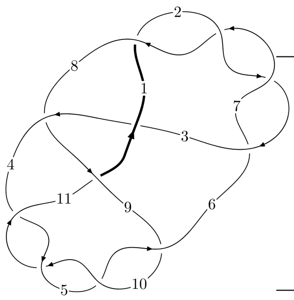
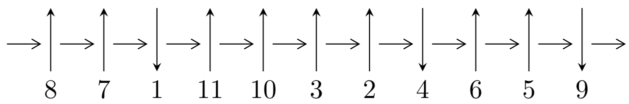
$11a_{333}$ ($K11a_{333}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^8 + 5u^6 + 7u^4 + u^3 + 2u^2 + 2u + 1 \rangle$$
$$I_2^u = \langle u^{24} + u^{23} + \cdots - u^3 + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 32 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. $I_1^u = \langle u^8 + 5u^6 + 7u^4 + u^3 + 2u^2 + 2u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^7 - 4u^6 + 20u^5 - 16u^4 + 24u^3 - 12u^2 - 4u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_9, c_{10}	$u^8 + 5u^6 + 7u^4 - u^3 + 2u^2 - 2u + 1$
c_3, c_{11}	$u^8 - 2u^7 + 3u^6 + 5u^4 - 5u^3 + 6u^2 - 2u + 1$
c_8	$u^8 - 5u^7 + 11u^6 - 16u^5 + 22u^4 - 27u^3 + 23u^2 - 12u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_9, c_{10}	$y^8 + 10y^7 + 39y^6 + 74y^5 + 71y^4 + 37y^3 + 14y^2 + 1$
c_3, c_{11}	$y^8 + 2y^7 + 19y^6 + 22y^5 + 55y^4 + 41y^3 + 26y^2 + 8y + 1$
c_8	$y^8 - 3y^7 + 5y^6 + 4y^5 + 14y^4 - 13y^3 + 57y^2 + 40y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.461135 + 0.691908I$	$-1.71296 + 5.69915I$	$0.47037 - 9.01967I$
$u = \ \ 0.461135 - 0.691908I$	$-1.71296 - 5.69915I$	$0.47037 + 9.01967I$
$u = \ \ 0.08626 + 1.49661I$	$-11.28300 + 3.64910I$	$-1.10964 - 3.07905I$
$u = \ \ 0.08626 - 1.49661I$	$-11.28300 - 3.64910I$	$-1.10964 + 3.07905I$
$u = -0.404853 + 0.285137I$	$0.853870 - 0.627235I$	$8.80552 + 5.03557I$
$u = -0.404853 - 0.285137I$	$0.853870 + 0.627235I$	$8.80552 - 5.03557I$
$u = -0.14255 + 1.61382I$	$-17.4667 - 10.2751I$	$-4.16626 + 5.30618I$
$u = -0.14255 - 1.61382I$	$-17.4667 + 10.2751I$	$-4.16626 - 5.30618I$

II. $I_2^u = \langle u^{24} + u^{23} + \cdots - u^3 + 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^5 - 2u^3 + u \\ u^7 + 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{14} + 7u^{12} + 16u^{10} + 11u^8 - 2u^6 + 1 \\ -u^{16} - 8u^{14} - 24u^{12} - 34u^{10} - 26u^8 - 14u^6 - 4u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^7 + 4u^5 + 4u^3 \\ u^7 + 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{21} + 12u^{19} + \cdots - 2u^3 + u \\ u^{21} + 11u^{19} + \cdots + u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 2u^{23} + u^{22} + \cdots + u + 2 \\ -u^{22} - 12u^{20} + \cdots - 2u^3 + u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 2u^{23} + u^{22} + \cdots + u + 2 \\ -u^{22} - 12u^{20} + \cdots - 2u^3 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{23} + 52u^{21} + 276u^{19} - 4u^{18} + 760u^{17} - 40u^{16} + 1136u^{15} - 148u^{14} + 880u^{13} - 232u^{12} + 328u^{11} - 96u^{10} + 84u^9 + 92u^8 + 4u^7 + 64u^6 - 4u^5 + 16u^4 + 4u^3 - 4u^2 + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_9, c_{10}	$u^{24} - u^{23} + \cdots + u^3 + 1$
