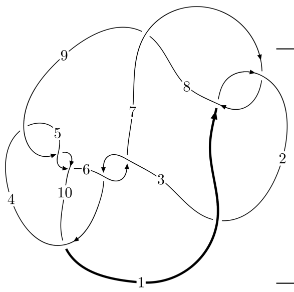
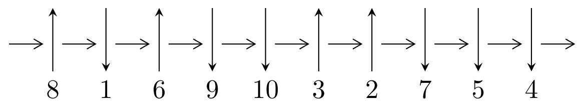
10_{29} $(K10a_{53})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{31} + u^{30} + \cdots + 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 31 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. $I^u_1 = \langle u^{31} + u^{30} + \cdots + 2u + 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^4 + u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^8 - 3u^6 + u^4 + 2u^2 + 1 \\ -u^8 + 4u^6 - 4u^4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{16} + 7u^{14} - 19u^{12} + 24u^{10} - 13u^8 + 2u^6 - 2u^4 + 2u^2 + 1 \\ u^{18} - 8u^{16} + 25u^{14} - 36u^{12} + 19u^{10} + 4u^8 - 2u^6 - 2u^4 - 3u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{19} + 8u^{17} - 24u^{15} + 30u^{13} - 7u^{11} - 10u^9 - 4u^7 + 6u^5 + 3u^3 + 2u \\ u^{19} - 9u^{17} + 32u^{15} - 55u^{13} + 43u^{11} - 9u^9 - 4u^5 - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{28} - 52u^{26} + 4u^{25} + 292u^{24} - 48u^{23} - 916u^{22} + 244u^{21} + 1732u^{20} - 672u^{19} - 1988u^{18} + 1056u^{17} + 1360u^{16} - 896u^{15} - 644u^{14} + 332u^{13} + 420u^{12} - 60u^{11} - 288u^{10} + 84u^9 + 88u^8 - 16u^6 - 44u^5 + 4u^2 - 16u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{31} - u^{30} + \cdots + 2u^2 + 1$
c_2, c_8	$u^{31} + 11u^{30} + \cdots - 4u - 1$
c_3, c_6	$u^{31} + 5u^{30} + \cdots + 40u + 7$
c_4, c_5, c_9	$u^{31} + u^{30} + \cdots + 2u + 1$
c_{10}	$u^{31} - 3u^{30} + \cdots - 13u - 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{31} + 11y^{30} + \cdots - 4y - 1$
c_2, c_8	$y^{31} + 19y^{30} + \cdots - 8y - 1$
c_3, c_6	$y^{31} + 23y^{30} + \cdots - 640y - 49$
c_4, c_5, c_9	$y^{31} - 29y^{30} + \cdots - 4y - 1$
c_{10}	$y^{31} - 9y^{30} + \cdots + 1481y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.196790 + 0.189244I$	$0.502956 + 0.402984I$	$-0.929300 - 0.528315I$
$u = -1.196790 - 0.189244I$	$0.502956 - 0.402984I$	$-0.929300 + 0.528315I$
$u = 0.371332 + 0.681959I$	$-0.47562 - 8.17190I$	$-2.44268 + 8.00325I$
$u = 0.371332 - 0.681959I$	$-0.47562 + 8.17190I$	$-2.44268 - 8.00325I$
$u = 0.434998 + 0.611250I$	$-4.89690 - 1.99617I$	$-7.89924 + 3.62729I$
$u = 0.434998 - 0.611250I$	$-4.89690 + 1.99617I$	$-7.89924 - 3.62729I$
$u = 1.239060 + 0.217665I$	$0.12823 - 5.89464I$	$-1.94513 + 6.44091I$
$u = 1.239060 - 0.217665I$	$0.12823 + 5.89464I$	$-1.94513 - 6.44091I$
$u = 0.529247 + 0.517876I$	$-1.14145 + 4.14236I$	$-4.20039 - 2.04013I$
$u = 0.529247 - 0.517876I$	$-1.14145 - 4.14236I$	$-4.20039 + 2.04013I$
$u = -0.343506 + 0.654959I$	$0.72976 + 2.73446I$	$-0.23310 - 3.38925I$
$u = -0.343506 - 0.654959I$	$0.72976 - 2.73446I$	$-0.23310 + 3.38925I$
$u = -1.26234$	-2.75281	-1.58210
$u = -0.028009 + 0.652167I$	$3.99591 + 2.71284I$	$3.89942 - 3.44665I$
$u = -0.028009 - 0.652167I$	$3.99591 - 2.71284I$	$3.89942 + 3.44665I$
$u = 1.358560 + 0.080822I$	$-5.22411 - 2.56488I$	$-9.16453 + 4.43258I$
$u = 1.358560 - 0.080822I$	$-5.22411 + 2.56488I$	$-9.16453 - 4.43258I$
$u = -0.464772 + 0.428483I$	$0.007927 + 0.929922I$	$-2.40372 - 3.68841I$
$u = -0.464772 - 0.428483I$	$0.007927 - 0.929922I$	$-2.40372 + 3.68841I$
$u = 1.43568 + 0.18978I$	$-5.89237 - 3.33239I$	$-5.23670 + 3.21859I$
$u = 1.43568 - 0.18978I$	$-5.89237 + 3.33239I$	$-5.23670 - 3.21859I$
$u = 1.43808 + 0.24908I$	$-4.99237 - 6.04082I$	$-4.35365 + 3.16093I$
$u = 1.43808 - 0.24908I$	$-4.99237 + 6.04082I$	$-4.35365 - 3.16093I$
$u = -1.45066 + 0.25754I$	$-6.33335 + 11.60290I$	$-6.34947 - 7.70694I$
$u = -1.45066 - 0.25754I$	$-6.33335 - 11.60290I$	$-6.34947 + 7.70694I$
$u = -1.46473 + 0.17711I$	$-7.51197 - 1.64856I$	$-8.01509 + 2.12263I$
$u = -1.46473 - 0.17711I$	$-7.51197 + 1.64856I$	$-8.01509 - 2.12263I$
$u = -1.46230 + 0.22292I$	$-11.00390 + 5.04935I$	$-11.12529 - 3.42516I$
$u = -1.46230 - 0.22292I$	$-11.00390 - 5.04935I$	$-11.12529 + 3.42516I$
$u = -0.265022 + 0.399657I$	$-0.107136 + 1.026300I$	$-1.81008 - 6.41690I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.265022 - 0.399657I$	$-0.107136 - 1.026300I$	$-1.81008 + 6.41690I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{31} - u^{30} + \cdots + 2u^2 + 1$
c_2, c_8	$u^{31} + 11u^{30} + \cdots - 4u - 1$
c_3, c_6	$u^{31} + 5u^{30} + \cdots + 40u + 7$
c_4, c_5, c_9	$u^{31} + u^{30} + \cdots + 2u + 1$
c_{10}	$u^{31} - 3u^{30} + \cdots - 13u - 16$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{31} + 11y^{30} + \cdots - 4y - 1$
c_2, c_8	$y^{31} + 19y^{30} + \cdots - 8y - 1$
c_3, c_6	$y^{31} + 23y^{30} + \cdots - 640y - 49$
c_4, c_5, c_9	$y^{31} - 29y^{30} + \cdots - 4y - 1$
c_{10}	$y^{31} - 9y^{30} + \cdots + 1481y - 256$