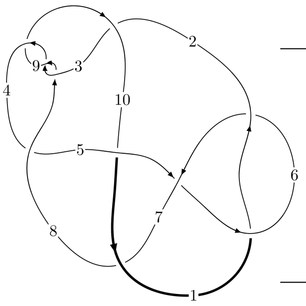
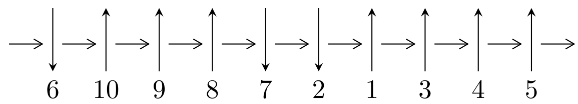
10_{27} ($K10a_{58}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{35} - u^{34} + \cdots + 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 35 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. $I_1^u = \langle u^{35} - u^{34} + \cdots + 2u - 1 \rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

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

$$a_5 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{11} + 2u^9 - 2u^7 + u^3 \\ -u^{11} + 3u^9 - 4u^7 + 3u^5 - u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ u^{10} - 2u^8 + 3u^6 - 2u^4 + u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{16} - 3u^{14} + 5u^{12} - 4u^{10} + 3u^8 - 2u^6 + 2u^4 + 1 \\ u^{18} - 4u^{16} + 9u^{14} - 12u^{12} + 11u^{10} - 6u^8 + 2u^6 + u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{32} + 7u^{30} + \cdots + 2u^4 + 1 \\ -u^{32} + 8u^{30} + \cdots - 4u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{33} + 32u^{31} - 4u^{30} - 132u^{29} + 28u^{28} + 348u^{27} - 100u^{26} - 644u^{25} + 224u^{24} + 868u^{23} - 344u^{22} - 880u^{21} + 376u^{20} + 700u^{19} - 312u^{18} - 488u^{17} + 228u^{16} + 336u^{15} - 180u^{14} - 232u^{13} + 140u^{12} + 136u^{11} - 88u^{10} - 72u^9 + 44u^8 + 32u^7 - 24u^6 - 16u^5 + 16u^4 + 4u^3 - 8u^2 + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{35} - u^{34} + \cdots + 2u - 1$
c_2, c_4	$u^{35} + 3u^{34} + \cdots + 14u + 5$
c_3, c_8, c_9	$u^{35} - u^{34} + \cdots + u^2 - 1$
c_5	$u^{35} + 17u^{34} + \cdots + 2u + 1$
c_7	$u^{35} - 3u^{34} + \cdots + 58u - 7$
c_{10}	$u^{35} + u^{34} + \cdots - 8u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{35} - 17y^{34} + \cdots + 2y - 1$
c_2, c_4	$y^{35} + 23y^{34} + \cdots + 166y - 25$
c_3, c_8, c_9	$y^{35} - 29y^{34} + \cdots + 2y - 1$
c_5	$y^{35} + 3y^{34} + \cdots - 14y - 1$
c_7	$y^{35} + 11y^{34} + \cdots + 1446y - 49$
c_{10}	$y^{35} - y^{34} + \cdots + 34y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.890522 + 0.542191I$	$3.03937 + 0.83862I$	$7.46140 + 0.32367I$
$u = \quad 0.890522 - 0.542191I$	$3.03937 - 0.83862I$	$7.46140 - 0.32367I$
$u = -0.996188 + 0.423828I$	$-1.53766 + 1.71623I$	$0.733091 + 0.125972I$
$u = -0.996188 - 0.423828I$	$-1.53766 - 1.71623I$	$0.733091 - 0.125972I$
$u = \quad 0.665614 + 0.623440I$	$3.70229 - 5.45820I$	$8.60996 + 5.96309I$
$u = \quad 0.665614 - 0.623440I$	$3.70229 + 5.45820I$	$8.60996 - 5.96309I$
$u = \quad 0.903342$	2.34444	4.14110
$u = -0.688085 + 0.531421I$	$-0.78083 + 2.01862I$	$2.90867 - 4.63726I$
$u = -0.688085 - 0.531421I$	$-0.78083 - 2.01862I$	$2.90867 + 4.63726I$
$u = \quad 1.059800 + 0.502369I$	$-0.80902 - 4.67146I$	$3.48727 + 7.37463I$
$u = \quad 1.059800 - 0.502369I$	$-0.80902 + 4.67146I$	$3.48727 - 7.37463I$
$u = -1.146120 + 0.254789I$	$-2.52028 - 4.45397I$	$0.84761 + 2.81525I$
$u = -1.146120 - 0.254789I$	$-2.52028 + 4.45397I$	$0.84761 - 2.81525I$
$u = \quad 0.308085 + 0.766136I$	$1.96589 + 7.38977I$	$7.01566 - 5.00078I$
$u = \quad 0.308085 - 0.766136I$	$1.96589 - 7.38977I$	$7.01566 + 5.00078I$
$u = \quad 1.142990 + 0.287310I$	$-6.81373 + 0.30557I$	$-3.68573 - 0.05854I$
$u = \quad 1.142990 - 0.287310I$	$-6.81373 - 0.30557I$	$-3.68573 + 0.05854I$
$u = -0.460984 + 0.678579I$	$6.79721 - 1.04155I$	$11.85373 + 0.57295I$
$u = -0.460984 - 0.678579I$	$6.79721 + 1.04155I$	$11.85373 - 0.57295I$
$u = -1.141570 + 0.325389I$	$-3.32477 + 3.85709I$	$-0.01107 - 3.91391I$
$u = -1.141570 - 0.325389I$	$-3.32477 - 3.85709I$	$-0.01107 + 3.91391I$
$u = -1.053770 + 0.564883I$	$5.05997 + 5.85664I$	$8.52563 - 5.76903I$
$u = -1.053770 - 0.564883I$	$5.05997 - 5.85664I$	$8.52563 + 5.76903I$
$u = -0.276974 + 0.740238I$	$-2.57455 - 3.36312I$	$2.16603 + 3.13288I$
$u = -0.276974 - 0.740238I$	$-2.57455 + 3.36312I$	$2.16603 - 3.13288I$
$u = \quad 1.131430 + 0.520956I$	$-2.00084 - 4.02658I$	$1.98982 + 2.90516I$
$u = \quad 1.131430 - 0.520956I$	$-2.00084 + 4.02658I$	$1.98982 - 2.90516I$
$u = -1.134810 + 0.545503I$	$-5.06633 + 8.22097I$	$-0.85255 - 6.68822I$
$u = -1.134810 - 0.545503I$	$-5.06633 - 8.22097I$	$-0.85255 + 6.68822I$
$u = \quad 1.134940 + 0.561389I$	$-0.46048 - 12.38410I$	$3.84214 + 8.57579I$

