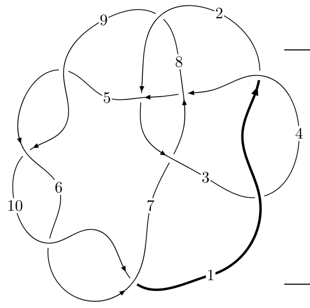
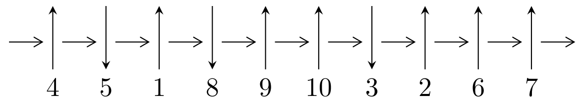
10_{85} $(K10a_{86})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 60294783u^{28} - 88287773u^{27} + \cdots + 346063354b - 88284553,$$
$$-32141431u^{28} + 46155247u^{27} + \cdots + 17303177a + 15723776,\ u^{29} - 2u^{28} + \cdots - 5u + 1\rangle$$
$$I_2^u = \langle b - 1,\ a + 1,\ u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 30 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.

$\boldsymbol{I_1^u = \langle 6.03 \times 10^7 u^{28} - 8.83 \times 10^7 u^{27} + \cdots + 3.46 \times 10^7 b - 8.83 \times 10^7,\ -3.21 \times 10^7 u^{28} + 4.62 \times 10^7 u^{27} + \cdots + 1.73 \times 10^7 a + 1.57 \times 10^7,\ u^{29} - 2u^{28} + \cdots - 5u + 1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1.85755u^{28} - 2.66744u^{27} + \cdots + 14.0229u - 0.908722 \\ -1.74230u^{28} + 2.55120u^{27} + \cdots - 12.6457u + 2.55111 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.82836u^{28} - 2.55221u^{27} + \cdots + 13.5669u - 0.794482 \\ -1.71312u^{28} + 2.43597u^{27} + \cdots - 12.1898u + 2.43687 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3.97113u^{28} - 4.76259u^{27} + \cdots + 10.6810u - 4.64851 \\ -4.16350u^{28} + 4.96257u^{27} + \cdots - 16.5831u + 4.96513 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.79416u^{28} + 2.57695u^{27} + \cdots - 12.7088u + 1.57715 \\ 1.79416u^{28} - 2.57695u^{27} + \cdots + 12.7088u - 2.57715 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{289657216}{17303177}u^{28} - \frac{414590110}{17303177}u^{27} + \cdots + \frac{1326964710}{17303177}u - \frac{307662332}{17303177}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{29}+2u^{28}+\cdots-9u+1$
c_2	$u^{29}-5u^{28}+\cdots+2u+2$
c_4	$u^{29}+2u^{28}+\cdots+u+1$
c_5, c_6, c_9 c_{10}	$u^{29}-2u^{28}+\cdots-5u+1$
c_7	$u^{29}-4u^{27}+\cdots-277u+173$
c_8	$u^{29}-2u^{28}+\cdots-51u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{29} - 24y^{28} + \cdots + 35y - 1$
c_2	$y^{29} + 9y^{28} + \cdots - 8y - 4$
c_4	$y^{29} + 4y^{28} + \cdots - y - 1$
c_5, c_6, c_9 c_{10}	$y^{29} - 36y^{28} + \cdots - y - 1$
c_7	$y^{29} - 8y^{28} + \cdots - 224637y - 29929$
c_8	$y^{29} - 36y^{28} + \cdots + 2499y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.945899 + 0.527377I$ $a = -1.42859 - 0.46825I$ $b = 1.23966 - 0.80863I$	$5.88176 - 9.11420I$	$9.68617 + 7.34304I$
$u = -0.945899 - 0.527377I$ $a = -1.42859 + 0.46825I$ $b = 1.23966 + 0.80863I$	$5.88176 + 9.11420I$	$9.68617 - 7.34304I$
$u = 0.919400 + 0.642162I$ $a = -0.315900 + 0.817663I$ $b = 0.838796 - 0.254515I$	$5.23846 + 0.21078I$	$14.1588 + 0.1661I$
$u = 0.919400 - 0.642162I$ $a = -0.315900 - 0.817663I$ $b = 0.838796 + 0.254515I$	$5.23846 - 0.21078I$	$14.1588 - 0.1661I$
$u = -0.852692 + 0.102964I$ $a = -2.16375 + 1.13712I$ $b = 0.698160 - 0.148828I$	$4.90102 - 1.77997I$	$15.0441 + 4.1634I$
$u = -0.852692 - 0.102964I$ $a = -2.16375 - 1.13712I$ $b = 0.698160 + 0.148828I$	$4.90102 + 1.77997I$	$15.0441 - 4.1634I$
$u = -0.778126 + 0.317868I$ $a = 1.21478 + 0.99243I$ $b = -0.813260 + 0.652109I$	$1.06268 - 4.13663I$	$7.22942 + 7.89079I$
$u = -0.778126 - 0.317868I$ $a = 1.21478 - 0.99243I$ $b = -0.813260 - 0.652109I$	$1.06268 + 4.13663I$	$7.22942 - 7.89079I$
