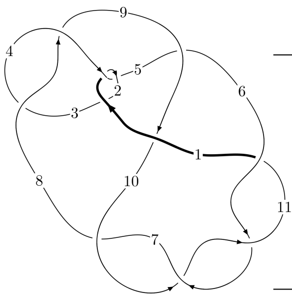
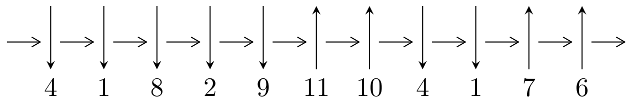
$11n_{64}$ ($K11n_{64}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^{11} - 2u^{10} + 8u^9 - 12u^8 + 22u^7 - 23u^6 + 24u^5 - 15u^4 + 9u^3 - 4u^2 + b + 2u - 1, \\
& - u^{13} + 2u^{12} - 11u^{11} + 18u^{10} - 45u^9 + 58u^8 - 84u^7 + 79u^6 - 70u^5 + 43u^4 - 23u^3 + 14u^2 + a - 5u + 3, \\
& u^{14} - 2u^{13} + 11u^{12} - 18u^{11} + 46u^{10} - 60u^9 + 91u^8 - 90u^7 + 86u^6 - 61u^5 + 36u^4 - 22u^3 + 8u^2 - 5u + 1\rangle \\
I_2^u = \langle & u^2 + b + u + 1,\ -u^3 - u^2 + a - 3u - 1,\ u^4 + u^3 + 3u^2 + 2u + 1\rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 18 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.

$$\boldsymbol{I_1^u = \langle u^{11} - 2u^{10} + \cdots + b - 1,\ -u^{13} + 2u^{12} + \cdots + a + 3,\ u^{14} - 2u^{13} + \cdots - 5u + 1\rangle}$$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{13} - 2u^{12} + \cdots + 5u - 3 \\ -u^{11} + 2u^{10} + \cdots - 2u + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{13} - 2u^{12} + \cdots + 4u - 2 \\ u^{12} - 2u^{11} + \cdots - 2u + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{10} + 5u^8 + 6u^6 - u^4 - u^2 - 1 \\ u^{12} + 6u^{10} + 12u^8 + 10u^6 + 5u^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{13} - 2u^{12} + \cdots + 3u - 2 \\ -u^{13} + 2u^{12} + \cdots - 3u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^5 + 2u^3 - u \\ u^7 + 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^5 + 2u^3 - u \\ u^7 + 3u^5 + 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -u^{13} + 2u^{12} - 11u^{11} + 17u^{10} - 42u^9 + 48u^8 - 62u^7 + 44u^6 - 17u^5 - 7u^4 + 23u^3 - 11u^2 + 6u - 9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{14} - 5u^{13} + \cdots + 7u - 1$
c_2	$u^{14} + 23u^{13} + \cdots + 3u + 1$
c_3, c_8	$u^{14} - u^{13} + \cdots - 24u - 16$
c_5	$u^{14} + 2u^{13} + \cdots + 3u + 1$
c_6, c_7, c_{10} c_{11}	$u^{14} + 2u^{13} + \cdots + 5u + 1$
c_9	$u^{14} - 6u^{13} + \cdots - 117u + 19$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{14} - 23y^{13} + \cdots - 3y + 1$
c_2	$y^{14} - 59y^{13} + \cdots + 681y + 1$
c_3, c_8	$y^{14} - 27y^{13} + \cdots + 960y + 256$
c_5	$y^{14} - 30y^{13} + \cdots - 9y + 1$
c_6, c_7, c_{10} c_{11}	$y^{14} + 18y^{13} + \cdots - 9y + 1$
c_9	$y^{14} - 18y^{13} + \cdots - 22277y + 361$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.550866 + 0.900632I$ $a = -1.08064 - 1.46517I$ $b = 0.098170 - 0.182990I$	$-14.5979 + 4.4309I$	$-8.77759 - 3.45380I$
$u = 0.550866 - 0.900632I$ $a = -1.08064 + 1.46517I$ $b = 0.098170 + 0.182990I$	$-14.5979 - 4.4309I$	$-8.77759 + 3.45380I$
$u = 0.131850 + 0.795140I$ $a = 1.42680 + 0.95287I$ $b = 0.002648 - 0.749310I$	$-3.41989 + 1.31906I$	$-10.67824 - 1.83447I$
$u = 0.131850 - 0.795140I$ $a = 1.42680 - 0.95287I$ $b = 0.002648 + 0.749310I$	$-3.41989 - 1.31906I$	$-10.67824 + 1.83447I$
$u = 0.778815$ $a = 0.532114$ $b = -1.55087$	-11.8742	-5.71440
$u = -0.310969 + 0.512101I$ $a = -0.546661 + 0.069487I$ $b = -0.054284 + 0.327429I$	$-0.044354 - 1.170560I$	$-0.70219 + 5.58030I$
$u = -0.310969 - 0.512101I$ $a = -0.546661 - 0.069487I$ $b = -0.054284 - 0.327429I$	$-0.044354 + 1.170560I$	$-0.70219 - 5.58030I$
$u = -0.07909 + 1.57522I$ $a = -0.593424 + 0.223836I$ $b = 1.203460 + 0.007835I$	$-7.25996 - 2.49887I$	$-4.67922 + 1.75896I$
$u = -0.07909 - 1.57522I$ $a = -0.593424 - 0.223836I$ $b = 1.203460 - 0.007835I$	$-7.25996 + 2.49887I$	$-4.67922 - 1.75896I$
$u = 0.03110 + 1.66209I$ $a = 1.73343 + 0.06583I$ $b = -3.48457 - 0.73242I$	$-12.09880 + 1.91262I$	$-10.51406 - 1.13289I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.03110 - 1.66209I$ $a = 1.73343 - 0.06583I$ $b = -3.48457 + 0.73242I$	$-12.09880 - 1.91262I$	$-10.51406 + 1.13289I$
$u = 0.16129 + 1.68407I$ $a = -2.01585 - 0.88397I$ $b = 4.18614 + 1.67352I$	$15.9841 + 7.2397I$	$-10.36154 - 2.69654I$
$u = 0.16129 - 1.68407I$ $a = -2.01585 + 0.88397I$ $b = 4.18614 - 1.67352I$	$15.9841 - 7.2397I$	$-10.36154 + 2.69654I$
$u = 0.251089$ $a = -2.37942$ $b = 0.647742$	-1.17986	-7.85990

