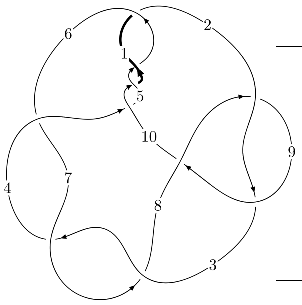
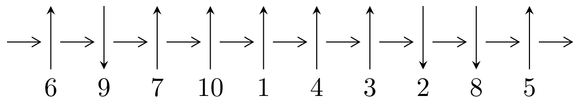
10_{12} $(K10a_{43})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{23} + u^{22} + \cdots + 2u^2 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 23 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. $I_1^u = \langle u^{23} + u^{22} + \cdots + 2u^2 - 1 \rangle$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^6 - u^4 + 1 \\ -u^6 + 2u^4 - u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{14} - 3u^{12} + 4u^{10} - u^8 + 1 \\ -u^{16} + 4u^{14} - 8u^{12} + 8u^{10} - 4u^8 - 2u^6 + 4u^4 - 2u^2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^{20} - 5u^{18} + 11u^{16} - 10u^{14} - 2u^{12} + 13u^{10} - 9u^8 + 3u^4 - u^2 + 1 \\ -u^{20} + 6u^{18} - 16u^{16} + 22u^{14} - 13u^{12} - 4u^{10} + 10u^8 - 4u^6 - u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{22} - 28u^{20} - 4u^{19} + 88u^{18} + 24u^{17} - 144u^{16} - 64u^{15} + 100u^{14} + 84u^{13} + 52u^{12} - 36u^{11} - 148u^{10} - 44u^9 + 84u^8 + 60u^7 + 20u^6 - 16u^5 - 36u^4 - 12u^3 + 8u^2 + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$u^{23} + u^{22} + \cdots + 2u^2 - 1$
c_2, c_8	$u^{23} + u^{22} + \cdots + 2u^2 - 1$
c_3, c_6, c_7	$u^{23} + 3u^{22} + \cdots + 8u + 1$
c_9	$u^{23} + 13u^{22} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$y^{23} - 25y^{22} + \cdots + 4y - 1$
c_2, c_8	$y^{23} - 13y^{22} + \cdots + 4y - 1$
c_3, c_6, c_7	$y^{23} + 23y^{22} + \cdots + 44y - 1$
c_9	$y^{23} - 5y^{22} + \cdots - 12y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.943991 + 0.417010I$	$-0.32248 - 3.66903I$	$4.65447 + 8.36170I$
$u = \ \ 0.943991 - 0.417010I$	$-0.32248 + 3.66903I$	$4.65447 - 8.36170I$
$u = -0.925645 + 0.242794I$	$-1.56228 + 0.94741I$	$-1.84899 - 0.66530I$
$u = -0.925645 - 0.242794I$	$-1.56228 - 0.94741I$	$-1.84899 + 0.66530I$
$u = \ \ 1.06813$	3.34151	2.11920
$u = -0.941020 + 0.526196I$	$6.90346 + 5.14882I$	$7.72787 - 5.87498I$
$u = -0.941020 - 0.526196I$	$6.90346 - 5.14882I$	$7.72787 + 5.87498I$
$u = -0.096630 + 0.838348I$	$2.71524 - 4.94630I$	$6.58652 + 2.90766I$
$u = -0.096630 - 0.838348I$	$2.71524 + 4.94630I$	$6.58652 - 2.90766I$
$u = \ \ 0.032467 + 0.825255I$	$-3.91327 + 2.09016I$	$2.84908 - 3.29724I$
$u = \ \ 0.032467 - 0.825255I$	$-3.91327 - 2.09016I$	$2.84908 + 3.29724I$
$u = -0.514598 + 0.582714I$	$8.10021 - 0.74106I$	$10.45548 - 0.11519I$
$u = -0.514598 - 0.582714I$	$8.10021 + 0.74106I$	$10.45548 + 0.11519I$
$u = \ \ 1.234440 + 0.405346I$	$-1.31438 + 0.65510I$	$2.52162 + 0.18366I$
$u = \ \ 1.234440 - 0.405346I$	$-1.31438 - 0.65510I$	$2.52162 - 0.18366I$
$u = -1.227460 + 0.443418I$	$-7.66398 + 2.39421I$	$-0.836170 - 0.236041I$
$u = -1.227460 - 0.443418I$	$-7.66398 - 2.39421I$	$-0.836170 + 0.236041I$
$u = \ \ 1.222590 + 0.473871I$	$-7.44486 - 6.76579I$	$-0.10985 + 6.36717I$
$u = \ \ 1.222590 - 0.473871I$	$-7.44486 + 6.76579I$	$-0.10985 - 6.36717I$
$u = -1.217040 + 0.502393I$	$-0.62159 + 9.81750I$	$3.52842 - 5.98024I$
$u = -1.217040 - 0.502393I$	$-0.62159 - 9.81750I$	$3.52842 + 5.98024I$
$u = \ \ 0.454832 + 0.348349I$	$0.985778 + 0.157850I$	$10.41194 - 1.08803I$
$u = \ \ 0.454832 - 0.348349I$	$0.985778 - 0.157850I$	$10.41194 + 1.08803I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$u^{23} + u^{22} + \cdots + 2u^2 - 1$
c_2, c_8	$u^{23} + u^{22} + \cdots + 2u^2 - 1$
c_3, c_6, c_7	$u^{23} + 3u^{22} + \cdots + 8u + 1$
c_9	$u^{23} + 13u^{22} + \cdots + 4u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$y^{23} - 25y^{22} + \cdots + 4y - 1$
c_2, c_8	$y^{23} - 13y^{22} + \cdots + 4y - 1$
c_3, c_6, c_7	$y^{23} + 23y^{22} + \cdots + 44y - 1$
c_9	$y^{23} - 5y^{22} + \cdots - 12y - 1$