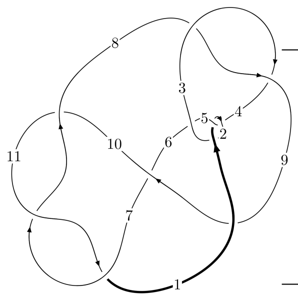
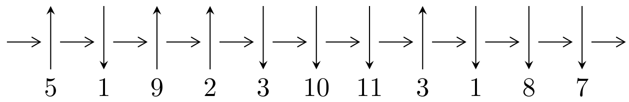
$11n_{18}$ $(K11n_{18})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{21} + 2u^{20} + \cdots + 2b - 1,\ -2u^{21} + 6u^{20} + \cdots + 2a + 5,\ u^{22} - 3u^{21} + \cdots - 4u + 1 \rangle$$
$$I_2^u = \langle u^2a + b + a,\ u^2a + a^2 + au + a - u,\ u^3 + u^2 + 2u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 28 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle -u^{21}+2u^{20}+\cdots+2b-1,\ -2u^{21}+6u^{20}+\cdots+2a+5,\ u^{22}-3u^{21}+\cdots-4u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 3u^{21}-\frac{13}{2}u^{20}+\frac{81}{2}u^{19}-73u^{18}+226u^{17}-340u^{16}+674u^{15}-828u^{14}+\frac{2275}{2}u^{13}-1060u^{12}+1009u^{11}-\frac{1069}{2}u^{10}+\frac{547}{2}u^9+\frac{371}{2}u^8-198u^7+242u^6-60u^5+\frac{11}{2}u^4+82u^3-\frac{19}{2}u^2+\frac{23}{2}u-\frac{1}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{22} + 4u^{21} + \cdots + 3u + 1$
c_2	$u^{22} + 4u^{21} + \cdots + 11u + 1$
c_3, c_8	$u^{22} - u^{21} + \cdots - 32u + 64$
c_5	$u^{22} - 4u^{21} + \cdots + 1113u + 306$
c_6	$u^{22} + 3u^{21} + \cdots - 105u + 34$
c_7, c_{10}, c_{11}	$u^{22} - 3u^{21} + \cdots - 4u + 1$
c_9	$u^{22} - u^{21} + \cdots + 2u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{22} + 4y^{21} + \cdots + 11y + 1$
c_2	$y^{22} + 32y^{21} + \cdots + 11y + 1$
c_3, c_8	$y^{22} - 35y^{21} + \cdots - 17408y + 4096$
c_5	$y^{22} + 60y^{21} + \cdots + 3785751y + 93636$
c_6	$y^{22} + 19y^{21} + \cdots + 18011y + 1156$
c_7, c_{10}, c_{11}	$y^{22} + 23y^{21} + \cdots + 4y + 1$
c_9	$y^{22} + 39y^{21} + \cdots + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.770283 + 0.589538I$ $a = 1.125210 - 0.379310I$ $b = -0.07905 - 1.81869I$	$10.13960 + 0.88452I$	$-0.211027 + 0.306129I$
$u = 0.770283 - 0.589538I$ $a = 1.125210 + 0.379310I$ $b = -0.07905 + 1.81869I$	$10.13960 - 0.88452I$	$-0.211027 - 0.306129I$
$u = 0.804807 + 0.517036I$ $a = -1.042990 + 0.300031I$ $b = 0.13147 + 1.87390I$	$9.90919 - 6.12637I$	$-0.73850 + 4.70880I$
$u = 0.804807 - 0.517036I$ $a = -1.042990 - 0.300031I$ $b = 0.13147 - 1.87390I$	$9.90919 + 6.12637I$	$-0.73850 - 4.70880I$
$u = -0.115563 + 1.244550I$ $a = 0.708694 + 0.469396I$ $b = 0.634802 - 0.033810I$	$1.83932 + 1.95875I$	$-3.73580 - 3.68347I$
$u = -0.115563 - 1.244550I$ $a = 0.708694 - 0.469396I$ $b = 0.634802 + 0.033810I$	$1.83932 - 1.95875I$	$-3.73580 + 3.68347I$
$u = -0.248700 + 1.353780I$ $a = 0.267493 - 0.437974I$ $b = -0.005781 - 0.383501I$	$3.35457 + 3.66509I$	$0.212427 - 1.175787I$
$u = -0.248700 - 1.353780I$ $a = 0.267493 + 0.437974I$ $b = -0.005781 + 0.383501I$	$3.35457 - 3.66509I$	$0.212427 + 1.175787I$
$u = -0.597356 + 0.125917I$ $a = 0.501330 - 0.329651I$ $b = 0.173251 - 0.149140I$	$-1.35470 + 0.57102I$	$-7.20802 - 0.39012I$
$u = -0.597356 - 0.125917I$ $a = 0.501330 + 0.329651I$ $b = 0.173251 + 0.149140I$	$-1.35470 - 0.57102I$	$-7.20802 + 0.39012I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.08081 + 1.44732I$ $a = 0.03594 + 1.88889I$ $b = 0.95469 + 1.28056I$	$5.22365 - 3.91165I$	$1.62467 + 2.79581I$
