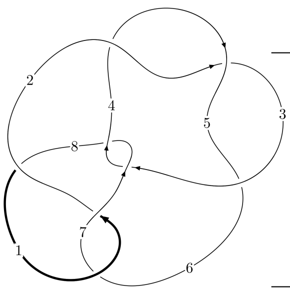
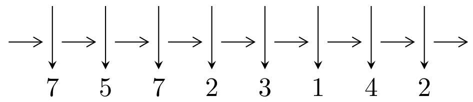
8_{19} $(K8n_3)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b + u + 1,\ a + 1,\ u^2 - 2u - 1 \rangle$$
$$I_2^u = \langle b,\ a + 1,\ u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 3 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. $I_1^u = \langle b+u+1,\ a+1,\ u^2-2u-1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 2u+1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ -u-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ 4u+1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -4u-2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2u \\ -8u-3 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ -u-1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6	$u^2 - 2u - 1$
c_3, c_7	$u^2 + 4u + 2$
c_8	$u^2 + 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6	$y^2 - 6y + 1$
c_3, c_7	$y^2 - 12y + 4$
c_8	$y^2 - 34y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.414214$ $a=-1.00000$ $b=-0.585786$	-0.822467	-12.0000
$u=\ \ 2.41421$ $a=-1.00000$ $b=-3.41421$	18.9167	-12.0000

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$u+1$
c_2, c_6, c_8	$u-1$
c_3, c_7	u

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_8	$y - 1$
c_3, c_7	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = 0$	-3.28987	-12.0000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$(u+1)(u^2-2u-1)$
c_2, c_6	$(u-1)(u^2-2u-1)$
c_3, c_7	$u(u^2+4u+2)$
c_8	$(u-1)(u^2+6u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6	$(y-1)(y^2-6y+1)$
c_3, c_7	$y(y^2-12y+4)$
c_8	$(y-1)(y^2-34y+1)$