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

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^3 + u^2 + 3u + 1 \\ -u^2 - u - 1 \end{pmatrix}$$

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

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

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

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

$$a_3 = \begin{pmatrix} u^3 + u^2 + 3u + 1 \\ -u^2 - u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^3 + 3u^2 + 10u - 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^4$
c_3, c_8	y^4
c_5, c_9	$y^4+y^3+3y^2+2y+1$
c_6, c_7, c_{10} c_{11}	$y^4+5y^3+7y^2+2y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.395123+0.506844I$ $a=-0.043315+1.227190I$ $b=-0.504108-0.106312I$	$-1.43393-1.41510I$	$-7.52507+4.18840I$
$u=-0.395123-0.506844I$ $a=-0.043315-1.227190I$ $b=-0.504108+0.106312I$	$-1.43393+1.41510I$	$-7.52507-4.18840I$
$u=-0.10488+1.55249I$ $a=-0.956685+0.641200I$ $b=\ \ 1.50411-1.22685I$	$-8.43568-3.16396I$	$-9.97493+3.47609I$
$u=-0.10488-1.55249I$ $a=-0.956685-0.641200I$ $b=\ \ 1.50411+1.22685I$	$-8.43568+3.16396I$	$-9.97493-3.47609I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{14}-5u^{13}+\cdots+7u-1)$
c_2	$((u+1)^4)(u^{14}+23u^{13}+\cdots+3u+1)$
c_3, c_8	$u^4(u^{14}-u^{13}+\cdots-24u-16)$
c_4	$((u+1)^4)(u^{14}-5u^{13}+\cdots+7u-1)$
c_5	$(u^4+u^3+u^2+1)(u^{14}+2u^{13}+\cdots+3u+1)$
c_6, c_7	$(u^4+u^3+3u^2+2u+1)(u^{14}+2u^{13}+\cdots+5u+1)$
c_9	$(u^4+u^3+u^2+1)(u^{14}-6u^{13}+\cdots-117u+19)$
c_{10}, c_{11}	$(u^4-u^3+3u^2-2u+1)(u^{14}+2u^{13}+\cdots+5u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^4)(y^{14} - 23y^{13} + \cdots - 3y + 1)$
c_2	$((y-1)^4)(y^{14} - 59y^{13} + \cdots + 681y + 1)$
c_3, c_8	$y^4(y^{14} - 27y^{13} + \cdots + 960y + 256)$
c_5	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{14} - 30y^{13} + \cdots - 9y + 1)$
c_6, c_7, c_{10} c_{11}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{14} + 18y^{13} + \cdots - 9y + 1)$
c_9	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{14} - 18y^{13} + \cdots - 22277y + 361)$