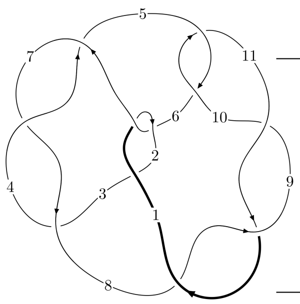
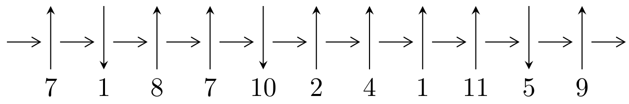
$11n_{102}$ ($K11n_{102}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 36u^6 + 57u^5 + 296u^4 - 153u^3 + 267u^2 + 1118b - 1115u - 122, \\ & 181u^6 + 240u^5 + 805u^4 - 1468u^3 - 288u^2 + 2236a - 5342u - 955, \\ & u^7 + 2u^6 + 5u^5 - 6u^4 - 6u^3 - 24u^2 - 15u - 4\rangle \\ I_2^u = \langle & u^2 + b - a + u + 2,\ -2u^2a + a^2 - 2au + 2u^2 - 4a + u + 4,\ u^3 + u^2 + 2u + 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 13 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. $\boldsymbol{I_1^u = \langle 36u^6 + 57u^5 + \cdots + 1118b - 122,\ 181u^6 + 240u^5 + \cdots + 2236a - 955,\ u^7 + 2u^6 + 5u^5 - 6u^4 - 6u^3 - 24u^2 - 15u - 4\rangle}$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0809481u^6 - 0.107335u^5 + \cdots + 2.38909u + 0.427102 \\ -0.0322004u^6 - 0.0509839u^5 + \cdots + 0.997317u + 0.109123 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.0487478u^6 - 0.0563506u^5 + \cdots + 1.39177u + 0.317979 \\ -0.0322004u^6 - 0.0509839u^5 + \cdots + 0.997317u + 0.109123 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0487478u^6 - 0.0563506u^5 + \cdots + 1.39177u + 0.317979 \\ -0.0983900u^6 - 0.0724508u^5 + \cdots + 0.575134u - 0.0554562 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0272809u^6 + 0.0223614u^5 + \cdots - 0.893560u + 0.588104 \\ 0.0411449u^6 + 0.148479u^5 + \cdots - 0.413238u - 0.194991 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.129696u^6 - 0.163685u^5 + \cdots + 3.78086u + 0.745081 \\ -0.130590u^6 - 0.123435u^5 + \cdots + 0.572451u + 0.0536673 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.0134168u^6 + 0.103757u^5 + \cdots + 1.37388u - 0.371199 \\ 0.0420394u^6 - 0.391771u^5 + \cdots - 0.704830u - 0.00357782 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0134168u^6 + 0.103757u^5 + \cdots + 1.37388u - 0.371199 \\ 0.0420394u^6 - 0.391771u^5 + \cdots - 0.704830u - 0.00357782 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{681}{559}u^6 - \frac{1218}{559}u^5 - \frac{3177}{559}u^4 + \frac{4711}{559}u^3 + \frac{2915}{559}u^2 + \frac{16294}{559}u + \frac{8550}{559}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7	$u^7 + u^6 - 3u^5 - 15u^4 + 7u^3 - 9u^2 + 3u - 1$
c_2	$u^7 - 7u^6 + 53u^5 - 243u^4 - 237u^3 - 69u^2 - 9u - 1$
c_5, c_{10}	$u^7 - 4u^6 + 9u^5 - 12u^4 + 10u^3 - 6u^2 + 3u - 2$
c_8, c_9, c_{11}	$u^7 - 2u^6 + 5u^5 + 6u^4 - 6u^3 + 24u^2 - 15u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7	$y^7 - 7y^6 + 53y^5 - 243y^4 - 237y^3 - 69y^2 - 9y - 1$
c_2	$y^7 + 57y^6 - 1067y^5 - 85155y^4 + 21667y^3 - 981y^2 - 57y - 1$
c_5, c_{10}	$y^7 + 2y^6 + 5y^5 - 6y^4 - 6y^3 - 24y^2 - 15y - 4$
c_8, c_9, c_{11}	$y^7 + 6y^6 + 37y^5 - 30y^4 - 386y^3 - 444y^2 + 33y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.170370 + 1.378620I$ $a = -0.017505 + 0.896353I$ $b = -0.027229 + 0.619612I$	$-4.84599 - 2.93728I$	$3.03833 + 3.35250I$
$u = -0.170370 - 1.378620I$ $a = -0.017505 - 0.896353I$ $b = -0.027229 - 0.619612I$	$-4.84599 + 2.93728I$	$3.03833 - 3.35250I$
$u = -0.339374 + 0.259459I$ $a = -0.349016 + 0.650489I$ $b = -0.229714 + 0.315113I$	$0.336860 - 0.937443I$	$6.03846 + 7.34722I$
$u = -0.339374 - 0.259459I$ $a = -0.349016 - 0.650489I$ $b = -0.229714 - 0.315113I$	$0.336860 + 0.937443I$	$6.03846 - 7.34722I$
$u = 1.75678$ $a = 0.976487$ $b = -2.45542$	4.12134	1.88290
$u = -1.36864 + 2.14303I$ $a = -0.496722 - 0.581190I$ $b = 1.98465 - 1.73888I$	$8.20573 - 7.24432I$	$2.98176 + 3.02276I$
$u = -1.36864 - 2.14303I$ $a = -0.496722 + 0.581190I$ $b = 1.98465 + 1.73888I$	$8.20573 + 7.24432I$	$2.98176 - 3.02276I$

