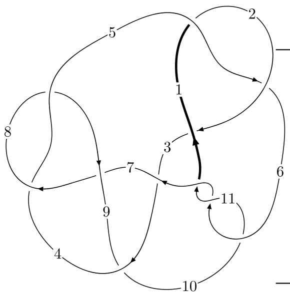
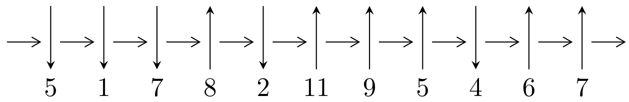
$11n_{106}$ $(K11n_{106})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -3u^{16} - 3u^{15} + \cdots + 4b + 4, \\
& u^{16} - 5u^{14} + 2u^{13} + 11u^{12} - 8u^{11} - 8u^{10} + 14u^9 - 7u^8 - 6u^7 + 18u^6 - 8u^5 - 8u^4 + 12u^3 - 2u^2 + 4a - 2u + \\
& u^{17} + 2u^{16} - 3u^{15} - 7u^{14} + 5u^{13} + 12u^{12} - u^{10} - u^9 - 13u^8 + 18u^6 + 10u^5 + 4u^4 + 4u^3 - 2u^2 - 4u - 2\rangle \\
I_2^u = \langle & u^3 - u^2 + b - u + 1,\ -u^3 + 2a + 2u,\ u^4 - 2u^2 + 2\rangle \\
I_3^u = \langle & -a^2 + b + a,\ a^3 - a - 1,\ u - 1\rangle
\end{aligned}$$

$$I_1^v = \langle a,\ b + 1,\ v - 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 25 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.

