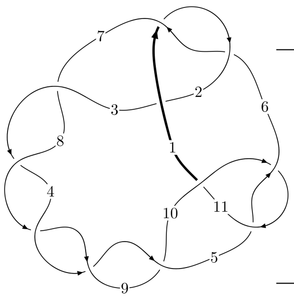
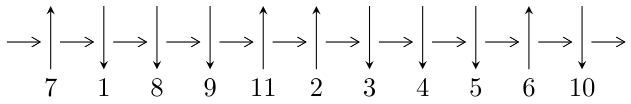
$11a_{179}$ ($K11a_{179}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{10} + 3u^8 + u^7 + 4u^6 + 2u^5 + u^4 + 2u^3 - u^2 - 1 \rangle$$
$$I_2^u = \langle u^{18} - u^{17} + \cdots - 2u + 1 \rangle$$

* 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. $\boldsymbol{I_1^u = \langle u^{10} + 3u^8 + u^7 + 4u^6 + 2u^5 + u^4 + 2u^3 - u^2 - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^9 + 4u^8 - 8u^7 + 4u^6 - 4u^5 + 4u^4 + 8u^3 - 8u^2 + 4u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$u^{10} + 3u^8 - u^7 + 4u^6 - 2u^5 + u^4 - 2u^3 - u^2 - 1$
c_2, c_{11}	$u^{10} + 6u^9 + 17u^8 + 25u^7 + 16u^6 - 8u^5 - 21u^4 - 14u^3 - u^2 + 2u + 1$
c_3, c_4, c_7 c_8, c_9	$u^{10} - 3u^9 - 2u^8 + 11u^7 - u^6 - 13u^5 + 6u^4 + 2u^3 - 3u^2 + u - 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$y^{10} + 6y^9 + 17y^8 + 25y^7 + 16y^6 - 8y^5 - 21y^4 - 14y^3 - y^2 + 2y + 1$
c_2, c_{11}	$y^{10} - 2y^9 + \cdots - 6y + 1$
c_3, c_4, c_7 c_8, c_9	$y^{10} - 13y^9 + \cdots + 11y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.405701 + 0.957098I$	$-2.02767 + 5.09588I$	$-7.00928 - 9.34423I$
$u = 0.405701 - 0.957098I$	$-2.02767 - 5.09588I$	$-7.00928 + 9.34423I$
$u = -0.928426$	-11.5246	-5.70350
$u = -0.452669 + 1.159180I$	$-8.16772 - 8.20953I$	$-10.99080 + 7.49201I$
$u = -0.452669 - 1.159180I$	$-8.16772 + 8.20953I$	$-10.99080 - 7.49201I$
$u = -0.300956 + 0.659835I$	$0.05290 - 1.41771I$	$-1.07087 + 5.41263I$
$u = -0.300956 - 0.659835I$	$0.05290 + 1.41771I$	$-1.07087 - 5.41263I$
$u = 0.650332$	-1.85975	-4.37780
$u = 0.486972 + 1.282400I$	$-19.3539 + 10.0674I$	$-11.88841 - 5.78919I$
$u = 0.486972 - 1.282400I$	$-19.3539 - 10.0674I$	$-11.88841 + 5.78919I$

II. $\boldsymbol{I_2^u = \langle u^{18} - u^{17} + 6u^{16} - 6u^{15} + 16u^{14} - 16u^{13} + 21u^{12} - 21u^{11} + 10u^{10} - 10u^9 - 7u^8 + 7u^7 - 9u^6 + 9u^5 - u^4 + u^3 + 2u^2 - 2u + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} u^{12} + 3u^{10} + 3u^8 - 2u^6 - 4u^4 - u^2 + 1 \\ u^{12} + 4u^{10} + 6u^8 + 2u^6 - 3u^4 - 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{16} + 5u^{14} + 11u^{12} + 10u^{10} - u^8 - 10u^6 - 6u^4 - u + 1 \\ -2u^{17} + u^{16} + \cdots - 3u + 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{15} + 4u^{13} + 6u^{11} - 8u^7 - 6u^5 + 2u^3 + 2u \\ u^{15} + 5u^{13} + 10u^{11} + 7u^9 - 4u^7 - 8u^5 - 2u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{15} + 4u^{13} + 6u^{11} - 8u^7 - 6u^5 + 2u^3 + 2u \\ u^{15} + 5u^{13} + 10u^{11} + 7u^9 - 4u^7 - 8u^5 - 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{15} + 20u^{13} + 40u^{11} + 24u^9 - 28u^7 - 44u^5 - 4u^3 + 12u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$u^{18} + u^{17} + \cdots + 2u + 1$
