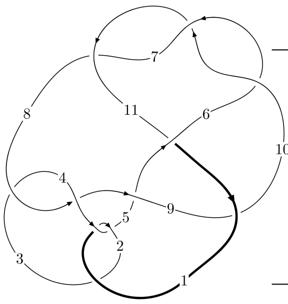
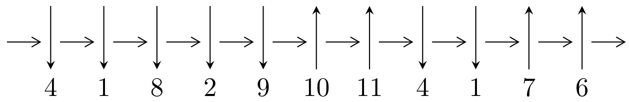
$11n_{60}$ $(K11n_{60})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2u^{19} + u^{18} + \cdots + b - 2,\ u^{18} + u^{17} + \cdots + a + 2,\ u^{20} + 2u^{19} + \cdots + 3u - 1\rangle$$
$$I_2^u = \langle u^4 - u^2 + b - u,\ -u^4 + u^3 + u^2 + a - u,\ u^5 - u^4 - 2u^3 + u^2 + u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 25 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.

$$I_1^u = \langle 2u^{19}+u^{18}+\cdots+b-2,\ u^{18}+u^{17}+\cdots+a+2,\ u^{20}+2u^{19}+\cdots+3u-1\rangle$$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix}-u^{18}-u^{17}+\cdots-5u^2-2\\-2u^{19}-u^{18}+\cdots-5u+2\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}-u^{19}-u^{18}+\cdots-2u-1\\u^{19}+u^{18}+\cdots+u^2+2u\end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix}u^5-2u^3+u\\-u^5+u^3+u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-u^{18}-u^{17}+\cdots-u-1\\-u^{19}+8u^{17}+\cdots-u+1\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-u^{16}+7u^{14}-19u^{12}+24u^{10}-13u^8+2u^6-1\\u^{16}-6u^{14}+12u^{12}-6u^{10}-6u^8+2u^6+4u^4\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-u^9+4u^7-5u^5+2u^3-u\\u^9-3u^7+u^5+2u^3+u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-u^9+4u^7-5u^5+2u^3-u\\u^9-3u^7+u^5+2u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^{19}-16u^{17}+3u^{16}+49u^{15}-22u^{14}-61u^{13}+58u^{12}-8u^{11}-54u^{10}+91u^9-20u^8-50u^7+52u^6-40u^5+26u^3-12u^2+9u-10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{20} - 6u^{19} + \cdots + 7u - 1$
c_2	$u^{20} + 30u^{19} + \cdots + 13u + 1$
c_3, c_8	$u^{20} - u^{19} + \cdots + 32u + 32$
c_5	$u^{20} + 2u^{19} + \cdots - 3u - 1$
c_6, c_7, c_{10}	$u^{20} - 2u^{19} + \cdots - 3u - 1$
c_9	$u^{20} - 6u^{19} + \cdots + 81u - 9$
c_{11}	$u^{20} + 6u^{19} + \cdots + 35u + 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{20} - 30y^{19} + \cdots - 13y + 1$
c_2	$y^{20} - 74y^{19} + \cdots + 355y + 1$
c_3, c_8	$y^{20} - 33y^{19} + \cdots + 3584y + 1024$
c_5	$y^{20} - 42y^{19} + \cdots - 11y + 1$
c_6, c_7, c_{10}	$y^{20} - 18y^{19} + \cdots - 11y + 1$
c_9	$y^{20} - 6y^{19} + \cdots - 5031y + 81$
c_{11}	$y^{20} + 6y^{19} + \cdots - 335y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.917550 + 0.464269I$ $a = 0.887708 + 0.822675I$ $b = -2.03002 - 1.48307I$	$-12.36330 - 0.65965I$	$-5.32167 - 1.11773I$
$u = 0.917550 - 0.464269I$ $a = 0.887708 - 0.822675I$ $b = -2.03002 + 1.48307I$	$-12.36330 + 0.65965I$	$-5.32167 + 1.11773I$
$u = 0.243336 + 0.826957I$ $a = -2.56703 - 1.06992I$ $b = 0.1190440 - 0.0724083I$	$-14.4810 + 5.2607I$	$-7.68359 - 3.29127I$
$u = 0.243336 - 0.826957I$ $a = -2.56703 + 1.06992I$ $b = 0.1190440 + 0.0724083I$	$-14.4810 - 5.2607I$	$-7.68359 + 3.29127I$
$u = 1.238020 + 0.241187I$ $a = -1.48735 - 1.05770I$ $b = 2.32454 + 1.44360I$	$-0.14678 + 1.84866I$	$-3.98019 - 2.83860I$
$u = 1.238020 - 0.241187I$ $a = -1.48735 + 1.05770I$ $b = 2.32454 - 1.44360I$	$-0.14678 - 1.84866I$	$-3.98019 + 2.83860I$
$u = -1.278360 + 0.104707I$ $a = 0.191843 - 0.012837I$ $b = -1.001270 + 0.473795I$	$3.00168 - 0.46375I$	$0.380412 - 0.924408I$
$u = -1.278360 - 0.104707I$ $a = 0.191843 + 0.012837I$ $b = -1.001270 - 0.473795I$	$3.00168 + 0.46375I$	$0.380412 + 0.924408I$
$u = 0.069392 + 0.685215I$ $a = 2.21387 + 0.78494I$ $b = 0.040683 - 0.477218I$	$-3.69282 + 1.48185I$	$-9.31815 - 1.78036I$
