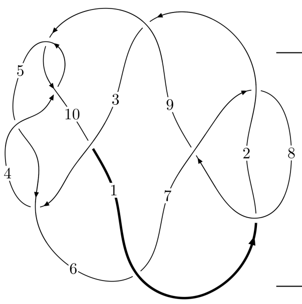
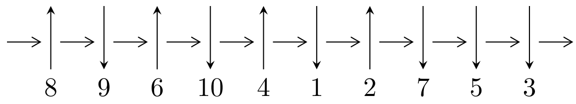
10_{41} $(K10a_{35})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{14} + 3u^{12} + 4u^{10} + u^8 - 2u^6 - 2u^4 + 1 \\ u^{16} + 4u^{14} + 8u^{12} + 8u^{10} + 4u^8 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{25} + 6u^{23} + \cdots + 3u^5 - u \\ u^{27} + 7u^{25} + \cdots + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{14} + 3u^{12} + 4u^{10} + u^8 - 2u^6 - 2u^4 + 1 \\ -u^{14} - 4u^{12} - 7u^{10} - 6u^8 - 2u^6 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{34} - 4u^{33} - 36u^{32} - 32u^{31} - 156u^{30} - 128u^{29} - 412u^{28} - 320u^{27} - 712u^{26} - 548u^{25} - 792u^{24} - 652u^{23} - 472u^{22} - 508u^{21} + 56u^{20} - 156u^{19} + 380u^{18} + 184u^{17} + 328u^{16} + 304u^{15} + 108u^{14} + 176u^{13} - 36u^{12} - 8u^{11} - 56u^{10} - 88u^9 - 44u^8 - 64u^7 - 16u^6 - 12u^5 - 4u^3 + 4u^2 + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{35} - u^{34} + \cdots - 2u + 1$
c_2, c_6	$u^{35} + u^{34} + \cdots + 10u + 1$
c_3, c_5	$u^{35} - 11u^{34} + \cdots - 2u + 1$
c_4, c_9	$u^{35} + u^{34} + \cdots + 2u + 1$
c_8	$u^{35} + 19u^{34} + \cdots - 2u - 1$
c_{10}	$u^{35} - 5u^{34} + \cdots - 54u + 13$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{35} + 19y^{34} + \cdots - 2y - 1$
c_2, c_6	$y^{35} - 29y^{34} + \cdots - 50y - 1$
c_3, c_5	$y^{35} + 27y^{34} + \cdots - 22y - 1$
c_4, c_9	$y^{35} + 11y^{34} + \cdots - 2y - 1$
c_8	$y^{35} - 5y^{34} + \cdots + 2y - 1$
c_{10}	$y^{35} - 9y^{34} + \cdots + 966y - 169$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.475306 + 0.917107I$	$-1.61985 - 2.07827I$	$-4.18960 + 3.40333I$
$u = -0.475306 - 0.917107I$	$-1.61985 + 2.07827I$	$-4.18960 - 3.40333I$
$u = 0.528952 + 0.892872I$	$-0.81872 + 7.33485I$	$-2.03591 - 8.71425I$
$u = 0.528952 - 0.892872I$	$-0.81872 - 7.33485I$	$-2.03591 + 8.71425I$
$u = -0.030366 + 1.049680I$	$-4.65111 - 2.79178I$	$-9.43445 + 3.12849I$
$u = -0.030366 - 1.049680I$	$-4.65111 + 2.79178I$	$-9.43445 - 3.12849I$
$u = 0.511218 + 0.765398I$	$3.43859 + 2.09817I$	$4.61461 - 4.20156I$
$u = 0.511218 - 0.765398I$	$3.43859 - 2.09817I$	$4.61461 + 4.20156I$
$u = -0.817305 + 0.125028I$	$-4.48418 + 7.52211I$	$-3.62607 - 5.45189I$
$u = -0.817305 - 0.125028I$	$-4.48418 - 7.52211I$	$-3.62607 + 5.45189I$
$u = 0.812555 + 0.099238I$	$-5.26005 - 1.67857I$	$-5.17734 + 0.36674I$
