	$(y^3+3y^2+2y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.744862 + 0.877439I$ $a = -1.43972 + 1.40722I$ $b = 2.30714 + 0.21508I$	$-3.02413 - 2.82812I$	$-3.50976 + 2.97945I$
$u = 0.744862 - 0.877439I$ $a = -1.43972 - 1.40722I$ $b = 2.30714 - 0.21508I$	$-3.02413 + 2.82812I$	$-3.50976 - 2.97945I$
$u = -0.744862 + 0.877439I$ $a = -0.315159 - 0.082503I$ $b = -0.307141 + 0.215080I$	$-3.02413 + 2.82812I$	$-3.50976 - 2.97945I$
$u = -0.744862 - 0.877439I$ $a = -0.315159 + 0.082503I$ $b = -0.307141 - 0.215080I$	$-3.02413 - 2.82812I$	$-3.50976 + 2.97945I$
$u = 0.754878I$ $a = 0.75488 + 1.32472I$ $b = 1.000000 - 0.569840I$	1.11345	3.01950
$u = -0.754878I$ $a = 0.75488 - 1.32472I$ $b = 1.000000 + 0.569840I$	1.11345	3.01950

III. $I_3^u = \langle b + a - u + 1,\ a^2 - au + 2a + 1,\ u^2 - u + 1\rangle$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ -u+1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} a \\ -a+u-1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u-1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -au+a-u+1 \\ -1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -au+a-u+1 \\ au+u-1 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ -u+1 \end{pmatrix}$$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_6, c_7	$u^4 - u^3 + 2u^2 - 2u + 1$
c_2	$u^4 + 3u^3 + 2u^2 + 1$
c_4, c_{10}	$(u^2 + u + 1)^2$
c_8, c_9, c_{11}	$(u^2 - u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_6, c_7	$y^4 + 3y^3 + 2y^2 + 1$
c_2	$y^4 - 5y^3 + 6y^2 + 4y + 1$
c_4, c_8, c_9 c_{10}, c_{11}	$(y^2 + y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.378256 - 0.440597I$ $b = -0.121744 + 1.306620I$	$-2.02988I$	$0. + 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -1.12174 + 1.30662I$ $b = 0.621744 - 0.440597I$	$-2.02988I$	$0. + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.378256 + 0.440597I$ $b = -0.121744 - 1.306620I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -1.12174 - 1.30662I$ $b = 0.621744 + 0.440597I$	$2.02988I$	$0. - 3.46410I$

IV. $I_4^u = \langle b + u - 2,\ a - u,\ u^2 - u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_6 c_7, c_{10}	$u^2 + u + 1$
c_8, c_9, c_{11}	$u^2 - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_6 c_7, c_8, c_9 c_{10}, c_{11}	$y^2 + y + 1$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.500000 + 0.866025I$		
$a =$	$0.500000 + 0.866025I$	$-2.02988I$	$0. + 3.46410I$
$b =$	$1.50000 - 0.86603I$		
$u =$	$0.500000 - 0.866025I$		
$a =$	$0.500000 - 0.866025I$	$2.02988I$	$0. - 3.46410I$
$b =$	$1.50000 + 0.86603I$		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$((u^2+1)^3)(u^2+u+1)(u^4-u^3+\cdots-2u+1)(u^{22}-u^{21}+\cdots+4u+1)$
c_2	$((u+1)^6)(u^2+u+1)(u^4+3u^3+2u^2+1)(u^{22}+3u^{21}+\cdots+24u+1)$
c_3, c_6, c_7	$((u^2+1)^3)(u^2+u+1)(u^4-u^3+\cdots-2u+1)(u^{22}-u^{21}+\cdots+10u+1)$
c_4, c_{10}	$((u^2+u+1)^3)(u^6+u^4+2u^2+1)(u^{22}-2u^{21}+\cdots-u+2)$
c_8, c_9	$((u^2-u+1)^3)(u^3+u^2+2u+1)^2(u^{22}-8u^{21}+\cdots-19u+4)$
c_{11}	$((u^2-u+1)^3)(u^3-u^2+2u-1)^2(u^{22}-8u^{21}+\cdots-19u+4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y+1)^6)(y^2+y+1)(y^4+3y^3+2y^2+1)(y^{22}+3y^{21}+\cdots+24y+1)$
c_2	$(y-1)^6(y^2+y+1)(y^4-5y^3+6y^2+4y+1)$ $\cdot\,(y^{22}+39y^{21}+\cdots+112y+1)$
c_3, c_6, c_7	$((y+1)^6)(y^2+y+1)(y^4+3y^3+2y^2+1)(y^{22}+31y^{21}+\cdots+56y+1)$
c_4, c_{10}	$((y^2+y+1)^3)(y^3+y^2+2y+1)^2(y^{22}+8y^{21}+\cdots+19y+4)$
c_8, c_9, c_{11}	$((y^2+y+1)^3)(y^3+3y^2+2y-1)^2(y^{22}+12y^{21}+\cdots+623y+16)$