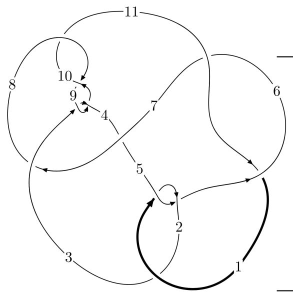
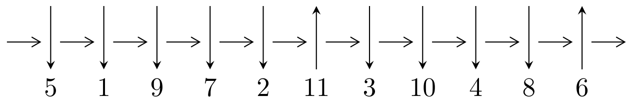
$11a_{117}$ ($K11a_{117}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{57} - 2u^{56} + \cdots + 4u - 1 \rangle$$
$$I_2^u = \langle u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 58 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. $I_1^u = \langle u^{57} - 2u^{56} + \cdots + 4u - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^6 - u^4 + 1 \\ -u^6 + 2u^4 - u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{14} + 3u^{12} - 4u^{10} + u^8 + 2u^6 - 2u^4 + 1 \\ u^{16} - 4u^{14} + 8u^{12} - 8u^{10} + 4u^8 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{14} + 3u^{12} - 4u^{10} + u^8 + 2u^6 - 2u^4 + 1 \\ u^{14} - 4u^{12} + 7u^{10} - 6u^8 + 2u^6 - u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{33} - 8u^{31} + \cdots - 4u^5 + u \\ -u^{35} + 9u^{33} + \cdots - u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{52} + 13u^{50} + \cdots + u^2 + 1 \\ u^{54} - 14u^{52} + \cdots - 2u^4 + u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{52} + 13u^{50} + \cdots + u^2 + 1 \\ u^{54} - 14u^{52} + \cdots - 2u^4 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -8u^{56} + 12u^{55} + \cdots + 36u - 22$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{57} + 2u^{56} + \cdots + 4u + 1$
c_2	$u^{57} + 30u^{56} + \cdots + 2u + 1$
c_3, c_9	$u^{57} - 9u^{55} + \cdots + 2u + 1$
c_4	$u^{57} - 8u^{56} + \cdots + 4u + 5$
c_6, c_{11}	$u^{57} + 3u^{56} + \cdots + 192u + 23$
c_7	$u^{57} + 2u^{56} + \cdots + 170u + 25$
c_8, c_{10}	$u^{57} + 18u^{56} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{57} - 30y^{56} + \cdots + 2y - 1$
c_2	$y^{57} - 6y^{56} + \cdots + 10y - 1$
c_3, c_9	$y^{57} - 18y^{56} + \cdots + 2y - 1$
c_4	$y^{57} + 6y^{56} + \cdots - 1114y - 25$
c_6, c_{11}	$y^{57} + 45y^{56} + \cdots - 20314y - 529$
c_7	$y^{57} - 6y^{56} + \cdots + 20350y - 625$
c_8, c_{10}	$y^{57} + 42y^{56} + \cdots + 26y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.836048 + 0.550317I$	$4.33306 + 3.41463I$	$-2.47924 - 4.18588I$
$u = -0.836048 - 0.550317I$	$4.33306 - 3.41463I$	$-2.47924 + 4.18588I$
$u = 0.871162 + 0.481731I$	$-1.78928 - 4.12553I$	$-10.51550 + 7.67121I$
$u = 0.871162 - 0.481731I$	$-1.78928 + 4.12553I$	$-10.51550 - 7.67121I$
$u = 0.976200 + 0.175447I$	$-0.260427 - 0.093386I$	$-10.10428 + 0.75716I$
$u = 0.976200 - 0.175447I$	$-0.260427 + 0.093386I$	$-10.10428 - 0.75716I$
$u = 0.854260 + 0.553633I$	$3.54472 - 9.12902I$	$-4.29187 + 9.35832I$
$u = 0.854260 - 0.553633I$	$3.54472 + 9.12902I$	$-4.29187 - 9.35832I$
$u = -1.025370 + 0.120940I$	$-0.97680 + 5.27922I$	$-11.94161 - 5.93896I$
$u = -1.025370 - 0.120940I$	$-0.97680 - 5.27922I$	$-11.94161 + 5.93896I$
$u = -0.776284 + 0.476241I$	$1.34370 + 1.99239I$	$-1.22032 - 4.61457I$
$u = -0.776284 - 0.476241I$	$1.34370 - 1.99239I$	$-1.22032 + 4.61457I$
$u = -0.685277 + 0.557032I$	$4.76168 + 1.02575I$	$-1.09591 - 2.82669I$
$u = -0.685277 - 0.557032I$	$4.76168 - 1.02575I$	$-1.09591 + 2.82669I$
$u = 0.659353 + 0.565162I$	$4.09639 + 4.65710I$	$-2.54128 - 2.76987I$
$u = 0.659353 - 0.565162I$	$4.09639 - 4.65710I$	$-2.54128 + 2.76987I$
$u = 0.152096 + 0.803844I$	$0.21111 + 9.73679I$	$-6.35596 - 6.96593I$
