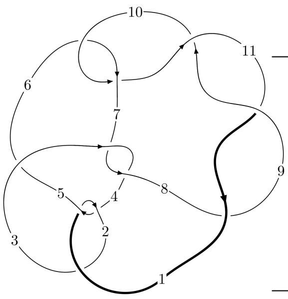
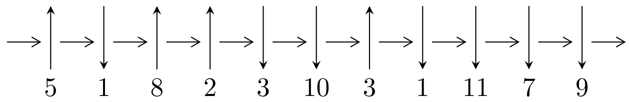
$11n_{12}$ ($K11n_{12}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$1,8 \underset{c_8}{\longrightarrow} 4,9 \underset{c_3}{\longrightarrow} 3 \underset{c_2}{\longrightarrow} 2 \underset{c_4}{\longrightarrow} 5 \underset{c_5}{\longrightarrow} 6 \underset{c_7}{\longrightarrow} 7 \underset{c_{11}}{\longrightarrow} 11 \underset{c_{10}}{\longrightarrow} 10 \longrightarrow\!\!\!\!\rightarrow c_1, c_6, c_9$$

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

$$I_1^u = \langle -4u^{11} - 85u^{10} + \cdots + 8858b - 4180,\ -5021u^{11} + 9565u^{10} + \cdots + 17716a + 23565,$$
$$u^{12} - u^{11} + 12u^{10} - 11u^9 + 47u^8 - 37u^7 + 56u^6 - 30u^5 - 12u^4 + 12u^3 - u + 1\rangle$$
$$I_2^u = \langle b,\ u^2a + a^2 - au + 2u^2 + 2a - u + 3,\ u^3 - u^2 + 2u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 18 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. $I^u_1 = \langle -4u^{11} - 85u^{10} + \cdots + 8858b - 4180,\ -5021u^{11} + 9565u^{10} + \cdots + 17716a + 23565,\ u^{12} - u^{11} + \cdots - u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.283416u^{11} - 0.539907u^{10} + \cdots + 0.840596u - 1.33015 \\ 0.000451569u^{11} + 0.00959585u^{10} + \cdots + 0.903251u + 0.471890 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.282965u^{11} - 0.549503u^{10} + \cdots - 0.0626552u - 1.80204 \\ 0.000451569u^{11} + 0.00959585u^{10} + \cdots + 0.903251u + 0.471890 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.282965u^{11} - 0.549503u^{10} + \cdots - 0.0626552u - 1.80204 \\ 0.0559381u^{11} + 0.00118537u^{10} + \cdots + 1.45275u + 0.205351 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.658106u^{11} + 0.452755u^{10} + \cdots - 1.93836u - 0.720422 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.00203206u^{11} - 0.206819u^{10} + \cdots - 2.18537u + 1.12350 \\ 0.207496u^{11} - 0.340709u^{10} + \cdots - 1.20603u + 0.333371 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.128584u^{11} + 0.142583u^{10} + \cdots + 1.17419u - 0.870625 \\ -0.204787u^{11} + 0.398284u^{10} + \cdots + 1.12554u - 0.00203206 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{56005}{17716}u^{11} - \frac{11673}{4429}u^{10} + \frac{166280}{4429}u^9 - \frac{127032}{4429}u^8 + \frac{2558331}{17716}u^7 - \frac{418885}{4429}u^6 + \frac{726025}{4429}u^5 - \frac{1302141}{17716}u^4 - \frac{815229}{17716}u^3 + \frac{405337}{17716}u^2 + \frac{46603}{8858}u - \frac{28579}{8858}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{12} + 4u^{11} + \cdots + 2u + 1$
c_2	$u^{12} + 14u^{10} + \cdots + 10u + 1$
c_3, c_7	$u^{12} + u^{11} + \cdots + 288u + 64$
c_5	$u^{12} - 4u^{11} + \cdots + 532u + 193$
c_6, c_{10}	$u^{12} + 3u^{11} + 4u^{10} + u^9 + u^8 + 7u^7 + 12u^6 + 6u^5 + u + 1$
c_8, c_9, c_{11}	$u^{12} + u^{11} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{12} + 14y^{10} + \cdots + 10y + 1$
c_2	$y^{12} + 28y^{11} + \cdots - 66y + 1$
c_3, c_7	$y^{12} - 35y^{11} + \cdots - 9216y + 4096$
c_5	$y^{12} + 56y^{11} + \cdots + 602074y + 37249$
c_6, c_{10}	$y^{12} - y^{11} + \cdots - y + 1$
c_8, c_9, c_{11}	$y^{12} + 23y^{11} + \cdots - y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.625204 + 0.231089I$ $a = 0.161222 + 0.490070I$ $b = 0.412005 + 0.431173I$	$-1.40636 - 0.34980I$	$-7.54487 + 0.48017I$
$u = 0.625204 - 0.231089I$ $a = 0.161222 - 0.490070I$ $b = 0.412005 - 0.431173I$	$-1.40636 + 0.34980I$	$-7.54487 - 0.48017I$
$u = -0.449650 + 0.155107I$ $a = -1.84569 + 2.79630I$ $b = -0.674003 + 1.032060I$	$1.31906 - 1.56861I$	$1.73907 + 2.71444I$
$u = -0.449650 - 0.155107I$ $a = -1.84569 - 2.79630I$ $b = -0.674003 - 1.032060I$	$1.31906 + 1.56861I$	$1.73907 - 2.71444I$
$u = 0.170188 + 0.372008I$ $a = -1.72486 + 0.94221I$ $b = 0.737368 - 0.073970I$	$-0.55164 - 2.71818I$	$-0.33339 + 6.77292I$
$u = 0.170188 - 0.372008I$ $a = -1.72486 - 0.94221I$ $b = 0.737368 + 0.073970I$	$-0.55164 + 2.71818I$	$-0.33339 - 6.77292I$
$u = 0.18845 + 1.62161I$ $a = 0.231111 + 0.902812I$ $b = 0.359686 + 1.355750I$	$4.35182 - 3.22757I$	$0.42641 + 2.31513I$
$u = 0.18845 - 1.62161I$ $a = 0.231111 - 0.902812I$ $b = 0.359686 - 1.355750I$	$4.35182 + 3.22757I$	$0.42641 - 2.31513I$
$u = -0.19909 + 2.16177I$ $a = -2.12976 - 0.49437I$ $b = -3.33668 - 0.28827I$	$-18.9549 + 0.4085I$	$0.320898 + 0.107074I$
$u = -0.19909 - 2.16177I$ $a = -2.12976 + 0.49437I$ $b = -3.33668 + 0.28827I$	$-18.9549 - 0.4085I$	$0.320898 - 0.107074I$

