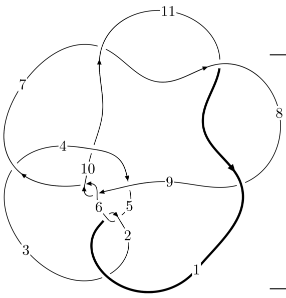
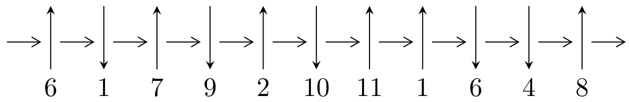
$11n_{48}$ ($K11n_{48}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.14153\times10^{15}u^{19} - 4.26909\times10^{15}u^{18} + \cdots + 8.56391\times10^{15}b + 1.10053\times10^{16},$$
$$6.37825\times10^{15}u^{19} + 2.69128\times10^{16}u^{18} + \cdots + 8.56391\times10^{15}a + 3.19918\times10^{16},\ u^{20} + 4u^{19} + \cdots + 2u + 1$$
$$I_2^u = \langle b^2 - 2,\ a + u + 1,\ u^2 + u + 1\rangle$$
$$I_3^u = \langle b,\ a - u - 1,\ u^2 + u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 26 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.

$$\boldsymbol{I_1^u = \langle -1.14\times 10^{15}u^{19} - 4.27\times 10^{15}u^{18} + \cdots + 8.56\times 10^{15}b + 1.10\times 10^{16},\ 6.38\times 10^{15}u^{19} + 2.69\times 10^{16}u^{18} + \cdots + 8.56\times 10^{15}a + 3.20\times 10^{16},\ u^{20} + 4u^{19} + \cdots + 2u + 1\rangle}$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.744782u^{19} - 3.14258u^{18} + \cdots - 36.0811u - 3.73565 \\ 0.133295u^{19} + 0.498498u^{18} + \cdots + 1.29523u - 1.28508 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.744782u^{19} - 3.14258u^{18} + \cdots - 36.0811u - 3.73565 \\ 0.169440u^{19} + 0.644676u^{18} + \cdots + 2.36692u - 1.12163 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.408694u^{19} + 1.81167u^{18} + \cdots + 31.0989u + 4.13465 \\ -0.233980u^{19} - 0.931452u^{18} + \cdots - 3.19070u + 0.665806 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.174714u^{19} - 0.880217u^{18} + \cdots - 27.9082u - 4.80045 \\ 0.258642u^{19} + 1.02897u^{18} + \cdots + 6.32631u - 0.537037 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.878077u^{19} - 3.64108u^{18} + \cdots - 37.3764u - 2.45056 \\ 0.133295u^{19} + 0.498498u^{18} + \cdots + 1.29523u - 1.28508 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1.12163u^{19} + 4.65596u^{18} + \cdots + 50.9286u + 4.61018 \\ -0.278931u^{19} - 1.06850u^{18} + \cdots - 2.73563u + 1.50344 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1.12163u^{19} + 4.65596u^{18} + \cdots + 50.9286u + 4.61018 \\ -0.278931u^{19} - 1.06850u^{18} + \cdots - 2.73563u + 1.50344 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$$= -\frac{1557563512851975}{8563912733265916}u^{19} - \frac{8797950809282545}{8563912733265916}u^{18} + \cdots - \frac{62067062106158523}{8563912733265916}u - \frac{1550791485072395}{2140978183316479}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{20} - 4u^{19} + \cdots - 2u + 1$
c_2	$u^{20} + 28u^{19} + \cdots + 74u + 1$
c_3	$u^{20} + 8u^{18} + \cdots - 16u + 41$
c_4	$u^{20} - 2u^{19} + \cdots + 2204u + 839$
c_6, c_9	$u^{20} + 3u^{19} + \cdots - 19u + 7$
c_7, c_8, c_{11}	$u^{20} - u^{19} + \cdots - 12u + 4$
c_{10}	$u^{20} + 2u^{19} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{20} + 28y^{19} + \cdots + 74y + 1$
c_2	$y^{20} - 68y^{19} + \cdots - 1654y + 1$
c_3	$y^{20} + 16y^{19} + \cdots + 10814y + 1681$
c_4	$y^{20} - 52y^{19} + \cdots + 5336234y + 703921$
c_6, c_9	$y^{20} - 29y^{19} + \cdots + 297y + 49$
c_7, c_8, c_{11}	$y^{20} - 15y^{19} + \cdots - 48y + 16$
c_{10}	$y^{20} + 4y^{19} + \cdots + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.729618 + 0.601963I$ $a = -0.002660 - 0.502436I$ $b = 1.343650 - 0.072587I$	$5.16928 - 2.57908I$	$8.86572 + 4.96809I$
$u = -0.729618 - 0.601963I$ $a = -0.002660 + 0.502436I$ $b = 1.343650 + 0.072587I$	$5.16928 + 2.57908I$	$8.86572 - 4.96809I$
$u = 0.337333 + 0.681420I$ $a = -1.15996 + 1.26131I$ $b = 0.515876 + 0.585061I$	$-3.04083 - 0.89466I$	$-2.94359 - 0.44261I$
