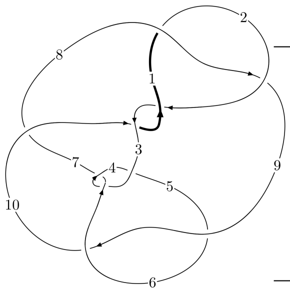
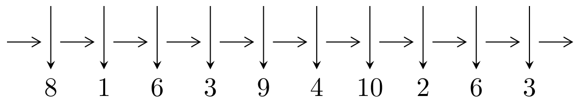
10_{134} ($K10n_6$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 7u^{13} + 19u^{12} + \cdots + 4b - 9,\ 3u^{13} + 9u^{12} + \cdots + 2a - 1,$$
$$u^{14} + 4u^{13} - 2u^{12} - 21u^{11} + 2u^{10} + 53u^9 - 13u^8 - 77u^7 + 38u^6 + 57u^5 - 37u^4 - 9u^3 + 12u^2 + u - 1\rangle$$
$$I_2^u = \langle b^3 + b^2 + 2b + 1,\ a,\ u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 17 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.
$\boldsymbol{I_1^u = \langle 7u^{13}+19u^{12}+\cdots+4b-9,\ 3u^{13}+9u^{12}+\cdots+2a-1,\ u^{14}+4u^{13}+\cdots+u-1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-\frac{3}{2}u^{13}-\frac{9}{2}u^{12}+\cdots-8u+\frac{1}{2}\\-\frac{7}{4}u^{13}-\frac{19}{4}u^{12}+\cdots-5u+\frac{9}{4}\end{pmatrix}$$
$$a_1 = \begin{pmatrix}\frac{1}{4}u^{13}+\frac{1}{4}u^{12}+\cdots-3u-\frac{7}{4}\\-\frac{7}{4}u^{13}-\frac{19}{4}u^{12}+\cdots-5u+\frac{9}{4}\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-\frac{1}{4}u^{13}-\frac{3}{4}u^{12}+\cdots-\frac{3}{2}u+\frac{9}{4}\\\frac{1}{4}u^{13}+\frac{3}{4}u^{12}+\cdots-\frac{1}{2}u-\frac{1}{4}\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-\frac{3}{2}u^{13}-\frac{9}{2}u^{12}+\cdots-8u+\frac{1}{2}\\\frac{3}{4}u^{13}+\frac{3}{4}u^{12}+\cdots-2u+\frac{3}{4}\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^2+1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1\\-\frac{1}{4}u^{13}-\frac{3}{4}u^{12}+\cdots+\frac{3}{2}u+\frac{1}{4}\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{13}-\frac{17}{2}u^{12}+4u^{11}+\frac{93}{2}u^{10}-\frac{11}{2}u^9-\frac{241}{2}u^8+38u^7+172u^6-\frac{215}{2}u^5-113u^4+102u^3-\frac{1}{2}u^2-\frac{51}{2}u-\frac{13}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{14} + 2u^{13} + \cdots - 4u - 1$
c_2, c_{10}	$u^{14} + 6u^{13} + \cdots + 8u + 1$
c_3, c_6	$u^{14} - 4u^{13} + \cdots - u - 1$
c_4	$u^{14} + 20u^{13} + \cdots + 25u + 1$
c_5, c_9	$u^{14} + u^{13} + \cdots + 20u + 8$
c_7	$u^{14} - 2u^{13} + \cdots - 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{14} - 6y^{13} + \cdots - 8y + 1$
c_2, c_{10}	$y^{14} + 6y^{13} + \cdots - 8y + 1$
c_3, c_6	$y^{14} - 20y^{13} + \cdots - 25y + 1$
c_4	$y^{14} - 48y^{13} + \cdots - 153y + 1$
c_5, c_9	$y^{14} - 21y^{13} + \cdots - 144y + 64$
c_7	$y^{14} - 30y^{13} + \cdots - 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.879051 + 0.720119I$ $a = 0.739858 - 0.863536I$ $b = 0.731209 + 1.048470I$	$-1.98336 - 4.24963I$	$-13.14655 + 5.18533I$
$u = 0.879051 - 0.720119I$ $a = 0.739858 + 0.863536I$ $b = 0.731209 - 1.048470I$	$-1.98336 + 4.24963I$	$-13.14655 - 5.18533I$
$u = 1.305050 + 0.250183I$ $a = 0.247411 - 0.791940I$ $b = 0.744850 - 0.696808I$	$-3.10381 + 1.41191I$	$-13.8732 - 3.8151I$
$u = 1.305050 - 0.250183I$ $a = 0.247411 + 0.791940I$ $b = 0.744850 + 0.696808I$	$-3.10381 - 1.41191I$	$-13.8732 + 3.8151I$
$u = 0.517778 + 0.426572I$ $a = -1.035790 + 0.663451I$ $b = 0.134884 - 0.480979I$	$-0.660151 - 0.090610I$	$-10.51478 + 0.23122I$
$u = 0.517778 - 0.426572I$ $a = -1.035790 - 0.663451I$ $b = 0.134884 + 0.480979I$	$-0.660151 + 0.090610I$	$-10.51478 - 0.23122I$
$u = -0.412302 + 0.084821I$ $a = -0.201506 + 1.398290I$ $b = 0.267015 + 1.222640I$	$2.37413 - 2.69540I$	$-3.68064 + 2.88879I$
$u = -0.412302 - 0.084821I$ $a = -0.201506 - 1.398290I$ $b = 0.267015 - 1.222640I$	$2.37413 + 2.69540I$	$-3.68064 - 2.88879I$
$u = 0.303096$ $a = -1.73095$ $b = 0.243596$	-0.780136	-12.5300
$u = -1.72923 + 0.15134I$ $a = -1.078920 + 0.093411I$ $b = -0.629782 + 0.920041I$	$-9.20540 + 2.45847I$	$-11.50081 - 0.42962I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.72923-0.15134I$ $a=-1.078920-0.093411I$ $b=-0.629782-0.920041I$	$-9.20540-2.45847I$	$-11.50081+0.42962I$
$u=-1.77359+0.25173I$ $a=\ \ 1.114820-0.148082I$ $b=\ \ 0.82970-1.55473I$	$-11.19680+8.39292I$	$-13.3988-4.5885I$
$u=-1.77359-0.25173I$ $a=\ \ 1.114820+0.148082I$ $b=\ \ 0.82970+1.55473I$	$-11.19680-8.39292I$	$-13.3988+4.5885I$
$u=-1.87660$ $a=\ \ 1.15919$ $b=\ \ 1.60066$	-15.8216	-16.2410

