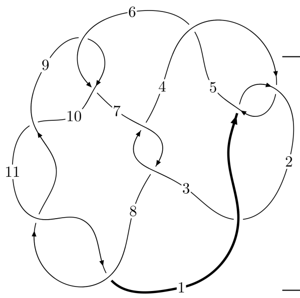
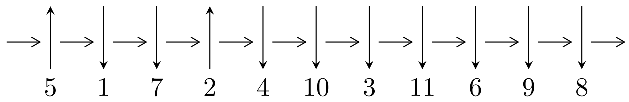
$11a_{50}$ ($K11a_{50}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -2u^{46} + 9u^{45} + \cdots + 4b + 5,\ -u^{46} + 18u^{45} + \cdots + 4a - 25,\ u^{47} - 4u^{46} + \cdots + 6u - 1 \rangle$$
$$I_2^u = \langle -au + b,\ a^3 - a^2u - a^2 + 2au + 1,\ u^2 + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 53 representations.

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[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. $I_1^u = \langle -2u^{46}+9u^{45}+\cdots+4b+5,\ -u^{46}+18u^{45}+\cdots+4a-25,\ u^{47}-4u^{46}+\cdots+6u-1 \rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^3 \\ u^5+u^3+u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{4}u^{46} - \frac{9}{2}u^{45} + \cdots - 17u + \frac{25}{4} \\ \frac{1}{2}u^{46} - \frac{9}{4}u^{45} + \cdots + \frac{9}{4}u - \frac{5}{4} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{7}{4}u^{46} - \frac{5}{2}u^{45} + \cdots + 2u + \frac{7}{4} \\ -\frac{9}{2}u^{46} + \frac{41}{4}u^{45} + \cdots + \frac{35}{4}u - \frac{7}{4} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{4}u^{46} + \frac{3}{4}u^{45} + \cdots + \frac{13}{4}u + 2 \\ \frac{1}{4}u^{46} - u^{45} + \cdots - \frac{5}{2}u + \frac{1}{4} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2u^{46} + \frac{15}{2}u^{45} + \cdots + 20u + 1 \\ -\frac{5}{4}u^{46} + \frac{13}{4}u^{45} + \cdots - \frac{11}{4}u + \frac{1}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{7}{4}u^{46} + \frac{33}{4}u^{45} + \cdots + \frac{107}{4}u - \frac{1}{2} \\ -\frac{5}{4}u^{46} + \frac{9}{4}u^{45} + \cdots - \frac{31}{4}u + \frac{3}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{7}{4}u^{46} + \frac{33}{4}u^{45} + \cdots + \frac{107}{4}u - \frac{1}{2} \\ -\frac{5}{4}u^{46} + \frac{9}{4}u^{45} + \cdots - \frac{31}{4}u + \frac{3}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -9u^{46} + \frac{33}{2}u^{45} + \cdots - 27u - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{47} + 4u^{46} + \cdots + 6u + 1$
c_2, c_5	$u^{47} + 14u^{46} + \cdots + 38u - 1$
c_3, c_7	$u^{47} - u^{46} + \cdots + 96u + 64$
c_6, c_9	$u^{47} + 3u^{46} + \cdots - u + 1$
c_8, c_{10}, c_{11}	$u^{47} + 11u^{46} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{47} + 14y^{46} + \cdots + 38y - 1$
c_2, c_5	$y^{47} + 42y^{46} + \cdots + 2346y - 1$
c_3, c_7	$y^{47} + 35y^{46} + \cdots - 23552y - 4096$
c_6, c_9	$y^{47} - 11y^{46} + \cdots + y - 1$
c_8, c_{10}, c_{11}	$y^{47} + 53y^{46} + \cdots + 41y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.663428+0.780790I$ $a=\ \ 1.00646-1.05901I$ $b=-0.205400+0.577345I$	$1.047100-0.807076I$	$-4.48198-0.15159I$
