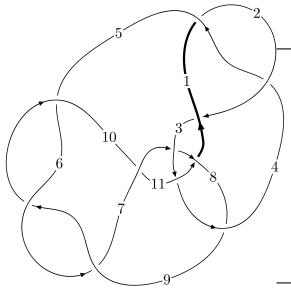
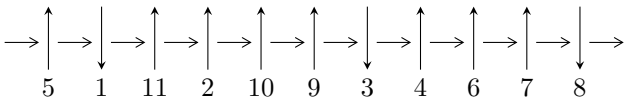
$11a_{54}$ ($K11a_{54}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$\underset{c_5}{5,10} \to \underset{c_1}{2,6} \to \underset{c_2}{1} \to \underset{c_4}{3} \to \underset{c_9}{4} \to \underset{c_6}{9} \to \underset{c_{10}}{7} \to \underset{c_8}{11} \to 8 \longrightarrow\!\!\!\!\rightarrow c_3, c_7, c_{11}$$

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

$$I_1^u = \langle -2.90257 \times 10^{44} u^{68} + 2.07176 \times 10^{44} u^{67} + \cdots + 1.04013 \times 10^{45} b - 2.13904 \times 10^{44},$$
$$- 5.37164 \times 10^{44} u^{68} + 1.14801 \times 10^{45} u^{67} + \cdots + 1.04013 \times 10^{45} a - 2.55357 \times 10^{45},\ u^{69} - u^{68} + \cdots + 5u +$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 69 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.

$\boldsymbol{I_1^u = \langle -2.90\times 10^{44}u^{68}+2.07\times 10^{44}u^{67}+\cdots+1.04\times 10^{45}b-2.14\times 10^{44},\ -5.37\times 10^{44}u^{68}+1.15\times 10^{45}u^{67}+\cdots+1.04\times 10^{45}a-2.55\times 10^{45},\ u^{69}-u^{68}+\cdots+5u+1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.516440u^{68} - 1.10372u^{67} + \cdots - 0.812598u + 2.45506 \\ 0.279059u^{68} - 0.199183u^{67} + \cdots - 2.53271u + 0.205651 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 0.237382u^{68} - 0.904533u^{67} + \cdots + 1.72012u + 2.24940 \\ 0.279059u^{68} - 0.199183u^{67} + \cdots - 2.53271u + 0.205651 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.842780u^{68} - 2.31989u^{67} + \cdots + 2.72044u + 1.93889 \\ 0.303058u^{68} - 0.207469u^{67} + \cdots - 1.50616u - 0.583069 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.747601u^{68} - 2.15154u^{67} + \cdots + 1.25494u + 1.59403 \\ 0.253468u^{68} - 0.180079u^{67} + \cdots - 2.44759u - 0.761967 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^7 - 3u^5 - 2u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.932153u^{68} - 1.40919u^{67} + \cdots + 9.77228u + 1.12782 \\ 0.109511u^{68} - 0.0467228u^{67} + \cdots + 3.97590u + 0.0969479 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.932153u^{68} - 1.40919u^{67} + \cdots + 9.77228u + 1.12782 \\ 0.109511u^{68} - 0.0467228u^{67} + \cdots + 3.97590u + 0.0969479 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5.57648u^{68} + 4.72032u^{67} + \cdots + 8.97518u + 3.36143$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{69} + u^{68} + \cdots + 7u - 1$
c_2	$u^{69} + 27u^{68} + \cdots + 7u - 1$
c_3	$u^{69} + 7u^{68} + \cdots + u + 1$
c_5, c_6, c_9	$u^{69} + u^{68} + \cdots + 5u - 1$
c_7	$u^{69} - u^{68} + \cdots - 375u - 103$
c_8	$u^{69} + u^{68} + \cdots + 137u - 119$
c_{10}	$u^{69} - u^{68} + \cdots + 12027u - 1217$
c_{11}	$u^{69} + 5u^{68} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{69} + 27y^{68} + \cdots + 7y - 1$
c_2	$y^{69} + 31y^{68} + \cdots + 611y - 1$
c_3	$y^{69} - 5y^{68} + \cdots + 7y - 1$