$$I_1^u = \langle -3u^{16}-3u^{15}+\cdots+4b+4,\ u^{16}-5u^{14}+\cdots+4a+2,\ u^{17}+2u^{16}+\cdots-4u-2\rangle$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{4}u^{16} + \frac{5}{4}u^{14} + \cdots + \frac{1}{2}u - \frac{1}{2} \\ \frac{3}{4}u^{16} + \frac{3}{4}u^{15} + \cdots - \frac{1}{2}u - 1 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -\frac{1}{4}u^{16} + \frac{5}{4}u^{14} + \cdots + \frac{1}{2}u - \frac{1}{2} \\ \frac{5}{4}u^{16} + \frac{3}{2}u^{15} + \cdots - 2u - 2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^7 + 2u^5 - 2u^3 \\ u^9 - u^7 + u^5 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^{10} + \frac{3}{2}u^8 + \cdots + u^2 - 1 \\ \frac{1}{4}u^{15} - u^{13} + \cdots + \frac{1}{2}u^2 + \frac{1}{2}u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{4}u^{15} + u^{13} + \cdots - \frac{1}{2}u + 1 \\ \frac{1}{4}u^{15} - u^{13} + \cdots + \frac{1}{2}u^2 + \frac{1}{2}u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^4 + u^2 - 1 \\ u^4 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^4 + u^2 - 1 \\ u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{16} + 10u^{14} - 2u^{13} - 22u^{12} + 8u^{11} + 16u^{10} - 14u^9 + 14u^8 + 10u^7 - 36u^6 + 16u^4 - 6u^3 + 4u^2 + 10u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{17} + 2u^{16} + \cdots + 11u - 5$
c_2	$u^{17} - 2u^{16} + \cdots + 121u + 25$
c_3	$u^{17} + 4u^{16} + \cdots - 7540u - 3866$
c_4, c_8	$u^{17} + 2u^{16} + \cdots - 4u - 2$
c_6, c_{10}, c_{11}	$u^{17} - 2u^{16} + \cdots - 17u - 5$
c_7	$u^{17} - 10u^{16} + \cdots + 8u - 4$
c_9	$u^{17} - 3u^{16} + \cdots + 32u - 46$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{17} + 2y^{16} + \cdots + 121y - 25$
c_2	$y^{17} + 50y^{16} + \cdots + 40441y - 625$
c_3	$y^{17} + 70y^{16} + \cdots + 33732920y - 14945956$
c_4, c_8	$y^{17} - 10y^{16} + \cdots + 8y - 4$
c_6, c_{10}, c_{11}	$y^{17} - 30y^{16} + \cdots + 329y - 25$
c_7	$y^{17} - 6y^{16} + \cdots - 96y - 16$
c_9	$y^{17} + 31y^{16} + \cdots + 14640y - 2116$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.076903 + 1.006450I$ $a = -1.28833 + 1.08624I$ $b = -0.344784 - 0.561209I$	$13.5757 - 4.4662I$	$2.93957 + 1.91782I$
$u = 0.076903 - 1.006450I$ $a = -1.28833 - 1.08624I$ $b = -0.344784 + 0.561209I$	$13.5757 + 4.4662I$	$2.93957 - 1.91782I$
$u = -0.995392 + 0.405067I$ $a = 0.702879 + 0.603320I$ $b = -0.30791 - 1.68630I$	$0.05634 - 3.87007I$	$-0.55814 + 7.00568I$
$u = -0.995392 - 0.405067I$ $a = 0.702879 - 0.603320I$ $b = -0.30791 + 1.68630I$	$0.05634 + 3.87007I$	$-0.55814 - 7.00568I$
$u = 0.194679 + 0.752552I$ $a = 0.913683 + 0.406237I$ $b = 0.274898 + 0.378400I$	$2.46422 + 0.66350I$	$3.92785 - 1.28554I$
$u = 0.194679 - 0.752552I$ $a = 0.913683 - 0.406237I$ $b = 0.274898 - 0.378400I$	$2.46422 - 0.66350I$	$3.92785 + 1.28554I$
$u = 1.122330 + 0.557673I$ $a = 0.129300 + 0.669933I$ $b = -0.93908 - 1.59767I$	$5.04445 + 4.17066I$	$6.60682 - 3.70952I$
$u = 1.122330 - 0.557673I$ $a = 0.129300 - 0.669933I$ $b = -0.93908 + 1.59767I$	$5.04445 - 4.17066I$	$6.60682 + 3.70952I$
$u = 0.710570$ $a = -0.516138$ $b = 1.01848$	1.26530	7.99450
$u = -1.260410 + 0.354016I$ $a = -0.013562 - 0.903193I$ $b = 0.46322 + 2.04947I$	$6.78062 - 4.50780I$	$6.98768 + 3.92800I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.260410 - 0.354016I$ $a = -0.013562 + 0.903193I$ $b = 0.46322 - 2.04947I$	$6.78062 + 4.50780I$	$6.98768 - 3.92800I$
$u = -0.440513 + 0.412959I$ $a = -1.16799 - 0.87598I$ $b = -0.426652 + 0.425827I$	$-1.48592 + 0.26904I$	$-6.62187 - 0.62877I$
$u = -0.440513 - 0.412959I$ $a = -1.16799 + 0.87598I$ $b = -0.426652 - 0.425827I$	$-1.48592 - 0.26904I$	$-6.62187 + 0.62877I$
$u = 1.299750 + 0.543064I$ $a = 0.547862 - 1.121000I$ $b = -0.48688 + 2.87606I$	$17.3459 + 9.9963I$	$5.48062 - 4.80381I$
$u = 1.299750 - 0.543064I$ $a = 0.547862 + 1.121000I$ $b = -0.48688 - 2.87606I$	$17.3459 - 9.9963I$	$5.48062 + 4.80381I$
$u = -1.35263 + 0.45076I$ $a = -1.065780 + 0.664446I$ $b = 1.25795 - 1.54860I$	$18.0935 - 0.6930I$	$6.24024 + 0.75440I$
$u = -1.35263 - 0.45076I$ $a = -1.065780 - 0.664446I$ $b = 1.25795 + 1.54860I$	$18.0935 + 0.6930I$	$6.24024 - 0.75440I$