Solutions to I_1^u		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.16491+2.16925I$		
$a=$	$1.80797-0.87122I$	$-19.3015-8.0703I$	$-0.10811+3.87488I$
$b=$	$3.00162-0.87325I$		
$u=$	$0.16491-2.16925I$		
$a=$	$1.80797+0.87122I$	$-19.3015+8.0703I$	$-0.10811-3.87488I$
$b=$	$3.00162+0.87325I$		

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3au - 2u^2 + a + 3u - 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2 + y + 1)^3$
c_3, c_7	y^6
c_6, 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
$u = 0.215080 + 1.307140I$ $a = -0.706350 + 0.266290I$ $b = 0$	$3.02413 - 4.85801I$	$-2.23639 + 5.66123I$
$u = 0.215080 + 1.307140I$ $a = 0.583789 + 0.478572I$ $b = 0$	$3.02413 - 0.79824I$	$-0.946254 + 0.677361I$
$u = 0.215080 - 1.307140I$ $a = -0.706350 - 0.266290I$ $b = 0$	$3.02413 + 4.85801I$	$-2.23639 - 5.66123I$
$u = 0.215080 - 1.307140I$ $a = 0.583789 - 0.478572I$ $b = 0$	$3.02413 + 0.79824I$	$-0.946254 - 0.677361I$
$u = 0.569840$ $a = -0.87744 + 1.51977I$ $b = 0$	$-1.11345 + 2.02988I$	$-5.31735 - 1.07831I$
$u = 0.569840$ $a = -0.87744 - 1.51977I$ $b = 0$	$-1.11345 - 2.02988I$	$-5.31735 + 1.07831I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^3)(u^{12}+4u^{11}+\cdots+2u+1)$
c_2	$((u^2+u+1)^3)(u^{12}+14u^{10}+\cdots+10u+1)$
c_3, c_7	$u^6(u^{12}+u^{11}+\cdots+288u+64)$
c_4	$((u^2-u+1)^3)(u^{12}+4u^{11}+\cdots+2u+1)$
c_5	$((u^2+u+1)^3)(u^{12}-4u^{11}+\cdots+532u+193)$
c_6	$(u^3+u^2-1)^2(u^{12}+3u^{11}+4u^{10}+u^9+u^8+7u^7+12u^6+6u^5+u+1)$
c_8, c_9	$((u^3-u^2+2u-1)^2)(u^{12}+u^{11}+\cdots+u+1)$
c_{10}	$(u^3-u^2+1)^2(u^{12}+3u^{11}+4u^{10}+u^9+u^8+7u^7+12u^6+6u^5+u+1)$
c_{11}	$((u^3+u^2+2u+1)^2)(u^{12}+u^{11}+\cdots+u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^3)(y^{12}+14y^{10}+\cdots+10y+1)$
c_2	$((y^2+y+1)^3)(y^{12}+28y^{11}+\cdots-66y+1)$
c_3, c_7	$y^6(y^{12}-35y^{11}+\cdots-9216y+4096)$
c_5	$((y^2+y+1)^3)(y^{12}+56y^{11}+\cdots+602074y+37249)$
c_6, c_{10}	$((y^3-y^2+2y-1)^2)(y^{12}-y^{11}+\cdots-y+1)$
c_8, c_9, c_{11}	$((y^3+3y^2+2y-1)^2)(y^{12}+23y^{11}+\cdots-y+1)$