c_5, c_6, c_9	$y^{69} + 59y^{68} + \cdots - 5y - 1$
c_7	$y^{69} + 83y^{68} + \cdots - 603653y - 10609$
c_8	$y^{69} + 59y^{68} + \cdots - 207093y - 14161$
c_{10}	$y^{69} - 25y^{68} + \cdots - 20237733y - 1481089$
c_{11}	$y^{69} + 7y^{68} + \cdots - 5y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.474255 + 0.934497I$ $a = 0.022719 + 0.709370I$ $b = -0.674946 + 1.055980I$	$1.05725 - 7.83679I$	0
$u = 0.474255 - 0.934497I$ $a = 0.022719 - 0.709370I$ $b = -0.674946 - 1.055980I$	$1.05725 + 7.83679I$	0
$u = -0.544160 + 0.765066I$ $a = 0.116423 - 0.432919I$ $b = -0.607578 - 0.720494I$	$1.57123 - 1.30415I$	$10.11030 + 4.92987I$
$u = -0.544160 - 0.765066I$ $a = 0.116423 + 0.432919I$ $b = -0.607578 + 0.720494I$	$1.57123 + 1.30415I$	$10.11030 - 4.92987I$
$u = -0.878362 + 0.307679I$ $a = 1.22977 + 0.73621I$ $b = -0.604946 + 0.875247I$	$3.10224 - 3.65612I$	$14.6967 + 8.0899I$
$u = -0.878362 - 0.307679I$ $a = 1.22977 - 0.73621I$ $b = -0.604946 - 0.875247I$	$3.10224 + 3.65612I$	$14.6967 - 8.0899I$
$u = 0.398272 + 0.993300I$ $a = 0.482088 - 0.750712I$ $b = -0.821583 - 0.588202I$	$2.48274 - 2.22918I$	0
$u = 0.398272 - 0.993300I$ $a = 0.482088 + 0.750712I$ $b = -0.821583 + 0.588202I$	$2.48274 + 2.22918I$	0
$u = -0.905812 + 0.191744I$ $a = 0.496640 + 0.086483I$ $b = -0.597458 - 0.808717I$	$3.31253 + 1.10291I$	$16.0867 + 0.I$
$u = -0.905812 - 0.191744I$ $a = 0.496640 - 0.086483I$ $b = -0.597458 + 0.808717I$	$3.31253 - 1.10291I$	$16.0867 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.541206+0.947022I$ $a=\ 0.800012+1.062110I$ $b=-0.618942+0.924861I$	$0.96001-6.16584I$	0
$u=-0.541206-0.947022I$ $a=\ 0.800012-1.062110I$ $b=-0.618942-0.924861I$	$0.96001+6.16584I$	0
$u=\ 0.829619+0.237108I$ $a=\ 1.54992-0.77867I$ $b=-0.692620-1.100100I$	$3.23009+12.46900I$	$6.85262-8.75626I$
$u=\ 0.829619-0.237108I$ $a=\ 1.54992+0.77867I$ $b=-0.692620+1.100100I$	$3.23009-12.46900I$	$6.85262+8.75626I$
$u=\ 0.807997+0.195414I$ $a=\ 0.482484-0.581590I$ $b=-0.899108+0.540063I$	$4.94303+6.60072I$	$9.45233-4.66175I$
$u=\ 0.807997-0.195414I$ $a=\ 0.482484+0.581590I$ $b=-0.899108-0.540063I$	$4.94303-6.60072I$	$9.45233+4.66175I$
$u=\ 0.213572+1.224400I$ $a=\ 0.477570-0.495136I$ $b=\ 0.821651-1.021950I$	$-0.91382-1.30908I$	0
$u=\ 0.213572-1.224400I$ $a=\ 0.477570+0.495136I$ $b=\ 0.821651+1.021950I$	$-0.91382+1.30908I$	0
$u=\ 0.098130+1.263710I$ $a=\ 0.91347-2.06956I$ $b=\ 0.389681-1.187680I$	$-4.28780-2.43362I$	0
$u=\ 0.098130-1.263710I$ $a=\ 0.91347+2.06956I$ $b=\ 0.389681+1.187680I$	$-4.28780+2.43362I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.261774 + 1.251380I$ $a = 0.711660 + 0.599885I$ $b = 1.010780 - 0.331574I$	$0.61350 + 1.71624I$	0
$u = 0.261774 - 1.251380I$ $a = 0.711660 - 0.599885I$ $b = 1.010780 + 0.331574I$	$0.61350 - 1.71624I$	0
$u = -0.228426 + 1.276370I$ $a = -0.60596 - 1.62424I$ $b = 0.551106 + 0.795185I$	$-2.50160 - 0.87317I$	0
