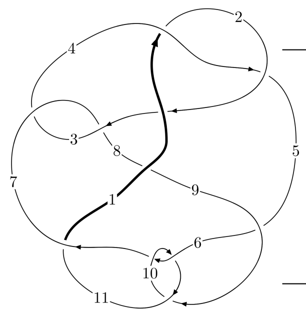
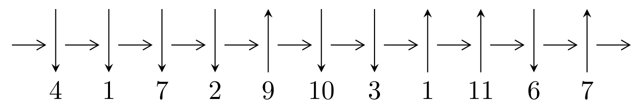
$11n_{51}$ $(K11n_{51})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

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

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 24 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.

$$I^u_1 = \langle u^{18}-3u^{17}+\cdots+b-3u,\ -u^{18}+3u^{17}+\cdots+a+1,\ u^{19}-2u^{18}+\cdots+4u-1\rangle$$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix}u^{18}-3u^{17}+\cdots-3u-1\\-u^{18}+3u^{17}+\cdots-6u^2+3u\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}-u^{17}+u^{16}+\cdots-u-2\\u^{17}-u^{16}+\cdots-3u^2+2u\end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix}-u^{14}+u^{13}+\cdots+u-2\\-u^{16}+u^{15}+\cdots-u^2+2u\end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix}-u^{11}-2u^9-2u^7-u^3\\-u^{13}-3u^{11}-5u^9-4u^7-2u^5+u^3+u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-u^{11}-2u^9-2u^7-u^3\\-u^{13}-3u^{11}-5u^9-4u^7-2u^5+u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{18}+7u^{17}-30u^{16}+40u^{15}-92u^{14}+103u^{13}-146u^{12}+136u^{11}-103u^{10}+75u^9+15u^8-26u^7+68u^6-42u^5+11u^4+2u^3-25u^2+13u-11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{19} - 6u^{18} + \cdots - 6u + 1$
c_2	$u^{19} + 22u^{17} + \cdots + 10u + 1$
c_3, c_7	$u^{19} + u^{18} + \cdots + 32u + 32$
c_5, c_{11}	$u^{19} - 2u^{18} + \cdots + 2u + 1$
c_6, c_{10}	$u^{19} + 2u^{18} + \cdots + 4u + 1$
c_8	$u^{19} + 8u^{18} + \cdots + 3614u - 53$
c_9	$u^{19} - 12u^{18} + \cdots + 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{19} + 22y^{17} + \cdots + 10y - 1$
c_2	$y^{19} + 44y^{18} + \cdots - 82y - 1$
c_3, c_7	$y^{19} + 33y^{18} + \cdots - 6656y - 1024$
c_5, c_{11}	$y^{19} - 28y^{18} + \cdots + 8y - 1$
c_6, c_{10}	$y^{19} + 12y^{18} + \cdots + 8y - 1$
c_8	$y^{19} - 88y^{18} + \cdots + 11357576y - 2809$
c_9	$y^{19} - 8y^{18} + \cdots + 148y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.958201 + 0.037511I$ $a = -0.09691 + 2.45307I$ $b = -0.68781 + 4.36675I$	$13.37810 + 4.28212I$	$-1.00628 - 2.00074I$
$u = 0.958201 - 0.037511I$ $a = -0.09691 - 2.45307I$ $b = -0.68781 - 4.36675I$	$13.37810 - 4.28212I$	$-1.00628 + 2.00074I$
$u = 0.257925 + 1.029280I$ $a = -0.974517 - 0.715624I$ $b = 0.400502 + 0.133322I$	$1.26128 - 2.36565I$	$1.22099 + 4.76618I$
$u = 0.257925 - 1.029280I$ $a = -0.974517 + 0.715624I$ $b = 0.400502 - 0.133322I$	$1.26128 + 2.36565I$	$1.22099 - 4.76618I$
$u = 0.411726 + 0.802360I$ $a = -0.613331 + 0.154728I$ $b = 0.0749982 + 0.0666033I$	$0.05095 - 1.76235I$	$0.18768 + 4.49049I$
$u = 0.411726 - 0.802360I$ $a = -0.613331 - 0.154728I$ $b = 0.0749982 - 0.0666033I$	$0.05095 + 1.76235I$	$0.18768 - 4.49049I$
$u = -0.136067 + 0.851256I$ $a = -0.34442 + 2.57576I$ $b = 1.21717 - 1.16867I$	$-0.904771 + 0.899537I$	$0.47063 + 1.75855I$
$u = -0.136067 - 0.851256I$ $a = -0.34442 - 2.57576I$ $b = 1.21717 + 1.16867I$	$-0.904771 - 0.899537I$	$0.47063 - 1.75855I$
$u = -0.751661 + 0.156600I$ $a = -0.485692 + 0.793209I$ $b = -0.42510 + 1.60730I$	$2.51975 - 1.53406I$	$-0.31883 + 1.85733I$
$u = -0.751661 - 0.156600I$ $a = -0.485692 - 0.793209I$ $b = -0.42510 - 1.60730I$	$2.51975 + 1.53406I$	$-0.31883 - 1.85733I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.503922 + 1.144700I$ $a = 1.50073 + 1.71154I$ $b = 0.50812 - 2.33885I$	$5.36309 + 6.16703I$	$2.22619 - 6.06641I$
$u = -0.503922 - 1.144700I$ $a = 1.50073 - 1.71154I$ $b = 0.50812 + 2.33885I$	$5.36309 - 6.16703I$	$2.22619 + 6.06641I$
$u = -0.349482 + 1.221390I$ $a = 0.51320 - 2.86957I$ $b = -2.48582 + 2.22515I$	$6.61331 + 2.23643I$	$3.68670 - 1.85634I$
$u = -0.349482 - 1.221390I$ $a = 0.51320 + 2.86957I$ $b = -2.48582 - 2.22515I$	$6.61331 - 2.23643I$	$3.68670 + 1.85634I$
$u = 0.505857 + 1.287090I$ $a = -0.86298 + 4.44842I$ $b = -4.03195 - 5.22546I$	$17.2204 - 9.5042I$	$1.84766 + 4.86373I$
$u = 0.505857 - 1.287090I$ $a = -0.86298 - 4.44842I$ $b = -4.03195 + 5.22546I$	$17.2204 + 9.5042I$	$1.84766 - 4.86373I$
$u = 0.461672 + 1.308730I$ $a = 1.77953 - 4.18615I$ $b = 2.72777 + 6.18474I$	$17.5665 - 0.7457I$	$2.31305 + 0.82283I$
$u = 0.461672 - 1.308730I$ $a = 1.77953 + 4.18615I$ $b = 2.72777 - 6.18474I$	$17.5665 + 0.7457I$	$2.31305 - 0.82283I$
$u = 0.291501$ $a = -1.83122$ $b = 0.404221$	-1.12234	-9.25560