c_2, c_{11}	$u^{18} + 11u^{17} + \cdots + 6u^2 + 1$
c_3, c_4, c_7 c_8, c_9	$(u^9 + u^8 - 6u^7 - 5u^6 + 11u^5 + 7u^4 - 6u^3 - 4u^2 - u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$y^{18} + 11y^{17} + \cdots + 6y^2 + 1$
c_2, c_{11}	$y^{18} - 9y^{17} + \cdots + 12y + 1$
c_3, c_4, c_7 c_8, c_9	$(y^9 - 13y^8 + 68y^7 - 183y^6 + 269y^5 - 211y^4 + 80y^3 - 18y^2 + 9y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.163695 + 1.039420I$	-3.85110	$-13.61277 + 0.I$
$u = 0.163695 - 1.039420I$	-3.85110	$-13.61277 + 0.I$
$u = 0.937573 + 0.014479I$	$-15.4587 - 4.9949I$	$-8.86627 + 2.90812I$
$u = 0.937573 - 0.014479I$	$-15.4587 + 4.9949I$	$-8.86627 - 2.90812I$
$u = -0.306317 + 0.859721I$	$-0.44198 - 1.55423I$	$-2.94040 + 4.30527I$
$u = -0.306317 - 0.859721I$	$-0.44198 + 1.55423I$	$-2.94040 - 4.30527I$
$u = 0.406229 + 1.141860I$	$-5.04794 + 3.86354I$	$-8.03791 - 4.00946I$
$u = 0.406229 - 1.141860I$	$-5.04794 - 3.86354I$	$-8.03791 + 4.00946I$
$u = -0.371894 + 1.189500I$	-8.79106	$-12.57530 + 0.I$
$u = -0.371894 - 1.189500I$	-8.79106	$-12.57530 + 0.I$
$u = -0.734633 + 0.083595I$	$-5.04794 + 3.86354I$	$-8.03791 - 4.00946I$
$u = -0.734633 - 0.083595I$	$-5.04794 - 3.86354I$	$-8.03791 + 4.00946I$
$u = -0.476691 + 1.280860I$	$-15.4587 - 4.9949I$	$-8.86627 + 2.90812I$
$u = -0.476691 - 1.280860I$	$-15.4587 + 4.9949I$	$-8.86627 - 2.90812I$
$u = 0.470193 + 1.289670I$	-19.4826	$-12.12278 + 0.I$
$u = 0.470193 - 1.289670I$	-19.4826	$-12.12278 + 0.I$
$u = 0.411845 + 0.333652I$	$-0.44198 - 1.55423I$	$-2.94040 + 4.30527I$
$u = 0.411845 - 0.333652I$	$-0.44198 + 1.55423I$	$-2.94040 - 4.30527I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$(u^{10}+3u^8+\cdots-u^2-1)(u^{18}+u^{17}+\cdots+2u+1)$
c_2, c_{11}	$(u^{10}+6u^9+17u^8+25u^7+16u^6-8u^5-21u^4-14u^3-u^2+2u+1)$ $\cdot(u^{18}+11u^{17}+\cdots+6u^2+1)$
c_3, c_4, c_7 c_8, c_9	$(u^9+u^8-6u^7-5u^6+11u^5+7u^4-6u^3-4u^2-u+1)^2$ $\cdot(u^{10}-3u^9-2u^8+11u^7-u^6-13u^5+6u^4+2u^3-3u^2+u-2)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$(y^{10}+6y^9+17y^8+25y^7+16y^6-8y^5-21y^4-14y^3-y^2+2y+1)$ $\cdot\,(y^{18}+11y^{17}+\cdots+6y^2+1)$
c_2, c_{11}	$(y^{10}-2y^9+\cdots-6y+1)(y^{18}-9y^{17}+\cdots+12y+1)$
c_3, c_4, c_7 c_8, c_9	$(y^9-13y^8+68y^7-183y^6+269y^5-211y^4+80y^3-18y^2+9y-1)^2$ $\cdot\,(y^{10}-13y^9+\cdots+11y+4)$