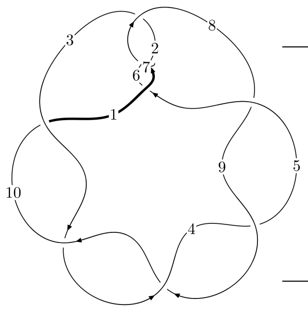
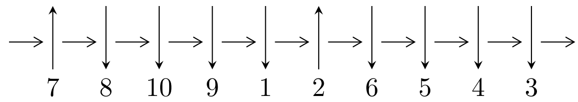
10_7 ($K10a_{65}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{21} - u^{20} + \cdots + u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 21 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. $I^u_1 = \langle u^{21} - u^{20} + 6u^{19} - 5u^{18} + 17u^{17} - 13u^{16} + 28u^{15} - 20u^{14} + 28u^{13} - 20u^{12} + 16u^{11} - 11u^{10} + 3u^9 - u^8 - 2u^7 + 4u^6 - u^5 + u^4 + 2u^3 - u^2 + u - 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 - u^3 \\ -u^{13} - 3u^{11} - 5u^9 - 4u^7 - 2u^5 + u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{19} + 4u^{17} + 8u^{15} + 8u^{13} + 5u^{11} + 2u^9 + 2u^7 + u^3 \\ u^{20} - u^{19} + \cdots + u^2 + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{14} + 3u^{12} + 4u^{10} + u^8 - 2u^6 - 2u^4 + 1 \\ -u^{14} - 4u^{12} - 7u^{10} - 6u^8 - 2u^6 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{19} - 4u^{18} + 20u^{17} - 20u^{16} + 48u^{15} - 52u^{14} + 64u^{13} - 76u^{12} + 48u^{11} - 64u^{10} + 16u^9 - 16u^8 - 4u^7 + 16u^6 - 8u^5 + 16u^4 - 4u^3 - 4u^2 + 4u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{21} + u^{20} + \cdots + u + 1$
c_2, c_5	$u^{21} - u^{20} + \cdots + u + 5$
c_3, c_4, c_8 c_9, c_{10}	$u^{21} - u^{20} + \cdots + u + 1$
c_7	$u^{21} + 11u^{20} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{21} + 11y^{20} + \cdots - y - 1$
c_2, c_5	$y^{21} - 13y^{20} + \cdots - 69y - 25$
c_3, c_4, c_8 c_9, c_{10}	$y^{21} + 27y^{20} + \cdots - y - 1$
c_7	$y^{21} - y^{20} + \cdots + 11y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.631235+0.777388I$	$12.97590-2.44340I$	$0.84460+3.15661I$
$u=-0.631235-0.777388I$	$12.97590+2.44340I$	$0.84460-3.15661I$
$u=\ \ 0.515219+0.758542I$	$3.44776+2.10610I$	$0.68965-4.22092I$
$u=\ \ 0.515219-0.758542I$	$3.44776-2.10610I$	$0.68965+4.22092I$
$u=\ \ 0.794642+0.241148I$	$10.29500-4.13640I$	$-0.28719+2.17514I$
$u=\ \ 0.794642-0.241148I$	$10.29500+4.13640I$	$-0.28719-2.17514I$
$u=-0.375476+1.140930I$	$-2.38679-0.77154I$	$-6.91276-0.81413I$
$u=-0.375476-1.140930I$	$-2.38679+0.77154I$	$-6.91276+0.81413I$
$u=\ \ 0.297476+1.182770I$	$5.89549-0.72644I$	$-5.47305-0.34896I$
$u=\ \ 0.297476-1.182770I$	$5.89549+0.72644I$	$-5.47305+0.34896I$
$u=-0.199725+0.739431I$	$-0.474299-1.026510I$	$-6.88729+6.49406I$
$u=-0.199725-0.739431I$	$-0.474299+1.026510I$	$-6.88729-6.49406I$
$u=\ \ 0.448707+1.150100I$	$-4.43097+4.04104I$	$-10.76568-4.27407I$
$u=\ \ 0.448707-1.150100I$	$-4.43097-4.04104I$	$-10.76568+4.27407I$
$u=-0.504141+1.153180I$	$-1.47889-7.30035I$	$-5.16109+7.23595I$
$u=-0.504141-1.153180I$	$-1.47889+7.30035I$	$-5.16109-7.23595I$
$u=-0.709616+0.181075I$	$1.31805+2.71325I$	$-1.55258-3.99913I$
$u=-0.709616-0.181075I$	$1.31805-2.71325I$	$-1.55258+3.99913I$
$u=\ \ 0.544516+1.163610I$	$7.57313+9.11591I$	$-3.42568-5.67037I$
$u=\ \ 0.544516-1.163610I$	$7.57313-9.11591I$	$-3.42568+5.67037I$
$u=\ \ 0.639263$	-1.31636	-8.13790

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{21} + u^{20} + \cdots + u + 1$
c_2, c_5	$u^{21} - u^{20} + \cdots + u + 5$
c_3, c_4, c_8 c_9, c_{10}	$u^{21} - u^{20} + \cdots + u + 1$
c_7	$u^{21} + 11u^{20} + \cdots - u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{21} + 11y^{20} + \cdots - y - 1$
c_2, c_5	$y^{21} - 13y^{20} + \cdots - 69y - 25$
c_3, c_4, c_8 c_9, c_{10}	$y^{21} + 27y^{20} + \cdots - y - 1$
c_7	$y^{21} - y^{20} + \cdots + 11y - 1$