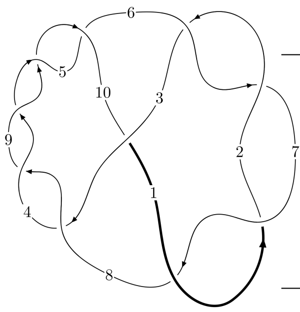
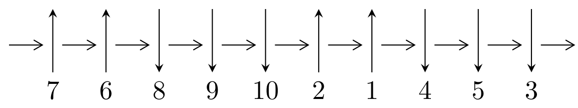
10_8 ($K10a_{114}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{14} + u^{13} - 9u^{12} - 8u^{11} + 30u^{10} + 23u^9 - 45u^8 - 30u^7 + 28u^6 + 20u^5 - 2u^4 - 6u^3 - 2u^2 + u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 14 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. $I^u_1 = \langle u^{14} + u^{13} - 9u^{12} - 8u^{11} + 30u^{10} + 23u^9 - 45u^8 - 30u^7 + 28u^6 + 20u^5 - 2u^4 - 6u^3 - 2u^2 + u - 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^7 - 4u^5 + 4u^3 - 2u \\ u^7 - 3u^5 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^8 + 5u^6 - 7u^4 + 2u^2 + 1 \\ -u^{10} + 6u^8 - 11u^6 + 6u^4 - u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{13} - 8u^{11} + 23u^9 - 30u^7 + 20u^5 - 6u^3 + u \\ u^{13} - 7u^{11} + 15u^9 - 8u^7 - 4u^5 + 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{10} - 28u^8 + 64u^6 + 4u^5 - 52u^4 - 16u^3 + 12u^2 + 12u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6 c_7	$u^{14} - u^{13} + \cdots + u - 1$
c_3, c_4, c_5 c_8, c_9	$u^{14} - u^{13} + \cdots - u - 1$
c_{10}	$u^{14} - 5u^{13} + \cdots - 9u + 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_7	$y^{14} + 17y^{13} + \cdots + 3y + 1$
c_3, c_4, c_5 c_8, c_9	$y^{14} - 19y^{13} + \cdots + 3y + 1$
c_{10}	$y^{14} - 11y^{13} + \cdots - 873y + 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.970951 + 0.194954I$	$-3.69538 + 2.85844I$	$-9.69586 - 5.54876I$
$u = -0.970951 - 0.194954I$	$-3.69538 - 2.85844I$	$-9.69586 + 5.54876I$
$u = 1.084880 + 0.290974I$	$-11.72400 - 4.55664I$	$-11.05347 + 3.73465I$
$u = 1.084880 - 0.290974I$	$-11.72400 + 4.55664I$	$-11.05347 - 3.73465I$
$u = 0.838105$	-1.62716	-4.88720
$u = -0.339787 + 0.534810I$	$-7.27107 + 1.74781I$	$-6.82316 - 3.51408I$
$u = -0.339787 - 0.534810I$	$-7.27107 - 1.74781I$	$-6.82316 + 3.51408I$
$u = 0.183882 + 0.352310I$	$-0.154017 - 0.948871I$	$-3.14842 + 7.14990I$
$u = 0.183882 - 0.352310I$	$-0.154017 + 0.948871I$	$-3.14842 - 7.14990I$
$u = -1.69593$	-10.7537	-6.14500
$u = 1.71487 + 0.04545I$	$-13.27980 - 3.79315I$	$-10.02102 + 3.81094I$
$u = 1.71487 - 0.04545I$	$-13.27980 + 3.79315I$	$-10.02102 - 3.81094I$
$u = -1.74398 + 0.07530I$	$17.6407 + 6.0832I$	$-11.74201 - 2.65432I$
$u = -1.74398 - 0.07530I$	$17.6407 - 6.0832I$	$-11.74201 + 2.65432I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6 c_7	$u^{14} - u^{13} + \cdots + u - 1$
c_3, c_4, c_5 c_8, c_9	$u^{14} - u^{13} + \cdots - u - 1$
c_{10}	$u^{14} - 5u^{13} + \cdots - 9u + 11$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_7	$y^{14} + 17y^{13} + \cdots + 3y + 1$
c_3, c_4, c_5 c_8, c_9	$y^{14} - 19y^{13} + \cdots + 3y + 1$
c_{10}	$y^{14} - 11y^{13} + \cdots - 873y + 121$