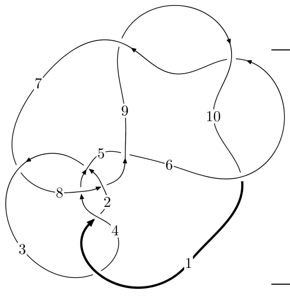
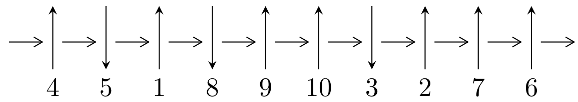
10_{83} $(K10a_{87})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 5.71392 \times 10^{63} u^{40} + 3.65753 \times 10^{64} u^{39} + \cdots + 1.68092 \times 10^{63} b - 3.02213 \times 10^{63}, \\ & - 6.85501 \times 10^{63} u^{40} - 4.73991 \times 10^{64} u^{39} + \cdots + 1.68092 \times 10^{63} a + 1.55757 \times 10^{64},\ u^{41} + 7u^{40} + \cdots - u - \end{aligned}$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 41 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.
$\boldsymbol{I_1^u = \langle 5.71\times10^{63}u^{40}+3.66\times10^{64}u^{39}+\cdots+1.68\times10^{63}b-3.02\times10^{63},\ -6.86\times 10^{63}u^{40}-4.74\times10^{64}u^{39}+\cdots+1.68\times10^{63}a+1.56\times10^{64},\ u^{41}+7u^{40}+\cdots-u-1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}4.07812u^{40}+28.1982u^{39}+\cdots+2.31009u-9.26617\\-3.39928u^{40}-21.7591u^{39}+\cdots+7.35017u+1.79790\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.678844u^{40}+6.43917u^{39}+\cdots+9.66026u-7.46827\\-3.39928u^{40}-21.7591u^{39}+\cdots+7.35017u+1.79790\end{pmatrix}$$
$$a_6 = \begin{pmatrix}8.89305u^{40}+59.3831u^{39}+\cdots-6.00010u-11.8860\\4.09598u^{40}+28.5050u^{39}+\cdots+3.04934u-8.50322\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1.80830u^{40}+11.7114u^{39}+\cdots-1.62251u-0.316229\\2.98878u^{40}+19.1668u^{39}+\cdots-5.42693u-3.06653\end{pmatrix}$$
$$a_1 = \begin{pmatrix}1.80830u^{40}+11.7114u^{39}+\cdots-1.62251u-0.316229\\-3.20007u^{40}-20.2893u^{39}+\cdots+6.28848u+2.11978\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1.67473u^{40}+12.2834u^{39}+\cdots+5.93075u-7.11966\\-3.47210u^{40}-22.4391u^{39}+\cdots+5.85564u+2.70675\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-4.33853u^{40}-24.2279u^{39}+\cdots+19.3082u-5.37875\\-7.53934u^{40}-48.4715u^{39}+\cdots+11.8342u+6.09444\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -10.0825u^{40} - 65.2708u^{39} + \cdots + 2.08186u + 7.14206$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{41} + u^{40} + \cdots + 7u - 1$
c_2	$u^{41} - 7u^{40} + \cdots - u + 1$
c_4	$u^{41} + 3u^{40} + \cdots + u + 1$
c_5	$u^{41} - u^{40} + \cdots + 131u - 17$
c_6, c_9, c_{10}	$u^{41} + u^{40} + \cdots + 3u - 1$
c_7	$u^{41} - u^{40} + \cdots + 289u + 77$
c_8	$u^{41} - 3u^{40} + \cdots - 129u + 31$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{41} - 29y^{40} + \cdots - 7y - 1$
c_2	$y^{41} + 3y^{40} + \cdots - 7y - 1$
c_4	$y^{41} + 7y^{40} + \cdots - 3y - 1$
c_5	$y^{41} - 17y^{40} + \cdots - 2627y - 289$
c_6, c_9, c_{10}	$y^{41} + 35y^{40} + \cdots - 3y - 1$
c_7	$y^{41} - 25y^{40} + \cdots - 76331y - 5929$
