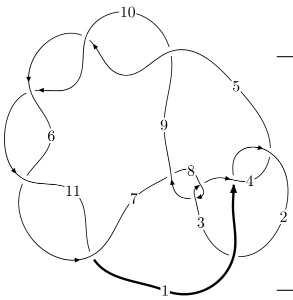
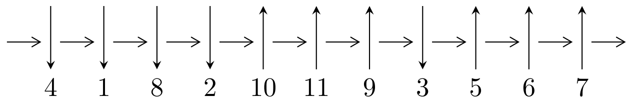
$11a_{55}$ $(K11a_{55})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{36} - 23u^{34} + \cdots + b - 1,\ -u^{36} + u^{35} + \cdots + a - 2,\ u^{37} - 2u^{36} + \cdots + u + 1 \rangle$$
$$I_2^u = \langle b,\ a - u - 1,\ u^2 + u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 39 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.

$$\boldsymbol{I_1^u = \langle u^{36} - 23u^{34} + \cdots + b - 1,\ -u^{36} + u^{35} + \cdots + a - 2,\ u^{37} - 2u^{36} + \cdots + u + 1\rangle}$$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{36} - u^{35} + \cdots - 7u + 2 \\ -u^{36} + 23u^{34} + \cdots - 7u^2 + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 2u^{36} - u^{35} + \cdots - 7u + 1 \\ -2u^{36} + 46u^{34} + \cdots + u + 2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{35} - u^{34} + \cdots + 6u - 2 \\ -u^{26} + 16u^{24} + \cdots - 5u^2 + 2u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^7 + 4u^5 - 4u^3 + 2u \\ u^7 - 3u^5 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^7 + 4u^5 - 4u^3 + 2u \\ u^7 - 3u^5 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -8u^{36} + 11u^{35} + \cdots + 32u + 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{37} - 3u^{36} + \cdots - 2u + 1$
c_2	$u^{37} + 19u^{36} + \cdots + 4u + 1$
c_3, c_8	$u^{37} - u^{36} + \cdots + 3u^2 + 4$
c_5, c_6, c_9 c_{10}, c_{11}	$u^{37} - 2u^{36} + \cdots + u + 1$
c_7	$u^{37} - 15u^{36} + \cdots - 24u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{37} - 19y^{36} + \cdots + 4y - 1$
c_2	$y^{37} + y^{36} + \cdots - 44y - 1$
c_3, c_8	$y^{37} + 15y^{36} + \cdots - 24y - 16$
c_5, c_6, c_9 c_{10}, c_{11}	$y^{37} - 48y^{36} + \cdots + 25y - 1$
c_7	$y^{37} + 11y^{36} + \cdots + 7712y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.957621 + 0.312318I$ $a = 0.073185 - 0.193326I$ $b = -0.598010 + 0.868889I$	$3.73036 - 4.62550I$	$7.76738 + 4.90690I$
$u = -0.957621 - 0.312318I$ $a = 0.073185 + 0.193326I$ $b = -0.598010 - 0.868889I$	$3.73036 + 4.62550I$	$7.76738 - 4.90690I$
$u = -0.949350 + 0.385280I$ $a = -0.633743 + 1.188910I$ $b = -0.19879 - 2.12627I$	$1.18638 - 9.75247I$	$4.12651 + 8.53256I$
$u = -0.949350 - 0.385280I$ $a = -0.633743 - 1.188910I$ $b = -0.19879 + 2.12627I$	$1.18638 + 9.75247I$	$4.12651 - 8.53256I$
$u = 0.883228 + 0.295441I$ $a = -0.51817 - 1.46272I$ $b = -0.41139 + 2.28971I$	$-0.53133 + 3.88210I$	$2.57643 - 5.18911I$
$u = 0.883228 - 0.295441I$ $a = -0.51817 + 1.46272I$ $b = -0.41139 - 2.28971I$	$-0.53133 - 3.88210I$	$2.57643 + 5.18911I$
$u = -1.092520 + 0.081336I$ $a = -0.138007 + 0.822702I$ $b = -0.51460 - 1.46532I$	$6.20655 - 2.48097I$	$9.67939 + 3.72325I$
$u = -1.092520 - 0.081336I$ $a = -0.138007 - 0.822702I$ $b = -0.51460 + 1.46532I$	$6.20655 + 2.48097I$	$9.67939 - 3.72325I$
$u = -0.821917 + 0.258796I$ $a = 1.54271 - 0.10934I$ $b = -0.128202 + 0.262204I$	$-1.03449 - 1.41041I$	$2.89217 + 4.96755I$
$u = -0.821917 - 0.258796I$ $a = 1.54271 + 0.10934I$ $b = -0.128202 - 0.262204I$	$-1.03449 + 1.41041I$	$2.89217 - 4.96755I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.819155 + 0.099014I$ $a = 0.507337 + 0.293800I$ $b = -0.977537 - 0.679950I$	$1.50853 + 0.14938I$	$6.45155 + 0.46456I$
$u = 0.819155 - 0.099014I$ $a = 0.507337 - 0.293800I$ $b = -0.977537 + 0.679950I$	$1.50853 - 0.14938I$	$6.45155 - 0.46456I$
$u = 0.669935 + 0.434127I$ $a = 1.373890 + 0.079928I$ $b = 0.053060 - 0.300111I$	$-0.46634 - 2.82395I$	$2.81248 + 2.07751I$
