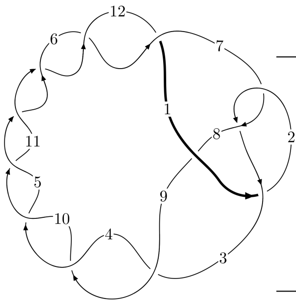
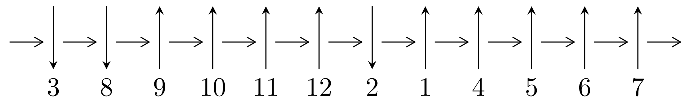
$12a_{0716}$ $(K12a_{0716})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$5,11 \xrightarrow[c_5]{} 6 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_6]{} 7 \xrightarrow[c_{12}]{} 1 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_4]{} 4 \xrightarrow[c_9]{} 9 \xrightarrow[c_3]{} 3 \xrightarrow[c_8]{} 8 \xrightarrow[c_2]{} 2 \gg c_1, c_7$$

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

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 + 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^4 - 3u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{11} + 8u^9 - 22u^7 + 24u^5 - 7u^3 - 2u \\ u^{13} - 9u^{11} + 29u^9 - 40u^7 + 22u^5 - 5u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{13} + 10u^{11} - 37u^9 + 62u^7 - 46u^5 + 12u^3 + u \\ u^{13} - 9u^{11} + 29u^9 - 40u^7 + 22u^5 - 5u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$-4u^{16}+52u^{14}-268u^{12}+696u^{10}-956u^8-4u^7+664u^6+24u^5-200u^4-40u^3+16u^2+16u+10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21} + 9u^{20} + \cdots + 7u + 1$
c_2, c_7	$u^{21} + u^{20} + \cdots - u + 1$
c_3, c_4, c_5 c_6, c_9, c_{10} c_{11}, c_{12}	$u^{21} - u^{20} + \cdots - u + 1$
c_8	$u^{21} + 3u^{20} + \cdots - 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} + 7y^{20} + \cdots - 13y - 1$
c_2, c_7	$y^{21} - 9y^{20} + \cdots + 7y - 1$
c_3, c_4, c_5 c_6, c_9, c_{10} c_{11}, c_{12}	$y^{21} - 33y^{20} + \cdots + 7y - 1$
c_8	$y^{21} - 5y^{20} + \cdots + 47y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.986925 + 0.107343I$	$5.30460 - 0.94567I$	$15.9891 + 0.9603I$
$u = -0.986925 - 0.107343I$	$5.30460 + 0.94567I$	$15.9891 - 0.9603I$
$u = \quad 0.964195 + 0.203562I$	$3.73785 + 5.76102I$	$12.8516 - 6.6283I$
$u = \quad 0.964195 - 0.203562I$	$3.73785 - 5.76102I$	$12.8516 + 6.6283I$
$u = \quad 0.693519$	0.883815	10.3390
$u = -1.43658$	8.31325	10.1730
$u = -0.381397 + 0.348992I$	$-0.51635 - 3.92137I$	$8.33191 + 8.74672I$
$u = -0.381397 - 0.348992I$	$-0.51635 + 3.92137I$	$8.33191 - 8.74672I$
$u = -1.50531 + 0.08944I$	$12.19490 - 6.89551I$	$13.5766 + 5.0714I$
$u = -1.50531 - 0.08944I$	$12.19490 + 6.89551I$	$13.5766 - 5.0714I$
$u = \quad 1.51471 + 0.04973I$	$13.91340 + 1.56839I$	$16.0849 - 0.3015I$
$u = \quad 1.51471 - 0.04973I$	$13.91340 - 1.56839I$	$16.0849 + 0.3015I$
$u = \quad 0.453462 + 0.122416I$	$0.769941 + 0.070488I$	$13.52298 - 1.80552I$
$u = \quad 0.453462 - 0.122416I$	$0.769941 - 0.070488I$	$13.52298 + 1.80552I$
$u = -0.113370 + 0.369174I$	$-1.30747 + 1.54741I$	$3.43030 - 0.59143I$
$u = -0.113370 - 0.369174I$	$-1.30747 - 1.54741I$	$3.43030 + 0.59143I$
$u = \quad 1.85680$	-18.6369	10.4160
$u = \quad 1.87144 + 0.02233I$	$-14.3542 + 7.5109I$	$13.7230 - 4.4405I$
$u = \quad 1.87144 - 0.02233I$	$-14.3542 - 7.5109I$	$13.7230 + 4.4405I$
$u = -1.87368 + 0.01263I$	$-12.55530 - 1.91754I$	$16.0257 + 0.0622I$
$u = -1.87368 - 0.01263I$	$-12.55530 + 1.91754I$	$16.0257 - 0.0622I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{21} + 9u^{20} + \cdots + 7u + 1$
c_2, c_7	$u^{21} + u^{20} + \cdots - u + 1$
c_3, c_4, c_5 c_6, c_9, c_{10} c_{11}, c_{12}	$u^{21} - u^{20} + \cdots - u + 1$
c_8	$u^{21} + 3u^{20} + \cdots - 7u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} + 7y^{20} + \cdots - 13y - 1$
c_2, c_7	$y^{21} - 9y^{20} + \cdots + 7y - 1$
c_3, c_4, c_5 c_6, c_9, c_{10} c_{11}, c_{12}	$y^{21} - 33y^{20} + \cdots + 7y - 1$
c_8	$y^{21} - 5y^{20} + \cdots + 47y - 1$