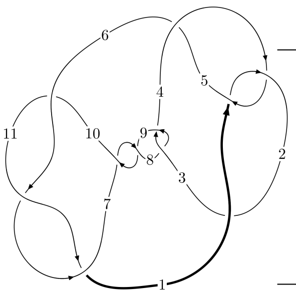
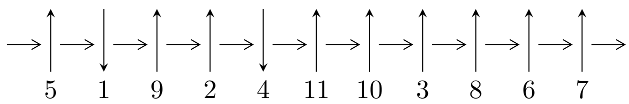
$11a_{64}$ ($K11a_{64}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I_1^u = \langle -5u^{49} - 9u^{48} + \cdots + b + 4,\ 3u^{49} + 4u^{48} + \cdots + 2a - 1,\ u^{50} + 3u^{49} + \cdots + 9u^2 - 1\rangle$
$I_2^u = \langle b,\ a^2 - a + 1,\ u - 1\rangle$

* 2 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. $I_1^u =$
$\langle -5u^{49}-9u^{48}+\cdots+b+4,\ 3u^{49}+4u^{48}+\cdots+2a-1,\ u^{50}+3u^{49}+\cdots+9u^2-1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3+2u \\ -u^3+u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{3}{2}u^{49}-2u^{48}+\cdots+\frac{1}{2}u+\frac{1}{2} \\ 5u^{49}+9u^{48}+\cdots+4u-4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{1}{2}u^{49}+u^{48}+\cdots-\frac{11}{2}u+\frac{1}{2} \\ -u^{16}+6u^{14}+\cdots-6u^3+4u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{5}{2}u^{49}+4u^{48}+\cdots+\frac{1}{2}u-\frac{1}{2} \\ -\frac{1}{2}u^{49}-u^{48}+\cdots-\frac{1}{2}u+\frac{1}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^6-3u^4+2u^2+1 \\ u^6-2u^4+u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{9}{2}u^{49}-8u^{48}+\cdots-\frac{5}{2}u+\frac{5}{2} \\ -2u^{49}-3u^{48}+\cdots-8u^2+1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{9}{2}u^{49}-8u^{48}+\cdots-\frac{5}{2}u+\frac{5}{2} \\ -2u^{49}-3u^{48}+\cdots-8u^2+1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18u^{49}-27u^{48}+\cdots-2u+25$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{50} + 2u^{49} + \cdots - 3u + 1$
c_2, c_5	$u^{50} + 18u^{49} + \cdots + u + 1$
c_3, c_8	$u^{50} + u^{49} + \cdots + 4u - 4$
c_6, c_{10}, c_{11}	$u^{50} + 3u^{49} + \cdots + 9u^2 - 1$
c_7, c_9	$u^{50} - 15u^{49} + \cdots - 104u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{50} + 18y^{49} + \cdots + y + 1$
c_2, c_5	$y^{50} + 30y^{49} + \cdots - 119y + 1$
c_3, c_8	$y^{50} - 15y^{49} + \cdots - 104y + 16$
c_6, c_{10}, c_{11}	$y^{50} - 41y^{49} + \cdots - 18y + 1$
c_7, c_9	$y^{50} + 37y^{49} + \cdots - 3360y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.087890 + 0.165328I$ $a = 0.139852 - 0.213211I$ $b = 0.645187 - 0.289728I$	$1.40881 + 0.77400I$	$6.94609 + 0.I$
$u = 1.087890 - 0.165328I$ $a = 0.139852 + 0.213211I$ $b = 0.645187 + 0.289728I$	$1.40881 - 0.77400I$	$6.94609 + 0.I$
$u = 0.126757 + 0.868356I$ $a = -1.47159 - 0.94278I$ $b = -1.22103 - 1.33662I$	$-2.73323 + 9.52065I$	$5.03643 - 7.69857I$
$u = 0.126757 - 0.868356I$ $a = -1.47159 + 0.94278I$ $b = -1.22103 + 1.33662I$	$-2.73323 - 9.52065I$	$5.03643 + 7.69857I$
$u = 0.133262 + 0.831170I$ $a = 1.011800 + 0.474392I$ $b = 0.865719 + 1.020570I$	$-1.38173 + 4.04307I$	$7.01868 - 3.20265I$
$u = 0.133262 - 0.831170I$ $a = 1.011800 - 0.474392I$ $b = 0.865719 - 1.020570I$	$-1.38173 - 4.04307I$	$7.01868 + 3.20265I$
$u = 1.096200 + 0.388771I$ $a = -0.323801 - 0.626772I$ $b = 0.168381 + 0.406270I$	$1.57629 + 0.36486I$	0