$u = 0.072018 + 0.813066I$ $a = -0.055406 - 0.155414I$ $b = -0.965881 - 0.630905I$	$2.76973 + 4.67347I$	$7.79912 - 5.64410I$
$u = 0.072018 - 0.813066I$ $a = -0.055406 + 0.155414I$ $b = -0.965881 + 0.630905I$	$2.76973 - 4.67347I$	$7.79912 + 5.64410I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.22499$ $a = -0.486025$ $b = -0.0200655$	2.40006	1.29980
$u = 0.696417$ $a = -3.92323$ $b = 3.47362$	2.85586	-37.1850
$u = 0.652302 + 0.186228I$ $a = 0.677568 - 0.199223I$ $b = -0.726039 - 0.441283I$	$1.260030 + 0.425153I$	$8.09157 - 0.86414I$
$u = 0.652302 - 0.186228I$ $a = 0.677568 + 0.199223I$ $b = -0.726039 + 0.441283I$	$1.260030 - 0.425153I$	$8.09157 + 0.86414I$
$u = -0.066518 + 0.465152I$ $a = 0.922681 + 0.795965I$ $b = 0.575911 + 0.420194I$	$-1.04879 + 1.39671I$	$-0.58532 - 2.57538I$
$u = -0.066518 - 0.465152I$ $a = 0.922681 - 0.795965I$ $b = 0.575911 - 0.420194I$	$-1.04879 - 1.39671I$	$-0.58532 + 2.57538I$
$u = -1.62115 + 0.04828I$ $a = -1.28657 + 0.61647I$ $b = 1.12014 - 1.06805I$	$9.19873 - 1.27855I$	0
$u = -1.62115 - 0.04828I$ $a = -1.28657 - 0.61647I$ $b = 1.12014 + 1.06805I$	$9.19873 + 1.27855I$	0
$u = -1.64256$ $a = 3.72388$ $b = -3.32176$	11.1512	0
$u = 1.65082 + 0.07616I$ $a = -1.56763 + 0.18293I$ $b = 0.985626 + 0.801694I$	$9.53565 + 5.57255I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.65082 - 0.07616I$ $a = -1.56763 - 0.18293I$ $b = 0.985626 - 0.801694I$	$9.53565 - 5.57255I$	0
$u = 1.67141 + 0.02331I$ $a = 1.76938 + 0.66852I$ $b = -0.801753 + 0.136783I$	$13.80520 + 2.24218I$	0
$u = 1.67141 - 0.02331I$ $a = 1.76938 - 0.66852I$ $b = -0.801753 - 0.136783I$	$13.80520 - 2.24218I$	0
$u = 1.69430 + 0.14926I$ $a = 2.01420 + 0.06571I$ $b = -1.47276 - 0.89148I$	$15.0062 + 11.7978I$	0
$u = 1.69430 - 0.14926I$ $a = 2.01420 - 0.06571I$ $b = -1.47276 + 0.89148I$	$15.0062 - 11.7978I$	0
$u = 0.175263 + 0.221780I$ $a = 3.00284 + 0.56107I$ $b = -0.809729 - 0.865243I$	$1.92999 + 0.70792I$	$4.69463 + 1.16490I$
$u = 0.175263 - 0.221780I$ $a = 3.00284 - 0.56107I$ $b = -0.809729 + 0.865243I$	$1.92999 - 0.70792I$	$4.69463 - 1.16490I$
$u = -1.71056 + 0.17143I$ $a = 1.059070 + 0.505719I$ $b = -0.934773 + 0.132892I$	$14.3721 - 3.4330I$	0
$u = -1.71056 - 0.17143I$ $a = 1.059070 - 0.505719I$ $b = -0.934773 - 0.132892I$	$14.3721 + 3.4330I$	0

II. $I_2^u = \langle b-1,\ a+1,\ u-1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1 \\ 2 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_6	$u+1$
c_2	u
c_3, c_7, c_8 c_9, c_{10}	$u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7 c_8, c_9, c_{10}	$y - 1$
c_2	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.00000$ $b = 1.00000$	3.28987	12.0000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u+1)(u^{29}+2u^{28}+\cdots-9u+1)$
c_2	$u(u^{29}-5u^{28}+\cdots+2u+2)$
c_3	$(u-1)(u^{29}+2u^{28}+\cdots-9u+1)$
c_4	$(u+1)(u^{29}+2u^{28}+\cdots+u+1)$
c_5, c_6	$(u+1)(u^{29}-2u^{28}+\cdots-5u+1)$
c_7	$(u-1)(u^{29}-4u^{27}+\cdots-277u+173)$
c_8	$(u-1)(u^{29}-2u^{28}+\cdots-51u+1)$
c_9, c_{10}	$(u-1)(u^{29}-2u^{28}+\cdots-5u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$(y-1)(y^{29}-24y^{28}+\cdots+35y-1)$
c_2	$y(y^{29}+9y^{28}+\cdots-8y-4)$
c_4	$(y-1)(y^{29}+4y^{28}+\cdots-y-1)$
c_5, c_6, c_9 c_{10}	$(y-1)(y^{29}-36y^{28}+\cdots-y-1)$
c_7	$(y-1)(y^{29}-8y^{28}+\cdots-224637y-29929)$
c_8	$(y-1)(y^{29}-36y^{28}+\cdots+2499y-1)$