$u=-0.663428-0.780790I$ $a=\ \ 1.00646+1.05901I$ $b=-0.205400-0.577345I$	$1.047100+0.807076I$	$-4.48198+0.15159I$
$u=-0.199822+1.009780I$ $a=-0.834043-0.291155I$ $b=-0.625995-0.626906I$	$-2.01497-4.25844I$	$-10.22284+8.38293I$
$u=-0.199822-1.009780I$ $a=-0.834043+0.291155I$ $b=-0.625995+0.626906I$	$-2.01497+4.25844I$	$-10.22284-8.38293I$
$u=-0.461388+0.956277I$ $a=\ \ 0.665200+0.526100I$ $b=-0.316069+0.253513I$	$-0.63663-1.64887I$	$-2.14725-2.29266I$
$u=-0.461388-0.956277I$ $a=\ \ 0.665200-0.526100I$ $b=-0.316069-0.253513I$	$-0.63663+1.64887I$	$-2.14725+2.29266I$
$u=\ \ 0.810606+0.776375I$ $a=\ \ 0.565835+0.632629I$ $b=-0.750225-1.009350I$	$4.58669-3.21526I$	$-3.05328+3.33895I$
$u=\ \ 0.810606-0.776375I$ $a=\ \ 0.565835-0.632629I$ $b=-0.750225+1.009350I$	$4.58669+3.21526I$	$-3.05328-3.33895I$
$u=-0.656947+0.912090I$ $a=-0.22666+1.51107I$ $b=-0.392245-0.675540I$	$0.63898-4.31334I$	$-6.53825+6.48689I$
$u=-0.656947-0.912090I$ $a=-0.22666-1.51107I$ $b=-0.392245+0.675540I$	$0.63898+4.31334I$	$-6.53825-6.48689I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.867038 + 0.019562I$ $a = 0.12989 + 1.85582I$ $b = -0.08456 - 1.60423I$	$9.34836 - 3.22875I$	$0.48816 + 2.52460I$
$u = -0.867038 - 0.019562I$ $a = 0.12989 - 1.85582I$ $b = -0.08456 + 1.60423I$	$9.34836 + 3.22875I$	$0.48816 - 2.52460I$
$u = -0.311898 + 0.787865I$ $a = 0.956078 + 0.122134I$ $b = 0.1036160 + 0.0693880I$	$-0.33163 - 1.48922I$	$-3.21291 + 4.41196I$
$u = -0.311898 - 0.787865I$ $a = 0.956078 - 0.122134I$ $b = 0.1036160 - 0.0693880I$	$-0.33163 + 1.48922I$	$-3.21291 - 4.41196I$
$u = 0.749711 + 0.881463I$ $a = 0.133762 - 0.692661I$ $b = -1.094820 - 0.057901I$	$1.38780 + 2.84463I$	$-7.00000 - 2.87095I$
$u = 0.749711 - 0.881463I$ $a = 0.133762 + 0.692661I$ $b = -1.094820 + 0.057901I$	$1.38780 - 2.84463I$	$-7.00000 + 2.87095I$
$u = -0.026264 + 0.834708I$ $a = -1.139080 - 0.577019I$ $b = -0.739974 + 0.342805I$	$-2.87835 + 0.31776I$	$-14.00580 - 0.89851I$
$u = -0.026264 - 0.834708I$ $a = -1.139080 + 0.577019I$ $b = -0.739974 - 0.342805I$	$-2.87835 - 0.31776I$	$-14.00580 + 0.89851I$
$u = 0.830386 + 0.839820I$ $a = 0.137676 - 0.366174I$ $b = 0.439191 + 0.593639I$	$6.59048 + 1.40114I$	$0. - 2.24691I$
$u = 0.830386 - 0.839820I$ $a = 0.137676 + 0.366174I$ $b = 0.439191 - 0.593639I$	$6.59048 - 1.40114I$	$0. + 2.24691I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.927893 + 0.738669I$ $a = 0.28332 + 1.95602I$ $b = -0.22878 - 1.70233I$	$13.7092 - 7.1190I$	$0. + 3.20529I$
$u = 0.927893 - 0.738669I$ $a = 0.28332 - 1.95602I$ $b = -0.22878 + 1.70233I$	$13.7092 + 7.1190I$	$0. - 3.20529I$
$u = -0.294048 + 1.158780I$ $a = -1.041500 - 0.000140I$ $b = -0.17743 - 1.57625I$	$5.33133 - 7.16658I$	$-4.32444 + 6.19083I$