$u = 0.08081 - 1.44732I$ $a = 0.03594 - 1.88889I$ $b = 0.95469 - 1.28056I$	$5.22365 + 3.91165I$	$1.62467 - 2.79581I$
$u = -0.02169 + 1.49375I$ $a = 0.116291 - 1.385550I$ $b = -0.551917 - 1.006360I$	$7.30874 + 1.68962I$	$3.46122 - 1.99684I$
$u = -0.02169 - 1.49375I$ $a = 0.116291 + 1.385550I$ $b = -0.551917 + 1.006360I$	$7.30874 - 1.68962I$	$3.46122 + 1.99684I$
$u = -0.037659 + 0.478054I$ $a = 1.42737 - 0.64365I$ $b = 0.056911 - 0.654735I$	$0.83479 + 1.39529I$	$1.49278 - 4.06161I$
$u = -0.037659 - 0.478054I$ $a = 1.42737 + 0.64365I$ $b = 0.056911 + 0.654735I$	$0.83479 - 1.39529I$	$1.49278 + 4.06161I$
$u = 0.28918 + 1.53736I$ $a = -1.00511 + 1.94899I$ $b = 0.28840 + 2.00471I$	$16.5973 - 10.1473I$	$1.94212 + 4.94349I$
$u = 0.28918 - 1.53736I$ $a = -1.00511 - 1.94899I$ $b = 0.28840 - 2.00471I$	$16.5973 + 10.1473I$	$1.94212 - 4.94349I$
$u = 0.25416 + 1.56446I$ $a = 0.88215 - 1.89631I$ $b = -0.32453 - 1.88491I$	$17.2299 - 2.8896I$	$2.69042 + 0.63603I$
$u = 0.25416 - 1.56446I$ $a = 0.88215 + 1.89631I$ $b = -0.32453 + 1.88491I$	$17.2299 + 2.8896I$	$2.69042 - 0.63603I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.321731 + 0.235214I$ $a = -2.01637 + 0.18504I$ $b = 0.721764 + 0.861777I$	$-0.35018 - 2.57282I$	$0.96973 + 5.85943I$
$u = 0.321731 - 0.235214I$ $a = -2.01637 - 0.18504I$ $b = 0.721764 - 0.861777I$	$-0.35018 + 2.57282I$	$0.96973 - 5.85943I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2a - au - 3u^2 - 3a - 3u - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.215080+1.307140I$ $a=-0.206350-1.132320I$ $b=\ \ 0.500000-0.866025I$	$3.02413+0.79824I$	$1.45566+0.28364I$
$u=-0.215080+1.307140I$ $a=\ \ 1.083790+0.387453I$ $b=\ \ 0.500000+0.866025I$	$3.02413+4.85801I$	$-2.09851-6.80481I$
$u=-0.215080-1.307140I$ $a=-0.206350+1.132320I$ $b=\ \ 0.500000+0.866025I$	$3.02413-0.79824I$	$1.45566-0.28364I$
$u=-0.215080-1.307140I$ $a=\ \ 1.083790-0.387453I$ $b=\ \ 0.500000-0.866025I$	$3.02413-4.85801I$	$-2.09851+6.80481I$
$u=-0.569840$ $a=-0.377439+0.653743I$ $b=\ \ 0.500000-0.866025I$	$-1.11345+2.02988I$	$-5.85715-2.43783I$
$u=-0.569840$ $a=-0.377439-0.653743I$ $b=\ \ 0.500000+0.866025I$	$-1.11345-2.02988I$	$-5.85715+2.43783I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^3)(u^{22}+4u^{21}+\cdots+3u+1)$
c_2	$((u^2+u+1)^3)(u^{22}+4u^{21}+\cdots+11u+1)$
c_3, c_8	$u^6(u^{22}-u^{21}+\cdots-32u+64)$
c_4	$((u^2-u+1)^3)(u^{22}+4u^{21}+\cdots+3u+1)$
c_5	$((u^2+u+1)^3)(u^{22}-4u^{21}+\cdots+1113u+306)$
c_6	$((u^3+u^2-1)^2)(u^{22}+3u^{21}+\cdots-105u+34)$
c_7	$((u^3-u^2+2u-1)^2)(u^{22}-3u^{21}+\cdots-4u+1)$
c_9	$((u^3+u^2-1)^2)(u^{22}-u^{21}+\cdots+2u^2+1)$
c_{10}, c_{11}	$((u^3+u^2+2u+1)^2)(u^{22}-3u^{21}+\cdots-4u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^3)(y^{22}+4y^{21}+\cdots+11y+1)$
c_2	$((y^2+y+1)^3)(y^{22}+32y^{21}+\cdots+11y+1)$
c_3, c_8	$y^6(y^{22}-35y^{21}+\cdots-17408y+4096)$
c_5	$((y^2+y+1)^3)(y^{22}+60y^{21}+\cdots+3785751y+93636)$
c_6	$((y^3-y^2+2y-1)^2)(y^{22}+19y^{21}+\cdots+18011y+1156)$
c_7, c_{10}, c_{11}	$((y^3+3y^2+2y-1)^2)(y^{22}+23y^{21}+\cdots+4y+1)$
c_9	$((y^3-y^2+2y-1)^2)(y^{22}+39y^{21}+\cdots+4y+1)$