$u = 0.669935 - 0.434127I$ $a = 1.373890 - 0.079928I$ $b = 0.053060 + 0.300111I$	$-0.46634 + 2.82395I$	$2.81248 - 2.07751I$
$u = 0.126557 + 0.616394I$ $a = -0.649911 - 0.790815I$ $b = 0.194995 - 1.112060I$	$-2.10926 + 6.36685I$	$-0.76306 - 6.73734I$
$u = 0.126557 - 0.616394I$ $a = -0.649911 + 0.790815I$ $b = 0.194995 + 1.112060I$	$-2.10926 - 6.36685I$	$-0.76306 + 6.73734I$
$u = 0.446224 + 0.376427I$ $a = 0.324362 - 0.529872I$ $b = -0.123832 - 0.626016I$	$1.20413 + 1.03970I$	$6.27276 - 4.95197I$
$u = 0.446224 - 0.376427I$ $a = 0.324362 + 0.529872I$ $b = -0.123832 + 0.626016I$	$1.20413 - 1.03970I$	$6.27276 + 4.95197I$
$u = 0.164699 + 0.507419I$ $a = 1.129790 - 0.016387I$ $b = 0.171879 - 0.083354I$	$0.29596 + 1.82108I$	$2.47769 - 3.83748I$
$u = 0.164699 - 0.507419I$ $a = 1.129790 + 0.016387I$ $b = 0.171879 + 0.083354I$	$0.29596 - 1.82108I$	$2.47769 + 3.83748I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.041396+0.496138I$ $a=-0.92411+1.21544I$ $b=\ \ 0.418405+1.058430I$	$-3.33947-1.17576I$	$-4.43128+1.03066I$
$u=-0.041396-0.496138I$ $a=-0.92411-1.21544I$ $b=\ \ 0.418405-1.058430I$	$-3.33947+1.17576I$	$-4.43128-1.03066I$
$u=-1.59215+0.06066I$ $a=-0.579041-0.150932I$ $b=-0.047557+0.344022I$	$7.10974+1.19498I$	0
$u=-1.59215-0.06066I$ $a=-0.579041+0.150932I$ $b=-0.047557-0.344022I$	$7.10974-1.19498I$	0
$u=\ \ 1.67626+0.05941I$ $a=-0.503100+0.060196I$ $b=-0.271772-0.167857I$	$7.80383+2.56815I$	0
$u=\ \ 1.67626-0.05941I$ $a=-0.503100-0.060196I$ $b=-0.271772+0.167857I$	$7.80383-2.56815I$	0
$u=-1.68061+0.03427I$ $a=-1.41650+1.55888I$ $b=\ \ 1.66994-1.91855I$	$10.43060-0.72718I$	0
$u=-1.68061-0.03427I$ $a=-1.41650-1.55888I$ $b=\ \ 1.66994+1.91855I$	$10.43060+0.72718I$	0
$u=-1.68650+0.07280I$ $a=\ \ 0.09784-3.23140I$ $b=\ \ 0.52086+3.57531I$	$8.52780-5.28278I$	0
$u=-1.68650-0.07280I$ $a=\ \ 0.09784+3.23140I$ $b=\ \ 0.52086-3.57531I$	$8.52780+5.28278I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.70104 + 0.10270I$ $a = 0.45064 + 2.76832I$ $b = 0.21974 - 3.16301I$	$10.4876 + 11.6846I$	0
$u = 1.70104 - 0.10270I$ $a = 0.45064 - 2.76832I$ $b = 0.21974 + 3.16301I$	$10.4876 - 11.6846I$	0
$u = 1.70490 + 0.08169I$ $a = -0.92941 - 1.36566I$ $b = 1.13242 + 1.88410I$	$13.1327 + 6.1887I$	0
$u = 1.70490 - 0.08169I$ $a = -0.92941 + 1.36566I$ $b = 1.13242 - 1.88410I$	$13.1327 - 6.1887I$	0
$u = 1.73093 + 0.01518I$ $a = -0.67256 + 2.24479I$ $b = 1.13578 - 2.69126I$	$16.2880 + 2.8364I$	0
$u = 1.73093 - 0.01518I$ $a = -0.67256 - 2.24479I$ $b = 1.13578 + 2.69126I$	$16.2880 - 2.8364I$	0
$u = -0.201734$ $a = 3.92958$ $b = 0.509239$	-1.30402	-9.26700

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 1.61803$ $b = 0$	-0.657974	5.00000
$u = -1.61803$ $a = -0.618034$ $b = 0$	7.23771	5.00000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^{37}-3u^{36}+\cdots-2u+1)$
c_2	$((u+1)^2)(u^{37}+19u^{36}+\cdots+4u+1)$
c_3, c_8	$u^2(u^{37}-u^{36}+\cdots+3u^2+4)$
c_4	$((u+1)^2)(u^{37}-3u^{36}+\cdots-2u+1)$
c_5, c_6	$(u^2-u-1)(u^{37}-2u^{36}+\cdots+u+1)$
c_7	$u^2(u^{37}-15u^{36}+\cdots-24u+16)$
c_9, c_{10}, c_{11}	$(u^2+u-1)(u^{37}-2u^{36}+\cdots+u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^2)(y^{37} - 19y^{36} + \cdots + 4y - 1)$
c_2	$((y-1)^2)(y^{37} + y^{36} + \cdots - 44y - 1)$
c_3, c_8	$y^2(y^{37} + 15y^{36} + \cdots - 24y - 16)$
c_5, c_6, c_9 c_{10}, c_{11}	$(y^2 - 3y + 1)(y^{37} - 48y^{36} + \cdots + 25y - 1)$
c_7	$y^2(y^{37} + 11y^{36} + \cdots + 7712y - 256)$