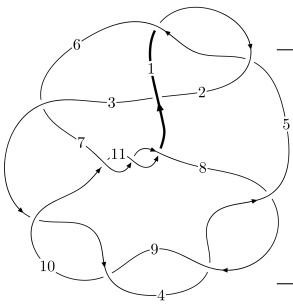
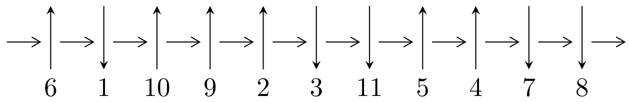
$11a_{97}$ $(K11a_{97})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 1.35647 \times 10^{26} u^{40} + 3.41407 \times 10^{25} u^{39} + \cdots + 4.76775 \times 10^{26} b + 1.22986 \times 10^{27}, \\ & 1.32011 \times 10^{27} u^{40} - 3.91635 \times 10^{27} u^{39} + \cdots + 5.72130 \times 10^{27} a + 9.91592 \times 10^{27},\ u^{41} + 3u^{40} + \cdots - 16u + \end{aligned}$$

$$I_2^u = \langle -2a^3 - 3a^2 + 5b - 15a - 7,\ a^4 + 2a^3 + 7a^2 + 6a + 3,\ u - 1 \rangle$$

$$I_3^u = \langle b,\ a^2 + a + 1,\ u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 47 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. $I_1^u = \langle 1.36\times10^{26}u^{40}+3.41\times10^{25}u^{39}+\cdots+4.77\times10^{26}b+1.23\times10^{27},\ 1.32\times10^{27}u^{40}-3.92\times10^{27}u^{39}+\cdots+5.72\times10^{27}a+9.92\times10^{27},\ u^{41}+3u^{40}+\cdots-16u+3\rangle$

