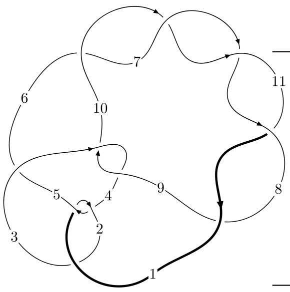
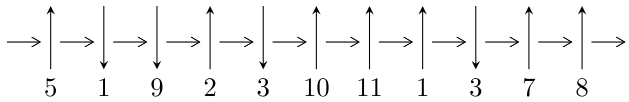
$11n_{19}$ ($K11n_{19}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^5 + u^4 - 3u^3 - 3u^2 + 2b - 3u - 1,\ u^4 - 5u^2 + 2a + 3,\ u^6 + 3u^5 - 2u^4 - 11u^3 - 6u^2 - u - 1 \rangle$$
$$I_2^u = \langle au + b + a,\ a^2 + au - a - u + 2,\ u^2 - u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 10 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. $\boldsymbol{I^u_1 = \langle u^5 + u^4 - 3u^3 - 3u^2 + 2b - 3u - 1,\ u^4 - 5u^2 + 2a + 3,\ u^6 + 3u^5 - 2u^4 - 11u^3 - 6u^2 - u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{1}{2}u^4 + \frac{5}{2}u^2 - \frac{3}{2} \\ -\frac{1}{2}u^5 - \frac{1}{2}u^4 + \cdots + \frac{3}{2}u + \frac{1}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^5 - \frac{3}{2}u^4 + 4u^3 + \frac{11}{2}u^2 - u - \frac{3}{2} \\ \frac{7}{2}u^5 + \frac{7}{2}u^4 + \cdots + \frac{1}{2}u - \frac{3}{2} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{2}u^4 + \frac{5}{2}u^2 - \frac{3}{2} \\ -2u^5 - 2u^4 + 7u^3 + 6u^2 + 2u + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{1}{2}u^4 + u^3 - \frac{3}{2}u^2 - 4u - \frac{3}{2} \\ \frac{1}{2}u^5 + \frac{1}{2}u^4 + \cdots + \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^4 - 3u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^4 - 3u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{3}{2}u^5 - 5u^4 + \frac{7}{2}u^3 + 20u^2 + \frac{15}{2}u + 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^6 + 3u^5 + 4u^4 + u^3 + 3u + 1$
c_2	$u^6 - u^5 + 10u^4 - 17u^3 + 2u^2 - 9u + 1$
c_3, c_9	$u^6 + 6u^5 + 28u^4 + 60u^3 + 20u^2 - 16u - 16$
c_5	$u^6 - 3u^5 + 12u^4 + 127u^3 + 52u^2 + 113u + 41$
c_6, c_7, c_8 c_{10}, c_{11}	$u^6 - 3u^5 - 2u^4 + 11u^3 - 6u^2 + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^6 - y^5 + 10y^4 - 17y^3 + 2y^2 - 9y + 1$
c_2	$y^6 + 19y^5 + 70y^4 - 265y^3 - 282y^2 - 77y + 1$
c_3, c_9	$y^6 + 20y^5 + 104y^4 - 2320y^3 + 1424y^2 - 896y + 256$
c_5	$y^6 + 15y^5 + 1010y^4 - 14121y^3 - 25014y^2 - 8505y + 1681$
c_6, c_7, c_8 c_{10}, c_{11}	$y^6 - 13y^5 + 58y^4 - 93y^3 + 18y^2 + 11y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.787648$ $a = -0.141467$ $b = -0.524726$	1.36678	7.32050
$u = 0.049860 + 0.377590I$ $a = -1.85932 + 0.09941I$ $b = 0.321306 + 0.548438I$	$0.088081 - 1.387970I$	$1.39961 + 3.44965I$
$u = 0.049860 - 0.377590I$ $a = -1.85932 - 0.09941I$ $b = 0.321306 - 0.548438I$	$0.088081 + 1.387970I$	$1.39961 - 3.44965I$
$u = 1.93055$ $a = 0.872199$ $b = -0.574576$	11.1902	8.52400
$u = -2.12131 + 0.18327I$ $a = -0.00604 + 1.52892I$ $b = 0.22835 - 2.85610I$	$-11.30140 - 4.76989I$	$7.67813 + 1.77109I$
$u = -2.12131 - 0.18327I$ $a = -0.00604 - 1.52892I$ $b = 0.22835 + 2.85610I$	$-11.30140 + 4.76989I$	$7.67813 - 1.77109I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3au + 2a + u + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.618034$ $a = 0.80902 + 1.40126I$ $b = -0.309017 - 0.535233I$	$0.98696 - 2.02988I$	$6.50000 + 5.40059I$
$u = -0.618034$ $a = 0.80902 - 1.40126I$ $b = -0.309017 + 0.535233I$	$0.98696 + 2.02988I$	$6.50000 - 5.40059I$
$u = 1.61803$ $a = -0.309017 + 0.535233I$ $b = 0.80902 - 1.40126I$	$8.88264 + 2.02988I$	$6.50000 - 1.52761I$
$u = 1.61803$ $a = -0.309017 - 0.535233I$ $b = 0.80902 + 1.40126I$	$8.88264 - 2.02988I$	$6.50000 + 1.52761I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2+u+1)^2(u^6+3u^5+4u^4+u^3+3u+1)$
c_2	$(u^2+u+1)^2(u^6-u^5+10u^4-17u^3+2u^2-9u+1)$
c_3, c_9	$u^4(u^6+6u^5+28u^4+60u^3+20u^2-16u-16)$
c_4	$(u^2-u+1)^2(u^6+3u^5+4u^4+u^3+3u+1)$
c_5	$(u^2+u+1)^2(u^6-3u^5+12u^4+127u^3+52u^2+113u+41)$
c_6, c_7, c_8	$(u^2-u-1)^2(u^6-3u^5-2u^4+11u^3-6u^2+u-1)$
c_{10}, c_{11}	$(u^2+u-1)^2(u^6-3u^5-2u^4+11u^3-6u^2+u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^2+y+1)^2(y^6-y^5+10y^4-17y^3+2y^2-9y+1)$
c_2	$(y^2+y+1)^2(y^6+19y^5+70y^4-265y^3-282y^2-77y+1)$
c_3, c_9	$y^4(y^6+20y^5+104y^4-2320y^3+1424y^2-896y+256)$
c_5	$(y^2+y+1)^2$ $\cdot(y^6+15y^5+1010y^4-14121y^3-25014y^2-8505y+1681)$
c_6, c_7, c_8 c_{10}, c_{11}	$(y^2-3y+1)^2(y^6-13y^5+58y^4-93y^3+18y^2+11y+1)$