$u = 0.812555 - 0.099238I$	$-5.26005 + 1.67857I$	$-5.17734 - 0.36674I$
$u = -0.274169 + 0.754223I$	$-0.387744 - 1.218140I$	$-4.43214 + 5.43737I$
$u = -0.274169 - 0.754223I$	$-0.387744 + 1.218140I$	$-4.43214 - 5.43737I$
$u = 0.541549 + 0.582168I$	$0.04226 - 3.00440I$	$0.20241 + 2.52989I$
$u = 0.541549 - 0.582168I$	$0.04226 + 3.00440I$	$0.20241 - 2.52989I$
$u = -0.407102 + 1.144230I$	$-2.27261 - 1.14078I$	$-3.06038 - 0.35223I$
$u = -0.407102 - 1.144230I$	$-2.27261 + 1.14078I$	$-3.06038 + 0.35223I$
$u = -0.491471 + 1.162520I$	$-1.65334 - 7.02473I$	$-1.60158 + 6.93954I$
$u = -0.491471 - 1.162520I$	$-1.65334 + 7.02473I$	$-1.60158 - 6.93954I$
$u = 0.453184 + 1.179210I$	$-5.12537 + 4.24996I$	$-8.86458 - 3.77353I$
$u = 0.453184 - 1.179210I$	$-5.12537 - 4.24996I$	$-8.86458 + 3.77353I$
$u = -0.386425 + 1.221160I$	$-8.54235 + 3.42594I$	$-8.10972 - 2.22817I$
$u = -0.386425 - 1.221160I$	$-8.54235 - 3.42594I$	$-8.10972 + 2.22817I$
$u = -0.703066 + 0.147767I$	$1.26318 + 2.51214I$	$2.03969 - 3.87852I$
$u = -0.703066 - 0.147767I$	$1.26318 - 2.51214I$	$2.03969 + 3.87852I$
$u = 0.402291 + 1.220240I$	$-9.20933 + 2.50696I$	$-9.26110 - 2.94934I$
$u = 0.402291 - 1.220240I$	$-9.20933 - 2.50696I$	$-9.26110 + 2.94934I$
$u = 0.714433$	-1.80251	-5.77680
$u = 0.498606 + 1.204550I$	$-8.52390 + 6.46046I$	$-8.19651 - 3.55460I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.498606 - 1.204550I$	$-8.52390 - 6.46046I$	$-8.19651 + 3.55460I$
$u = -0.509525 + 1.201690I$	$-7.6692 - 12.3766I$	$-6.59656 + 8.49008I$
$u = -0.509525 - 1.201690I$	$-7.6692 + 12.3766I$	$-6.59656 - 8.49008I$
$u = -0.510838 + 0.446804I$	$-0.37526 - 1.90476I$	$-0.38240 + 3.26312I$
$u = -0.510838 - 0.446804I$	$-0.37526 + 1.90476I$	$-0.38240 - 3.26312I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{35} - u^{34} + \cdots - 2u + 1$
c_2, c_6	$u^{35} + u^{34} + \cdots + 10u + 1$
c_3, c_5	$u^{35} - 11u^{34} + \cdots - 2u + 1$
c_4, c_9	$u^{35} + u^{34} + \cdots + 2u + 1$
c_8	$u^{35} + 19u^{34} + \cdots - 2u - 1$
c_{10}	$u^{35} - 5u^{34} + \cdots - 54u + 13$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{35} + 19y^{34} + \cdots - 2y - 1$
c_2, c_6	$y^{35} - 29y^{34} + \cdots - 50y - 1$
c_3, c_5	$y^{35} + 27y^{34} + \cdots - 22y - 1$
c_4, c_9	$y^{35} + 11y^{34} + \cdots - 2y - 1$
c_8	$y^{35} - 5y^{34} + \cdots + 2y - 1$
c_{10}	$y^{35} - 9y^{34} + \cdots + 966y - 169$