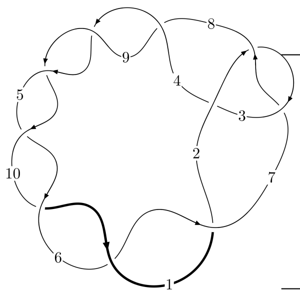
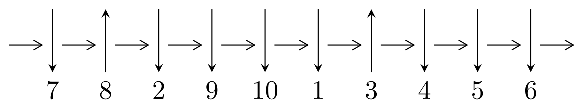
10_2 $(K10a_{59})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{11} + u^{10} + 4u^9 + 3u^8 + 6u^7 + 4u^6 + 2u^5 + u^4 - 3u^3 - u^2 - 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 11 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. $\boldsymbol{I_1^u = \langle u^{11} + u^{10} + 4u^9 + 3u^8 + 6u^7 + 4u^6 + 2u^5 + u^4 - 3u^3 - u^2 - 2u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^9 + 4u^8 + 12u^7 + 8u^6 + 12u^5 + 8u^4 - 4u^3 - 4u^2 - 8u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_9 c_{10}	$u^{11} - u^{10} + \cdots - 2u - 1$
c_2, c_7	$u^{11} + u^{10} + 4u^9 + 3u^8 + 6u^7 + 4u^6 + 2u^5 + u^4 - 3u^3 - u^2 - 2u - 1$
c_3	$u^{11} + 7u^{10} + \cdots + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_9 c_{10}	$y^{11} - 17y^{10} + \cdots + 2y - 1$
c_2, c_7	$y^{11} + 7y^{10} + \cdots + 2y - 1$
c_3	$y^{11} - 5y^{10} + \cdots + 30y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.955154$	-19.0832	-11.9080
$u=-0.345235+1.061380I$	$-3.59441-3.12518I$	$-14.0547+5.4576I$
$u=-0.345235-1.061380I$	$-3.59441+3.12518I$	$-14.0547-5.4576I$
$u=\ \ 0.197351+0.826949I$	$-0.596970+1.107570I$	$-7.89422-5.61222I$
$u=\ \ 0.197351-0.826949I$	$-0.596970-1.107570I$	$-7.89422+5.61222I$
$u=\ \ 0.805680$	-7.27447	-11.5740
$u=\ \ 0.433313+1.213520I$	$-10.90050+4.42189I$	$-14.9599-3.5435I$
$u=\ \ 0.433313-1.213520I$	$-10.90050-4.42189I$	$-14.9599+3.5435I$
$u=-0.483698+1.296390I$	$16.3901-5.1148I$	$-15.0081+2.8305I$
$u=-0.483698-1.296390I$	$16.3901+5.1148I$	$-15.0081-2.8305I$
$u=-0.453988$	-0.912673	-10.6840

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_9 c_{10}	$u^{11} - u^{10} + \cdots - 2u - 1$
c_2, c_7	$u^{11} + u^{10} + 4u^9 + 3u^8 + 6u^7 + 4u^6 + 2u^5 + u^4 - 3u^3 - u^2 - 2u - 1$
c_3	$u^{11} + 7u^{10} + \cdots + 2u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_9 c_{10}	$y^{11} - 17y^{10} + \cdots + 2y - 1$
c_2, c_7	$y^{11} + 7y^{10} + \cdots + 2y - 1$
c_3	$y^{11} - 5y^{10} + \cdots + 30y - 1$