(i) Arc colorings

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

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

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

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

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

$$a_4 = \begin{pmatrix} -0.230736u^{40}+0.684521u^{39}+\cdots+27.5823u-1.73316 \\ -0.284509u^{40}-0.0716075u^{39}+\cdots+13.5631u-2.57954 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0537729u^{40}+0.756128u^{39}+\cdots+14.0192u+0.846378 \\ -0.284509u^{40}-0.0716075u^{39}+\cdots+13.5631u-2.57954 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.417033u^{40}+0.180050u^{39}+\cdots+24.6975u-0.635993 \\ -0.488200u^{40}-0.376850u^{39}+\cdots+16.4598u-3.17299 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.699060u^{40}-0.274328u^{39}+\cdots+36.6179u-7.70938 \\ -0.662144u^{40}-0.883819u^{39}+\cdots+14.3253u-3.84461 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2.14850u^{40}+4.44463u^{39}+\cdots+10.3774u-6.62221 \\ 0.866962u^{40}+1.26216u^{39}+\cdots-10.7057u-0.442876 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.516885u^{40}+0.0710561u^{39}+\cdots-22.2661u+0.886590 \\ 0.526631u^{40}+0.306983u^{39}+\cdots-19.7993u+3.74658 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.516885u^{40}+0.0710561u^{39}+\cdots-22.2661u+0.886590 \\ 0.526631u^{40}+0.306983u^{39}+\cdots-19.7993u+3.74658 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{5598982410885933967170616691}{2383876459424415470033348479}u^{40} + \frac{4039771820038093187322417 25}{866864167063423807284903 56}u^{39} + \cdots - \frac{4651646994369341678762969 04}{2383876459424415470033348479}u + \frac{6335264979066394557124381 83}{9535505837697661880133939 16}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{41} - 2u^{40} + \cdots + 3u - 3$
c_2	$u^{41} + 22u^{40} + \cdots - 33u - 9$
c_3, c_4, c_8 c_9	$u^{41} - u^{40} + \cdots + 8u + 4$
c_6	$u^{41} + 2u^{40} + \cdots + 327u - 87$
c_7, c_{10}, c_{11}	$u^{41} + 3u^{40} + \cdots - 16u + 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{41} + 22y^{40} + \cdots - 33y - 9$
c_2	$y^{41} - 2y^{40} + \cdots + 423y - 81$
c_3, c_4, c_8 c_9	$y^{41} + 51y^{40} + \cdots - 128y - 16$
c_6	$y^{41} - 26y^{40} + \cdots - 166425y - 7569$
c_7, c_{10}, c_{11}	$y^{41} - 43y^{40} + \cdots + 4y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.997009 + 0.226554I$ $a = 0.0239968 + 0.0485183I$ $b = 0.302628 - 0.382168I$	$-2.03507 + 1.22420I$	$-5.30574 + 2.47978I$
$u = -0.997009 - 0.226554I$ $a = 0.0239968 - 0.0485183I$ $b = 0.302628 + 0.382168I$	$-2.03507 - 1.22420I$	$-5.30574 - 2.47978I$
$u = 0.549974 + 0.797423I$ $a = 0.960310 + 0.778214I$ $b = -0.05763 + 1.60436I$	$-7.81669 - 2.63616I$	$-2.57791 + 2.58719I$
$u = 0.549974 - 0.797423I$ $a = 0.960310 - 0.778214I$ $b = -0.05763 - 1.60436I$	$-7.81669 + 2.63616I$	$-2.57791 - 2.58719I$
$u = 0.507571 + 0.956182I$ $a = -0.888380 - 0.590788I$ $b = 0.09789 - 1.64453I$	$-10.92990 - 7.37639I$	$-5.80773 + 5.55165I$
$u = 0.507571 - 0.956182I$ $a = -0.888380 + 0.590788I$ $b = 0.09789 + 1.64453I$	$-10.92990 + 7.37639I$	$-5.80773 - 5.55165I$
$u = 0.762467 + 0.844946I$ $a = -0.710291 - 0.815437I$ $b = -0.00225 - 1.64871I$	$-11.70310 + 1.34196I$	$-7.30625 - 0.70220I$
$u = 0.762467 - 0.844946I$ $a = -0.710291 + 0.815437I$ $b = -0.00225 + 1.64871I$	$-11.70310 - 1.34196I$	$-7.30625 + 0.70220I$
$u = 1.137860 + 0.247744I$ $a = 0.169104 + 1.219170I$ $b = 0.12340 + 1.41903I$	$-7.87303 + 0.41748I$	$-9.30153 + 0.50767I$
$u = 1.137860 - 0.247744I$ $a = 0.169104 - 1.219170I$ $b = 0.12340 - 1.41903I$	$-7.87303 - 0.41748I$	$-9.30153 - 0.50767I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.455355 + 0.700282I$ $a = -0.905605 - 0.022977I$ $b = 0.366148 + 0.772313I$	$-2.54750 + 5.63680I$	$-3.76761 - 8.15870I$
$u = -0.455355 - 0.700282I$ $a = -0.905605 + 0.022977I$ $b = 0.366148 - 0.772313I$	$-2.54750 - 5.63680I$	$-3.76761 + 8.15870I$
$u = -0.631099 + 0.496871I$ $a = -0.486895 - 0.221432I$ $b = 0.021123 + 0.779816I$	$-3.17977 - 1.35362I$	$-6.58078 + 0.48937I$
$u = -0.631099 - 0.496871I$ $a = -0.486895 + 0.221432I$ $b = 0.021123 - 0.779816I$	$-3.17977 + 1.35362I$	$-6.58078 - 0.48937I$
$u = 1.247250 + 0.042571I$ $a = -0.20681 - 1.71804I$ $b = 0.102712 - 0.658984I$	$-2.68106 - 2.54195I$	$-5.78064 + 4.47516I$
$u = 1.247250 - 0.042571I$ $a = -0.20681 + 1.71804I$ $b = 0.102712 + 0.658984I$	$-2.68106 + 2.54195I$	$-5.78064 - 4.47516I$
$u = -0.337954 + 0.540347I$ $a = 0.817560 - 0.128808I$ $b = -0.294187 - 0.599361I$	$-0.16445 + 1.48990I$	$0.43975 - 5.27239I$
$u = -0.337954 - 0.540347I$ $a = 0.817560 + 0.128808I$ $b = -0.294187 + 0.599361I$	$-0.16445 - 1.48990I$	$0.43975 + 5.27239I$
$u = -1.38121$ $a = -0.0677912$ $b = 0.707999$	-3.43392	0
$u = 1.45521 + 0.17025I$ $a = -0.414019 - 1.121630I$ $b = 0.508690 - 0.861076I$	$-6.01336 - 4.06181I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.45521 - 0.17025I$ $a = -0.414019 + 1.121630I$ $b = 0.508690 + 0.861076I$	$-6.01336 + 4.06181I$	0
$u = -1.47695 + 0.04519I$ $a = -0.26335 + 2.90182I$ $b = 0.02320 + 1.62981I$	$-10.76740 + 2.97655I$	0
$u = -1.47695 - 0.04519I$ $a = -0.26335 - 2.90182I$ $b = 0.02320 - 1.62981I$	$-10.76740 - 2.97655I$	0
$u = -1.48592 + 0.10113I$ $a = 0.0860114 - 0.0153300I$ $b = -0.823123 + 0.103447I$	$-6.74821 + 4.23995I$	0
$u = -1.48592 - 0.10113I$ $a = 0.0860114 + 0.0153300I$ $b = -0.823123 - 0.103447I$	$-6.74821 - 4.23995I$	0
$u = 0.385648 + 0.302544I$ $a = -1.59375 - 0.01228I$ $b = 0.456373 + 0.089106I$	$-0.52713 - 2.73009I$	$3.23724 + 4.11462I$
$u = 0.385648 - 0.302544I$ $a = -1.59375 + 0.01228I$ $b = 0.456373 - 0.089106I$	$-0.52713 + 2.73009I$	$3.23724 - 4.11462I$
$u = 1.52169 + 0.06207I$ $a = 0.267867 + 1.067660I$ $b = -0.490449 + 1.028460I$	$-10.25760 - 0.21541I$	0
$u = 1.52169 - 0.06207I$ $a = 0.267867 - 1.067660I$ $b = -0.490449 - 1.028460I$	$-10.25760 + 0.21541I$	0
$u = 1.51624 + 0.23392I$ $a = 0.450012 + 1.020390I$ $b = -0.618443 + 0.860508I$	$-9.03060 - 9.03490I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.51624 - 0.23392I$ $a = 0.450012 - 1.020390I$ $b = -0.618443 - 0.860508I$	$-9.03060 + 9.03490I$	0
$u = 0.046246 + 0.427515I$ $a = 1.224630 - 0.289199I$ $b = -0.391553 - 0.302388I$	$0.667792 + 1.033690I$	$4.88372 - 5.04725I$
$u = 0.046246 - 0.427515I$ $a = 1.224630 + 0.289199I$ $b = -0.391553 + 0.302388I$	$0.667792 - 1.033690I$	$4.88372 + 5.04725I$
$u = -1.55585 + 0.27915I$ $a = -0.94920 + 2.04202I$ $b = 0.14733 + 1.66702I$	$-14.7091 + 6.6164I$	0
$u = -1.55585 - 0.27915I$ $a = -0.94920 - 2.04202I$ $b = 0.14733 - 1.66702I$	$-14.7091 - 6.6164I$	0
$u = -1.57027 + 0.34811I$ $a = 1.02078 - 1.83166I$ $b = -0.18501 - 1.67298I$	$-17.6792 + 12.1700I$	0
$u = -1.57027 - 0.34811I$ $a = 1.02078 + 1.83166I$ $b = -0.18501 + 1.67298I$	$-17.6792 - 12.1700I$	0
$u = -1.64338 + 0.21292I$ $a = 0.60957 - 2.00064I$ $b = -0.11349 - 1.71534I$	$19.5976 + 2.5619I$	0
$u = -1.64338 - 0.21292I$ $a = 0.60957 + 2.00064I$ $b = -0.11349 + 1.71534I$	$19.5976 - 2.5619I$	0
$u = 0.214248 + 0.196206I$ $a = 3.15567 + 3.27078I$ $b = -0.02735 + 1.45336I$	$-4.91839 - 2.21626I$	$0.59639 + 3.86290I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.214248 - 0.196206I$		
$a = 3.15567 - 3.27078I$	$-4.91839 + 2.21626I$	$0.59639 - 3.86290I$
$b = -0.02735 - 1.45336I$		

