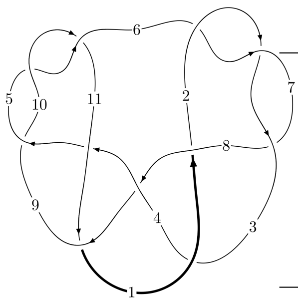
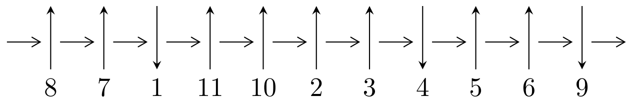
$11a_{306}$ $(K11a_{306})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^9 + u^8 - 4u^7 - 4u^6 + 4u^5 + 4u^4 + u^3 - u + 1\rangle$$
$$I_2^u = \langle u^{42} + u^{41} + \cdots - 2u^4 + 1\rangle$$
$$I_3^u = \langle u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 52 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. $I_1^u = \langle u^9 + u^8 - 4u^7 - 4u^6 + 4u^5 + 4u^4 + u^3 - u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^7 - 4u^6 + 16u^5 + 12u^4 - 16u^3 - 8u^2 + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^9 - u^7 + 2u^6 + 8u^5 - 5u^4 - 5u^3 - 5u^2 + 9u - 3$
c_2, c_5, c_6 c_7, c_9, c_{10}	$u^9 + u^8 - 4u^7 - 4u^6 + 4u^5 + 4u^4 + u^3 - u + 1$
c_3, c_{11}	$u^9 - u^8 + 4u^7 - 2u^6 + 8u^5 - 6u^4 + 9u^3 - 6u^2 + 3u - 1$
c_8	$u^9 - 6u^8 + 18u^7 - 33u^6 + 39u^5 - 23u^4 - 7u^3 + 26u^2 - 20u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^9 - 2y^8 + 17y^7 - 30y^6 + 112y^5 - 103y^4 + 131y^3 - 145y^2 + 51y - 9$
c_2, c_5, c_6 c_7, c_9, c_{10}	$y^9 - 9y^8 + 32y^7 - 54y^6 + 38y^5 - 2y^4 + y^3 - 10y^2 + y - 1$
c_3, c_{11}	$y^9 + 7y^8 + 28y^7 + 66y^6 + 106y^5 + 106y^4 + 53y^3 + 6y^2 - 3y - 1$
c_8	$y^9 + 6y^7 + 25y^6 + 23y^5 + 17y^4 + 213y^3 - 28y^2 - 16y - 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.287064+0.695105I$	$-1.39752-6.41727I$	$2.65899+8.21479I$
$u=-0.287064-0.695105I$	$-1.39752+6.41727I$	$2.65899-8.21479I$
$u=-1.30640$	7.01397	12.1820
$u=\ \ 0.423257+0.356395I$	$0.980950+0.551491I$	$9.15793-4.50455I$
$u=\ \ 0.423257-0.356395I$	$0.980950-0.551491I$	$9.15793+4.50455I$
$u=-1.42328+0.27641I$	$9.5593-13.5238I$	$11.6511+8.3193I$
$u=-1.42328-0.27641I$	$9.5593+13.5238I$	$11.6511-8.3193I$
$u=\ \ 1.44029+0.16872I$	$12.84680+4.88120I$	$15.4409-3.5107I$
$u=\ \ 1.44029-0.16872I$	$12.84680-4.88120I$	$15.4409+3.5107I$

