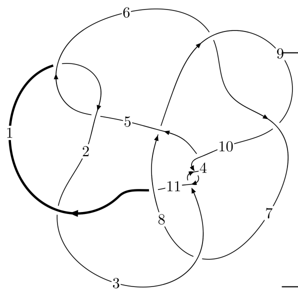
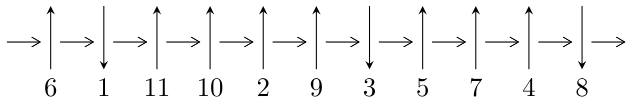
$11a_{130}$ ($K11a_{130}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.08589 \times 10^{65} u^{61} - 2.14541 \times 10^{65} u^{60} + \cdots + 1.37317 \times 10^{65} b + 1.63028 \times 10^{65},$$
$$1.15709 \times 10^{65} u^{61} - 2.34918 \times 10^{65} u^{60} + \cdots + 1.37317 \times 10^{65} a + 1.55380 \times 10^{65},\ u^{62} - 2u^{61} + \cdots + 2u - 1\rangle$$
$$I_2^u = \langle 3b + 1,\ 3a + 1,\ u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 63 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.
$\boldsymbol{I_1^u = \langle 1.09\times 10^{65}u^{61} - 2.15\times 10^{65}u^{60} + \cdots + 1.37\times 10^{65}b + 1.63\times 10^{65},\ 1.16\times 10^{65}u^{61} - 2.35\times 10^{65}u^{60} + \cdots + 1.37\times 10^{65}a + 1.55\times 10^{65},\ u^{62} - 2u^{61} + \cdots + 2u - 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.842640u^{61} + 1.71077u^{60} + \cdots - 2.66212u - 1.13154\\-0.790788u^{61} + 1.56238u^{60} + \cdots + 2.05964u - 1.18724\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.0518518u^{61} + 0.148389u^{60} + \cdots - 4.72176u + 0.0556948\\-0.790788u^{61} + 1.56238u^{60} + \cdots + 2.05964u - 1.18724\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.341402u^{61} - 0.580498u^{60} + \cdots - 0.691103u + 0.320601\\-0.235284u^{61} + 0.469850u^{60} + \cdots - 1.26969u - 0.112987\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.252650u^{61} - 0.150172u^{60} + \cdots + 0.0795973u + 1.03377\\-0.109160u^{61} - 0.0358719u^{60} + \cdots - 0.212253u + 0.116597\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u^3 + u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u^2 + 1\\-u^4 - 2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.792952u^{61} + 1.65665u^{60} + \cdots - 4.07865u - 1.02885\\-0.744507u^{61} + 1.47164u^{60} + \cdots + 3.24890u - 1.22506\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.183781u^{61} + 0.268627u^{60} + \cdots + 1.82401u - 0.309920\\-0.100621u^{61} + 0.180677u^{60} + \cdots - 1.14699u + 0.0882537\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.183781u^{61} + 0.268627u^{60} + \cdots + 1.82401u - 0.309920\\-0.100621u^{61} + 0.180677u^{60} + \cdots - 1.14699u + 0.0882537\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.87855u^{61} + 4.80262u^{60} + \cdots + 9.92096u - 3.84759$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{62} - 2u^{61} + \cdots - 2u + 1$
c_2	$u^{62} + 22u^{61} + \cdots - 8u + 1$
c_3, c_4, c_{10}	$u^{62} + 2u^{61} + \cdots - 2u - 1$
c_6, c_9	$u^{62} + 2u^{61} + \cdots - 4u - 9$
c_7	$3(3u^{62} - 52u^{61} + \cdots + 308u + 49)$
c_8	$3(3u^{62} + 43u^{61} + \cdots + 708u - 62)$
c_{11}	$u^{62} + 5u^{61} + \cdots + 36u + 18$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{62} + 22y^{61} + \cdots - 8y + 1$
c_2	$y^{62} + 30y^{61} + \cdots - 352y + 1$
c_3, c_4, c_{10}	$y^{62} + 58y^{61} + \cdots - 8y + 1$
