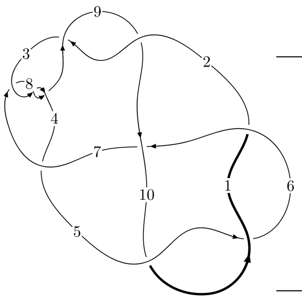
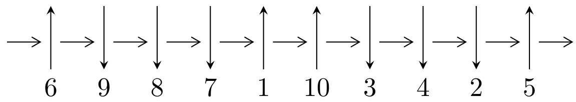
10_{22} $(K10a_{112})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{24} - u^{23} + \cdots + 2u^2 + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 24 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. $I_1^u = \langle u^{24} - u^{23} + \cdots + 2u^2 + 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^3 + 2u \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{16} + 7u^{14} - 19u^{12} + 22u^{10} - 3u^8 - 14u^6 + 6u^4 + 2u^2 + 1 \\ -u^{16} + 6u^{14} - 14u^{12} + 14u^{10} - 2u^8 - 6u^6 + 4u^4 - 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{18} - 7u^{16} + 20u^{14} - 27u^{12} + 11u^{10} + 13u^8 - 14u^6 + 3u^2 + 1 \\ -u^{20} + 8u^{18} - 26u^{16} + 40u^{14} - 19u^{12} - 24u^{10} + 30u^8 - 9u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{21} + 32u^{19} + 4u^{18} - 108u^{17} - 28u^{16} + 180u^{15} + 80u^{14} - 104u^{13} - 104u^{12} - 120u^{11} + 24u^{10} + 216u^9 + 88u^8 - 56u^7 - 76u^6 - 80u^5 - 12u^4 + 36u^3 + 24u^2 + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_{10}	$u^{24} + u^{23} + \cdots + 2u^2 + 1$
c_2, c_4, c_9	$u^{24} - 3u^{23} + \cdots - 8u + 1$
c_3, c_7, c_8	$u^{24} + u^{23} + \cdots + 2u^2 + 1$
c_6	$u^{24} - 3u^{23} + \cdots + 20u - 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{10}	$y^{24} - 23y^{23} + \cdots + 4y + 1$
c_2, c_4, c_9	$y^{24} + 25y^{23} + \cdots - 20y + 1$
c_3, c_7, c_8	$y^{24} - 19y^{23} + \cdots + 4y + 1$
c_6	$y^{24} - 11y^{23} + \cdots - 904y + 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.047552 + 0.882738I$	$12.21820 + 5.35992I$	$5.68286 - 3.17670I$
$u = -0.047552 - 0.882738I$	$12.21820 - 5.35992I$	$5.68286 + 3.17670I$
$u = 0.023946 + 0.850260I$	$5.90820 - 2.14805I$	$2.49248 + 3.24690I$
$u = 0.023946 - 0.850260I$	$5.90820 + 2.14805I$	$2.49248 - 3.24690I$
$u = -0.832524$	3.20914	1.52540
$u = 1.20293$	-2.53343	-1.89060
$u = -1.293390 + 0.128068I$	$-4.64383 + 2.66216I$	$-8.07524 - 4.83074I$
$u = -1.293390 - 0.128068I$	$-4.64383 - 2.66216I$	$-8.07524 + 4.83074I$
$u = -1.234200 + 0.427679I$	$8.55472 - 0.67393I$	$2.54072 - 0.18139I$
$u = -1.234200 - 0.427679I$	$8.55472 + 0.67393I$	$2.54072 + 0.18139I$
$u = -0.691969$	3.21354	0.806220
$u = 1.30821$	-2.22926	-4.75390
$u = 1.252440 + 0.391136I$	$2.10558 - 2.30642I$	$-0.925091 + 0.098908I$
$u = 1.252440 - 0.391136I$	$2.10558 + 2.30642I$	$-0.925091 - 0.098908I$
$u = 1.317160 + 0.196052I$	$-0.01480 - 5.67994I$	$-2.05445 + 5.89837I$
$u = 1.317160 - 0.196052I$	$-0.01480 + 5.67994I$	$-2.05445 - 5.89837I$
$u = -1.291330 + 0.388939I$	$1.81113 + 6.59660I$	$-1.74384 - 6.15928I$
$u = -1.291330 - 0.388939I$	$1.81113 - 6.59660I$	$-1.74384 + 6.15928I$
$u = 1.311950 + 0.407404I$	$7.97363 - 9.98187I$	$1.73153 + 5.91019I$
$u = 1.311950 - 0.407404I$	$7.97363 + 9.98187I$	$1.73153 - 5.91019I$
$u = -0.240904 + 0.566295I$	$4.81497 + 3.00632I$	$4.21158 - 5.20782I$
$u = -0.240904 - 0.566295I$	$4.81497 - 3.00632I$	$4.21158 + 5.20782I$
$u = 0.208545 + 0.356460I$	$-0.079333 - 0.910145I$	$-1.70410 + 7.59691I$
$u = 0.208545 - 0.356460I$	$-0.079333 + 0.910145I$	$-1.70410 - 7.59691I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_{10}	$u^{24} + u^{23} + \cdots + 2u^2 + 1$
c_2, c_4, c_9	$u^{24} - 3u^{23} + \cdots - 8u + 1$
c_3, c_7, c_8	$u^{24} + u^{23} + \cdots + 2u^2 + 1$
c_6	$u^{24} - 3u^{23} + \cdots + 20u - 7$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{10}	$y^{24} - 23y^{23} + \cdots + 4y + 1$
c_2, c_4, c_9	$y^{24} + 25y^{23} + \cdots - 20y + 1$
c_3, c_7, c_8	$y^{24} - 19y^{23} + \cdots + 4y + 1$
c_6	$y^{24} - 11y^{23} + \cdots - 904y + 49$