II. $\boldsymbol{I_2^u = \langle -2a^3 - 3a^2 + 5b - 15a - 7,\ a^4 + 2a^3 + 7a^2 + 6a + 3,\ u - 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ \frac{2}{5}a^3 + \frac{3}{5}a^2 + 3a + \frac{7}{5} \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{2}{5}a^3 - \frac{3}{5}a^2 - 2a - \frac{7}{5} \\ \frac{2}{5}a^3 + \frac{3}{5}a^2 + 3a + \frac{7}{5} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{2}{5}a^3 - \frac{3}{5}a^2 - 2a - \frac{7}{5} \\ \frac{4}{5}a^3 + \frac{6}{5}a^2 + 5a + \frac{14}{5} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{2}{5}a^3 + \frac{3}{5}a^2 + 2a + \frac{2}{5} \\ -\frac{1}{5}a^3 + \frac{1}{5}a^2 - a + \frac{9}{5} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{5}a^3 + \frac{1}{5}a^2 - a - \frac{1}{5} \\ -2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{2}{5}a^3 + \frac{3}{5}a^2 + 2a + \frac{7}{5} \\ -\frac{2}{5}a^3 - \frac{3}{5}a^2 - 3a - \frac{7}{5} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{2}{5}a^3 + \frac{3}{5}a^2 + 2a + \frac{7}{5} \\ -\frac{2}{5}a^3 - \frac{3}{5}a^2 - 3a - \frac{7}{5} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{8}{5}a^3 + \frac{12}{5}a^2 + 8a - \frac{12}{5}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.500000 + 0.548188I$ $b = 1.414210I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 1.00000$ $a = -0.500000 - 0.548188I$ $b = -1.414210I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = 1.00000$ $a = -0.50000 + 2.28024I$ $b = 1.414210I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = 1.00000$ $a = -0.50000 - 2.28024I$ $b = -1.414210I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$