c_6, c_9	$y^{62} - 38y^{61} + \cdots + 524y + 81$
c_7	$9(9y^{62} - 1042y^{61} + \cdots - 72128y + 2401)$
c_8	$9(9y^{62} - 1081y^{61} + \cdots + 151348y + 3844)$
c_{11}	$y^{62} - 9y^{61} + \cdots - 180y + 324$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.854708 + 0.475494I$ $a = -0.501387 + 0.218656I$ $b = -0.766880 - 1.014110I$	$5.21542 - 5.84748I$	$0. + 5.18141I$
$u = -0.854708 - 0.475494I$ $a = -0.501387 - 0.218656I$ $b = -0.766880 + 1.014110I$	$5.21542 + 5.84748I$	$0. - 5.18141I$
$u = 0.786648 + 0.683133I$ $a = 0.435125 - 0.646494I$ $b = -0.564398 - 0.724669I$	$3.00308 - 6.49550I$	0
$u = 0.786648 - 0.683133I$ $a = 0.435125 + 0.646494I$ $b = -0.564398 + 0.724669I$	$3.00308 + 6.49550I$	0
$u = 0.828519 + 0.476769I$ $a = 0.527967 + 0.318651I$ $b = 0.93975 - 1.10440I$	$3.57519 + 11.87880I$	$5.00000 - 8.97401I$
$u = 0.828519 - 0.476769I$ $a = 0.527967 - 0.318651I$ $b = 0.93975 + 1.10440I$	$3.57519 - 11.87880I$	$5.00000 + 8.97401I$
$u = 0.834218 + 0.349760I$ $a = 0.205591 + 0.243605I$ $b = 0.939722 - 0.468213I$	$-2.11951 + 4.18883I$	$1.15636 - 7.37516I$
$u = 0.834218 - 0.349760I$ $a = 0.205591 - 0.243605I$ $b = 0.939722 + 0.468213I$	$-2.11951 - 4.18883I$	$1.15636 + 7.37516I$
$u = -0.858558 + 0.732202I$ $a = -0.324943 - 0.468199I$ $b = 0.329628 - 0.628618I$	$4.56334 + 0.20821I$	0
$u = -0.858558 - 0.732202I$ $a = -0.324943 + 0.468199I$ $b = 0.329628 + 0.628618I$	$4.56334 - 0.20821I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.19372$ $a = -0.137031$ $b = -0.442772$	3.07751	0
$u = 0.489192 + 0.594790I$ $a = -0.182908 - 1.042450I$ $b = -0.692845 + 0.109180I$	$-3.46490 + 0.19843I$	$-2.36990 - 1.02428I$
$u = 0.489192 - 0.594790I$ $a = -0.182908 + 1.042450I$ $b = -0.692845 - 0.109180I$	$-3.46490 - 0.19843I$	$-2.36990 + 1.02428I$
$u = 0.017185 + 1.247160I$ $a = 0.162682 - 0.287701I$ $b = -0.013266 + 1.237940I$	$1.05860 + 2.54967I$	0
$u = 0.017185 - 1.247160I$ $a = 0.162682 + 0.287701I$ $b = -0.013266 - 1.237940I$	$1.05860 - 2.54967I$	0
$u = 0.537923 + 0.421196I$ $a = -0.66395 - 1.42924I$ $b = -0.874587 + 0.713367I$	$-0.54466 + 6.46296I$	$3.86014 - 8.94603I$
$u = 0.537923 - 0.421196I$ $a = -0.66395 + 1.42924I$ $b = -0.874587 - 0.713367I$	$-0.54466 - 6.46296I$	$3.86014 + 8.94603I$
$u = 0.126822 + 1.321270I$ $a = 1.46059 - 0.50935I$ $b = 0.169563 + 0.083121I$	$-0.24430 + 1.55160I$	0
$u = 0.126822 - 1.321270I$ $a = 1.46059 + 0.50935I$ $b = 0.169563 - 0.083121I$	$-0.24430 - 1.55160I$	0
$u = -0.146235 + 1.336670I$ $a = -1.61705 - 0.58737I$ $b = -0.154694 - 0.262432I$	$-0.85413 - 6.64291I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.146235 - 1.336670I$ $a = -1.61705 + 0.58737I$ $b = -0.154694 + 0.262432I$	$-0.85413 + 6.64291I$	0
$u = 0.056128 + 1.345530I$ $a = 1.61787 + 0.49934I$ $b = 1.11617 + 1.02320I$	$-2.08593 + 1.24865I$	0
$u = 0.056128 - 1.345530I$ $a = 1.61787 - 0.49934I$ $b = 1.11617 - 1.02320I$	$-2.08593 - 1.24865I$	0
$u = -0.479881 + 0.382241I$ $a = 0.86897 - 1.13609I$ $b = 0.593189 + 0.758731I$	$0.78887 - 1.60795I$	$6.50613 + 4.85102I$