II. $I_2^u = \langle u^3 - u^2 + b - u + 1,\ -u^3 + 2a + 2u,\ u^4 - 2u^2 + 2\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{2}u^3 - u \\ -u^3 + u^2 + u - 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{1}{2}u^3 - u \\ -u^3 + u^2 + 2u - 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ 2u^2 - 2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{2}u^3 + u^2 - u - 1 \\ -u^3 - u^2 + 2u + 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{2}u^3 - u \\ -u^3 + u^2 + 2u - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2 - 1 \\ -2u^2 + 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2 - 1 \\ -2u^2 + 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2 + 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.098680 + 0.455090I$ $a = -0.776887 + 0.321797I$ $b = 0.455090 - 0.098684I$	$2.46740 + 3.66386I$	$4.00000 - 4.00000I$
$u = 1.098680 - 0.455090I$ $a = -0.776887 - 0.321797I$ $b = 0.455090 + 0.098684I$	$2.46740 - 3.66386I$	$4.00000 + 4.00000I$
$u = -1.098680 + 0.455090I$ $a = 0.776887 + 0.321797I$ $b = -0.45509 - 2.09868I$	$2.46740 - 3.66386I$	$4.00000 + 4.00000I$
$u = -1.098680 - 0.455090I$ $a = 0.776887 - 0.321797I$ $b = -0.45509 + 2.09868I$	$2.46740 + 3.66386I$	$4.00000 - 4.00000I$

III. $I_3^u = \langle -a^2 + b + a,\ a^3 - a - 1,\ u - 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.662359 + 0.562280I$ $b = 0.78492 - 1.30714I$	1.64493	6.00000
$u = 1.00000$ $a = -0.662359 - 0.562280I$ $b = 0.78492 + 1.30714I$	1.64493	6.00000
$u = 1.00000$ $a = 1.32472$ $b = 0.430160$	1.64493	6.00000

IV. $I_1^v = \langle a,\ b+1,\ v-1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -1.00000$	0	0

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)(u+1)^4(u^3-u+1)(u^{17}+2u^{16}+\cdots+11u-5)$
c_2	$((u+1)^5)(u^3+2u^2+u+1)(u^{17}-2u^{16}+\cdots+121u+25)$
c_3	$u(u-1)^3(u^4+2u^2+2)(u^{17}+4u^{16}+\cdots-7540u-3866)$
c_4, c_8	$u(u-1)^3(u^4-2u^2+2)(u^{17}+2u^{16}+\cdots-4u-2)$
c_5	$((u-1)^4)(u+1)(u^3-u+1)(u^{17}+2u^{16}+\cdots+11u-5)$
c_6	$((u-1)^4)(u+1)(u^3-u+1)(u^{17}-2u^{16}+\cdots-17u-5)$
c_7	$u(u-1)^3(u^2+2u+2)^2(u^{17}-10u^{16}+\cdots+8u-4)$
c_9	$u^4(u^4+2u^2+2)(u^{17}-3u^{16}+\cdots+32u-46)$
c_{10}, c_{11}	$(u-1)(u+1)^4(u^3-u+1)(u^{17}-2u^{16}+\cdots-17u-5)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y-1)^5)(y^3-2y^2+y-1)(y^{17}+2y^{16}+\cdots+121y-25)$
c_2	$((y-1)^5)(y^3-2y^2-3y-1)(y^{17}+50y^{16}+\cdots+40441y-625)$
c_3	$y(y-1)^3(y^2+2y+2)^2$ $\cdot(y^{17}+70y^{16}+\cdots+33732920y-14945956)$
c_4, c_8	$y(y-1)^3(y^2-2y+2)^2(y^{17}-10y^{16}+\cdots+8y-4)$
c_6, c_{10}, c_{11}	$((y-1)^5)(y^3-2y^2+y-1)(y^{17}-30y^{16}+\cdots+329y-25)$
c_7	$y(y-1)^3(y^2+4)^2(y^{17}-6y^{16}+\cdots-96y-16)$
c_9	$y^4(y^2+2y+2)^2(y^{17}+31y^{16}+\cdots+14640y-2116)$