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

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} u^2 + u + 1 \\ u^4 + u^3 + u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^2 + u + 1 \\ u^4 + u^3 + u^2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^3 \\ -u^4 - u^3 - u^2 - 1 \end{pmatrix}$$

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^4 + 7u^3 + 8u^2 + 6u$

(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_7	u^5
c_5, c_8	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_6	$u^5 + u^4 + 2u^3 + u^2 + u + 1$
c_9	$u^5 + 3u^4 + 4u^3 + u^2 - u - 1$
c_{10}	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_{11}	$u^5 + u^4 - 2u^3 - u^2 + u - 1$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = 0.77780 + 1.38013I$ $b = -1.206350 - 0.340852I$	$-1.31583 - 1.53058I$	$-6.99101 + 6.23673I$
$u = 0.339110 - 0.822375I$ $a = 0.77780 - 1.38013I$ $b = -1.206350 + 0.340852I$	$-1.31583 + 1.53058I$	$-6.99101 - 6.23673I$
$u = -0.766826$ $a = 0.821196$ $b = 0.482881$	0.756147	-2.36160
$u = -0.455697 + 1.200150I$ $a = -0.688402 + 0.106340I$ $b = 0.964913 + 0.621896I$	$4.22763 + 4.40083I$	$1.17182 - 3.02310I$
$u = -0.455697 - 1.200150I$ $a = -0.688402 - 0.106340I$ $b = 0.964913 - 0.621896I$	$4.22763 - 4.40083I$	$1.17182 + 3.02310I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{19}-6u^{18}+\cdots-6u+1)$
c_2	$((u+1)^5)(u^{19}+22u^{17}+\cdots+10u+1)$
c_3, c_7	$u^5(u^{19}+u^{18}+\cdots+32u+32)$
c_4	$((u+1)^5)(u^{19}-6u^{18}+\cdots-6u+1)$
c_5	$(u^5-u^4-2u^3+u^2+u+1)(u^{19}-2u^{18}+\cdots+2u+1)$
c_6	$(u^5+u^4+2u^3+u^2+u+1)(u^{19}+2u^{18}+\cdots+4u+1)$
c_8	$(u^5-u^4-2u^3+u^2+u+1)(u^{19}+8u^{18}+\cdots+3614u-53)$
c_9	$(u^5+3u^4+4u^3+u^2-u-1)(u^{19}-12u^{18}+\cdots+8u+1)$
c_{10}	$(u^5-u^4+2u^3-u^2+u-1)(u^{19}+2u^{18}+\cdots+4u+1)$
c_{11}	$(u^5+u^4-2u^3-u^2+u-1)(u^{19}-2u^{18}+\cdots+2u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^5)(y^{19} + 22y^{17} + \cdots + 10y - 1)$
c_2	$((y-1)^5)(y^{19} + 44y^{18} + \cdots - 82y - 1)$
c_3, c_7	$y^5(y^{19} + 33y^{18} + \cdots - 6656y - 1024)$
c_5, c_{11}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{19} - 28y^{18} + \cdots + 8y - 1)$
c_6, c_{10}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{19} + 12y^{18} + \cdots + 8y - 1)$
c_8	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{19} - 88y^{18} + \cdots + 11357576y - 2809)$
c_9	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)(y^{19} - 8y^{18} + \cdots + 148y - 1)$