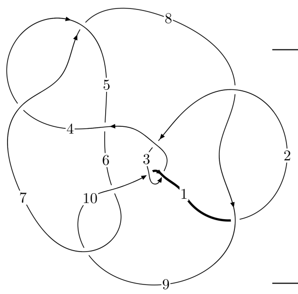
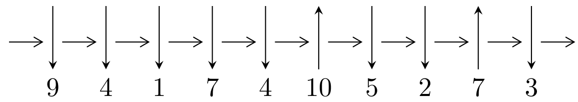
10_{150} $(K10n_9)$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$1,4 \xrightarrow[c_3]{} 3 \xrightarrow[c_2]{} 2 \xrightarrow[c_{10}]{} 7,10 \xrightarrow[c_6]{} 6 \xrightarrow[c_5]{} 5 \xrightarrow[c_7]{} 8 \xrightarrow[c_9]{} 9 \twoheadrightarrow c_1, c_4, c_8$$

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

$$I_1^u = \langle 5218u^{16} - 13845u^{15} + \cdots + 24209b - 23873,\ 14691u^{16} - 23006u^{15} + \cdots + 24209a - 62170,\ u^{17} - 2u^{16} + \cdots - 3u - 1\rangle$$

$$I_2^u = \langle b - 1,\ -u^2 + a + u - 1,\ u^3 - u^2 + 1\rangle$$

* 2 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. $\boldsymbol{I_1^u = \langle 5218u^{16} - 13845u^{15} + \cdots + 24209b - 23873,\ 14691u^{16} - 23006u^{15} + \cdots + 24209a - 62170,\ u^{17} - 2u^{16} + \cdots - 3u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.606840u^{16} + 0.950308u^{15} + \cdots - 2.86026u + 2.56805 \\ -0.215540u^{16} + 0.571895u^{15} + \cdots - 0.628196u + 0.986121 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.650337u^{16} + 1.05824u^{15} + \cdots - 2.69995u + 2.65839 \\ -0.137841u^{16} + 0.712421u^{15} + \cdots - 0.487215u + 1.05552 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.788178u^{16} + 1.77066u^{15} + \cdots - 3.18716u + 3.71391 \\ -0.137841u^{16} + 0.712421u^{15} + \cdots - 0.487215u + 1.05552 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.421785u^{16} - 1.78739u^{15} + \cdots - 0.282003u - 1.72217 \\ -0.844603u^{16} + 0.281053u^{15} + \cdots - 2.71804u - 0.861209 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.396877u^{16} + 1.39225u^{15} + \cdots - 0.955099u + 1.13198 \\ 0.271015u^{16} + 0.327482u^{15} + \cdots + 1.53959u + 0.667892 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{76049}{24209}u^{16} + \frac{104431}{24209}u^{15} + \cdots - \frac{330360}{24209}u - \frac{115800}{24209}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{17} - 2u^{16} + \cdots + u - 1$
c_2	$u^{17} + 12u^{16} + \cdots + 7u + 1$
c_3, c_{10}	$u^{17} - 2u^{16} + \cdots - 3u - 1$
c_4, c_7	$u^{17} - 4u^{16} + \cdots + 16u - 1$
c_5	$u^{17} + 22u^{16} + \cdots + 256u + 1$
c_6, c_9	$u^{17} + 3u^{16} + \cdots + 20u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{17} + 18y^{15} + \cdots + 7y - 1$
c_2	$y^{17} - 12y^{16} + \cdots + 155y - 1$
c_3, c_{10}	$y^{17} - 12y^{16} + \cdots + 7y - 1$
c_4, c_7	$y^{17} - 22y^{16} + \cdots + 256y - 1$
c_5	$y^{17} - 50y^{16} + \cdots + 60796y - 1$
c_6, c_9	$y^{17} + 21y^{16} + \cdots + 976y - 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.876782 + 0.644726I$ $a = 0.092257 - 0.124101I$ $b = -0.568271 + 0.184291I$	$2.13008 - 2.53959I$	$0.76560 + 1.98769I$
$u = 0.876782 - 0.644726I$ $a = 0.092257 + 0.124101I$ $b = -0.568271 - 0.184291I$	$2.13008 + 2.53959I$	$0.76560 - 1.98769I$
$u = -1.089060 + 0.132960I$ $a = -0.02578 - 2.03485I$ $b = 0.834229 - 0.235726I$	$-3.18058 + 0.67411I$	$-10.63151 + 5.49435I$
$u = -1.089060 - 0.132960I$ $a = -0.02578 + 2.03485I$ $b = 0.834229 + 0.235726I$	$-3.18058 - 0.67411I$	$-10.63151 - 5.49435I$
$u = -0.026050 + 1.128120I$ $a = -1.354380 + 0.277932I$ $b = -1.63657 + 0.18009I$	$-8.13487 + 4.20505I$	$-7.98094 - 2.47792I$
$u = -0.026050 - 1.128120I$ $a = -1.354380 - 0.277932I$ $b = -1.63657 - 0.18009I$	$-8.13487 - 4.20505I$	$-7.98094 + 2.47792I$
$u = -0.819663$ $a = 0.742247$ $b = -0.0636841$	-1.19406	-8.42610
$u = 1.229710 + 0.222583I$ $a = -0.189457 + 1.004150I$ $b = 0.83094 + 1.19370I$	$-4.39628 - 4.11745I$	$-11.29745 + 5.99012I$
$u = 1.229710 - 0.222583I$ $a = -0.189457 - 1.004150I$ $b = 0.83094 - 1.19370I$	$-4.39628 + 4.11745I$	$-11.29745 - 5.99012I$
$u = 1.26347$ $a = -0.266454$ $b = 1.87117$	-6.78936	-15.0240