$u = 0.152096 - 0.803844I$	$0.21111 - 9.73679I$	$-6.35596 + 6.96593I$
$u = -0.155610 + 0.790091I$	$1.21747 - 4.03618I$	$-4.49079 + 2.19532I$
$u = -0.155610 - 0.790091I$	$1.21747 + 4.03618I$	$-4.49079 - 2.19532I$
$u = 0.111905 + 0.792068I$	$-5.01846 + 3.97499I$	$-12.06289 - 3.93262I$
$u = 0.111905 - 0.792068I$	$-5.01846 - 3.97499I$	$-12.06289 + 3.93262I$
$u = 1.102490 + 0.477153I$	$0.600300 - 0.796809I$	0
$u = 1.102490 - 0.477153I$	$0.600300 + 0.796809I$	0
$u = -1.119950 + 0.489456I$	$0.82059 + 6.47261I$	0
$u = -1.119950 - 0.489456I$	$0.82059 - 6.47261I$	0
$u = 0.044927 + 0.773200I$	$-2.60957 - 1.93878I$	$-9.59639 + 2.80772I$
$u = 0.044927 - 0.773200I$	$-2.60957 + 1.93878I$	$-9.59639 - 2.80772I$
$u = 1.180170 + 0.409792I$	$-4.63162 - 1.95472I$	0
$u = 1.180170 - 0.409792I$	$-4.63162 + 1.95472I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=1.198100+0.370055I$	$-2.82122+0.17822I$	0
$u=1.198100-0.370055I$	$-2.82122-0.17822I$	0
$u=-0.107682+0.735407I$	$-0.97923-1.98324I$	$-4.77053+3.25742I$
$u=-0.107682-0.735407I$	$-0.97923+1.98324I$	$-4.77053-3.25742I$
$u=-1.208710+0.369755I$	$-3.88380-5.81260I$	0
$u=-1.208710-0.369755I$	$-3.88380+5.81260I$	0
$u=-1.207110+0.396302I$	$-8.92696+0.08907I$	0
$u=-1.207110-0.396302I$	$-8.92696-0.08907I$	0
$u=-1.177440+0.489853I$	$-4.05781+6.54158I$	0
$u=-1.177440-0.489853I$	$-4.05781-6.54158I$	0
$u=-1.201970+0.429227I$	$-6.25189+6.18788I$	0
$u=-1.201970-0.429227I$	$-6.25189-6.18788I$	0
$u=1.193890+0.471955I$	$-5.94721-2.57635I$	0
$u=1.193890-0.471955I$	$-5.94721+2.57635I$	0
$u=-1.185350+0.514468I$	$-1.80837+8.85455I$	0
$u=-1.185350-0.514468I$	$-1.80837-8.85455I$	0
$u=1.194420+0.499684I$	$-8.19464-8.71399I$	0
$u=1.194420-0.499684I$	$-8.19464+8.71399I$	0
$u=0.573785+0.409516I$	$-1.012750+0.227361I$	$-8.27265-0.51249I$
$u=0.573785-0.409516I$	$-1.012750-0.227361I$	$-8.27265+0.51249I$
$u=1.190800+0.516494I$	$-2.8518-14.5970I$	0
$u=1.190800-0.516494I$	$-2.8518+14.5970I$	0
$u=-0.260945+0.634945I$	$3.29597-2.09703I$	$-2.01630+2.69781I$
$u=-0.260945-0.634945I$	$3.29597+2.09703I$	$-2.01630-2.69781I$
$u=0.305661+0.608350I$	$2.89549-3.46679I$	$-2.84958+3.34170I$
$u=0.305661-0.608350I$	$2.89549+3.46679I$	$-2.84958-3.34170I$
$u=0.677040$	-0.929485	-11.1190

II. $I_2^u = \langle u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_7 c_8, c_9, c_{10}	$y-1$
c_6, c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$	-4.93480	-18.0000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u-1)(u^{57}+2u^{56}+\cdots+4u+1)$
c_2	$(u+1)(u^{57}+30u^{56}+\cdots+2u+1)$
c_3, c_9	$(u-1)(u^{57}-9u^{55}+\cdots+2u+1)$
c_4	$(u+1)(u^{57}-8u^{56}+\cdots+4u+5)$
c_6, c_{11}	$u(u^{57}+3u^{56}+\cdots+192u+23)$
c_7	$(u-1)(u^{57}+2u^{56}+\cdots+170u+25)$
c_8, c_{10}	$(u+1)(u^{57}+18u^{56}+\cdots+2u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y-1)(y^{57} - 30y^{56} + \cdots + 2y - 1)$
c_2	$(y-1)(y^{57} - 6y^{56} + \cdots + 10y - 1)$
c_3, c_9	$(y-1)(y^{57} - 18y^{56} + \cdots + 2y - 1)$
c_4	$(y-1)(y^{57} + 6y^{56} + \cdots - 1114y - 25)$
c_6, c_{11}	$y(y^{57} + 45y^{56} + \cdots - 20314y - 529)$
c_7	$(y-1)(y^{57} - 6y^{56} + \cdots + 20350y - 625)$
c_8, c_{10}	$(y-1)(y^{57} + 42y^{56} + \cdots + 26y - 1)$