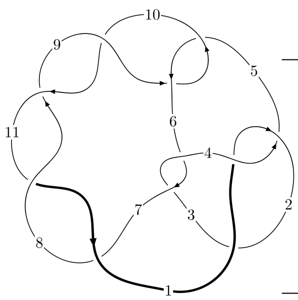
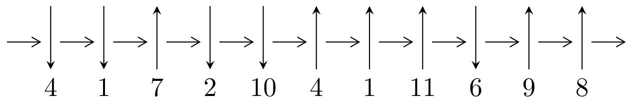
$11n_{38}$ ($K11n_{38}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b - u,\ 5u^4 + u^3 + 33u^2 + 14a + 10u + 11,\ u^5 + 6u^3 - u^2 - u - 1\rangle$$
$$I_2^u = \langle b + u,\ -u^3 - u^2 + a - 3u - 2,\ u^4 + u^3 + 3u^2 + 2u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 9 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. $\boldsymbol{I_1^u = \langle b - u,\ 5u^4 + u^3 + 33u^2 + 14a + 10u + 11,\ u^5 + 6u^3 - u^2 - u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{5}{14}u^4 - \frac{1}{14}u^3 + \cdots - \frac{5}{7}u - \frac{11}{14} \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{4}{7}u^4 - \frac{5}{7}u^3 + \cdots - \frac{15}{7}u - \frac{6}{7} \\ \frac{1}{14}u^4 + \frac{31}{14}u^3 + \cdots + \frac{1}{7}u - \frac{9}{14} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{4}{7}u^4 - \frac{5}{7}u^3 + \cdots - \frac{15}{7}u - \frac{6}{7} \\ \frac{3}{14}u^4 + \frac{9}{14}u^3 + \cdots + \frac{10}{7}u + \frac{1}{14} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{4}{7}u^4 - \frac{2}{7}u^3 + \cdots + \frac{22}{7}u + \frac{6}{7} \\ -0.357143u^4 + 0.928571u^3 + \cdots - 0.714286u - 0.785714 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.785714u^4 - 0.357143u^3 + \cdots - 2.57143u + 0.0714286 \\ \frac{9}{14}u^4 - \frac{1}{14}u^3 + \cdots + \frac{2}{7}u + \frac{3}{14} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{23}{7}u^4 + \frac{1}{7}u^3 - \frac{135}{7}u^2 + \frac{31}{7}u + \frac{18}{7}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^5 - 5u^4 + 20u^2 - u + 1$
c_2	$u^5 + 25u^4 + 198u^3 + 390u^2 - 39u + 1$
c_3, c_6	$u^5 + 4u^4 + 38u^3 + 40u^2 - 40u + 16$
c_5, c_9	$u^5 + 2u^4 + 2u^3 - u^2 - u - 1$
c_7, c_8, c_{10} c_{11}	$u^5 + 6u^3 + u^2 - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^5 - 25y^4 + 198y^3 - 390y^2 - 39y - 1$
c_2	$y^5 - 229y^4 + 19626y^3 - 167594y^2 + 741y - 1$
c_3, c_6	$y^5 + 60y^4 + 1044y^3 - 4768y^2 + 320y - 256$
c_5, c_9	$y^5 + 6y^3 - y^2 - y - 1$
c_7, c_8, c_{10} c_{11}	$y^5 + 12y^4 + 34y^3 - 13y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.695222$ $a = -2.52902$ $b = 0.695222$	-2.84858	-4.39070
$u = -0.281458 + 0.392024I$ $a = -0.401414 + 0.226060I$ $b = -0.281458 + 0.392024I$	$0.206446 - 1.108910I$	$2.91822 + 5.88873I$
$u = -0.281458 - 0.392024I$ $a = -0.401414 - 0.226060I$ $b = -0.281458 - 0.392024I$	$0.206446 + 1.108910I$	$2.91822 - 5.88873I$
$u = -0.06615 + 2.48427I$ $a = 0.165924 - 1.354820I$ $b = -0.06615 + 2.48427I$	$10.26500 - 4.12490I$	$-3.22285 + 1.83437I$
$u = -0.06615 - 2.48427I$ $a = 0.165924 + 1.354820I$ $b = -0.06615 - 2.48427I$	$10.26500 + 4.12490I$	$-3.22285 - 1.83437I$

II. $I_2^u = \langle b+u,\ -u^3-u^2+a-3u-2,\ u^4+u^3+3u^2+2u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^3+2u^2+7u+1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^4$
c_3, c_6	y^4
c_5, c_9	$y^4 + y^3 + 3y^2 + 2y + 1$
c_7, c_8, c_{10} c_{11}	$y^4 + 5y^3 + 7y^2 + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.395123 + 0.506844I$ $a = 0.95668 + 1.22719I$ $b = 0.395123 - 0.506844I$	$-1.43393 - 1.41510I$	$-1.48175 + 2.96122I$
$u = -0.395123 - 0.506844I$ $a = 0.95668 - 1.22719I$ $b = 0.395123 + 0.506844I$	$-1.43393 + 1.41510I$	$-1.48175 - 2.96122I$
$u = -0.10488 + 1.55249I$ $a = 0.043315 + 0.641200I$ $b = 0.10488 - 1.55249I$	$-8.43568 - 3.16396I$	$-3.01825 + 2.83489I$
$u = -0.10488 - 1.55249I$ $a = 0.043315 - 0.641200I$ $b = 0.10488 + 1.55249I$	$-8.43568 + 3.16396I$	$-3.01825 - 2.83489I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^4(u^5-5u^4+20u^2-u+1)$
c_2	$(u+1)^4(u^5+25u^4+198u^3+390u^2-39u+1)$
c_3, c_6	$u^4(u^5+4u^4+38u^3+40u^2-40u+16)$
c_4	$(u+1)^4(u^5-5u^4+20u^2-u+1)$
c_5	$(u^4+u^3+u^2+1)(u^5+2u^4+2u^3-u^2-u-1)$
c_7, c_8	$(u^4+u^3+3u^2+2u+1)(u^5+6u^3+u^2-u+1)$
c_9	$(u^4-u^3+u^2+1)(u^5+2u^4+2u^3-u^2-u-1)$
c_{10}, c_{11}	$(u^4-u^3+3u^2-2u+1)(u^5+6u^3+u^2-u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y-1)^4(y^5 - 25y^4 + 198y^3 - 390y^2 - 39y - 1)$
c_2	$(y-1)^4(y^5 - 229y^4 + 19626y^3 - 167594y^2 + 741y - 1)$
c_3, c_6	$y^4(y^5 + 60y^4 + 1044y^3 - 4768y^2 + 320y - 256)$
c_5, c_9	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^5 + 6y^3 - y^2 - y - 1)$
c_7, c_8, c_{10} c_{11}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^5 + 12y^4 + 34y^3 - 13y^2 - y - 1)$