II. $I_2^u = \langle u^{42} + u^{41} + \cdots - 2u^4 + 1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ u^8 - 4u^6 + 4u^4 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^{17} + 8u^{15} - 25u^{13} + 36u^{11} - 19u^9 - 4u^7 + 2u^5 + 4u^3 - u \\ -u^{19} + 9u^{17} - 32u^{15} + 55u^{13} - 43u^{11} + 9u^9 + 4u^5 - u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{10} + 5u^8 - 8u^6 + 3u^4 + u^2 + 1 \\ u^{10} - 4u^8 + 5u^6 - 2u^4 + u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{28} - 13u^{26} + \cdots + u^2 + 1 \\ -u^{28} + 12u^{26} + \cdots + 2u^6 + 3u^4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{41} - u^{40} + \cdots + u + 2 \\ u^{41} - 19u^{39} + \cdots + u - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{41} - u^{40} + \cdots + u + 2 \\ u^{41} - 19u^{39} + \cdots + u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{40} + 72u^{38} - 588u^{36} + 2864u^{34} - 4u^{33} - 9192u^{32} + 60u^{31} + 20240u^{30} - 404u^{29} - 30780u^{28} + 1600u^{27} + 31580u^{26} - 4096u^{25} - 20524u^{24} + 6988u^{23} + 7548u^{22} - 7832u^{21} - 1876u^{20} + 5336u^{19} + 1340u^{18} - 1704u^{17} - 664u^{16} - 16u^{15} - 192u^{14} - 116u^{13} + 212u^{12} + 256u^{11} - 28u^{10} - 24u^9 - 44u^8 - 56u^7 + 28u^6 + 8u^5 + 8u^4 + 12u^3 + 4u^2 - 8u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{42} - 3u^{41} + \cdots - 2u - 1$
c_2, c_5, c_6 c_7, c_9, c_{10}	$u^{42} + u^{41} + \cdots - 2u^4 + 1$
c_3, c_{11}	$u^{42} - 9u^{41} + \cdots - 920u + 113$
c_8	$(u^{21} + 3u^{20} + \cdots + 4u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{42} - y^{41} + \cdots - 24y + 1$
c_2, c_5, c_6 c_7, c_9, c_{10}	$y^{42} - 37y^{41} + \cdots - 4y^2 + 1$
c_3, c_{11}	$y^{42} + 11y^{41} + \cdots + 84720y + 12769$
c_8	$(y^{21} - 3y^{20} + \cdots + 52y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.08927$	1.57667	7.15490
$u = -1.082920 + 0.161904I$	$-0.40568 - 3.16875I$	$2.95224 + 5.22442I$
$u = -1.082920 - 0.161904I$	$-0.40568 + 3.16875I$	$2.95224 - 5.22442I$
$u = \quad 1.112720 + 0.206888I$	$4.64745 + 6.55351I$	$8.17560 - 6.03047I$
$u = \quad 1.112720 - 0.206888I$	$4.64745 - 6.55351I$	$8.17560 + 6.03047I$
$u = \quad 0.301718 + 0.707163I$	$4.04389 + 9.94224I$	$7.31059 - 8.24169I$
$u = \quad 0.301718 - 0.707163I$	$4.04389 - 9.94224I$	$7.31059 + 8.24169I$
$u = \quad 0.619519 + 0.389305I$	$5.30545 - 6.06326I$	$10.03226 + 2.92445I$
$u = \quad 0.619519 - 0.389305I$	$5.30545 + 6.06326I$	$10.03226 - 2.92445I$
$u = -0.335269 + 0.641117I$	$6.08429 - 1.09840I$	$10.14786 + 3.17531I$
$u = -0.335269 - 0.641117I$	$6.08429 + 1.09840I$	$10.14786 - 3.17531I$
$u = \quad 0.274697 + 0.655623I$	$-0.07785 + 2.71696I$	$5.48517 - 3.12164I$
$u = \quad 0.274697 - 0.655623I$	$-0.07785 - 2.71696I$	$5.48517 + 3.12164I$
$u = \quad 0.211792 + 0.670835I$	$-0.40568 + 3.16875I$	$2.95224 - 5.22442I$
$u = \quad 0.211792 - 0.670835I$	$-0.40568 - 3.16875I$	$2.95224 + 5.22442I$
$u = -0.594417 + 0.333320I$	$-0.07785 + 2.71696I$	$5.48517 - 3.12164I$
$u = -0.594417 - 0.333320I$	$-0.07785 - 2.71696I$	$5.48517 + 3.12164I$
$u = \quad 0.096884 + 0.668841I$	$1.62697 - 3.23317I$	$3.55215 + 1.92093I$
$u = \quad 0.096884 - 0.668841I$	$1.62697 + 3.23317I$	$3.55215 - 1.92093I$
$u = -0.481440 + 0.468716I$	$6.75483 - 2.56601I$	$12.00469 + 3.90900I$
$u = -0.481440 - 0.468716I$	$6.75483 + 2.56601I$	$12.00469 - 3.90900I$
$u = -0.147288 + 0.653126I$	-3.11833	$-1.91795 + 0.I$
$u = -0.147288 - 0.653126I$	-3.11833	$-1.91795 + 0.I$
$u = -1.317380 + 0.229558I$	6.02305	0
$u = -1.317380 - 0.229558I$	6.02305	0
$u = \quad 0.644973$	1.57667	7.15490
$u = \quad 1.354040 + 0.243767I$	$1.62697 + 3.23317I$	0
$u = \quad 1.354040 - 0.243767I$	$1.62697 - 3.23317I$	0
$u = -1.379260 + 0.261235I$	$4.64745 - 6.55351I$	0
$u = -1.379260 - 0.261235I$	$4.64745 + 6.55351I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.41719 + 0.15750I$	$6.75483 - 2.56601I$	0
$u = -1.41719 - 0.15750I$	$6.75483 + 2.56601I$	0
$u = 1.42429 + 0.12838I$	$6.08429 - 1.09840I$	0
$u = 1.42429 - 0.12838I$	$6.08429 + 1.09840I$	0
$u = -1.40967 + 0.25849I$	$5.30545 - 6.06326I$	0
$u = -1.40967 - 0.25849I$	$5.30545 + 6.06326I$	0
$u = 1.41609 + 0.27243I$	$4.04389 + 9.94224I$	0
$u = 1.41609 - 0.27243I$	$4.04389 - 9.94224I$	0
$u = -1.44204 + 0.12357I$	$11.72580 + 4.35170I$	0
$u = -1.44204 - 0.12357I$	$11.72580 - 4.35170I$	0
$u = 1.42800 + 0.24722I$	$11.72580 + 4.35170I$	0
$u = 1.42800 - 0.24722I$	$11.72580 - 4.35170I$	0

