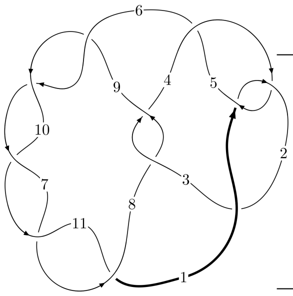
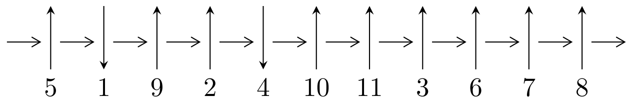
$11a_{62}$ ($K11a_{62}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I^u_1 = \langle 3u^{30} - 3u^{29} + \cdots + 2b - 3,\ -5u^{30} + 8u^{29} + \cdots + 2a + 5u,\ u^{31} - 3u^{30} + \cdots - 12u^2 + 1\rangle$
$I^u_2 = \langle -au + b,\ a^2 - a + 1,\ u^2 + u - 1\rangle$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 35 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. $I_1^u =$
$\langle 3u^{30}-3u^{29}+\cdots+2b-3,\ -5u^{30}+8u^{29}+\cdots+2a+5u,\ u^{31}-3u^{30}+\cdots-12u^2+1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} \frac{5}{2}u^{30} - 4u^{29} + \cdots + \frac{11}{2}u^2 - \frac{5}{2}u \\ -\frac{3}{2}u^{30} + \frac{3}{2}u^{29} + \cdots - u + \frac{3}{2} \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -\frac{1}{2}u^{30} + u^{29} + \cdots - \frac{11}{2}u + 1 \\ \frac{1}{2}u^{30} - \frac{1}{2}u^{29} + \cdots + \frac{19}{2}u^2 - \frac{1}{2} \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -\frac{9}{2}u^{30} + 5u^{29} + \cdots + \frac{1}{2}u + 4 \\ \frac{17}{2}u^{30} - \frac{21}{2}u^{29} + \cdots - 4u - \frac{9}{2} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2u^{30} + \frac{3}{2}u^{29} + \cdots - \frac{3}{2}u + \frac{7}{2} \\ 4u^{30} - 5u^{29} + \cdots - 2u - 2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2u^{30} + \frac{3}{2}u^{29} + \cdots - \frac{3}{2}u + \frac{7}{2} \\ 4u^{30} - 5u^{29} + \cdots - 2u - 2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{13}{2}u^{30} - 8u^{29} + \cdots + \frac{31}{2}u + 9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{31}+3u^{30}+\cdots+4u-1$
c_2, c_5	$u^{31}+9u^{30}+\cdots+12u-1$
c_3, c_8	$u^{31}+u^{30}+\cdots-20u^2+16$
c_6, c_7, c_9 c_{10}, c_{11}	$u^{31}-3u^{30}+\cdots-12u^2+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{31} + 9y^{30} + \cdots + 12y - 1$
c_2, c_5	$y^{31} + 29y^{30} + \cdots + 524y - 1$
c_3, c_8	$y^{31} - 25y^{30} + \cdots + 640y - 256$
c_6, c_7, c_9 c_{10}, c_{11}	$y^{31} - 43y^{30} + \cdots + 24y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.979024 + 0.144758I$ $a = 0.831915 + 0.090072I$ $b = 0.119170 + 0.711208I$	$2.01140 - 3.46353I$	$11.93946 + 5.35734I$
$u = -0.979024 - 0.144758I$ $a = 0.831915 - 0.090072I$ $b = 0.119170 - 0.711208I$	$2.01140 + 3.46353I$	$11.93946 - 5.35734I$
$u = 1.077390 + 0.054634I$ $a = 0.229000 - 1.283970I$ $b = -0.36400 + 2.47719I$	$4.65693 + 2.79600I$	$13.44598 - 3.14561I$
$u = 1.077390 - 0.054634I$ $a = 0.229000 + 1.283970I$ $b = -0.36400 - 2.47719I$	$4.65693 - 2.79600I$	$13.44598 + 3.14561I$
$u = -1.11047$ $a = -1.03356$ $b = 0.559359$	5.42058	16.8260
$u = -1.127600 + 0.375707I$ $a = 0.299700 - 0.775841I$ $b = -0.43314 + 2.13863I$	$9.18803 - 8.59967I$	$14.1525 + 6.5112I$
$u = -1.127600 - 0.375707I$ $a = 0.299700 + 0.775841I$ $b = -0.43314 - 2.13863I$	$9.18803 + 8.59967I$	$14.1525 - 6.5112I$
$u = -1.174380 + 0.329803I$ $a = -0.642970 + 0.790351I$ $b = 0.82679 - 1.90155I$	$9.85498 - 2.40122I$	$15.3857 + 1.4439I$
$u = -1.174380 - 0.329803I$ $a = -0.642970 - 0.790351I$ $b = 0.82679 + 1.90155I$	$9.85498 + 2.40122I$	$15.3857 - 1.4439I$
$u = 0.422649 + 0.629353I$ $a = -1.064760 - 0.248038I$ $b = -0.493860 - 0.673775I$	$4.80361 - 0.89095I$	$12.16176 - 0.45664I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.422649 - 0.629353I$ $a = -1.064760 + 0.248038I$ $b = -0.493860 + 0.673775I$	$4.80361 + 0.89095I$	$12.16176 + 0.45664I$
$u = 0.348369 + 0.655737I$ $a = 1.28503 + 0.62780I$ $b = 0.291890 + 0.578542I$	$4.57379 + 5.07655I$	$11.28457 - 5.75893I$
