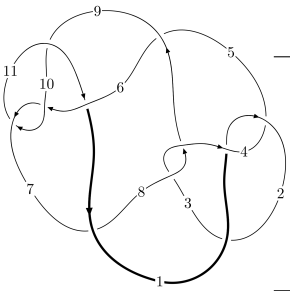
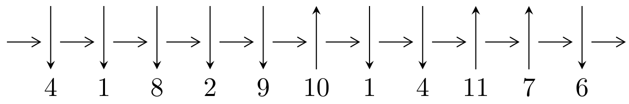
$11n_{61}$ ($K11n_{61}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$6{,}10 \xrightarrow[c_6]{} 7 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_{11}]{} 1{,}4 \xrightarrow[c_1]{} 2 \xrightarrow[c_2]{} 3 \xrightarrow[c_9]{} 9 \xrightarrow[c_5]{} 5 \xrightarrow[c_8]{} 8 \twoheadrightarrow c_3, c_4, c_7$$

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

$$\begin{aligned} I_1^u = \langle & -u^{13} - u^{12} + 2u^{11} + 3u^{10} - 2u^9 - 4u^8 + 4u^6 + 2u^5 - 2u^4 - u^3 + 2u^2 + b + u, \\ & u^{11} + u^{10} - 2u^9 - 3u^8 + 2u^7 + 4u^6 - 4u^4 - u^3 + 2u^2 + a - 2, \\ & u^{14} + 2u^{13} - u^{12} - 6u^{11} - 2u^{10} + 8u^9 + 7u^8 - 6u^7 - 10u^6 + 6u^4 - 4u^2 - u + 1\rangle \\ I_2^u = \langle & b + 1,\ u^4 - u^2 + a + u,\ u^6 - u^5 - u^4 + 2u^3 - u + 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 20 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.

$$I_1^u = \langle -u^{13} - u^{12} + \cdots + b + u,\ u^{11} + u^{10} + \cdots + a - 2,\ u^{14} + 2u^{13} + \cdots - u + 1 \rangle$$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{11} - u^{10} + 2u^9 + 3u^8 - 2u^7 - 4u^6 + 4u^4 + u^3 - 2u^2 + 2 \\ u^{13} + u^{12} - 2u^{11} - 3u^{10} + 2u^9 + 4u^8 - 4u^6 - 2u^5 + 2u^4 + u^3 - 2u^2 - u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{13} - u^{12} + \cdots + u - 2 \\ -u^{13} - u^{12} + 2u^{11} + 4u^{10} - 2u^9 - 6u^8 + 7u^6 + 2u^5 - 4u^4 - u^3 + 3u^2 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -2u^{13} - 2u^{12} + \cdots + 3u - 3 \\ -u^{13} - u^{12} + \cdots - u^3 + 5u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ -u^{10} + 2u^8 - 3u^6 + 2u^4 - u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$8u^{13}+10u^{12}-16u^{11}-35u^{10}+13u^9+55u^8+10u^7-57u^6-34u^5+28u^4+22u^3-19u^2-16u-2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{14} - 7u^{13} + \cdots + 4u - 1$
c_2	$u^{14} + 29u^{13} + \cdots + 2u + 1$
c_3, c_8	$u^{14} - u^{13} + \cdots - 64u - 64$
c_5, c_7	$u^{14} + 2u^{13} + \cdots + 3u + 1$
c_6, c_{10}	$u^{14} - 2u^{13} + \cdots + u + 1$
c_9	$u^{14} - 6u^{13} + \cdots - 9u + 1$
c_{11}	$u^{14} - 6u^{13} + \cdots - u - 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{14} - 29y^{13} + \cdots - 2y + 1$
c_2	$y^{14} - 129y^{13} + \cdots + 462y + 1$
c_3, c_8	$y^{14} - 39y^{13} + \cdots + 8192y + 4096$
c_5, c_7	$y^{14} - 30y^{13} + \cdots - 9y + 1$
c_6, c_{10}	$y^{14} - 6y^{13} + \cdots - 9y + 1$
c_9	$y^{14} + 6y^{13} + \cdots - 25y + 1$
c_{11}	$y^{14} - 6y^{13} + \cdots - 301y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.959410 + 0.328783I$ $a = 0.495533 - 0.463828I$ $b = 0.191801 + 0.163474I$	$1.63965 - 1.19495I$	$1.59955 + 1.11588I$
$u = -0.959410 - 0.328783I$ $a = 0.495533 + 0.463828I$ $b = 0.191801 - 0.163474I$	$1.63965 + 1.19495I$	$1.59955 - 1.11588I$
$u = -0.501889 + 0.920209I$ $a = -0.201970 + 0.008787I$ $b = 2.28288 - 0.17435I$	$19.1238 + 2.3664I$	$-10.04321 - 0.09569I$
$u = -0.501889 - 0.920209I$ $a = -0.201970 - 0.008787I$ $b = 2.28288 + 0.17435I$	$19.1238 - 2.3664I$	$-10.04321 + 0.09569I$
$u = -0.853744 + 0.641916I$ $a = -0.29441 + 1.45158I$ $b = -1.59669 - 0.17157I$	$-3.47956 - 2.50408I$	$-8.95669 + 2.99860I$
$u = -0.853744 - 0.641916I$ $a = -0.29441 - 1.45158I$ $b = -1.59669 + 0.17157I$	$-3.47956 + 2.50408I$	$-8.95669 - 2.99860I$
$u = 1.014210 + 0.562829I$ $a = -0.229267 - 0.800962I$ $b = 0.036725 + 0.627532I$	$-0.01563 + 4.65799I$	$-4.40917 - 5.70687I$
$u = 1.014210 - 0.562829I$ $a = -0.229267 + 0.800962I$ $b = 0.036725 - 0.627532I$	$-0.01563 - 4.65799I$	$-4.40917 + 5.70687I$
$u = 0.589347 + 0.525928I$ $a = 0.836757 + 0.496215I$ $b = -0.355616 - 0.529402I$	$-1.309150 - 0.137583I$	$-8.56031 + 0.56305I$
$u = 0.589347 - 0.525928I$ $a = 0.836757 - 0.496215I$ $b = -0.355616 + 0.529402I$	$-1.309150 + 0.137583I$	$-8.56031 - 0.56305I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.25934$ $a = -2.87186$ $b = 2.12501$	-13.7717	-5.12960
$u = -1.128420 + 0.686699I$ $a = -1.08197 - 2.42300I$ $b = 2.21915 + 0.28216I$	$-18.4364 - 8.2751I$	$-7.93412 + 4.24282I$
$u = -1.128420 - 0.686699I$ $a = -1.08197 + 2.42300I$ $b = 2.21915 - 0.28216I$	$-18.4364 + 8.2751I$	$-7.93412 - 4.24282I$
$u = 0.420479$ $a = 1.82253$ $b = -0.681509$	-1.01289	-10.2630