III. $\boldsymbol{I_3^u = \langle u-1 \rangle}$

(i) Arc colorings

$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_{10} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

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

$a_4 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_1 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_8 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_7 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$

$a_7 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	1.00000	1.64493	6.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$u(u^9 - u^7 + 2u^6 + 8u^5 - 5u^4 - 5u^3 - 5u^2 + 9u - 3)$ $\cdot (u^{42} - 3u^{41} + \cdots - 2u - 1)$
c_2, c_5, c_6 c_7, c_9, c_{10}	$(u - 1)(u^9 + u^8 - 4u^7 - 4u^6 + 4u^5 + 4u^4 + u^3 - u + 1)$ $\cdot (u^{42} + u^{41} + \cdots - 2u^4 + 1)$
c_3, c_{11}	$(u - 1)(u^9 - u^8 + 4u^7 - 2u^6 + 8u^5 - 6u^4 + 9u^3 - 6u^2 + 3u - 1)$ $\cdot (u^{42} - 9u^{41} + \cdots - 920u + 113)$
c_8	$(u - 1)(u^9 - 6u^8 + \cdots - 20u + 8)$ $\cdot (u^{21} + 3u^{20} + \cdots + 4u - 1)^2$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	y $\cdot\,(y^9 - 2y^8 + 17y^7 - 30y^6 + 112y^5 - 103y^4 + 131y^3 - 145y^2 + 51y - 9)$ $\cdot\,(y^{42} - y^{41} + \cdots - 24y + 1)$
c_2, c_5, c_6 c_7, c_9, c_{10}	$(y-1)(y^9 - 9y^8 + 32y^7 - 54y^6 + 38y^5 - 2y^4 + y^3 - 10y^2 + y - 1)$ $\cdot\,(y^{42} - 37y^{41} + \cdots - 4y^2 + 1)$
c_3, c_{11}	$(y-1)(y^9 + 7y^8 + \cdots - 3y - 1)$ $\cdot\,(y^{42} + 11y^{41} + \cdots + 84720y + 12769)$
c_8	$(y-1)(y^9 + 6y^7 + \cdots - 16y - 64)$ $\cdot\,(y^{21} - 3y^{20} + \cdots + 52y - 1)^2$