II.

$$\boldsymbol{I_2^u = \langle u^2+b-a+u+2,\ -2u^2a+a^2-2au+2u^2-4a+u+4,\ u^3+u^2+2u+1\rangle}$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a \\ -u^2+a-u-2 \end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix} u^2+u+2 \\ -u^2+a-2 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -u^2+a-u-2 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^2-u-1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 0 \\ -au-1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ -au-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7	$(u^2+1)^3$
c_2	$(u+1)^6$
c_5, 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_4 c_6, c_7	$(y+1)^6$
c_2	$(y-1)^6$
c_5, 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
$u = -0.215080 + 1.307140I$ $a = 0.122561 - 0.255138I$ $b = -1.000000I$	$-6.31400 - 2.82812I$	$-3.50976 + 2.97945I$
$u = -0.215080 + 1.307140I$ $a = 0.12256 + 1.74486I$ $b = 1.000000I$	$-6.31400 - 2.82812I$	$-3.50976 + 2.97945I$
$u = -0.215080 - 1.307140I$ $a = 0.122561 + 0.255138I$ $b = 1.000000I$	$-6.31400 + 2.82812I$	$-3.50976 - 2.97945I$
$u = -0.215080 - 1.307140I$ $a = 0.12256 - 1.74486I$ $b = -1.000000I$	$-6.31400 + 2.82812I$	$-3.50976 - 2.97945I$
$u = -0.569840$ $a = 1.75488 + 1.00000I$ $b = 1.000000I$	-2.17641	3.01950
$u = -0.569840$ $a = 1.75488 - 1.00000I$ $b = -1.000000I$	-2.17641	3.01950

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7	$(u^2+1)^3(u^7+u^6-3u^5-15u^4+7u^3-9u^2+3u-1)$
c_2	$(u+1)^6(u^7-7u^6+53u^5-243u^4-237u^3-69u^2-9u-1)$
c_5, c_{10}	$(u^6+u^4+2u^2+1)(u^7-4u^6+9u^5-12u^4+10u^3-6u^2+3u-2)$
c_8, c_9	$(u^3+u^2+2u+1)^2(u^7-2u^6+5u^5+6u^4-6u^3+24u^2-15u+4)$
c_{11}	$(u^3-u^2+2u-1)^2(u^7-2u^6+5u^5+6u^4-6u^3+24u^2-15u+4)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7	$(y+1)^6(y^7 - 7y^6 + 53y^5 - 243y^4 - 237y^3 - 69y^2 - 9y - 1)$
c_2	$(y-1)^6$ $\cdot (y^7 + 57y^6 - 1067y^5 - 85155y^4 + 21667y^3 - 981y^2 - 57y - 1)$
c_5, c_{10}	$(y^3 + y^2 + 2y + 1)^2(y^7 + 2y^6 + 5y^5 - 6y^4 - 6y^3 - 24y^2 - 15y - 4)$
c_8, c_9, c_{11}	$(y^3 + 3y^2 + 2y - 1)^2$ $\cdot (y^7 + 6y^6 + 37y^5 - 30y^4 - 386y^3 - 444y^2 + 33y - 16)$