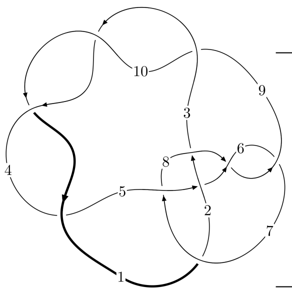
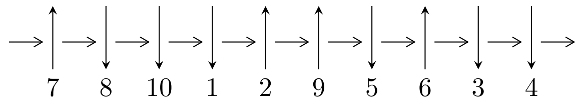
10_{82} $(K10a_{83})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1790814371u^{31} + 3053908485u^{30} + \cdots + 152158384l4b + 1796669401,$$
$$9786061617u^{31} + 13386015963u^{30} + \cdots + 5071946138a + 29865915991,\ u^{32} + 2u^{31} + \cdots - u + 1\rangle$$
$$I_2^u = \langle b,\ a+1,\ u+1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 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. $\boldsymbol{I_1^u = \langle 1.79\times10^{9}u^{31}+3.05\times10^{9}u^{30}+\cdots+1.52\times10^{10}b+1.80\times10^{9},\ 9.79\times10^{9}u^{31}+1.34\times10^{10}u^{30}+\cdots+5.07\times10^{9}a+2.99\times10^{10},\ u^{32}+2u^{31}+\cdots-u+1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1.92945u^{31}-2.63923u^{30}+\cdots+9.12108u-5.88845\\-0.117694u^{31}-0.200706u^{30}+\cdots+2.07712u-0.118079\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-2.04714u^{31}-2.83993u^{30}+\cdots+11.1982u-6.00653\\-0.117694u^{31}-0.200706u^{30}+\cdots+2.07712u-0.118079\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-2.22835u^{31}-3.03012u^{30}+\cdots+0.715268u+0.285838\\-0.998715u^{31}-0.999372u^{30}+\cdots+1.28281u-0.999382\end{pmatrix}$$
$$a_6 = \begin{pmatrix}2.22354u^{31}+3.04014u^{30}+\cdots-10.0154u+6.22362\\-u^5+3u^3-u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^3+2u\\u^5-3u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{18210579048}{2535973069}u^{31}+\frac{32359838926}{2535973069}u^{30}+\cdots-\frac{948834606442}{2535973069}u+\frac{41946667180}{2535973069}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} + 2u^{31} + \cdots + 12u + 8$
c_2	$u^{32} + 11u^{30} + \cdots + 13u - 1$
c_3, c_4, c_9 c_{10}	$u^{32} + 2u^{31} + \cdots - u + 1$
c_5	$u^{32} - 2u^{31} + \cdots + u - 1$
c_6, c_8	$u^{32} + 2u^{31} + \cdots - 13u - 1$
c_7	$u^{32} - 5u^{31} + \cdots - 6u + 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} + 30y^{31} + \cdots + 240y + 64$
c_2	$y^{32} + 22y^{31} + \cdots - 121y + 1$
c_3, c_4, c_9 c_{10}	$y^{32} - 38y^{31} + \cdots - 5y + 1$
c_5	$y^{32} - 6y^{31} + \cdots - 5y + 1$
c_6, c_8	$y^{32} - 18y^{31} + \cdots - 81y + 1$
c_7	$y^{32} - 9y^{31} + \cdots - 32y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.820983 + 0.567595I$ $a = -1.27469 + 0.62091I$ $b = 1.088800 + 0.850114I$	$0.60537 - 9.61260I$	$-2.87987 + 8.20248I$
$u = 0.820983 - 0.567595I$ $a = -1.27469 - 0.62091I$ $b = 1.088800 - 0.850114I$	$0.60537 + 9.61260I$	$-2.87987 - 8.20248I$
$u = 0.795955 + 0.349102I$ $a = 1.45784 - 0.39446I$ $b = -1.136450 - 0.835713I$	$-2.75563 - 4.13382I$	$-6.93448 + 6.73749I$
$u = 0.795955 - 0.349102I$ $a = 1.45784 + 0.39446I$ $b = -1.136450 + 0.835713I$	$-2.75563 + 4.13382I$	$-6.93448 - 6.73749I$
$u = -0.643643 + 0.579820I$ $a = 0.109445 + 0.730653I$ $b = -0.758624 + 0.110290I$	$-1.27204 + 1.92248I$	$-7.80216 - 5.91516I$
$u = -0.643643 - 0.579820I$ $a = 0.109445 - 0.730653I$ $b = -0.758624 - 0.110290I$	$-1.27204 - 1.92248I$	$-7.80216 + 5.91516I$
$u = -1.076160 + 0.444148I$ $a = -0.311615 - 0.602654I$ $b = 0.691368 + 0.318391I$	$-0.800175 - 0.941991I$	$-6.40540 + 5.25085I$
$u = -1.076160 - 0.444148I$ $a = -0.311615 + 0.602654I$ $b = 0.691368 - 0.318391I$	$-0.800175 + 0.941991I$	$-6.40540 - 5.25085I$
$u = -0.788048$ $a = -0.997928$ $b = 0.333761$	-1.36694	-7.37900