$u = 1.096200 - 0.388771I$ $a = -0.323801 + 0.626772I$ $b = 0.168381 - 0.406270I$	$1.57629 - 0.36486I$	0
$u = 0.047274 + 0.835322I$ $a = 0.00341 - 1.47071I$ $b = -0.19335 - 1.77874I$	$-7.20082 + 2.98868I$	$0.09209 - 2.99503I$
$u = 0.047274 - 0.835322I$ $a = 0.00341 + 1.47071I$ $b = -0.19335 + 1.77874I$	$-7.20082 - 2.98868I$	$0.09209 + 2.99503I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.136100 + 0.443889I$ $a = 0.860244 + 0.826310I$ $b = 0.311641 - 0.759236I$	$0.35735 - 4.82997I$	0
$u = 1.136100 - 0.443889I$ $a = 0.860244 - 0.826310I$ $b = 0.311641 + 0.759236I$	$0.35735 + 4.82997I$	0
$u = -0.039568 + 0.776582I$ $a = 1.63186 - 0.95120I$ $b = 0.93537 - 1.48672I$	$-3.45504 - 3.62076I$	$3.32917 + 2.61098I$
$u = -0.039568 - 0.776582I$ $a = 1.63186 + 0.95120I$ $b = 0.93537 + 1.48672I$	$-3.45504 + 3.62076I$	$3.32917 - 2.61098I$
$u = 0.566666 + 0.530676I$ $a = 1.15612 + 0.89658I$ $b = 0.785797 + 0.191841I$	$3.39308 - 0.60483I$	$12.63177 - 0.83622I$
$u = 0.566666 - 0.530676I$ $a = 1.15612 - 0.89658I$ $b = 0.785797 - 0.191841I$	$3.39308 + 0.60483I$	$12.63177 + 0.83622I$
$u = 0.490724 + 0.589200I$ $a = -0.95926 - 1.35644I$ $b = -0.676569 - 0.417065I$	$3.13688 + 4.70114I$	$11.25136 - 7.35452I$
$u = 0.490724 - 0.589200I$ $a = -0.95926 + 1.35644I$ $b = -0.676569 + 0.417065I$	$3.13688 - 4.70114I$	$11.25136 + 7.35452I$
$u = -1.260390 + 0.078461I$ $a = -0.689828 - 0.574408I$ $b = 0.592579 - 0.232734I$	$2.80671 - 3.20550I$	0
$u = -1.260390 - 0.078461I$ $a = -0.689828 + 0.574408I$ $b = 0.592579 + 0.232734I$	$2.80671 + 3.20550I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.015463 + 0.734978I$ $a = -0.963235 + 0.305603I$ $b = -0.523840 + 1.031980I$	$-1.96381 + 1.49641I$	$5.67052 - 2.83851I$
$u = 0.015463 - 0.734978I$ $a = -0.963235 - 0.305603I$ $b = -0.523840 - 1.031980I$	$-1.96381 - 1.49641I$	$5.67052 + 2.83851I$
$u = -1.241070 + 0.324695I$ $a = -0.822795 + 0.783089I$ $b = 0.089700 - 0.769159I$	$0.243412 - 0.350536I$	0
$u = -1.241070 - 0.324695I$ $a = -0.822795 - 0.783089I$ $b = 0.089700 + 0.769159I$	$0.243412 + 0.350536I$	0
$u = 1.224770 + 0.385024I$ $a = 0.859798 - 0.298010I$ $b = -0.74436 - 1.63598I$	$-3.57195 + 1.39688I$	0
$u = 1.224770 - 0.385024I$ $a = 0.859798 + 0.298010I$ $b = -0.74436 + 1.63598I$	$-3.57195 - 1.39688I$	0
$u = 1.274810 + 0.306801I$ $a = 0.023714 + 0.698294I$ $b = 2.16911 + 1.11902I$	$1.95830 + 2.25536I$	0
$u = 1.274810 - 0.306801I$ $a = 0.023714 - 0.698294I$ $b = 2.16911 - 1.11902I$	$1.95830 - 2.25536I$	0
$u = 1.311800 + 0.024858I$ $a = 0.171282 - 0.913457I$ $b = 0.44051 - 2.72877I$	$5.15830 + 2.67468I$	0
$u = 1.311800 - 0.024858I$ $a = 0.171282 + 0.913457I$ $b = 0.44051 + 2.72877I$	$5.15830 - 2.67468I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.32705$ $a=\ \ 0.308792$ $b=-1.01507$	5.84071	0
$u=-1.290930+0.313969I$ $a=\ \ 0.384785-0.354450I$ $b=-0.676082+0.534271I$	$2.12444-5.28818I$	0