c_8	$y^{41} - 45y^{40} + \cdots + 24081y - 961$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.866167+0.522972I$ $a=\ \ 1.35646-0.66908I$ $b=-0.725791-1.020460I$	$-4.89451+5.37316I$	$0.36580-6.73028I$
$u=-0.866167-0.522972I$ $a=\ \ 1.35646+0.66908I$ $b=-0.725791+1.020460I$	$-4.89451-5.37316I$	$0.36580+6.73028I$
$u=\ \ 0.631814+0.671299I$ $a=\ \ 0.943824-0.130258I$ $b=-0.620989+0.419528I$	$-0.99413-1.43665I$	$-0.46376+2.78521I$
$u=\ \ 0.631814-0.671299I$ $a=\ \ 0.943824+0.130258I$ $b=-0.620989-0.419528I$	$-0.99413+1.43665I$	$-0.46376-2.78521I$
$u=\ \ 1.134280+0.411388I$ $a=-0.871113-0.261658I$ $b=\ \ 0.321519-0.685150I$	$-6.90594-0.82118I$	$-3.22724+0.I$
$u=\ \ 1.134280-0.411388I$ $a=-0.871113+0.261658I$ $b=\ \ 0.321519+0.685150I$	$-6.90594+0.82118I$	$-3.22724+0.I$
$u=\ \ 0.465693+0.633658I$ $a=\ \ 0.05902-2.25820I$ $b=\ \ 0.580789-0.173369I$	$-0.29899-5.96215I$	$6.24062+8.95093I$
$u=\ \ 0.465693-0.633658I$ $a=\ \ 0.05902+2.25820I$ $b=\ \ 0.580789+0.173369I$	$-0.29899+5.96215I$	$6.24062-8.95093I$
$u=-0.326222+0.713161I$ $a=-2.26295-0.54539I$ $b=\ \ 0.755468+0.459159I$	$2.95137+3.82132I$	$10.20968-8.07346I$
$u=-0.326222-0.713161I$ $a=-2.26295+0.54539I$ $b=\ \ 0.755468-0.459159I$	$2.95137-3.82132I$	$10.20968+8.07346I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.801624+1.033830I$ $a=-1.213990-0.028195I$ $b=\ \ 1.161390+0.790188I$	$3.54673+5.39109I$	0
$u=-0.801624-1.033830I$ $a=-1.213990+0.028195I$ $b=\ \ 1.161390-0.790188I$	$3.54673-5.39109I$	0
$u=\ \ 0.344862+1.265380I$ $a=\ \ 0.614486-0.252898I$ $b=-0.953366+0.482315I$	$-1.46534-1.30012I$	0
$u=\ \ 0.344862-1.265380I$ $a=\ \ 0.614486+0.252898I$ $b=-0.953366-0.482315I$	$-1.46534+1.30012I$	0
$u=\ \ 0.119178+0.652646I$ $a=\ \ 1.53296+2.51289I$ $b=-0.639883-0.088284I$	$4.91037-1.30258I$	$16.3776+4.3347I$
$u=\ \ 0.119178-0.652646I$ $a=\ \ 1.53296-2.51289I$ $b=-0.639883+0.088284I$	$4.91037+1.30258I$	$16.3776-4.3347I$
$u=\ \ 0.020565+0.656018I$ $a=\ \ 0.658242-0.704684I$ $b=-1.62626-0.29430I$	$-2.00733-2.04071I$	$3.80481+5.50278I$
$u=\ \ 0.020565-0.656018I$ $a=\ \ 0.658242+0.704684I$ $b=-1.62626+0.29430I$	$-2.00733+2.04071I$	$3.80481-5.50278I$
$u=-0.453284+0.429541I$ $a=\ \ 0.257607-1.211290I$ $b=-0.541078-1.041380I$	$-3.37217+3.66290I$	$0.41021-1.40051I$
$u=-0.453284-0.429541I$ $a=\ \ 0.257607+1.211290I$ $b=-0.541078+1.041380I$	$-3.37217-3.66290I$	$0.41021+1.40051I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.439287 + 0.430084I$ $a = -0.369850 + 0.809872I$ $b = 0.826171 - 0.878602I$	$1.92386 - 0.70569I$	$4.73633 - 1.49377I$
$u = -0.439287 - 0.430084I$ $a = -0.369850 - 0.809872I$ $b = 0.826171 + 0.878602I$	$1.92386 + 0.70569I$	$4.73633 + 1.49377I$
$u = 0.458556 + 0.245803I$ $a = -0.926842 + 0.254373I$ $b = 3.14697 - 0.02721I$	$-1.01770 + 3.12959I$	$-11.2117 + 9.6931I$