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.39748 + 0.52974I$ $a = -0.069718 - 1.260110I$ $b = -1.72864 - 0.39180I$	$-12.6337 - 10.0814I$	$-9.96961 + 5.13034I$
$u = 1.39748 - 0.52974I$ $a = -0.069718 + 1.260110I$ $b = -1.72864 + 0.39180I$	$-12.6337 + 10.0814I$	$-9.96961 - 5.13034I$
$u = -1.39973 + 0.55866I$ $a = -0.294421 + 0.977752I$ $b = -1.71162 + 0.05597I$	$-12.44690 + 1.83083I$	$-10.41430 - 0.85064I$
$u = -1.39973 - 0.55866I$ $a = -0.294421 - 0.977752I$ $b = -1.71162 - 0.05597I$	$-12.44690 - 1.83083I$	$-10.41430 + 0.85064I$
$u = -0.057966 + 0.464686I$ $a = 1.90019 - 0.95414I$ $b = 0.504075 - 0.513259I$	$-0.61170 + 1.48793I$	$-4.64409 - 4.66231I$
$u = -0.057966 - 0.464686I$ $a = 1.90019 + 0.95414I$ $b = 0.504075 + 0.513259I$	$-0.61170 - 1.48793I$	$-4.64409 + 4.66231I$
$u = -0.306131$ $a = 3.40681$ $b = 1.14424$	-2.29521	-1.20570

II. $I_2^u = \langle b-1,\ -u^2+a+u-1,\ u^3-u^2+1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2-u+1 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ -u^2+u+1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^2-u+1 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^2-u+2 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ -u^2+u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^2+8u-16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	u^3+u^2+2u+1
c_2, c_8	u^3-u^2+2u-1
c_3	u^3-u^2+1
c_4	$(u-1)^3$
c_5, c_7	$(u+1)^3$
c_6, c_9	u^3
c_{10}	u^3+u^2-1

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_8	$y^3 + 3y^2 + 2y - 1$
c_3, c_{10}	$y^3 - y^2 + 2y - 1$
c_4, c_5, c_7	$(y-1)^3$
c_6, c_9	y^3

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 0.337641 + 0.562280I$ $b = 1.00000$	$1.37919 - 2.82812I$	$-9.19557 + 4.65175I$
$u = 0.877439 - 0.744862I$ $a = 0.337641 - 0.562280I$ $b = 1.00000$	$1.37919 + 2.82812I$	$-9.19557 - 4.65175I$
$u = -0.754878$ $a = 2.32472$ $b = 1.00000$	-2.75839	-22.6090

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^3+u^2+2u+1)(u^{17}-2u^{16}+\cdots+u-1)$
c_2	$(u^3-u^2+2u-1)(u^{17}+12u^{16}+\cdots+7u+1)$
c_3	$(u^3-u^2+1)(u^{17}-2u^{16}+\cdots-3u-1)$
c_4	$((u-1)^3)(u^{17}-4u^{16}+\cdots+16u-1)$
c_5	$((u+1)^3)(u^{17}+22u^{16}+\cdots+256u+1)$
c_6, c_9	$u^3(u^{17}+3u^{16}+\cdots+20u+8)$
c_7	$((u+1)^3)(u^{17}-4u^{16}+\cdots+16u-1)$
c_8	$(u^3-u^2+2u-1)(u^{17}-2u^{16}+\cdots+u-1)$
c_{10}	$(u^3+u^2-1)(u^{17}-2u^{16}+\cdots-3u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^3+3y^2+2y-1)(y^{17}+18y^{15}+\cdots+7y-1)$
c_2	$(y^3+3y^2+2y-1)(y^{17}-12y^{16}+\cdots+155y-1)$
c_3, c_{10}	$(y^3-y^2+2y-1)(y^{17}-12y^{16}+\cdots+7y-1)$
c_4, c_7	$((y-1)^3)(y^{17}-22y^{16}+\cdots+256y-1)$
c_5	$((y-1)^3)(y^{17}-50y^{16}+\cdots+60796y-1)$
c_6, c_9	$y^3(y^{17}+21y^{16}+\cdots+976y-64)$