$u = -0.228426 - 1.276370I$ $a = -0.60596 + 1.62424I$ $b = 0.551106 - 0.795185I$	$-2.50160 + 0.87317I$	0
$u = 0.667506 + 0.220812I$ $a = -0.614338 + 0.663614I$ $b = 0.083389 + 1.231880I$	$-1.87888 + 4.75178I$	$3.16509 - 7.67915I$
$u = 0.667506 - 0.220812I$ $a = -0.614338 - 0.663614I$ $b = 0.083389 - 1.231880I$	$-1.87888 - 4.75178I$	$3.16509 + 7.67915I$
$u = -0.259393 + 1.276300I$ $a = 0.507456 - 0.058898I$ $b = 0.254514 - 0.249135I$	$-2.37890 - 3.34092I$	0
$u = -0.259393 - 1.276300I$ $a = 0.507456 + 0.058898I$ $b = 0.254514 + 0.249135I$	$-2.37890 + 3.34092I$	0
$u = 0.696765 + 0.023683I$ $a = -0.911462 - 0.318031I$ $b = 0.985003 + 0.485819I$	$4.38283 + 1.75150I$	$16.4419 - 3.6342I$
$u = 0.696765 - 0.023683I$ $a = -0.911462 + 0.318031I$ $b = 0.985003 - 0.485819I$	$4.38283 - 1.75150I$	$16.4419 + 3.6342I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.274685 + 1.282870I$ $a = -0.160254 + 1.132300I$ $b = 1.013220 + 0.613592I$	$0.32305 + 5.26485I$	0
$u = 0.274685 - 1.282870I$ $a = -0.160254 - 1.132300I$ $b = 1.013220 - 0.613592I$	$0.32305 - 5.26485I$	0
$u = 0.675565 + 0.090170I$ $a = -1.56040 + 0.21247I$ $b = 0.741295 + 1.123290I$	$2.46511 + 4.51237I$	$11.3986 - 8.8654I$
$u = 0.675565 - 0.090170I$ $a = -1.56040 - 0.21247I$ $b = 0.741295 - 1.123290I$	$2.46511 - 4.51237I$	$11.3986 + 8.8654I$
$u = -0.167578 + 1.317380I$ $a = 0.89036 + 3.40700I$ $b = 0.380257 + 0.909412I$	$-3.74691 - 0.61271I$	0
$u = -0.167578 - 1.317380I$ $a = 0.89036 - 3.40700I$ $b = 0.380257 - 0.909412I$	$-3.74691 + 0.61271I$	0
$u = -0.241087 + 1.312890I$ $a = -3.38443 - 2.06516I$ $b = 0.546073 - 0.910104I$	$-2.86842 - 5.27183I$	0
$u = -0.241087 - 1.312890I$ $a = -3.38443 + 2.06516I$ $b = 0.546073 + 0.910104I$	$-2.86842 + 5.27183I$	0
$u = -0.663268$ $a = 0.468971$ $b = 0.189635$	1.60413	5.38980
$u = 0.323648 + 0.563013I$ $a = 1.39577 - 1.31325I$ $b = -0.017291 - 1.055820I$	$-3.31539 - 1.42653I$	$-1.46022 + 0.90595I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.323648 - 0.563013I$ $a = 1.39577 + 1.31325I$ $b = -0.017291 + 1.055820I$	$-3.31539 + 1.42653I$	$-1.46022 - 0.90595I$
$u = 0.275545 + 1.322890I$ $a = -1.11206 + 2.21999I$ $b = 0.716579 + 1.203070I$	$-1.97766 + 7.97069I$	0
$u = 0.275545 - 1.322890I$ $a = -1.11206 - 2.21999I$ $b = 0.716579 - 1.203070I$	$-1.97766 - 7.97069I$	0
$u = -0.616761 + 0.031191I$ $a = -4.35476 + 1.75506I$ $b = 0.540656 - 0.860419I$	$1.37720 - 2.17002I$	$-20.8441 - 10.9028I$
$u = -0.616761 - 0.031191I$ $a = -4.35476 - 1.75506I$ $b = 0.540656 + 0.860419I$	$1.37720 + 2.17002I$	$-20.8441 + 10.9028I$
$u = -0.380195 + 1.353450I$ $a = -0.173256 - 0.145320I$ $b = -0.568825 - 0.669802I$	$-1.50104 - 3.50534I$	0
$u = -0.380195 - 1.353450I$ $a = -0.173256 + 0.145320I$ $b = -0.568825 + 0.669802I$	$-1.50104 + 3.50534I$	0
$u = 0.276062 + 1.378580I$ $a = -0.90488 + 2.16282I$ $b = 0.036581 + 1.312140I$	$-6.94265 + 8.21032I$	0
$u = 0.276062 - 1.378580I$ $a = -0.90488 - 2.16282I$ $b = 0.036581 - 1.312140I$	$-6.94265 - 8.21032I$	0