$u=-1.290930-0.313969I$ $a=\ \ 0.384785+0.354450I$ $b=-0.676082-0.534271I$	$2.12444+5.28818I$	0
$u=\ \ 1.297340+0.337432I$ $a=\ \ 0.180485-1.100720I$ $b=-2.31845-1.85146I$	$0.72091+7.64132I$	0
$u=\ \ 1.297340-0.337432I$ $a=\ \ 0.180485+1.100720I$ $b=-2.31845+1.85146I$	$0.72091-7.64132I$	0
$u=-1.302710+0.373085I$ $a=-0.869978-0.369291I$ $b=\ \ 1.05915-1.45675I$	$-2.98615-7.33040I$	0
$u=-1.302710-0.373085I$ $a=-0.869978+0.369291I$ $b=\ \ 1.05915+1.45675I$	$-2.98615+7.33040I$	0
$u=-1.352760+0.362996I$ $a=\ \ 0.035493+0.735238I$ $b=-2.06776+0.99691I$	$3.29225-8.34439I$	0
$u=-1.352760-0.362996I$ $a=\ \ 0.035493-0.735238I$ $b=-2.06776-0.99691I$	$3.29225+8.34439I$	0
$u=-1.356030+0.382707I$ $a=-0.148346-1.113900I$ $b=\ \ 2.30162-1.44569I$	$1.9302-14.0131I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.356030 - 0.382707I$ $a = -0.148346 + 1.113900I$ $b = 2.30162 + 1.44569I$	$1.9302 + 14.0131I$	0
$u = -1.41586 + 0.11171I$ $a = -0.068754 + 0.864041I$ $b = -1.19732 + 1.43891I$	$9.73666 - 1.34570I$	0
$u = -1.41586 - 0.11171I$ $a = -0.068754 - 0.864041I$ $b = -1.19732 - 1.43891I$	$9.73666 + 1.34570I$	0
$u = -1.41536 + 0.14641I$ $a = -0.125925 - 0.999357I$ $b = 0.70733 - 1.72091I$	$9.27302 - 7.09927I$	0
$u = -1.41536 - 0.14641I$ $a = -0.125925 + 0.999357I$ $b = 0.70733 + 1.72091I$	$9.27302 + 7.09927I$	0
$u = 0.104654 + 0.432324I$ $a = -0.39489 - 1.38867I$ $b = -0.504003 - 0.064352I$	$-1.18724 + 1.58310I$	$1.45548 - 5.77798I$
$u = 0.104654 - 0.432324I$ $a = -0.39489 + 1.38867I$ $b = -0.504003 + 0.064352I$	$-1.18724 - 1.58310I$	$1.45548 + 5.77798I$
$u = 0.375797$ $a = -0.231356$ $b = 0.443920$	0.739246	14.0540
$u = -0.263398 + 0.099445I$ $a = -0.15916 - 3.77330I$ $b = -0.163758 - 0.657660I$	$0.39231 - 2.25929I$	$1.99740 + 3.42645I$
$u = -0.263398 - 0.099445I$ $a = -0.15916 + 3.77330I$ $b = -0.163758 + 0.657660I$	$0.39231 + 2.25929I$	$1.99740 - 3.42645I$

II. $I_2^u = \langle b,\ a^2 - a + 1,\ u - 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a + 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	1.00000		
$a =$	$0.500000 + 0.866025I$	$1.64493 - 2.02988I$	$9.00000 + 3.46410I$
$b =$	0		
$u =$	1.00000		
$a =$	$0.500000 - 0.866025I$	$1.64493 + 2.02988I$	$9.00000 - 3.46410I$
$b =$	0		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2+u+1)(u^{50}+2u^{49}+\cdots-3u+1)$
c_2, c_5	$(u^2+u+1)(u^{50}+18u^{49}+\cdots+u+1)$
c_3, c_8	$u^2(u^{50}+u^{49}+\cdots+4u-4)$
c_4	$(u^2-u+1)(u^{50}+2u^{49}+\cdots-3u+1)$
c_6	$((u+1)^2)(u^{50}+3u^{49}+\cdots+9u^2-1)$
c_7, c_9	$u^2(u^{50}-15u^{49}+\cdots-104u+16)$
c_{10}, c_{11}	$((u-1)^2)(u^{50}+3u^{49}+\cdots+9u^2-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^2+y+1)(y^{50}+18y^{49}+\cdots+y+1)$
c_2, c_5	$(y^2+y+1)(y^{50}+30y^{49}+\cdots-119y+1)$
c_3, c_8	$y^2(y^{50}-15y^{49}+\cdots-104y+16)$
c_6, c_{10}, c_{11}	$((y-1)^2)(y^{50}-41y^{49}+\cdots-18y+1)$
c_7, c_9	$y^2(y^{50}+37y^{49}+\cdots-3360y+256)$