$u = -0.479881 - 0.382241I$ $a = 0.86897 + 1.13609I$ $b = 0.593189 - 0.758731I$	$0.78887 + 1.60795I$	$6.50613 - 4.85102I$
$u = -0.024388 + 1.403660I$ $a = -8.25761 + 1.43088I$ $b = -8.06787 + 1.51488I$	$-3.33744 + 1.94948I$	0
$u = -0.024388 - 1.403660I$ $a = -8.25761 - 1.43088I$ $b = -8.06787 - 1.51488I$	$-3.33744 - 1.94948I$	0
$u = -0.099048 + 1.403400I$ $a = -1.84560 - 0.69536I$ $b = -1.172890 - 0.762039I$	$-4.73418 - 2.70185I$	0
$u = -0.099048 - 1.403400I$ $a = -1.84560 + 0.69536I$ $b = -1.172890 + 0.762039I$	$-4.73418 + 2.70185I$	0
$u = 0.356454 + 1.365780I$ $a = -0.896048 - 0.640586I$ $b = -0.915691 - 0.086245I$	$-4.97349 - 0.07836I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.356454 - 1.365780I$ $a = -0.896048 + 0.640586I$ $b = -0.915691 + 0.086245I$	$-4.97349 + 0.07836I$	0
$u = 0.484112 + 0.293337I$ $a = -0.371899 + 0.237707I$ $b = 0.942298 + 0.544052I$	$-0.34287 - 3.16265I$	$3.47830 + 1.04615I$
$u = 0.484112 - 0.293337I$ $a = -0.371899 - 0.237707I$ $b = 0.942298 - 0.544052I$	$-0.34287 + 3.16265I$	$3.47830 - 1.04615I$
$u = -0.516231 + 0.142983I$ $a = 2.34094 - 0.73876I$ $b = -0.092583 + 0.868567I$	$3.74985 - 4.26844I$	$11.92903 + 7.28144I$
$u = -0.516231 - 0.142983I$ $a = 2.34094 + 0.73876I$ $b = -0.092583 - 0.868567I$	$3.74985 + 4.26844I$	$11.92903 - 7.28144I$
$u = -0.17339 + 1.45631I$ $a = -1.57036 - 0.03554I$ $b = -0.906111 - 0.957483I$	$-5.19208 - 4.01888I$	0
$u = -0.17339 - 1.45631I$ $a = -1.57036 + 0.03554I$ $b = -0.906111 + 0.957483I$	$-5.19208 + 4.01888I$	0
$u = -0.07310 + 1.46676I$ $a = -0.785313 - 0.776260I$ $b = -0.523873 - 1.073670I$	$-4.86855 - 2.39184I$	0
$u = -0.07310 - 1.46676I$ $a = -0.785313 + 0.776260I$ $b = -0.523873 + 1.073670I$	$-4.86855 + 2.39184I$	0
$u = 0.19203 + 1.46284I$ $a = 1.65883 + 0.15373I$ $b = 1.03342 - 1.00736I$	$-6.64439 + 9.14751I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.19203 - 1.46284I$ $a = 1.65883 - 0.15373I$ $b = 1.03342 + 1.00736I$	$-6.64439 - 9.14751I$	0
$u = 0.506831 + 0.096686I$ $a = -2.48548 - 0.48498I$ $b = 0.165777 + 0.615510I$	$4.11698 - 0.69808I$	$13.39590 - 0.06993I$
$u = 0.506831 - 0.096686I$ $a = -2.48548 + 0.48498I$ $b = 0.165777 - 0.615510I$	$4.11698 + 0.69808I$	$13.39590 + 0.06993I$
$u = 0.17217 + 1.50217I$ $a = 1.180340 + 0.239805I$ $b = 0.973547 - 0.684251I$	$-10.23620 + 2.66149I$	0
$u = 0.17217 - 1.50217I$ $a = 1.180340 - 0.239805I$ $b = 0.973547 + 0.684251I$	$-10.23620 - 2.66149I$	0
$u = 0.30961 + 1.48362I$ $a = -1.62839 - 0.14045I$ $b = -1.38181 + 0.69978I$	$-8.08648 + 8.33462I$	0
$u = 0.30961 - 1.48362I$ $a = -1.62839 + 0.14045I$ $b = -1.38181 - 0.69978I$	$-8.08648 - 8.33462I$	0
$u = -0.37255 + 1.47837I$ $a = 1.073200 - 0.107474I$ $b = 0.847659 + 0.449176I$	$-2.26534 - 5.42283I$	0
$u = -0.37255 - 1.47837I$ $a = 1.073200 + 0.107474I$ $b = 0.847659 - 0.449176I$	$-2.26534 + 5.42283I$	0
