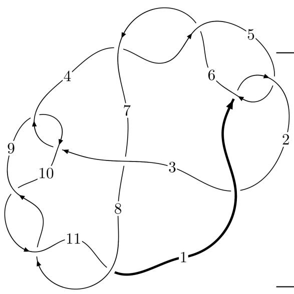
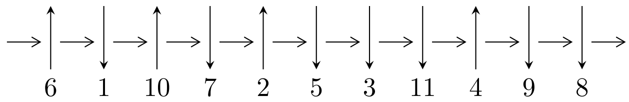
$11a_{119}$ ($K11a_{119}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^8 + u^6 + 3u^4 + 2u^2 - u + 1 \rangle$$
$$I_2^u = \langle u^{30} - u^{29} + \cdots + 2u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 38 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. $\boldsymbol{I_1^u = \langle u^8 + u^6 + 3u^4 + 2u^2 - u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^7 - 4u^6 - 4u^4 - 12u^3 - 12u^2 - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_9	$u^8 + u^6 + 3u^4 + 2u^2 - u + 1$
c_2, c_4, c_6 c_8, c_{10}, c_{11}	$u^8 + 2u^7 + 7u^6 + 10u^5 + 15u^4 + 14u^3 + 10u^2 + 3u + 1$
c_7	$u^8 - 7u^7 + 26u^6 - 57u^5 + 81u^4 - 71u^3 + 42u^2 - 20u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_9	$y^8 + 2y^7 + 7y^6 + 10y^5 + 15y^4 + 14y^3 + 10y^2 + 3y + 1$
c_2, c_4, c_6 c_8, c_{10}, c_{11}	$y^8 + 10y^7 + 39y^6 + 74y^5 + 75y^4 + 58y^3 + 46y^2 + 11y + 1$
c_7	$y^8 + 3y^7 + 40y^6 + 53y^5 + 387y^4 - 101y^3 + 220y^2 + 272y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.338450 + 0.907350I$	$-2.36499 - 4.78635I$	$-7.25990 + 9.32742I$
$u = -0.338450 - 0.907350I$	$-2.36499 + 4.78635I$	$-7.25990 - 9.32742I$
$u = -0.894334 + 0.857566I$	$13.66310 - 0.79369I$	$4.03459 + 2.11393I$
$u = -0.894334 - 0.857566I$	$13.66310 + 0.79369I$	$4.03459 - 2.11393I$
$u = 0.840313 + 0.975020I$	$12.9062 + 12.0580I$	$2.66730 - 7.52058I$
$u = 0.840313 - 0.975020I$	$12.9062 - 12.0580I$	$2.66730 + 7.52058I$
$u = 0.392471 + 0.514949I$	$0.469731 + 1.216760I$	$2.55801 - 5.53294I$
$u = 0.392471 - 0.514949I$	$0.469731 - 1.216760I$	$2.55801 + 5.53294I$

II. $I_2^u = \langle u^{30} - u^{29} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^6 + u^4 + 2u^2 + 1 \\ -u^6 - u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{15} + 2u^{13} + 6u^{11} + 8u^9 + 10u^7 + 8u^5 + 4u^3 \\ -u^{15} - u^{13} - 4u^{11} - 3u^9 - 4u^7 - 2u^5 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^8 + u^6 + 3u^4 + 2u^2 + 1 \\ -u^{10} - 2u^8 - 3u^6 - 4u^4 - u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{17} - 2u^{15} - 7u^{13} - 10u^{11} - 15u^9 - 14u^7 - 10u^5 - 4u^3 - u \\ u^{19} + 3u^{17} + 8u^{15} + 15u^{13} + 19u^{11} + 21u^9 + 14u^7 + 6u^5 + u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{26} + 3u^{24} + \cdots + 3u^2 + 1 \\ -u^{28} - 4u^{26} + \cdots - 7u^4 - 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{26} + 3u^{24} + \cdots + 3u^2 + 1 \\ -u^{28} - 4u^{26} + \cdots - 7u^4 - 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{25} - 12u^{23} - 44u^{21} - 88u^{19} - 4u^{18} - 164u^{17} - 12u^{16} - 224u^{15} - 32u^{14} - 256u^{13} - 56u^{12} - 228u^{11} - 72u^{10} - 160u^9 - 72u^8 - 88u^7 - 48u^6 - 40u^5 - 20u^4 - 28u^3 - 4u^2 - 12u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_9	$u^{30} - u^{29} + \cdots + 2u + 1$
c_2, c_4, c_6 c_8, c_{10}, c_{11}	$u^{30} + 7u^{29} + \cdots + 4u^2 + 1$
c_7	$(u^{15} + 3u^{14} + \cdots - 5u - 7)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_9	$y^{30} + 7y^{29} + \cdots + 4y^2 + 1$
