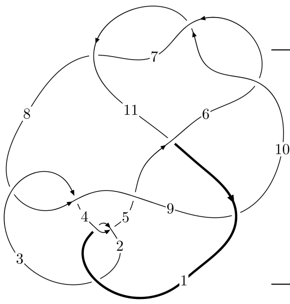
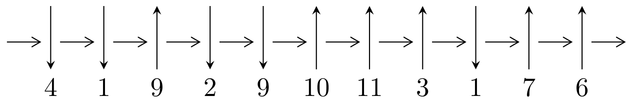
$11n_{58}$ ($K11n_{58}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{21} - u^{20} + \cdots + 5u^2 + b,\ -u^{14} + 7u^{12} - 18u^{10} + 19u^8 - 6u^6 + 2u^4 + 2u^3 - 4u^2 + a - 4u - 1,\\ u^{22} + 2u^{21} + \cdots - 4u^2 - 1\rangle$$
$$I_2^u = \langle b + 1,\ u^3 + a - 2u,\ u^5 - u^4 - 2u^3 + u^2 + u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 27 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. $I_1^u =$
$\langle -u^{21}-u^{20}+\cdots+5u^2+b,\ -u^{14}+7u^{12}+\cdots+a-1,\ u^{22}+2u^{21}+\cdots-4u^2-1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^3+2u\\-u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^{14}-7u^{12}+18u^{10}-19u^8+6u^6-2u^4-2u^3+4u^2+4u+1\\u^{21}+u^{20}+\cdots-9u^3-5u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}u^{21}+u^{20}+\cdots+5u+1\\3u^{21}+2u^{20}+\cdots+u-1\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^7-4u^5+4u^3\\u^7-3u^5+2u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-2u^{21}-2u^{20}+\cdots+4u+2\\u^{21}+u^{20}+\cdots-5u^2+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u^{14}-7u^{12}+18u^{10}-19u^8+4u^6+4u^4-1\\u^{14}-6u^{12}+13u^{10}-10u^8-2u^6+4u^4+u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u^{14}-7u^{12}+18u^{10}-19u^8+4u^6+4u^4-1\\u^{14}-6u^{12}+13u^{10}-10u^8-2u^6+4u^4+u^2\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -2u^{21}-4u^{20}+20u^{19}+37u^{18}-87u^{17}-136u^{16}+219u^{15}+241u^{14}-359u^{13}-186u^{12}+398u^{11}+17u^{10}-277u^9+14u^8+98u^7+38u^6-34u^5-18u^4+36u^3+13u^2-u-2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{22} - 6u^{21} + \cdots + 6u - 1$
c_2	$u^{22} + 2u^{21} + \cdots + 2u + 1$
c_3, c_8	$u^{22} - u^{21} + \cdots - 64u + 32$
c_5	$u^{22} + 2u^{21} + \cdots + 2996u - 1960$
c_6, c_7, c_{10}	$u^{22} - 2u^{21} + \cdots - 4u^2 - 1$
c_9	$u^{22} - 2u^{21} + \cdots - 2u + 1$
c_{11}	$u^{22} + 6u^{21} + \cdots - 64u - 17$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{22} - 2y^{21} + \cdots - 2y + 1$
c_2	$y^{22} + 42y^{21} + \cdots - 62y + 1$
c_3, c_8	$y^{22} - 33y^{21} + \cdots - 7680y + 1024$
c_5	$y^{22} + 66y^{21} + \cdots + 61827024y + 3841600$
c_6, c_7, c_{10}	$y^{22} - 22y^{21} + \cdots + 8y + 1$
c_9	$y^{22} + 30y^{21} + \cdots + 8y + 1$
c_{11}	$y^{22} - 14y^{21} + \cdots - 2056y + 289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.547451 + 0.687554I$ $a = -1.64917 + 1.79616I$ $b = -0.18168 + 2.30378I$	$10.04630 - 1.61926I$	$3.79117 - 0.60262I$
$u = 0.547451 - 0.687554I$ $a = -1.64917 - 1.79616I$ $b = -0.18168 - 2.30378I$	$10.04630 + 1.61926I$	$3.79117 + 0.60262I$
$u = 0.477782 + 0.730631I$ $a = 1.68752 - 2.10270I$ $b = 0.07337 - 2.34864I$	$9.80847 + 6.35147I$	$3.22096 - 4.88727I$
$u = 0.477782 - 0.730631I$ $a = 1.68752 + 2.10270I$ $b = 0.07337 + 2.34864I$	$9.80847 - 6.35147I$	$3.22096 + 4.88727I$
$u = -1.15891$ $a = -0.585194$ $b = 0.132093$	1.97038	6.11980
$u = -0.253735 + 0.636077I$ $a = -0.333427 + 0.841858I$ $b = -0.032077 + 0.372929I$	$0.10442 - 2.33425I$	$2.92732 + 5.10863I$
$u = -0.253735 - 0.636077I$ $a = -0.333427 - 0.841858I$ $b = -0.032077 - 0.372929I$	$0.10442 + 2.33425I$	$2.92732 - 5.10863I$
$u = 1.33846$ $a = 1.06516$ $b = 1.56525$	1.80329	6.37870
$u = -1.374360 + 0.085773I$ $a = -0.046048 - 1.048570I$ $b = 0.632067 + 0.872611I$	$3.07940 - 2.15283I$	$3.96233 + 2.53077I$