$u = -0.345940 + 0.314360I$ $a = 0.691718 + 0.084915I$ $b = -0.339879 + 0.970968I$	$0.771077 - 1.084410I$	$6.64507 + 5.83005I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.345940-0.314360I$ $a=\ 0.691718-0.084915I$ $b=-0.339879-0.970968I$	$0.771077+1.084410I$	$6.64507-5.83005I$
$u=-0.362744+0.281740I$ $a=\ 1.140060-0.294583I$ $b=\ 0.206349+0.912447I$	$0.631390-1.069140I$	$6.33384+6.12642I$
$u=-0.362744-0.281740I$ $a=\ 1.140060+0.294583I$ $b=\ 0.206349-0.912447I$	$0.631390+1.069140I$	$6.33384-6.12642I$
$u=\ 0.30069+1.51433I$ $a=-1.84162+0.31312I$ $b=-1.34082+1.27068I$	$-2.8670+15.9906I$	0
$u=\ 0.30069-1.51433I$ $a=-1.84162-0.31312I$ $b=-1.34082-1.27068I$	$-2.8670-15.9906I$	0
$u=-0.30976+1.51386I$ $a=\ 1.67471+0.29668I$ $b=\ 1.18463+1.15509I$	$-1.20729-10.07420I$	0
$u=-0.30976-1.51386I$ $a=\ 1.67471-0.29668I$ $b=\ 1.18463-1.15509I$	$-1.20729+10.07420I$	0
$u=-0.061045+0.399084I$ $a=\ 0.245153+0.689749I$ $b=-0.01690+2.26843I$	$2.17222+2.29029I$	$-6.76562+2.81680I$
$u=-0.061045-0.399084I$ $a=\ 0.245153-0.689749I$ $b=-0.01690-2.26843I$	$2.17222-2.29029I$	$-6.76562-2.81680I$
$u=\ 0.10761+1.63393I$ $a=\ 0.225146+0.198889I$ $b=\ 0.322471-0.217860I$	$-5.19332-2.98425I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.10761 - 1.63393I$ $a = 0.225146 - 0.198889I$ $b = 0.322471 + 0.217860I$	$-5.19332 + 2.98425I$	0
$u = 0.336606$ $a = -2.26896$ $b = -0.768700$	2.13260	1.50210

II. $I_2^u = \langle 3b+1,\ 3a+1,\ u-1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.333333 \\ -0.333333 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ -0.333333 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1 \\ 2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 2 \\ -3 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.33333 \\ 1.66667 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 19.1111$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_{10}	$u + 1$
c_2, c_3, c_4 c_5, c_9	$u - 1$
c_7	$3(3u - 1)$
c_8	$3(3u - 2)$
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_6 c_9, c_{10}	$y-1$
c_7	$9(9y-1)$
c_8	$9(9y-4)$
c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.333333$ $b = -0.333333$	3.28987	19.1110

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u+1)(u^{62}-2u^{61}+\cdots-2u+1)$
c_2	$(u-1)(u^{62}+22u^{61}+\cdots-8u+1)$
c_3, c_4	$(u-1)(u^{62}+2u^{61}+\cdots-2u-1)$
c_5	$(u-1)(u^{62}-2u^{61}+\cdots-2u+1)$
c_6	$(u+1)(u^{62}+2u^{61}+\cdots-4u-9)$
c_7	$9(3u-1)(3u^{62}-52u^{61}+\cdots+308u+49)$
c_8	$9(3u-2)(3u^{62}+43u^{61}+\cdots+708u-62)$
c_9	$(u-1)(u^{62}+2u^{61}+\cdots-4u-9)$
c_{10}	$(u+1)(u^{62}+2u^{61}+\cdots-2u-1)$
c_{11}	$u(u^{62}+5u^{61}+\cdots+36u+18)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y-1)(y^{62}+22y^{61}+\cdots-8y+1)$
c_2	$(y-1)(y^{62}+30y^{61}+\cdots-352y+1)$
c_3, c_4, c_{10}	$(y-1)(y^{62}+58y^{61}+\cdots-8y+1)$
c_6, c_9	$(y-1)(y^{62}-38y^{61}+\cdots+524y+81)$
c_7	$81(9y-1)(9y^{62}-1042y^{61}+\cdots-72128y+2401)$
c_8	$81(9y-4)(9y^{62}-1081y^{61}+\cdots+151348y+3844)$
c_{11}	$y(y^{62}-9y^{61}+\cdots-180y+324)$