$u = -0.04736 + 1.41955I$ $a = -0.293334 - 0.561445I$ $b = -0.634036 - 0.280540I$	$-5.27570 - 2.79528I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.04736-1.41955I$ $a=-0.293334+0.561445I$ $b=-0.634036+0.280540I$	$-5.27570+2.79528I$	0
$u=\ \ 0.33764+1.38231I$ $a=-0.663824-0.414973I$ $b=-0.939775+0.500176I$	$-0.04985+10.73450I$	0
$u=\ \ 0.33764-1.38231I$ $a=-0.663824+0.414973I$ $b=-0.939775-0.500176I$	$-0.04985-10.73450I$	0
$u=\ \ 0.07786+1.42827I$ $a=\ \ 0.66709-2.40876I$ $b=-0.194887-1.153270I$	$-9.60907-0.11401I$	0
$u=\ \ 0.07786-1.42827I$ $a=\ \ 0.66709+2.40876I$ $b=-0.194887+1.153270I$	$-9.60907+0.11401I$	0
$u=-0.21019+1.41955I$ $a=\ \ 0.01506-1.66109I$ $b=-0.155367-0.798808I$	$-4.90709-3.41016I$	0
$u=-0.21019-1.41955I$ $a=\ \ 0.01506+1.66109I$ $b=-0.155367+0.798808I$	$-4.90709+3.41016I$	0
$u=\ \ 0.34352+1.40634I$ $a=\ \ 1.21013-2.12096I$ $b=-0.691729-1.130530I$	$-1.9859+16.7029I$	0
$u=\ \ 0.34352-1.40634I$ $a=\ \ 1.21013+2.12096I$ $b=-0.691729+1.130530I$	$-1.9859-16.7029I$	0
$u=-0.37055+1.42903I$ $a=\ \ 1.04218+1.70770I$ $b=-0.591164+0.961287I$	$-2.38282-8.18392I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.37055-1.42903I$ $a=\ \ 1.04218-1.70770I$ $b=-0.591164-0.961287I$	$-2.38282+8.18392I$	0
$u=-0.03392+1.50679I$ $a=-0.00525+2.05953I$ $b=-0.557159+1.062340I$	$-7.30954-7.36946I$	0
$u=-0.03392-1.50679I$ $a=-0.00525-2.05953I$ $b=-0.557159-1.062340I$	$-7.30954+7.36946I$	0
$u=-0.370929+0.272771I$ $a=\ \ 1.030350-0.760360I$ $b=\ \ 0.180375-0.359379I$	$0.572882-1.093980I$	$6.17226+6.06480I$
$u=-0.370929-0.272771I$ $a=\ \ 1.030350+0.760360I$ $b=\ \ 0.180375+0.359379I$	$0.572882+1.093980I$	$6.17226-6.06480I$
$u=-0.342089+0.112981I$ $a=\ \ 2.59464+1.55121I$ $b=\ \ 0.476152+0.761801I$	$0.64094+1.45108I$	$5.67805-6.58266I$
$u=-0.342089-0.112981I$ $a=\ \ 2.59464-1.55121I$ $b=\ \ 0.476152-0.761801I$	$0.64094-1.45108I$	$5.67805+6.58266I$
$u=-0.062768+0.268464I$ $a=\ \ 1.87391-1.74824I$ $b=\ \ 0.545287-0.961436I$	$-0.07982-2.77352I$	$2.01744+1.22489I$
$u=-0.062768-0.268464I$ $a=\ \ 1.87391+1.74824I$ $b=\ \ 0.545287+0.961436I$	$-0.07982+2.77352I$	$2.01744-1.22489I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{69} + u^{68} + \cdots + 7u - 1$
c_2	$u^{69} + 27u^{68} + \cdots + 7u - 1$
c_3	$u^{69} + 7u^{68} + \cdots + u + 1$
c_5, c_6, c_9	$u^{69} + u^{68} + \cdots + 5u - 1$
c_7	$u^{69} - u^{68} + \cdots - 375u - 103$
c_8	$u^{69} + u^{68} + \cdots + 137u - 119$
c_{10}	$u^{69} - u^{68} + \cdots + 12027u - 1217$
c_{11}	$u^{69} + 5u^{68} + \cdots - u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{69} + 27y^{68} + \cdots + 7y - 1$
c_2	$y^{69} + 31y^{68} + \cdots + 611y - 1$
c_3	$y^{69} - 5y^{68} + \cdots + 7y - 1$
c_5, c_6, c_9	$y^{69} + 59y^{68} + \cdots - 5y - 1$
c_7	$y^{69} + 83y^{68} + \cdots - 603653y - 10609$
c_8	$y^{69} + 59y^{68} + \cdots - 207093y - 14161$
c_{10}	$y^{69} - 25y^{68} + \cdots - 20237733y - 1481089$
c_{11}	$y^{69} + 7y^{68} + \cdots - 5y - 1$