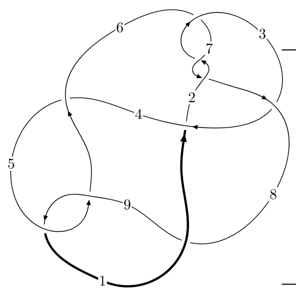
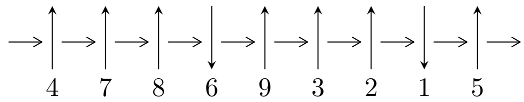
9_{21} ($K9a_{21}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{21} + u^{20} + \cdots - u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 21 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. $I_1^u = \langle u^{21} + u^{20} + \cdots - u - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^7 - 4u^5 - 4u^3 \\ -u^7 - 3u^5 - 2u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{14} + 7u^{12} + 18u^{10} + 19u^8 + 4u^6 - 4u^4 + 1 \\ u^{14} + 6u^{12} + 13u^{10} + 10u^8 - 2u^6 - 4u^4 + u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^9 + 4u^7 + 5u^5 + 2u^3 + u \\ u^{11} + 5u^9 + 8u^7 + 3u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^9 + 4u^7 + 5u^5 + 2u^3 + u \\ u^{11} + 5u^9 + 8u^7 + 3u^5 - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{19} + 4u^{18} + 36u^{17} + 32u^{16} + 132u^{15} + 100u^{14} + 244u^{13} + 140u^{12} + 216u^{11} + 52u^{10} + 40u^9 - 68u^8 - 56u^7 - 52u^6 + 12u^4 + 36u^3 + 12u^2 + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21} + 5u^{20} + \cdots - 11u - 3$
c_2, c_6, c_7	$u^{21} + u^{20} + \cdots - u - 1$
c_3	$u^{21} - u^{20} + \cdots - 3u - 1$
c_4, c_8	$u^{21} + 7u^{20} + \cdots + 3u - 1$
c_5, c_9	$u^{21} - u^{20} + \cdots + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} + 3y^{20} + \cdots - 41y - 9$
c_2, c_6, c_7	$y^{21} + 19y^{20} + \cdots + 3y - 1$
c_3	$y^{21} - y^{20} + \cdots + 3y - 1$
c_4, c_8	$y^{21} + 15y^{20} + \cdots + 27y - 1$
c_5, c_9	$y^{21} + 7y^{20} + \cdots + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.199184 + 0.953331I$	$1.36988 + 2.68588I$	$5.85070 - 3.67518I$
$u = \quad 0.199184 - 0.953331I$	$1.36988 - 2.68588I$	$5.85070 + 3.67518I$
$u = -0.268883 + 0.739769I$	$1.15989 + 2.73152I$	$4.80842 - 2.00184I$
$u = -0.268883 - 0.739769I$	$1.15989 - 2.73152I$	$4.80842 + 2.00184I$
$u = -0.721828 + 0.253446I$	$2.90434 - 6.51836I$	$7.49661 + 6.69162I$
$u = -0.721828 - 0.253446I$	$2.90434 + 6.51836I$	$7.49661 - 6.69162I$
$u = \quad 0.708881 + 0.196468I$	$3.65968 + 0.90110I$	$9.44354 - 1.25880I$
$u = \quad 0.708881 - 0.196468I$	$3.65968 - 0.90110I$	$9.44354 + 1.25880I$
$u = \quad 0.161237 + 1.327480I$	$-3.39772 + 2.26276I$	$4.12423 - 3.11409I$
$u = \quad 0.161237 - 1.327480I$	$-3.39772 - 2.26276I$	$4.12423 + 3.11409I$
$u = -0.520195 + 0.340511I$	$-2.02154 - 1.59690I$	$0.86726 + 4.73829I$
$u = -0.520195 - 0.340511I$	$-2.02154 + 1.59690I$	$0.86726 - 4.73829I$
$u = \quad 0.280467 + 1.374360I$	$-1.32092 + 4.48385I$	$4.56586 - 2.47352I$
$u = \quad 0.280467 - 1.374360I$	$-1.32092 - 4.48385I$	$4.56586 + 2.47352I$
$u = -0.085311 + 1.403890I$	$-5.14411 + 1.80763I$	$-0.25907 - 2.73625I$
$u = -0.085311 - 1.403890I$	$-5.14411 - 1.80763I$	$-0.25907 + 2.73625I$
$u = -0.20569 + 1.41170I$	$-7.58755 - 4.29720I$	$-2.75143 + 3.93304I$
$u = -0.20569 - 1.41170I$	$-7.58755 + 4.29720I$	$-2.75143 - 3.93304I$
$u = -0.28719 + 1.40273I$	$-2.37086 - 10.18330I$	$2.74618 + 7.21296I$
$u = -0.28719 - 1.40273I$	$-2.37086 + 10.18330I$	$2.74618 - 7.21296I$
$u = \quad 0.478663$	0.823807	12.2150

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{21} + 5u^{20} + \cdots - 11u - 3$
c_2, c_6, c_7	$u^{21} + u^{20} + \cdots - u - 1$
c_3	$u^{21} - u^{20} + \cdots - 3u - 1$
c_4, c_8	$u^{21} + 7u^{20} + \cdots + 3u - 1$
c_5, c_9	$u^{21} - u^{20} + \cdots + u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} + 3y^{20} + \cdots - 41y - 9$
c_2, c_6, c_7	$y^{21} + 19y^{20} + \cdots + 3y - 1$
c_3	$y^{21} - y^{20} + \cdots + 3y - 1$
c_4, c_8	$y^{21} + 15y^{20} + \cdots + 27y - 1$
c_5, c_9	$y^{21} + 7y^{20} + \cdots + 3y - 1$