III. $\boldsymbol{I_3^u = \langle b,\ a^2 + a + 1,\ u + 1 \rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.500000 + 0.866025I$ $b = 0$	$-1.64493 + 2.02988I$	$0. - 3.46410I$
$u = -1.00000$ $a = -0.500000 - 0.866025I$ $b = 0$	$-1.64493 - 2.02988I$	$0. + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^2)(u^2+u+1)(u^{41}-2u^{40}+\cdots+3u-3)$
c_2	$((u^2+u+1)^3)(u^{41}+22u^{40}+\cdots-33u-9)$
c_3, c_4, c_8 c_9	$u^2(u^2+2)^2(u^{41}-u^{40}+\cdots+8u+4)$
c_5	$(u^2-u+1)(u^2+u+1)^2(u^{41}-2u^{40}+\cdots+3u-3)$
c_6	$((u^2-u+1)^2)(u^2+u+1)(u^{41}+2u^{40}+\cdots+327u-87)$
c_7	$((u-1)^2)(u+1)^4(u^{41}+3u^{40}+\cdots-16u+3)$
c_{10}, c_{11}	$((u-1)^4)(u+1)^2(u^{41}+3u^{40}+\cdots-16u+3)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y^2+y+1)^3)(y^{41}+22y^{40}+\cdots-33y-9)$
c_2	$((y^2+y+1)^3)(y^{41}-2y^{40}+\cdots+423y-81)$
c_3, c_4, c_8 c_9	$y^2(y+2)^4(y^{41}+51y^{40}+\cdots-128y-16)$
c_6	$((y^2+y+1)^3)(y^{41}-26y^{40}+\cdots-166425y-7569)$
c_7, c_{10}, c_{11}	$((y-1)^6)(y^{41}-43y^{40}+\cdots+4y-9)$