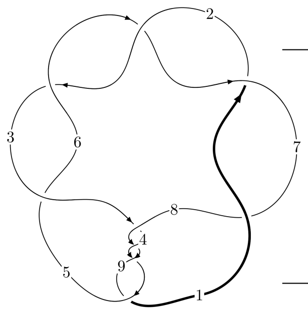
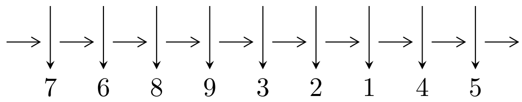
9_4 $(K9a_{35})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{10} + u^9 - 5u^8 - 4u^7 + 8u^6 + 3u^5 - 5u^4 + 2u^3 + 3u^2 + u - 1 \rangle$$

* 1 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. $\boldsymbol{I^u_1 = \langle u^{10} + u^9 - 5u^8 - 4u^7 + 8u^6 + 3u^5 - 5u^4 + 2u^3 + 3u^2 + u - 1 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^5 - 2u^3 - u \\ u^5 - 3u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^9 - 4u^7 + 3u^5 + 2u^3 + u \\ u^9 - 5u^7 + 7u^5 - 2u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^6 + 3u^4 - 2u^2 + 1 \\ -u^8 + 4u^6 - 4u^4 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^6 + 3u^4 - 2u^2 + 1 \\ -u^8 + 4u^6 - 4u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^8 + 20u^6 - 28u^4 + 4u^3 + 8u^2 - 8u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7	$u^{10} - u^9 + 7u^8 - 6u^7 + 16u^6 - 11u^5 + 13u^4 - 6u^3 + 3u^2 - u - 1$
c_3, c_4, c_8 c_9	$u^{10} - u^9 - 5u^8 + 4u^7 + 8u^6 - 3u^5 - 5u^4 - 2u^3 + 3u^2 - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7	$y^{10} + 13y^9 + \cdots - 7y + 1$
c_3, c_4, c_8 c_9	$y^{10} - 11y^9 + \cdots - 7y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.510102 + 0.680941I$	$10.72030 - 2.28632I$	$-4.39779 + 2.91176I$
$u = 0.510102 - 0.680941I$	$10.72030 + 2.28632I$	$-4.39779 - 2.91176I$
$u = -0.449833 + 0.459351I$	$1.85926 + 1.60532I$	$-4.94346 - 5.03395I$
$u = -0.449833 - 0.459351I$	$1.85926 - 1.60532I$	$-4.94346 + 5.03395I$
$u = 1.50079 + 0.11328I$	$-4.58159 - 3.55946I$	$-9.64226 + 4.06361I$
$u = 1.50079 - 0.11328I$	$-4.58159 + 3.55946I$	$-9.64226 - 4.06361I$
$u = -1.50960$	-7.13336	-14.0490
$u = -1.51481 + 0.22020I$	$4.09816 + 5.55652I$	$-7.79190 - 2.88175I$
$u = -1.51481 - 0.22020I$	$4.09816 - 5.55652I$	$-7.79190 + 2.88175I$
$u = 0.417104$	-0.609522	-16.4010

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7	$u^{10} - u^9 + 7u^8 - 6u^7 + 16u^6 - 11u^5 + 13u^4 - 6u^3 + 3u^2 - u - 1$
c_3, c_4, c_8 c_9	$u^{10} - u^9 - 5u^8 + 4u^7 + 8u^6 - 3u^5 - 5u^4 - 2u^3 + 3u^2 - u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7	$y^{10} + 13y^9 + \cdots - 7y + 1$
c_3, c_4, c_8 c_9	$y^{10} - 11y^9 + \cdots - 7y + 1$