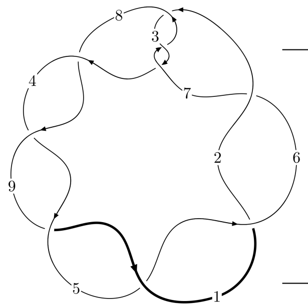
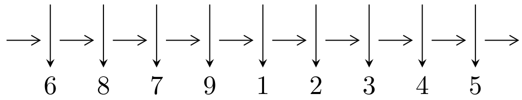
9_3 ($K9a_{38}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^9 - u^8 - 6u^7 + 5u^6 + 11u^5 - 7u^4 - 6u^3 + 4u^2 - u - 1\rangle$$

* 1 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. $I_1^u = \langle u^9 - u^8 - 6u^7 + 5u^6 + 11u^5 - 7u^4 - 6u^3 + 4u^2 - u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^5 - 16u^3 + 12u - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_9	$y^9 - 13y^8 + 68y^7 - 183y^6 + 269y^5 - 211y^4 + 80y^3 - 18y^2 + 9y - 1$
c_2, c_3, c_7	$y^9 + 7y^8 + 20y^7 + 25y^6 + y^5 - 31y^4 - 24y^3 + 6y^2 + 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.115700 + 0.218357I$	$-1.75807 + 3.86354I$	$-12.03791 - 4.00946I$
$u = -1.115700 - 0.218357I$	$-1.75807 - 3.86354I$	$-12.03791 + 4.00946I$
$u = 1.15527$	-5.50120	-16.5750
$u = 0.344156 + 0.466288I$	$2.84789 - 1.55423I$	$-6.94040 + 4.30527I$
$u = 0.344156 - 0.466288I$	$2.84789 + 1.55423I$	$-6.94040 - 4.30527I$
$u = -0.362481$	-0.561234	-17.6130
$u = 1.76115 + 0.05266I$	$-12.16890 - 4.99486I$	$-12.86627 + 2.90812I$
$u = 1.76115 - 0.05266I$	$-12.16890 + 4.99486I$	$-12.86627 - 2.90812I$
$u = -1.77199$	-16.1927	-16.1230

II. u-Polynomials

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

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_9	$y^9 - 13y^8 + 68y^7 - 183y^6 + 269y^5 - 211y^4 + 80y^3 - 18y^2 + 9y - 1$
c_2, c_3, c_7	$y^9 + 7y^8 + 20y^7 + 25y^6 + y^5 - 31y^4 - 24y^3 + 6y^2 + 9y - 1$