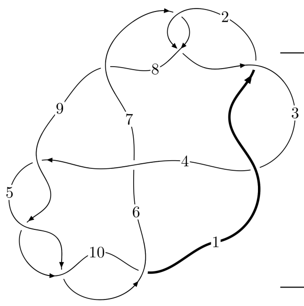
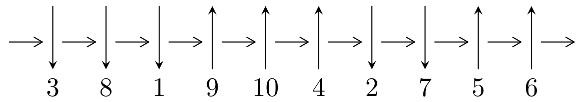
10_{15} $(K10a_{68})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^4 - u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{12} - u^{10} + 3u^8 - 2u^6 + 2u^4 - u^2 + 1 \\ -u^{14} + 2u^{12} - 5u^{10} + 6u^8 - 6u^6 + 4u^4 - u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{11} - 2u^9 + 4u^7 - 4u^5 + 3u^3 \\ u^{11} - u^9 + 2u^7 - u^5 - u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{20} - 3u^{18} + 9u^{16} - 16u^{14} + 24u^{12} - 25u^{10} + 21u^8 - 10u^6 + 3u^4 - u^2 + 1 \\ u^{20} - 2u^{18} + 6u^{16} - 8u^{14} + 9u^{12} - 6u^{10} + 4u^6 - 3u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{19} + 4u^{18} + 8u^{17} - 12u^{16} - 28u^{15} + 32u^{14} + 40u^{13} - 56u^{12} - 64u^{11} + 72u^{10} + 64u^9 - 68u^8 - 56u^7 + 44u^6 + 36u^5 - 8u^4 - 16u^3 - 4u^2 + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_8	$u^{21} + 5u^{20} + \cdots + 3u + 1$
c_2, c_7	$u^{21} - u^{20} + \cdots + u - 1$
c_4, c_5, c_9 c_{10}	$u^{21} - u^{20} + \cdots - u - 1$
c_6	$u^{21} + 7u^{20} + \cdots + 57u + 23$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_8	$y^{21} + 23y^{20} + \cdots - 21y - 1$
c_2, c_7	$y^{21} - 5y^{20} + \cdots + 3y - 1$
c_4, c_5, c_9 c_{10}	$y^{21} - 25y^{20} + \cdots + 3y - 1$
c_6	$y^{21} - 13y^{20} + \cdots + 903y - 529$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.953485$	4.41569	-0.452350
$u = \quad 0.874819 + 0.364250I$	$-0.42770 - 3.55745I$	$0.30280 + 8.52474I$
$u = \quad 0.874819 - 0.364250I$	$-0.42770 + 3.55745I$	$0.30280 - 8.52474I$
$u = -0.953468 + 0.447109I$	$6.90304 + 5.27729I$	$3.50266 - 5.86843I$
$u = -0.953468 - 0.447109I$	$6.90304 - 5.27729I$	$3.50266 + 5.86843I$
$u = -0.797642 + 0.208550I$	$-1.36175 + 0.64933I$	$-4.62516 - 0.62543I$
$u = -0.797642 - 0.208550I$	$-1.36175 - 0.64933I$	$-4.62516 + 0.62543I$
$u = -0.863139 + 0.856542I$	$7.11051 - 0.45995I$	$6.17329 + 1.45528I$
$u = -0.863139 - 0.856542I$	$7.11051 + 0.45995I$	$6.17329 - 1.45528I$
$u = \quad 0.900058 + 0.818905I$	$4.54603 - 3.06102I$	$1.66624 + 2.52883I$
$u = \quad 0.900058 - 0.818905I$	$4.54603 + 3.06102I$	$1.66624 - 2.52883I$
$u = \quad 0.853497 + 0.897241I$	$15.5974 + 2.5355I$	$7.87177 - 0.33713I$
$u = \quad 0.853497 - 0.897241I$	$15.5974 - 2.5355I$	$7.87177 + 0.33713I$
$u = -0.352374 + 0.669848I$	$8.81523 - 1.18870I$	$8.06950 + 0.14927I$
$u = -0.352374 - 0.669848I$	$8.81523 + 1.18870I$	$8.06950 - 0.14927I$
$u = -0.945375 + 0.826771I$	$6.85351 + 6.71941I$	$5.45682 - 6.57422I$
$u = -0.945375 - 0.826771I$	$6.85351 - 6.71941I$	$5.45682 + 6.57422I$
$u = \quad 0.974286 + 0.843873I$	$15.2130 - 8.9734I$	$7.18924 + 5.14301I$
$u = \quad 0.974286 - 0.843873I$	$15.2130 + 8.9734I$	$7.18924 - 5.14301I$
$u = \quad 0.332595 + 0.443596I$	$1.162670 + 0.391903I$	$7.61900 - 1.22999I$
$u = \quad 0.332595 - 0.443596I$	$1.162670 - 0.391903I$	$7.61900 + 1.22999I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3, c_8	$u^{21} + 5u^{20} + \cdots + 3u + 1$
c_2, c_7	$u^{21} - u^{20} + \cdots + u - 1$
c_4, c_5, c_9 c_{10}	$u^{21} - u^{20} + \cdots - u - 1$
c_6	$u^{21} + 7u^{20} + \cdots + 57u + 23$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_8	$y^{21} + 23y^{20} + \cdots - 21y - 1$
c_2, c_7	$y^{21} - 5y^{20} + \cdots + 3y - 1$
c_4, c_5, c_9 c_{10}	$y^{21} - 25y^{20} + \cdots + 3y - 1$
c_6	$y^{21} - 13y^{20} + \cdots + 903y - 529$