$u = 0.458556 - 0.245803I$ $a = -0.926842 - 0.254373I$ $b = 3.14697 + 0.02721I$	$-1.01770 - 3.12959I$	$-11.2117 - 9.6931I$
$u = -0.98309 + 1.11338I$ $a = 1.042320 - 0.030462I$ $b = -1.28757 - 0.91513I$	$5.88754 + 9.99849I$	0
$u = -0.98309 - 1.11338I$ $a = 1.042320 + 0.030462I$ $b = -1.28757 + 0.91513I$	$5.88754 - 9.99849I$	0
$u = -0.164101 + 0.449464I$ $a = -0.688933 + 1.140020I$ $b = 0.744682 + 0.591989I$	$1.35739 + 0.57043I$	$7.08701 - 0.51436I$
$u = -0.164101 - 0.449464I$ $a = -0.688933 - 1.140020I$ $b = 0.744682 - 0.591989I$	$1.35739 - 0.57043I$	$7.08701 + 0.51436I$
$u = 0.95044 + 1.21876I$ $a = -0.641001 + 0.045558I$ $b = 0.825830 - 0.718272I$	$1.17907 - 4.49890I$	0
$u = 0.95044 - 1.21876I$ $a = -0.641001 - 0.045558I$ $b = 0.825830 + 0.718272I$	$1.17907 + 4.49890I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.11398 + 1.11513I$ $a = -0.963889 + 0.084455I$ $b = 1.33509 + 1.02179I$	$0.7775 + 14.2581I$	0
$u = -1.11398 - 1.11513I$ $a = -0.963889 - 0.084455I$ $b = 1.33509 - 1.02179I$	$0.7775 - 14.2581I$	0
$u = 0.387269$ $a = 1.11745$ $b = -3.36262$	3.05082	-23.9460
$u = -1.25742 + 1.12500I$ $a = 0.221918 - 0.430829I$ $b = -0.738517 + 0.066545I$	$5.25717 - 1.92366I$	0
$u = -1.25742 - 1.12500I$ $a = 0.221918 + 0.430829I$ $b = -0.738517 - 0.066545I$	$5.25717 + 1.92366I$	0
$u = -1.50650 + 0.79307I$ $a = -0.147496 + 0.451688I$ $b = 0.517015 + 0.004012I$	$1.64294 + 1.58754I$	0
$u = -1.50650 - 0.79307I$ $a = -0.147496 - 0.451688I$ $b = 0.517015 - 0.004012I$	$1.64294 - 1.58754I$	0
$u = 1.20335 + 1.23704I$ $a = 0.605373 + 0.022172I$ $b = -0.801305 + 0.846956I$	$-3.65031 - 8.13712I$	0
$u = 1.20335 - 1.23704I$ $a = 0.605373 - 0.022172I$ $b = -0.801305 - 0.846956I$	$-3.65031 + 8.13712I$	0
$u = -1.11069 + 1.42621I$ $a = -0.264870 + 0.387539I$ $b = 0.901140 - 0.076911I$	$1.04931 - 5.53805I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.11069 - 1.42621I$ $a = -0.264870 - 0.387539I$ $b = \quad 0.901140 + 0.076911I$	$1.04931 + 5.53805I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{41} + u^{40} + \cdots + 7u - 1$
c_2	$u^{41} - 7u^{40} + \cdots - u + 1$
c_4	$u^{41} + 3u^{40} + \cdots + u + 1$
c_5	$u^{41} - u^{40} + \cdots + 131u - 17$
c_6, c_9, c_{10}	$u^{41} + u^{40} + \cdots + 3u - 1$
c_7	$u^{41} - u^{40} + \cdots + 289u + 77$
c_8	$u^{41} - 3u^{40} + \cdots - 129u + 31$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{41} - 29y^{40} + \cdots - 7y - 1$
c_2	$y^{41} + 3y^{40} + \cdots - 7y - 1$
c_4	$y^{41} + 7y^{40} + \cdots - 3y - 1$
c_5	$y^{41} - 17y^{40} + \cdots - 2627y - 289$
c_6, c_9, c_{10}	$y^{41} + 35y^{40} + \cdots - 3y - 1$
c_7	$y^{41} - 25y^{40} + \cdots - 76331y - 5929$
c_8	$y^{41} - 45y^{40} + \cdots + 24081y - 961$