$u = -0.294048 - 1.158780I$ $a = -1.041500 + 0.000140I$ $b = -0.17743 + 1.57625I$	$5.33133 + 7.16658I$	$-4.32444 - 6.19083I$
$u = -0.322894 + 1.152850I$ $a = 1.126820 + 0.062685I$ $b = -0.03457 + 1.51727I$	$5.51392 - 0.84918I$	$-3.71085 + 0.I$
$u = -0.322894 - 1.152850I$ $a = 1.126820 - 0.062685I$ $b = -0.03457 - 1.51727I$	$5.51392 + 0.84918I$	$-3.71085 + 0.I$
$u = -0.810352 + 0.881677I$ $a = 1.20304 - 2.40238I$ $b = -0.06174 + 1.58029I$	$8.49103 + 0.19218I$	$-2.01859 + 0.I$
$u = -0.810352 - 0.881677I$ $a = 1.20304 + 2.40238I$ $b = -0.06174 - 1.58029I$	$8.49103 - 0.19218I$	$-2.01859 + 0.I$
$u = 0.928006 + 0.759035I$ $a = -0.06191 - 1.86044I$ $b = 0.10905 + 1.59219I$	$14.10940 - 0.53726I$	$0. - 1.50138I$
$u = 0.928006 - 0.759035I$ $a = -0.06191 + 1.86044I$ $b = 0.10905 - 1.59219I$	$14.10940 + 0.53726I$	$0. + 1.50138I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.803055 + 0.903733I$ $a = -0.99990 + 2.49478I$ $b = -0.11755 - 1.60103I$	$8.42204 - 6.23223I$	$0. + 5.02146I$
$u = -0.803055 - 0.903733I$ $a = -0.99990 - 2.49478I$ $b = -0.11755 + 1.60103I$	$8.42204 + 6.23223I$	$0. - 5.02146I$
$u = 0.797400 + 0.942409I$ $a = 0.817901 + 0.783072I$ $b = 0.484733 - 0.494859I$	$6.27252 + 4.67969I$	0
$u = 0.797400 - 0.942409I$ $a = 0.817901 - 0.783072I$ $b = 0.484733 + 0.494859I$	$6.27252 - 4.67969I$	0
$u = 0.760355 + 0.975109I$ $a = -0.78027 - 1.38920I$ $b = -0.832040 + 0.941509I$	$3.97968 + 9.12021I$	$-7.00000 - 8.49829I$
$u = 0.760355 - 0.975109I$ $a = -0.78027 + 1.38920I$ $b = -0.832040 - 0.941509I$	$3.97968 - 9.12021I$	$-7.00000 + 8.49829I$
$u = 0.236667 + 0.699953I$ $a = -2.00141 - 0.89361I$ $b = -0.27531 + 1.39228I$	$2.56997 + 3.95764I$	$-7.31001 - 0.68586I$
$u = 0.236667 - 0.699953I$ $a = -2.00141 + 0.89361I$ $b = -0.27531 - 1.39228I$	$2.56997 - 3.95764I$	$-7.31001 + 0.68586I$
$u = 0.807992 + 1.034530I$ $a = 1.69856 + 1.55368I$ $b = 0.14248 - 1.55761I$	$13.2416 + 6.9328I$	0
$u = 0.807992 - 1.034530I$ $a = 1.69856 - 1.55368I$ $b = 0.14248 + 1.55761I$	$13.2416 - 6.9328I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.796590 + 1.043640I$ $a = -1.65368 - 1.73183I$ $b = -0.26885 + 1.69481I$	$12.7501 + 13.4737I$	0
$u = 0.796590 - 1.043640I$ $a = -1.65368 + 1.73183I$ $b = -0.26885 - 1.69481I$	$12.7501 - 13.4737I$	0
$u = 0.262896 + 0.609439I$ $a = 2.19053 + 0.65507I$ $b = -0.102273 - 1.283390I$	$2.83383 - 1.80935I$	$-5.60137 + 4.89150I$
$u = 0.262896 - 0.609439I$ $a = 2.19053 - 0.65507I$ $b = -0.102273 + 1.283390I$	$2.83383 + 1.80935I$	$-5.60137 - 4.89150I$
$u = -0.563257 + 0.159760I$ $a = 0.608331 + 0.292239I$ $b = -0.248810 - 0.689997I$	$1.45889 - 1.89863I$	$-0.82802 + 4.86862I$