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$1.134940 - 0.561389I$	$-0.46048 + 12.38410I$	$3.84214 - 8.57579I$
$u =$	$0.217277 + 0.699987I$	$0.592334 - 0.599446I$	$5.29885 + 0.74081I$
$u =$	$0.217277 - 0.699987I$	$0.592334 + 0.599446I$	$5.29885 - 0.74081I$
$u =$	$0.396163 + 0.521609I$	$1.091810 + 0.446317I$	$8.73891 - 2.08073I$
$u =$	$0.396163 - 0.521609I$	$1.091810 - 0.446317I$	$8.73891 + 2.08073I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{35} - u^{34} + \cdots + 2u - 1$
c_2, c_4	$u^{35} + 3u^{34} + \cdots + 14u + 5$
c_3, c_8, c_9	$u^{35} - u^{34} + \cdots + u^2 - 1$
c_5	$u^{35} + 17u^{34} + \cdots + 2u + 1$
c_7	$u^{35} - 3u^{34} + \cdots + 58u - 7$
c_{10}	$u^{35} + u^{34} + \cdots - 8u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{35} - 17y^{34} + \cdots + 2y - 1$
c_2, c_4	$y^{35} + 23y^{34} + \cdots + 166y - 25$
c_3, c_8, c_9	$y^{35} - 29y^{34} + \cdots + 2y - 1$
c_5	$y^{35} + 3y^{34} + \cdots - 14y - 1$
c_7	$y^{35} + 11y^{34} + \cdots + 1446y - 49$
c_{10}	$y^{35} - y^{34} + \cdots + 34y - 1$