$u = 0.348369 - 0.655737I$ $a = 1.28503 - 0.62780I$ $b = 0.291890 - 0.578542I$	$4.57379 - 5.07655I$	$11.28457 + 5.75893I$
$u = 0.698660 + 0.209211I$ $a = 0.266260 - 0.231304I$ $b = -0.762190 + 0.457078I$	$0.456932 + 0.462087I$	$9.00639 - 0.86680I$
$u = 0.698660 - 0.209211I$ $a = 0.266260 + 0.231304I$ $b = -0.762190 - 0.457078I$	$0.456932 - 0.462087I$	$9.00639 + 0.86680I$
$u = 0.099887 + 0.392148I$ $a = -0.03361 + 1.67355I$ $b = 0.443597 + 0.182843I$	$-1.25989 + 1.71484I$	$2.62221 - 5.71238I$
$u = 0.099887 - 0.392148I$ $a = -0.03361 - 1.67355I$ $b = 0.443597 - 0.182843I$	$-1.25989 - 1.71484I$	$2.62221 + 5.71238I$
$u = 0.394527$ $a = 0.563421$ $b = -0.451465$	0.662850	15.1240
$u = -1.63009 + 0.03537I$ $a = -0.815204 - 0.932358I$ $b = 1.04001 + 1.19147I$	$8.61876 - 1.24218I$	0
$u = -1.63009 - 0.03537I$ $a = -0.815204 + 0.932358I$ $b = 1.04001 - 1.19147I$	$8.61876 + 1.24218I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.268160+0.102485I$ $a=-0.10435+2.92800I$ $b=\ \ 0.250893+0.701619I$	$0.38814-2.23506I$	$1.04827+4.75217I$
$u=-0.268160-0.102485I$ $a=-0.10435-2.92800I$ $b=\ \ 0.250893-0.701619I$	$0.38814+2.23506I$	$1.04827-4.75217I$
$u=\ \ 1.72918+0.03341I$ $a=\ \ 0.219808-1.029000I$ $b=-0.95945+1.46832I$	$11.77940+4.15554I$	0
$u=\ \ 1.72918-0.03341I$ $a=\ \ 0.219808+1.029000I$ $b=-0.95945-1.46832I$	$11.77940-4.15554I$	0
$u=-1.75006+0.01346I$ $a=-0.27253-3.19299I$ $b=\ \ 0.33934+4.04196I$	$14.9045-3.0785I$	0
$u=-1.75006-0.01346I$ $a=-0.27253+3.19299I$ $b=\ \ 0.33934-4.04196I$	$14.9045+3.0785I$	0
$u=\ \ 1.75654$ $a=\ \ 0.528132$ $b=-0.0669841$	15.8245	0
$u=\ \ 1.76039+0.10095I$ $a=-0.77692-2.65214I$ $b=\ \ 0.57757+3.62883I$	$19.5055+10.6386I$	0
$u=\ \ 1.76039-0.10095I$ $a=-0.77692+2.65214I$ $b=\ \ 0.57757-3.62883I$	$19.5055-10.6386I$	0
$u=\ \ 1.77250+0.08381I$ $a=\ \ 1.04963+2.23983I$ $b=-0.89708-3.04423I$	$-19.0119+4.1870I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.77250 - 0.08381I$		
$a = \quad 1.04963 - 2.23983I$	$-19.0119 - 4.1870I$	0
$b = -0.89708 + 3.04423I$		

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} u \\ -u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a \\ au \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} a - u - 1 \\ au \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ au \end{pmatrix}$$

$$a_2 = \begin{pmatrix} au + a \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} au + a \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2au + 3a + u + 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 0.500000 + 0.866025I$ $b = 0.309017 + 0.535233I$	$0.98696 - 2.02988I$	$13.50000 + 1.52761I$
$u = 0.618034$ $a = 0.500000 - 0.866025I$ $b = 0.309017 - 0.535233I$	$0.98696 + 2.02988I$	$13.50000 - 1.52761I$
$u = -1.61803$ $a = 0.500000 + 0.866025I$ $b = -0.80902 - 1.40126I$	$8.88264 - 2.02988I$	$13.5000 + 5.4006I$
$u = -1.61803$ $a = 0.500000 - 0.866025I$ $b = -0.80902 + 1.40126I$	$8.88264 + 2.02988I$	$13.5000 - 5.4006I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^2)(u^{31}+3u^{30}+\cdots+4u-1)$
c_2, c_5	$((u^2+u+1)^2)(u^{31}+9u^{30}+\cdots+12u-1)$
c_3, c_8	$u^4(u^{31}+u^{30}+\cdots-20u^2+16)$
c_4	$((u^2-u+1)^2)(u^{31}+3u^{30}+\cdots+4u-1)$
c_6, c_7	$((u^2-u-1)^2)(u^{31}-3u^{30}+\cdots-12u^2+1)$
c_9, c_{10}, c_{11}	$((u^2+u-1)^2)(u^{31}-3u^{30}+\cdots-12u^2+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^2)(y^{31}+9y^{30}+\cdots+12y-1)$
c_2, c_5	$((y^2+y+1)^2)(y^{31}+29y^{30}+\cdots+524y-1)$
c_3, c_8	$y^4(y^{31}-25y^{30}+\cdots+640y-256)$
c_6, c_7, c_9 c_{10}, c_{11}	$((y^2-3y+1)^2)(y^{31}-43y^{30}+\cdots+24y-1)$