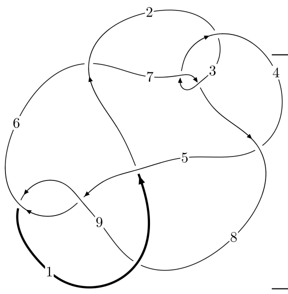
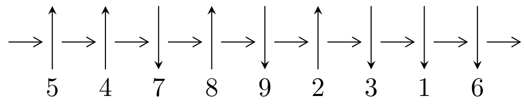
9_{27} $(K9a_{12})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{24} + u^{23} + \cdots + 2u^3 + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 24 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. $\boldsymbol{I_1^u = \langle u^{24} + u^{23} - 5u^{22} - 6u^{21} + 13u^{20} + 18u^{19} - 20u^{18} - 34u^{17} + 19u^{16} + 44u^{15} - 10u^{14} - 42u^{13} + 2u^{12} + 32u^{11} - 22u^{9} + 13u^{7} + u^{6} - 6u^{5} - u^{4} + 2u^{3} + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ u^{10} - 2u^8 + 3u^6 - 2u^4 + u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{21} - 4u^{19} + 9u^{17} - 12u^{15} + 12u^{13} - 10u^{11} + 9u^9 - 6u^7 + 3u^5 - 2u^3 + u \\ u^{23} - 5u^{21} + \cdots - 3u^5 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{21} - 4u^{19} + 9u^{17} - 12u^{15} + 12u^{13} - 10u^{11} + 9u^9 - 6u^7 + 3u^5 - 2u^3 + u \\ u^{23} - 5u^{21} + \cdots - 3u^5 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{23} + 24u^{21} + 4u^{20} - 72u^{19} - 20u^{18} + 132u^{17} + 52u^{16} - 160u^{15} - 84u^{14} + 132u^{13} + 92u^{12} - 84u^{11} - 72u^{10} + 52u^9 + 44u^8 - 32u^7 - 24u^6 + 8u^5 + 12u^4 + 4u^3 - 4u^2 - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} + 3u^{23} + \cdots + 4u + 1$
c_2	$u^{24} - 13u^{23} + \cdots - 2u^2 + 1$
c_3, c_7	$u^{24} + u^{23} + \cdots + 2u + 1$
c_4, c_6	$u^{24} - u^{23} + \cdots - 10u + 1$
c_5, c_9	$u^{24} + u^{23} + \cdots + 2u^3 + 1$
c_8	$u^{24} + 11u^{23} + \cdots - 2u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} + y^{23} + \cdots + 20y + 1$
c_2	$y^{24} - 3y^{23} + \cdots - 4y + 1$
c_3, c_7	$y^{24} + 13y^{23} + \cdots - 2y^2 + 1$
c_4, c_6	$y^{24} - 19y^{23} + \cdots - 48y + 1$
c_5, c_9	$y^{24} - 11y^{23} + \cdots - 2y^2 + 1$
c_8	$y^{24} + 5y^{23} + \cdots - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.981563 + 0.214317I$	$-1.74298 + 0.40841I$	$-5.87200 - 0.75563I$
$u = -0.981563 - 0.214317I$	$-1.74298 - 0.40841I$	$-5.87200 + 0.75563I$
$u = 0.803335 + 0.491088I$	$1.74384 - 2.05721I$	$4.27298 + 4.01793I$
$u = 0.803335 - 0.491088I$	$1.74384 + 2.05721I$	$4.27298 - 4.01793I$
$u = -0.527198 + 0.744803I$	$6.35994 + 2.92383I$	$5.29020 - 3.29300I$
$u = -0.527198 - 0.744803I$	$6.35994 - 2.92383I$	$5.29020 + 3.29300I$
$u = 1.085860 + 0.107562I$	$0.74814 + 3.77265I$	$-1.89193 - 3.49106I$
$u = 1.085860 - 0.107562I$	$0.74814 - 3.77265I$	$-1.89193 + 3.49106I$
$u = -0.433290 + 0.779547I$	$5.84506 - 5.78082I$	$4.37527 + 3.72629I$
$u = -0.433290 - 0.779547I$	$5.84506 + 5.78082I$	$4.37527 - 3.72629I$
$u = -1.062920 + 0.387157I$	$-2.96425 + 1.34320I$	$-6.02964 - 0.62000I$
$u = -1.062920 - 0.387157I$	$-2.96425 - 1.34320I$	$-6.02964 + 0.62000I$
$u = 0.452781 + 0.717874I$	$2.63437 + 1.18290I$	$1.39246 - 0.39910I$
$u = 0.452781 - 0.717874I$	$2.63437 - 1.18290I$	$1.39246 + 0.39910I$
$u = 1.083310 + 0.462291I$	$-2.43992 - 5.71321I$	$-4.10823 + 7.50361I$
$u = 1.083310 - 0.462291I$	$-2.43992 + 5.71321I$	$-4.10823 - 7.50361I$
$u = -1.041780 + 0.614710I$	$4.82981 + 2.24524I$	$3.02697 - 1.89383I$
$u = -1.041780 - 0.614710I$	$4.82981 - 2.24524I$	$3.02697 + 1.89383I$
$u = 1.075010 + 0.585259I$	$0.79700 - 6.17959I$	$-1.78521 + 5.04555I$
$u = 1.075010 - 0.585259I$	$0.79700 + 6.17959I$	$-1.78521 - 5.04555I$
$u = -1.097340 + 0.604979I$	$3.87224 + 11.00000I$	$1.31825 - 8.05284I$
$u = -1.097340 - 0.604979I$	$3.87224 - 11.00000I$	$1.31825 + 8.05284I$
$u = 0.143789 + 0.548880I$	$0.05596 + 1.77225I$	$0.01088 - 4.04184I$
$u = 0.143789 - 0.548880I$	$0.05596 - 1.77225I$	$0.01088 + 4.04184I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{24} + 3u^{23} + \cdots + 4u + 1$
c_2	$u^{24} - 13u^{23} + \cdots - 2u^2 + 1$
c_3, c_7	$u^{24} + u^{23} + \cdots + 2u + 1$
c_4, c_6	$u^{24} - u^{23} + \cdots - 10u + 1$
c_5, c_9	$u^{24} + u^{23} + \cdots + 2u^3 + 1$
c_8	$u^{24} + 11u^{23} + \cdots - 2u^2 + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} + y^{23} + \cdots + 20y + 1$
c_2	$y^{24} - 3y^{23} + \cdots - 4y + 1$
c_3, c_7	$y^{24} + 13y^{23} + \cdots - 2y^2 + 1$
c_4, c_6	$y^{24} - 19y^{23} + \cdots - 48y + 1$
c_5, c_9	$y^{24} - 11y^{23} + \cdots - 2y^2 + 1$
c_8	$y^{24} + 5y^{23} + \cdots - 4y + 1$