$u = -0.563257 - 0.159760I$ $a = 0.608331 - 0.292239I$ $b = -0.248810 + 0.689997I$	$1.45889 + 1.89863I$	$-0.82802 - 4.86862I$
$u = 0.143780$ $a = 3.43014$ $b = -0.444877$	-0.906933	-11.3950

II. $I_2^u = \langle -au + b,\ a^3 - a^2u - a^2 + 2au + 1,\ u^2 + u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ au \end{pmatrix}$$
$$a_7 = \begin{pmatrix} a \\ au \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -a^2u + 1 \\ a^2u + a^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -a^2u - au - a + u + 1 \\ a^2u + a^2 - au - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -2a^2u - a^2 - a + u + 2 \\ a^2u + a^2 - au - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -2a^2u - a^2 - a + u + 2 \\ a^2u + a^2 - au - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5a^2u + 6a^2 - 5au - a + 7u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5	$(u^2+u+1)^3$
c_3, c_7	u^6
c_4	$(u^2-u+1)^3$
c_6	$(u^3+u^2-1)^2$
c_8	$(u^3-u^2+2u-1)^2$
c_9	$(u^3-u^2+1)^2$
c_{10}, c_{11}	$(u^3+u^2+2u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2+y+1)^3$
c_3, c_7	y^6
c_6, c_9	$(y^3-y^2+2y-1)^2$
c_8, c_{10}, c_{11}	$(y^3+3y^2+2y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 1.239560 - 0.467306I$ $b = -0.215080 + 1.307140I$	$3.02413 - 4.85801I$	$-2.74410 + 7.22587I$
$u = -0.500000 + 0.866025I$ $a = -1.024480 + 0.839835I$ $b = -0.215080 - 1.307140I$	$3.02413 + 0.79824I$	$-4.03424 + 1.64667I$
$u = -0.500000 + 0.866025I$ $a = 0.284920 + 0.493496I$ $b = -0.569840$	$-1.11345 - 2.02988I$	$-12.72167 + 5.84990I$
$u = -0.500000 - 0.866025I$ $a = 1.239560 + 0.467306I$ $b = -0.215080 - 1.307140I$	$3.02413 + 4.85801I$	$-2.74410 - 7.22587I$
$u = -0.500000 - 0.866025I$ $a = -1.024480 - 0.839835I$ $b = -0.215080 + 1.307140I$	$3.02413 - 0.79824I$	$-4.03424 - 1.64667I$
$u = -0.500000 - 0.866025I$ $a = 0.284920 - 0.493496I$ $b = -0.569840$	$-1.11345 + 2.02988I$	$-12.72167 - 5.84990I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^3)(u^{47}+4u^{46}+\cdots+6u+1)$
c_2, c_5	$((u^2+u+1)^3)(u^{47}+14u^{46}+\cdots+38u-1)$
c_3, c_7	$u^6(u^{47}-u^{46}+\cdots+96u+64)$
c_4	$((u^2-u+1)^3)(u^{47}+4u^{46}+\cdots+6u+1)$
c_6	$((u^3+u^2-1)^2)(u^{47}+3u^{46}+\cdots-u+1)$
c_8	$((u^3-u^2+2u-1)^2)(u^{47}+11u^{46}+\cdots+u+1)$
c_9	$((u^3-u^2+1)^2)(u^{47}+3u^{46}+\cdots-u+1)$
c_{10}, c_{11}	$((u^3+u^2+2u+1)^2)(u^{47}+11u^{46}+\cdots+u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^3)(y^{47}+14y^{46}+\cdots+38y-1)$
c_2, c_5	$((y^2+y+1)^3)(y^{47}+42y^{46}+\cdots+2346y-1)$
c_3, c_7	$y^6(y^{47}+35y^{46}+\cdots-23552y-4096)$
c_6, c_9	$((y^3-y^2+2y-1)^2)(y^{47}-11y^{46}+\cdots+y-1)$
c_8, c_{10}, c_{11}	$((y^3+3y^2+2y-1)^2)(y^{47}+53y^{46}+\cdots+41y-1)$