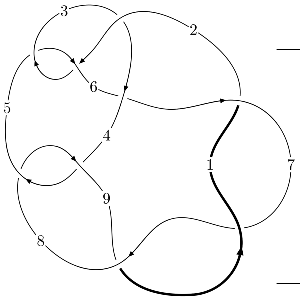
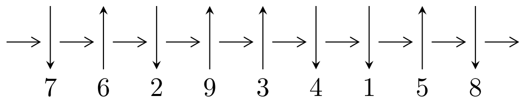
9_{19} $(K9a_3)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle u^{20} - u^{19} + \cdots + u^2 + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 20 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. $\boldsymbol{I_1^u = \langle u^{20} - u^{19} + 3u^{18} - 2u^{17} + 9u^{16} - 6u^{15} + 16u^{14} - 8u^{13} + 24u^{12} - 9u^{11} + 25u^{10} - 6u^9 + 21u^8 + 10u^6 + 4u^5 + 3u^4 + 3u^3 + u^2 + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^6 + u^4 + 2u^2 + 1 \\ -u^6 - u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{15} + 2u^{13} + 6u^{11} + 8u^9 + 10u^7 + 8u^5 + 4u^3 \\ -u^{15} - u^{13} - 4u^{11} - 3u^9 - 4u^7 - 2u^5 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^8 + u^6 + 3u^4 + 2u^2 + 1 \\ -u^{10} - 2u^8 - 3u^6 - 4u^4 - u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^8 + u^6 + 3u^4 + 2u^2 + 1 \\ -u^{10} - 2u^8 - 3u^6 - 4u^4 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{19} - 8u^{17} - 4u^{16} - 28u^{15} - 8u^{14} - 40u^{13} - 24u^{12} - 64u^{11} - 36u^{10} - 64u^9 - 44u^8 - 60u^7 - 44u^6 - 36u^5 - 24u^4 - 24u^3 - 8u^2 - 8u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7, c_9	$u^{20} + 5u^{19} + \cdots + 2u + 1$
c_2, c_5	$u^{20} + u^{19} + \cdots + 2u + 1$
c_3	$u^{20} + 9u^{19} + \cdots + 2u + 1$
c_4, c_8	$u^{20} - u^{19} + \cdots + u^2 + 1$
c_6	$u^{20} - u^{19} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_9	$y^{20} + 21y^{19} + \cdots + 10y + 1$
c_2, c_5	$y^{20} + 9y^{19} + \cdots + 2y + 1$
c_3	$y^{20} + 5y^{19} + \cdots + 10y + 1$
c_4, c_8	$y^{20} + 5y^{19} + \cdots + 2y + 1$
c_6	$y^{20} + y^{19} + \cdots + 18y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.362805 + 0.953641I$	$-2.49174 - 6.06247I$	$-4.39660 + 7.82928I$
$u = -0.362805 - 0.953641I$	$-2.49174 + 6.06247I$	$-4.39660 - 7.82928I$
$u = -0.161278 + 0.924181I$	$-3.63536 + 0.74806I$	$-7.88926 - 0.17223I$
$u = -0.161278 - 0.924181I$	$-3.63536 - 0.74806I$	$-7.88926 + 0.17223I$
$u = 0.351156 + 0.820236I$	$-0.32995 + 1.83292I$	$-0.44386 - 4.26331I$
$u = 0.351156 - 0.820236I$	$-0.32995 - 1.83292I$	$-0.44386 + 4.26331I$
$u = 0.765553 + 0.891086I$	$1.42388 + 2.89577I$	$-2.31229 - 2.74717I$
$u = 0.765553 - 0.891086I$	$1.42388 - 2.89577I$	$-2.31229 + 2.74717I$
$u = 0.872273 + 0.832901I$	$5.41964 - 3.75485I$	$1.74318 + 2.44199I$
$u = 0.872273 - 0.832901I$	$5.41964 + 3.75485I$	$1.74318 - 2.44199I$
$u = -0.857922 + 0.867417I$	$7.08907 - 1.55876I$	$4.11661 + 2.37917I$
$u = -0.857922 - 0.867417I$	$7.08907 + 1.55876I$	$4.11661 - 2.37917I$
$u = -0.828456 + 0.942427I$	$6.85240 - 4.70967I$	$3.63739 + 2.80351I$
$u = -0.828456 - 0.942427I$	$6.85240 + 4.70967I$	$3.63739 - 2.80351I$
$u = 0.818606 + 0.971044I$	$4.98583 + 10.03250I$	$0.83081 - 7.28178I$
$u = 0.818606 - 0.971044I$	$4.98583 - 10.03250I$	$0.83081 + 7.28178I$
$u = 0.483351 + 0.483677I$	$0.67976 + 1.37271I$	$3.12015 - 4.43993I$
$u = 0.483351 - 0.483677I$	$0.67976 - 1.37271I$	$3.12015 + 4.43993I$
$u = -0.580477 + 0.222282I$	$-0.25432 + 2.59904I$	$1.59387 - 3.16627I$
$u = -0.580477 - 0.222282I$	$-0.25432 - 2.59904I$	$1.59387 + 3.16627I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7, c_9	$u^{20} + 5u^{19} + \cdots + 2u + 1$
c_2, c_5	$u^{20} + u^{19} + \cdots + 2u + 1$
c_3	$u^{20} + 9u^{19} + \cdots + 2u + 1$
c_4, c_8	$u^{20} - u^{19} + \cdots + u^2 + 1$
c_6	$u^{20} - u^{19} + \cdots - 4u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_9	$y^{20} + 21y^{19} + \cdots + 10y + 1$
c_2, c_5	$y^{20} + 9y^{19} + \cdots + 2y + 1$
c_3	$y^{20} + 5y^{19} + \cdots + 10y + 1$
c_4, c_8	$y^{20} + 5y^{19} + \cdots + 2y + 1$
c_6	$y^{20} + y^{19} + \cdots + 18y + 1$