c_3, c_{11}	$u^{24} - 7u^{23} + \cdots - 94u + 17$
c_8	$(u^{12} + 2u^{11} + \cdots + 2u + 3)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_9, c_{10}	$y^{24} + 27y^{23} + \cdots - 2y^2 + 1$
c_3, c_{11}	$y^{24} - 9y^{23} + \cdots - 2376y + 289$
c_8	$(y^{12} - 6y^{11} + \cdots - 46y + 9)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.288696 + 0.833188I$	$-10.86470 + 1.36952I$	$-4.42656 + 0.88523I$
$u = -0.288696 - 0.833188I$	$-10.86470 - 1.36952I$	$-4.42656 - 0.88523I$
$u = -0.489583 + 0.725679I$	$-9.51380 - 7.90456I$	$-1.91927 + 6.92574I$
$u = -0.489583 - 0.725679I$	$-9.51380 + 7.90456I$	$-1.91927 - 6.92574I$
$u = \quad 0.271534 + 0.725672I$	-2.90121	$-3.57147 + 0.I$
$u = \quad 0.271534 - 0.725672I$	-2.90121	$-3.57147 + 0.I$
$u = -0.409437 + 0.638189I$	$-0.18849 - 2.30634I$	$4.56865 + 4.07548I$
$u = -0.409437 - 0.638189I$	$-0.18849 + 2.30634I$	$4.56865 - 4.07548I$
$u = \quad 0.493302 + 0.448019I$	$-4.94432 + 1.72225I$	$2.81956 - 4.07903I$
$u = \quad 0.493302 - 0.448019I$	$-4.94432 - 1.72225I$	$2.81956 + 4.07903I$
$u = -0.591891 + 0.137722I$	$-7.79349 + 4.22631I$	$1.67942 - 2.13120I$
$u = -0.591891 - 0.137722I$	$-7.79349 - 4.22631I$	$1.67942 + 2.13120I$
$u = \quad 0.516875 + 0.160721I$	$-0.18849 - 2.30634I$	$4.56865 + 4.07548I$
$u = \quad 0.516875 - 0.160721I$	$-0.18849 + 2.30634I$	$4.56865 - 4.07548I$
$u = -0.02617 + 1.49212I$	$-4.94432 - 1.72225I$	$2.81956 + 4.07903I$
$u = -0.02617 - 1.49212I$	$-4.94432 + 1.72225I$	$2.81956 - 4.07903I$
$u = -0.11519 + 1.59101I$	$-7.79349 - 4.22631I$	$1.67942 + 2.13120I$
$u = -0.11519 - 1.59101I$	$-7.79349 + 4.22631I$	$1.67942 - 2.13120I$
$u = \quad 0.08387 + 1.60577I$	$-10.86470 + 1.36952I$	$-4.42656 + 0.88523I$
$u = \quad 0.08387 - 1.60577I$	$-10.86470 - 1.36952I$	$-4.42656 - 0.88523I$
$u = \quad 0.13255 + 1.60291I$	$-9.51380 + 7.90456I$	$-1.91927 - 6.92574I$
$u = \quad 0.13255 - 1.60291I$	$-9.51380 - 7.90456I$	$-1.91927 + 6.92574I$
$u = -0.07716 + 1.63217I$	-19.3156	$-5.87212 + 0.I$
$u = -0.07716 - 1.63217I$	-19.3156	$-5.87212 + 0.I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_9, c_{10}	$(u^8+5u^6+7u^4-u^3+2u^2-2u+1)(u^{24}-u^{23}+\cdots+u^3+1)$
c_3, c_{11}	$(u^8-2u^7+3u^6+5u^4-5u^3+6u^2-2u+1)$ $\cdot(u^{24}-7u^{23}+\cdots-94u+17)$
c_8	$(u^8-5u^7+11u^6-16u^5+22u^4-27u^3+23u^2-12u+4)$ $\cdot(u^{12}+2u^{11}+\cdots+2u+3)^2$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_9, c_{10}	$(y^8 + 10y^7 + 39y^6 + 74y^5 + 71y^4 + 37y^3 + 14y^2 + 1)$ $\cdot (y^{24} + 27y^{23} + \cdots - 2y^2 + 1)$
c_3, c_{11}	$(y^8 + 2y^7 + 19y^6 + 22y^5 + 55y^4 + 41y^3 + 26y^2 + 8y + 1)$ $\cdot (y^{24} - 9y^{23} + \cdots - 2376y + 289)$
c_8	$(y^8 - 3y^7 + 5y^6 + 4y^5 + 14y^4 - 13y^3 + 57y^2 + 40y + 16)$ $\cdot (y^{12} - 6y^{11} + \cdots - 46y + 9)^2$