II. $I_2^u = \langle b^3 + b^2 + 2b + 1,\ a,\ u - 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -b \\ b \end{pmatrix}$$
$$a_2 = \begin{pmatrix} b^2 + 1 \\ -b^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ -b^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -b^2 - 3b - 15$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^3 - u^2 + 1$
c_2	$u^3 + u^2 + 2u + 1$
c_3	$(u-1)^3$
c_4, c_6	$(u+1)^3$
c_5, c_9	u^3
c_7, c_{10}	$u^3 - u^2 + 2u - 1$
c_8	$u^3 + u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^3 - y^2 + 2y - 1$
c_2, c_7, c_{10}	$y^3 + 3y^2 + 2y - 1$
c_3, c_4, c_6	$(y-1)^3$
c_5, c_9	y^3

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0$ $b = -0.215080 + 1.307140I$	$1.37919 + 2.82812I$	$-12.69240 - 3.35914I$
$u = 1.00000$ $a = 0$ $b = -0.215080 - 1.307140I$	$1.37919 - 2.82812I$	$-12.69240 + 3.35914I$
$u = 1.00000$ $a = 0$ $b = -0.569840$	-2.75839	-13.6150

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^3-u^2+1)(u^{14}+2u^{13}+\cdots-4u-1)$
c_2	$(u^3+u^2+2u+1)(u^{14}+6u^{13}+\cdots+8u+1)$
c_3	$((u-1)^3)(u^{14}-4u^{13}+\cdots-u-1)$
c_4	$((u+1)^3)(u^{14}+20u^{13}+\cdots+25u+1)$
c_5, c_9	$u^3(u^{14}+u^{13}+\cdots+20u+8)$
c_6	$((u+1)^3)(u^{14}-4u^{13}+\cdots-u-1)$
c_7	$(u^3-u^2+2u-1)(u^{14}-2u^{13}+\cdots-2u-1)$
c_8	$(u^3+u^2-1)(u^{14}+2u^{13}+\cdots-4u-1)$
c_{10}	$(u^3-u^2+2u-1)(u^{14}+6u^{13}+\cdots+8u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^3 - y^2 + 2y - 1)(y^{14} - 6y^{13} + \cdots - 8y + 1)$
c_2, c_{10}	$(y^3 + 3y^2 + 2y - 1)(y^{14} + 6y^{13} + \cdots - 8y + 1)$
c_3, c_6	$((y-1)^3)(y^{14} - 20y^{13} + \cdots - 25y + 1)$
c_4	$((y-1)^3)(y^{14} - 48y^{13} + \cdots - 153y + 1)$
c_5, c_9	$y^3(y^{14} - 21y^{13} + \cdots - 144y + 64)$
c_7	$(y^3 + 3y^2 + 2y - 1)(y^{14} - 30y^{13} + \cdots - 8y + 1)$