II. $I_2^u = \langle b+1,\ u^4-u^2+a+u,\ u^6-u^5-u^4+2u^3-u+1\rangle$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ -u^3+u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^4+u^2-u \\ -1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^4+u^3+u^2-u \\ -u^3+u-1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^4+u^2-u \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 \\ u^5-u^3+u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^3 \\ u^3-u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^3 \\ u^5-u^3+u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^3 \\ u^5-u^3+u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^4+3u^2-3u-9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^6$
c_2, c_4	$(u+1)^6$
c_3, c_8	u^6
c_5, c_7, c_{10}	$u^6 + u^5 - u^4 - 2u^3 + u + 1$
c_6	$u^6 - u^5 - u^4 + 2u^3 - u + 1$
c_9, c_{11}	$u^6 + 3u^5 + 5u^4 + 4u^3 + 2u^2 + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^6$
c_3, c_8	y^6
c_5, c_6, c_7 c_{10}	$y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1$
c_9, c_{11}	$y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.002190 + 0.295542I$ $a = 1.42918 + 0.19856I$ $b = -1.00000$	$0.245672 - 0.924305I$	$-5.20252 + 1.68215I$
$u = -1.002190 - 0.295542I$ $a = 1.42918 - 0.19856I$ $b = -1.00000$	$0.245672 + 0.924305I$	$-5.20252 - 1.68215I$
$u = 0.428243 + 0.664531I$ $a = -0.429179 + 0.198557I$ $b = -1.00000$	$-3.53554 - 0.92430I$	$-10.03026 + 0.88960I$
$u = 0.428243 - 0.664531I$ $a = -0.429179 - 0.198557I$ $b = -1.00000$	$-3.53554 + 0.92430I$	$-10.03026 - 0.88960I$
$u = 1.073950 + 0.558752I$ $a = 0.50000 - 1.37764I$ $b = -1.00000$	$-1.64493 + 5.69302I$	$-6.76721 - 6.15196I$
$u = 1.073950 - 0.558752I$ $a = 0.50000 + 1.37764I$ $b = -1.00000$	$-1.64493 - 5.69302I$	$-6.76721 + 6.15196I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{14}-7u^{13}+\cdots+4u-1)$
c_2	$((u+1)^6)(u^{14}+29u^{13}+\cdots+2u+1)$
c_3, c_8	$u^6(u^{14}-u^{13}+\cdots-64u-64)$
c_4	$((u+1)^6)(u^{14}-7u^{13}+\cdots+4u-1)$
c_5, c_7	$(u^6+u^5-u^4-2u^3+u+1)(u^{14}+2u^{13}+\cdots+3u+1)$
c_6	$(u^6-u^5-u^4+2u^3-u+1)(u^{14}-2u^{13}+\cdots+u+1)$
c_9	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)(u^{14}-6u^{13}+\cdots-9u+1)$
c_{10}	$(u^6+u^5-u^4-2u^3+u+1)(u^{14}-2u^{13}+\cdots+u+1)$
c_{11}	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)(u^{14}-6u^{13}+\cdots-u-5)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^6)(y^{14} - 29y^{13} + \cdots - 2y + 1)$
c_2	$((y-1)^6)(y^{14} - 129y^{13} + \cdots + 462y + 1)$
c_3, c_8	$y^6(y^{14} - 39y^{13} + \cdots + 8192y + 4096)$
c_5, c_7	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{14} - 30y^{13} + \cdots - 9y + 1)$
c_6, c_{10}	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{14} - 6y^{13} + \cdots - 9y + 1)$
c_9	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{14} + 6y^{13} + \cdots - 25y + 1)$
c_{11}	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{14} - 6y^{13} + \cdots - 301y + 25)$