c_2, c_4, c_6 c_8, c_{10}, c_{11}	$y^{30} + 31y^{29} + \cdots + 8y + 1$
c_7	$(y^{15} + 9y^{14} + \cdots - 171y - 49)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.452252 + 0.939744I$	$5.01187 + 2.09461I$	$-0.30918 - 3.37423I$
$u = \ \ 0.452252 - 0.939744I$	$5.01187 - 2.09461I$	$-0.30918 + 3.37423I$
$u = -0.434887 + 0.955633I$	$4.70557 - 8.28968I$	$-1.16488 + 8.39094I$
$u = -0.434887 - 0.955633I$	$4.70557 + 8.28968I$	$-1.16488 - 8.39094I$
$u = -0.019728 + 0.944684I$	$2.41074 + 3.00115I$	$-4.85411 - 2.57684I$
$u = -0.019728 - 0.944684I$	$2.41074 - 3.00115I$	$-4.85411 + 2.57684I$
$u = -0.197860 + 0.871029I$	-3.14864	$-11.00170 + 0.I$
$u = -0.197860 - 0.871029I$	-3.14864	$-11.00170 + 0.I$
$u = \ \ 0.343092 + 0.793576I$	$-0.34244 + 1.73470I$	$-0.36395 - 4.47971I$
$u = \ \ 0.343092 - 0.793576I$	$-0.34244 - 1.73470I$	$-0.36395 + 4.47971I$
$u = \ \ 0.847869 + 0.850065I$	$5.01187 - 2.09461I$	$-0.30918 + 3.37423I$
$u = \ \ 0.847869 - 0.850065I$	$5.01187 + 2.09461I$	$-0.30918 - 3.37423I$
$u = \ \ 0.799403 + 0.896020I$	$2.41074 + 3.00115I$	$-4.85411 - 2.57684I$
$u = \ \ 0.799403 - 0.896020I$	$2.41074 - 3.00115I$	$-4.85411 + 2.57684I$
$u = -0.849380 + 0.882463I$	$6.81987 - 1.98171I$	$4.04276 + 2.49548I$
$u = -0.849380 - 0.882463I$	$6.81987 + 1.98171I$	$4.04276 - 2.49548I$
$u = \ \ 0.895044 + 0.849606I$	$13.3047 - 5.6388I$	$3.41159 + 2.70946I$
$u = \ \ 0.895044 - 0.849606I$	$13.3047 + 5.6388I$	$3.41159 - 2.70946I$
$u = \ \ 0.658622 + 0.369163I$	$6.81987 + 1.98171I$	$4.04276 - 2.49548I$
$u = \ \ 0.658622 - 0.369163I$	$6.81987 - 1.98171I$	$4.04276 + 2.49548I$
$u = -0.832514 + 0.928695I$	$6.67502 - 4.27520I$	$3.73863 + 2.74888I$
$u = -0.832514 - 0.928695I$	$6.67502 + 4.27520I$	$3.73863 - 2.74888I$
$u = \ \ 0.815148 + 0.948838I$	$4.70557 + 8.28968I$	$-1.16488 - 8.39094I$
$u = \ \ 0.815148 - 0.948838I$	$4.70557 - 8.28968I$	$-1.16488 + 8.39094I$
$u = -0.661870 + 0.335265I$	$6.67502 + 4.27520I$	$3.73863 - 2.74888I$
$u = -0.661870 - 0.335265I$	$6.67502 - 4.27520I$	$3.73863 + 2.74888I$
$u = -0.844833 + 0.970234I$	$13.3047 - 5.6388I$	$3.41159 + 2.70946I$
$u = -0.844833 - 0.970234I$	$13.3047 + 5.6388I$	$3.41159 - 2.70946I$
$u = -0.470358 + 0.199229I$	$-0.34244 + 1.73470I$	$-0.36395 - 4.47971I$
$u = -0.470358 - 0.199229I$	$-0.34244 - 1.73470I$	$-0.36395 + 4.47971I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_9	$(u^8 + u^6 + 3u^4 + 2u^2 - u + 1)(u^{30} - u^{29} + \cdots + 2u + 1)$
c_2, c_4, c_6 c_8, c_{10}, c_{11}	$(u^8 + 2u^7 + 7u^6 + 10u^5 + 15u^4 + 14u^3 + 10u^2 + 3u + 1)$ $\cdot (u^{30} + 7u^{29} + \cdots + 4u^2 + 1)$
c_7	$(u^8 - 7u^7 + 26u^6 - 57u^5 + 81u^4 - 71u^3 + 42u^2 - 20u + 8)$ $\cdot (u^{15} + 3u^{14} + \cdots - 5u - 7)^2$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_9	$(y^8+2y^7+7y^6+10y^5+15y^4+14y^3+10y^2+3y+1)$ $\cdot(y^{30}+7y^{29}+\cdots+4y^2+1)$
c_2, c_4, c_6 c_8, c_{10}, c_{11}	$(y^8+10y^7+39y^6+74y^5+75y^4+58y^3+46y^2+11y+1)$ $\cdot(y^{30}+31y^{29}+\cdots+8y+1)$
c_7	$(y^8+3y^7+40y^6+53y^5+387y^4-101y^3+220y^2+272y+64)$ $\cdot(y^{15}+9y^{14}+\cdots-171y-49)^2$