$u = -1.374360 - 0.085773I$ $a = -0.046048 + 1.048570I$ $b = 0.632067 - 0.872611I$	$3.07940 + 2.15283I$	$3.96233 - 2.53077I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.458175 + 0.412746I$ $a = -1.044590 - 0.139124I$ $b = -0.311064 - 0.023201I$	$1.10436 - 0.93215I$	$5.59687 + 3.71705I$
$u = -0.458175 - 0.412746I$ $a = -1.044590 + 0.139124I$ $b = -0.311064 + 0.023201I$	$1.10436 + 0.93215I$	$5.59687 - 3.71705I$
$u = 1.384260 + 0.250179I$ $a = 0.084137 - 0.456690I$ $b = 0.043050 - 0.643455I$	$5.30289 + 5.58097I$	$6.98899 - 5.83204I$
$u = 1.384260 - 0.250179I$ $a = 0.084137 + 0.456690I$ $b = 0.043050 + 0.643455I$	$5.30289 - 5.58097I$	$6.98899 + 5.83204I$
$u = 1.46039 + 0.14631I$ $a = -0.589431 - 0.029298I$ $b = -0.810187 + 0.008550I$	$7.28227 + 3.02618I$	$8.05288 - 2.57798I$
$u = 1.46039 - 0.14631I$ $a = -0.589431 + 0.029298I$ $b = -0.810187 - 0.008550I$	$7.28227 - 3.02618I$	$8.05288 + 2.57798I$
$u = -1.50300 + 0.26177I$ $a = 1.77777 + 0.03837I$ $b = 0.23595 + 2.50634I$	$16.2359 - 9.9783I$	$6.35264 + 4.88027I$
$u = -1.50300 - 0.26177I$ $a = 1.77777 - 0.03837I$ $b = 0.23595 - 2.50634I$	$16.2359 + 9.9783I$	$6.35264 - 4.88027I$
$u = -1.52245 + 0.22649I$ $a = -1.49085 + 0.18083I$ $b = -0.42745 - 2.45052I$	$16.8152 - 1.7067I$	$7.03198 + 0.67482I$
$u = -1.52245 - 0.22649I$ $a = -1.49085 - 0.18083I$ $b = -0.42745 + 2.45052I$	$16.8152 + 1.7067I$	$7.03198 - 0.67482I$

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u =$	$0.152064 + 0.338601I$		
$a =$	$1.36411 + 1.84123I$	$-1.75639 + 0.64723I$	$-5.17438 + 1.08919I$
$b =$	$0.929357 - 0.322994I$		
$u =$	$0.152064 - 0.338601I$		
$a =$	$1.36411 - 1.84123I$	$-1.75639 - 0.64723I$	$-5.17438 - 1.08919I$
$b =$	$0.929357 + 0.322994I$		

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(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
$u = -1.21774$ $a = -0.629714$ $b = -1.00000$	0.756147	-2.80750
$u = -0.309916 + 0.549911I$ $a = -0.871221 + 1.107660I$ $b = -1.00000$	$-1.31583 - 1.53058I$	$-0.02714 + 4.76366I$
$u = -0.309916 - 0.549911I$ $a = -0.871221 - 1.107660I$ $b = -1.00000$	$-1.31583 + 1.53058I$	$-0.02714 - 4.76366I$
$u = 1.41878 + 0.21917I$ $a = 0.186078 - 0.874646I$ $b = -1.00000$	$4.22763 + 4.40083I$	$4.43089 - 2.80751I$
$u = 1.41878 - 0.21917I$ $a = 0.186078 + 0.874646I$ $b = -1.00000$	$4.22763 - 4.40083I$	$4.43089 + 2.80751I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{22}-6u^{21}+\cdots+6u-1)$
c_2	$((u+1)^5)(u^{22}+2u^{21}+\cdots+2u+1)$
c_3, c_8	$u^5(u^{22}-u^{21}+\cdots-64u+32)$
c_4	$((u+1)^5)(u^{22}-6u^{21}+\cdots+6u-1)$
c_5	$(u^5+u^4+2u^3+u^2+u+1)(u^{22}+2u^{21}+\cdots+2996u-1960)$
c_6, c_7	$(u^5-u^4-2u^3+u^2+u+1)(u^{22}-2u^{21}+\cdots-4u^2-1)$
c_9	$(u^5+u^4+2u^3+u^2+u+1)(u^{22}-2u^{21}+\cdots-2u+1)$
c_{10}	$(u^5+u^4-2u^3-u^2+u-1)(u^{22}-2u^{21}+\cdots-4u^2-1)$
c_{11}	$(u^5-3u^4+4u^3-u^2-u+1)(u^{22}+6u^{21}+\cdots-64u-17)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^5)(y^{22} - 2y^{21} + \cdots - 2y + 1)$
c_2	$((y-1)^5)(y^{22} + 42y^{21} + \cdots - 62y + 1)$
c_3, c_8	$y^5(y^{22} - 33y^{21} + \cdots - 7680y + 1024)$
c_5	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)$ $\cdot (y^{22} + 66y^{21} + \cdots + 61827024y + 3841600)$
c_6, c_7, c_{10}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{22} - 22y^{21} + \cdots + 8y + 1)$
c_9	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{22} + 30y^{21} + \cdots + 8y + 1)$
c_{11}	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)(y^{22} - 14y^{21} + \cdots - 2056y + 289)$