$u = 0.069392 - 0.685215I$ $a = 2.21387 - 0.78494I$ $b = 0.040683 + 0.477218I$	$-3.69282 - 1.48185I$	$-9.31815 + 1.78036I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.314810 + 0.281063I$ $a = -0.578126 + 0.956901I$ $b = 1.58117 - 2.41766I$	$0.65473 - 4.99045I$	$-3.53301 + 4.53534I$
$u = -1.314810 - 0.281063I$ $a = -0.578126 - 0.956901I$ $b = 1.58117 + 2.41766I$	$0.65473 + 4.99045I$	$-3.53301 - 4.53534I$
$u = 1.39777 + 0.21985I$ $a = 0.535073 + 0.493687I$ $b = -0.802086 - 0.653876I$	$5.26329 + 4.10687I$	$5.09324 - 3.12286I$
$u = 1.39777 - 0.21985I$ $a = 0.535073 - 0.493687I$ $b = -0.802086 + 0.653876I$	$5.26329 - 4.10687I$	$5.09324 + 3.12286I$
$u = -0.243428 + 0.530766I$ $a = -0.710922 - 0.053518I$ $b = 0.009442 + 0.295836I$	$0.003151 - 1.284380I$	$-0.00392 + 4.85690I$
$u = -0.243428 - 0.530766I$ $a = -0.710922 + 0.053518I$ $b = 0.009442 - 0.295836I$	$0.003151 + 1.284380I$	$-0.00392 - 4.85690I$
$u = -1.41087 + 0.34270I$ $a = 0.67202 - 2.01481I$ $b = -1.37414 + 3.84768I$	$-9.22640 - 9.48716I$	$-3.68120 + 4.58970I$
$u = -1.41087 - 0.34270I$ $a = 0.67202 + 2.01481I$ $b = -1.37414 - 3.84768I$	$-9.22640 + 9.48716I$	$-3.68120 - 4.58970I$
$u = -1.49993$ $a = 0.998510$ $b = -0.427242$	-4.28328	-1.87430
$u = 0.262728$ $a = -2.31269$ $b = 0.692511$	-1.18420	-8.02950

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^3 + u^2 + 8u - 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_8	y^5
c_5, c_9	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_6, c_7, c_{10}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_{11}	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.21774$ $a = \quad 1.30408$ $b = -1.93379$	0.756147	-2.23020
$u = -0.309916 + 0.549911I$ $a = -0.428550 + 1.039280I$ $b = -0.442672 + 0.068387I$	$-1.31583 - 1.53058I$	$-6.94263 + 4.09764I$
$u = -0.309916 - 0.549911I$ $a = -0.428550 - 1.039280I$ $b = -0.442672 - 0.068387I$	$-1.31583 + 1.53058I$	$-6.94263 - 4.09764I$
$u = \quad 1.41878 + 0.21917I$ $a = \quad 0.276511 + 0.728237I$ $b = -0.09043 - 1.60288I$	$4.22763 + 4.40083I$	$-2.94226 - 4.18967I$
$u = \quad 1.41878 - 0.21917I$ $a = \quad 0.276511 - 0.728237I$ $b = -0.09043 + 1.60288I$	$4.22763 - 4.40083I$	$-2.94226 + 4.18967I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{20}-6u^{19}+\cdots+7u-1)$
c_2	$((u+1)^5)(u^{20}+30u^{19}+\cdots+13u+1)$
c_3, c_8	$u^5(u^{20}-u^{19}+\cdots+32u+32)$
c_4	$((u+1)^5)(u^{20}-6u^{19}+\cdots+7u-1)$
c_5	$(u^5+u^4+2u^3+u^2+u+1)(u^{20}+2u^{19}+\cdots-3u-1)$
c_6, c_7	$(u^5-u^4-2u^3+u^2+u+1)(u^{20}-2u^{19}+\cdots-3u-1)$
c_9	$(u^5+u^4+2u^3+u^2+u+1)(u^{20}-6u^{19}+\cdots+81u-9)$
c_{10}	$(u^5+u^4-2u^3-u^2+u-1)(u^{20}-2u^{19}+\cdots-3u-1)$
c_{11}	$(u^5-3u^4+4u^3-u^2-u+1)(u^{20}+6u^{19}+\cdots+35u+5)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^5)(y^{20} - 30y^{19} + \cdots - 13y + 1)$
c_2	$((y-1)^5)(y^{20} - 74y^{19} + \cdots + 355y + 1)$
c_3, c_8	$y^5(y^{20} - 33y^{19} + \cdots + 3584y + 1024)$
c_5	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{20} - 42y^{19} + \cdots - 11y + 1)$
c_6, c_7, c_{10}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{20} - 18y^{19} + \cdots - 11y + 1)$
c_9	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{20} - 6y^{19} + \cdots - 5031y + 81)$
c_{11}	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)(y^{20} + 6y^{19} + \cdots - 335y + 25)$