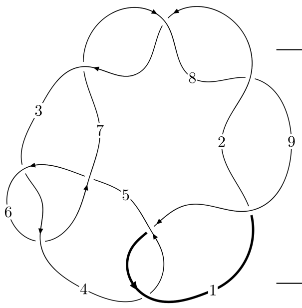
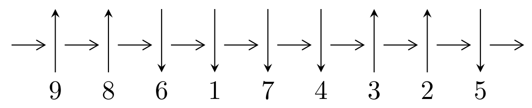
9_8 ($K9a_8$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{15} - u^{14} - 4u^{13} + 5u^{12} + 6u^{11} - 10u^{10} + 7u^8 - 8u^7 + 4u^6 + 6u^5 - 8u^4 + 2u^3 + 2u^2 - 2u + 1\rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 15 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. $I_1^u = \langle u^{15} - u^{14} - 4u^{13} + 5u^{12} + 6u^{11} - 10u^{10} + 7u^8 - 8u^7 + 4u^6 + 6u^5 - 8u^4 + 2u^3 + 2u^2 - 2u + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^9 + 2u^7 - u^5 - 2u^3 + u \\ -u^9 + 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{12} - 3u^{10} + 3u^8 + 2u^6 - 4u^4 + u^2 + 1 \\ u^{12} - 4u^{10} + 6u^8 - 2u^6 - 3u^4 + 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{13} - 16u^{11} + 4u^{10} + 28u^9 - 12u^8 - 12u^7 + 16u^6 - 16u^5 + 24u^3 - 8u^2 + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_7 c_8	$u^{15} - 3u^{14} + \cdots - 8u^2 + 1$
c_3, c_6	$u^{15} - u^{14} + \cdots - 2u + 1$
c_4, c_9	$u^{15} + u^{14} + \cdots + 2u + 1$
c_5	$u^{15} + 9u^{14} + \cdots - 4u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_7 c_8	$y^{15} + 19y^{14} + \cdots + 16y - 1$
c_3, c_6	$y^{15} - 9y^{14} + \cdots + 4y^2 - 1$
c_4, c_9	$y^{15} + 3y^{14} + \cdots + 8y^2 - 1$
c_5	$y^{15} - 5y^{14} + \cdots + 8y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.023100 + 0.900040I$	$-8.02484 + 3.25615I$	$-3.67133 - 2.40088I$
$u = 0.023100 - 0.900040I$	$-8.02484 - 3.25615I$	$-3.67133 + 2.40088I$
$u = -0.863978$	-1.25565	-8.48380
$u = -1.093890 + 0.311098I$	$-3.39978 + 1.10849I$	$-7.51398 - 0.68443I$
$u = -1.093890 - 0.311098I$	$-3.39978 - 1.10849I$	$-7.51398 + 0.68443I$
$u = 0.747479 + 0.391613I$	$1.24227 - 1.75942I$	$2.85085 + 5.01461I$
$u = 0.747479 - 0.391613I$	$1.24227 + 1.75942I$	$2.85085 - 5.01461I$
$u = 1.070290 + 0.443484I$	$-2.41352 - 5.68434I$	$-4.20490 + 7.47679I$
$u = 1.070290 - 0.443484I$	$-2.41352 + 5.68434I$	$-4.20490 - 7.47679I$
$u = -1.268720 + 0.457284I$	$-11.97600 + 1.54935I$	$-7.09602 - 0.66420I$
$u = -1.268720 - 0.457284I$	$-11.97600 - 1.54935I$	$-7.09602 + 0.66420I$
$u = 1.260410 + 0.482704I$	$-11.7871 - 8.1923I$	$-6.69502 + 5.35870I$
$u = 1.260410 - 0.482704I$	$-11.7871 + 8.1923I$	$-6.69502 - 5.35870I$
$u = 0.193328 + 0.557909I$	$-0.02424 + 1.73642I$	$-0.42769 - 4.08118I$
$u = 0.193328 - 0.557909I$	$-0.02424 - 1.73642I$	$-0.42769 + 4.08118I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_7 c_8	$u^{15} - 3u^{14} + \cdots - 8u^2 + 1$
c_3, c_6	$u^{15} - u^{14} + \cdots - 2u + 1$
c_4, c_9	$u^{15} + u^{14} + \cdots + 2u + 1$
c_5	$u^{15} + 9u^{14} + \cdots - 4u^2 + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_7 c_8	$y^{15} + 19y^{14} + \cdots + 16y - 1$
c_3, c_6	$y^{15} - 9y^{14} + \cdots + 4y^2 - 1$
c_4, c_9	$y^{15} + 3y^{14} + \cdots + 8y^2 - 1$
c_5	$y^{15} - 5y^{14} + \cdots + 8y - 1$