$u = 0.102445 + 0.771273I$ $a = 0.249085 - 0.151496I$ $b = 0.853465 - 0.688304I$	$2.78249 + 5.16401I$	$0.17525 - 5.43243I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.102445 - 0.771273I$ $a = 0.249085 + 0.151496I$ $b = 0.853465 + 0.688304I$	$2.78249 - 5.16401I$	$0.17525 + 5.43243I$
$u = 0.560858 + 0.310184I$ $a = -0.155519 + 0.637386I$ $b = 0.671965 - 1.149150I$	$1.86601 - 2.61443I$	$0.82365 + 8.13996I$
$u = 0.560858 - 0.310184I$ $a = -0.155519 - 0.637386I$ $b = 0.671965 + 1.149150I$	$1.86601 + 2.61443I$	$0.82365 - 8.13996I$
$u = -0.598750 + 0.114970I$ $a = 0.25826 - 3.79474I$ $b = -0.135421 - 0.360183I$	$0.576409 + 0.313871I$	$8.1378 + 17.1065I$
$u = -0.598750 - 0.114970I$ $a = 0.25826 + 3.79474I$ $b = -0.135421 + 0.360183I$	$0.576409 - 0.313871I$	$8.1378 - 17.1065I$
$u = -0.086458 + 0.449548I$ $a = -0.783456 + 0.459529I$ $b = -0.610958 + 0.536174I$	$-0.227616 + 1.394370I$	$-2.60146 - 4.04487I$
$u = -0.086458 - 0.449548I$ $a = -0.783456 - 0.459529I$ $b = -0.610958 - 0.536174I$	$-0.227616 - 1.394370I$	$-2.60146 + 4.04487I$
$u = -1.55208$ $a = -2.62954$ $b = 1.76871$	-3.73390	0
$u = -1.57850 + 0.06009I$ $a = -0.52697 - 1.39477I$ $b = 0.56830 + 1.70360I$	$-5.46664 + 3.81790I$	0
$u = -1.57850 - 0.06009I$ $a = -0.52697 + 1.39477I$ $b = 0.56830 - 1.70360I$	$-5.46664 - 3.81790I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.60015 + 0.02565I$ $a = 0.830347 + 1.077280I$ $b = -0.363802 + 0.595725I$	$-7.09081 - 0.79638I$	0
$u = 1.60015 - 0.02565I$ $a = 0.830347 - 1.077280I$ $b = -0.363802 - 0.595725I$	$-7.09081 + 0.79638I$	0
$u = 0.269938 + 0.288721I$ $a = -2.52869 + 1.49962I$ $b = 0.887931 + 0.459497I$	$2.64104 + 0.25879I$	$3.85203 + 2.96045I$
$u = 0.269938 - 0.288721I$ $a = -2.52869 - 1.49962I$ $b = 0.887931 - 0.459497I$	$2.64104 - 0.25879I$	$3.85203 - 2.96045I$
$u = 1.61612 + 0.17777I$ $a = 1.092350 - 0.316288I$ $b = -0.985940 - 0.438836I$	$-8.99388 - 4.78654I$	0
$u = 1.61612 - 0.17777I$ $a = 1.092350 + 0.316288I$ $b = -0.985940 + 0.438836I$	$-8.99388 + 4.78654I$	0
$u = -1.63927 + 0.09770I$ $a = 2.05679 - 0.27434I$ $b = -1.51522 + 0.94459I$	$-11.15790 + 5.83644I$	0
$u = -1.63927 - 0.09770I$ $a = 2.05679 + 0.27434I$ $b = -1.51522 - 0.94459I$	$-11.15790 - 5.83644I$	0
$u = -1.65031 + 0.16673I$ $a = -1.89221 + 0.02470I$ $b = 1.30041 - 0.93941I$	$-7.8166 + 12.4315I$	0
$u = -1.65031 - 0.16673I$ $a = -1.89221 - 0.02470I$ $b = 1.30041 + 0.93941I$	$-7.8166 - 12.4315I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.67671 + 0.06666I$ $a = -1.267240 + 0.207888I$ $b = 0.892941 + 0.200725I$	$-10.51010 - 0.53898I$	0
$u = 1.67671 - 0.06666I$ $a = -1.267240 - 0.207888I$ $b = 0.892941 - 0.200725I$	$-10.51010 + 0.53898I$	0

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

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = 0$	0	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u+1)(u^{32}+2u^{31}+\cdots+12u+8)$
c_2	$(u+1)(u^{32}+11u^{30}+\cdots+13u-1)$
c_3, c_4	$(u+1)(u^{32}+2u^{31}+\cdots-u+1)$
c_5	$(u+1)(u^{32}-2u^{31}+\cdots+u-1)$
c_6	$(u+1)(u^{32}+2u^{31}+\cdots-13u-1)$
c_7	$u(u^{32}-5u^{31}+\cdots-6u+2)$
c_8	$(u-1)(u^{32}+2u^{31}+\cdots-13u-1)$
c_9, c_{10}	$(u-1)(u^{32}+2u^{31}+\cdots-u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)(y^{32}+30y^{31}+\cdots+240y+64)$
c_2	$(y-1)(y^{32}+22y^{31}+\cdots-121y+1)$
c_3, c_4, c_9 c_{10}	$(y-1)(y^{32}-38y^{31}+\cdots-5y+1)$
c_5	$(y-1)(y^{32}-6y^{31}+\cdots-5y+1)$
c_6, c_8	$(y-1)(y^{32}-18y^{31}+\cdots-81y+1)$
c_7	$y(y^{32}-9y^{31}+\cdots-32y+4)$