$u = 0.337333 - 0.681420I$ $a = -1.15996 - 1.26131I$ $b = 0.515876 - 0.585061I$	$-3.04083 + 0.89466I$	$-2.94359 + 0.44261I$
$u = -0.342865 + 1.301010I$ $a = -0.567886 - 0.523820I$ $b = -0.778134 - 0.346045I$	$-1.166150 - 0.686038I$	$1.05440 - 1.40687I$
$u = -0.342865 - 1.301010I$ $a = -0.567886 + 0.523820I$ $b = -0.778134 + 0.346045I$	$-1.166150 + 0.686038I$	$1.05440 + 1.40687I$
$u = -0.007874 + 1.394550I$ $a = 0.585444 - 0.602506I$ $b = 1.027390 - 0.480106I$	$-1.53618 - 5.13397I$	$0.62229 + 5.85487I$
$u = -0.007874 - 1.394550I$ $a = 0.585444 + 0.602506I$ $b = 1.027390 + 0.480106I$	$-1.53618 + 5.13397I$	$0.62229 - 5.85487I$
$u = -1.10251 + 0.94498I$ $a = 0.757275 + 0.607433I$ $b = -0.965691 + 0.331710I$	$-0.59440 - 3.60439I$	$2.12405 + 4.48047I$
$u = -1.10251 - 0.94498I$ $a = 0.757275 - 0.607433I$ $b = -0.965691 - 0.331710I$	$-0.59440 + 3.60439I$	$2.12405 - 4.48047I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.195248 + 0.372946I$ $a = -0.774007 + 0.603593I$ $b = -0.277579 + 0.390975I$	$0.131319 - 1.058260I$	$2.00315 + 6.24655I$
$u = -0.195248 - 0.372946I$ $a = -0.774007 - 0.603593I$ $b = -0.277579 - 0.390975I$	$0.131319 + 1.058260I$	$2.00315 - 6.24655I$
$u = 0.36556 + 1.75156I$ $a = -0.101116 + 1.030470I$ $b = 1.39118 + 0.66555I$	$-11.13930 + 2.93869I$	$-0.922503 - 0.819894I$
$u = 0.36556 - 1.75156I$ $a = -0.101116 - 1.030470I$ $b = 1.39118 - 0.66555I$	$-11.13930 - 2.93869I$	$-0.922503 + 0.819894I$
$u = 0.030822 + 0.170366I$ $a = -0.29189 - 5.45429I$ $b = -1.370380 + 0.067940I$	$3.14870 - 0.11294I$	$1.81708 - 1.16761I$
$u = 0.030822 - 0.170366I$ $a = -0.29189 + 5.45429I$ $b = -1.370380 - 0.067940I$	$3.14870 + 0.11294I$	$1.81708 + 1.16761I$
$u = -0.36649 + 1.92873I$ $a = 0.003517 + 0.916631I$ $b = -1.46300 + 0.57660I$	$-10.3499 - 9.9960I$	$0.04826 + 5.02986I$
$u = -0.36649 - 1.92873I$ $a = 0.003517 - 0.916631I$ $b = -1.46300 - 0.57660I$	$-10.3499 + 9.9960I$	$0.04826 - 5.02986I$
$u = 0.01089 + 1.99331I$ $a = 0.051284 - 0.957095I$ $b = 0.076693 - 1.208720I$	$-15.1661 - 3.6593I$	$-2.66886 + 2.23636I$
$u = 0.01089 - 1.99331I$ $a = 0.051284 + 0.957095I$ $b = 0.076693 + 1.208720I$	$-15.1661 + 3.6593I$	$-2.66886 - 2.23636I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u + 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_{10}	$(u^2+u+1)^2$
c_3	$u^4-2u^3+5u^2+2u+1$
c_4	$u^4+2u^3+5u^2-2u+1$
c_5	$(u^2-u+1)^2$
c_6	$(u+1)^4$
c_7, c_8, c_{11}	$(u^2-2)^2$
c_9	$(u-1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_{10}	$(y^2 + y + 1)^2$
c_3, c_4	$y^4 + 6y^3 + 35y^2 + 6y + 1$
c_6, c_9	$(y - 1)^4$
c_7, c_8, c_{11}	$(y - 2)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = \quad 1.41421$	$3.28987 - 2.02988I$	$2.00000 + 3.46410I$
$u = -0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = -1.41421$	$3.28987 - 2.02988I$	$2.00000 + 3.46410I$
$u = -0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = \quad 1.41421$	$3.28987 + 2.02988I$	$2.00000 - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = -1.41421$	$3.28987 + 2.02988I$	$2.00000 - 3.46410I$

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

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

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

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

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

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

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

$$a_4 = \begin{pmatrix} -u-1 \\ u+1 \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^3)(u^{20}-4u^{19}+\cdots-2u+1)$
c_2	$((u^2+u+1)^3)(u^{20}+28u^{19}+\cdots+74u+1)$
c_3	$(u^2-u+1)(u^4-2u^3+\cdots+2u+1)(u^{20}+8u^{18}+\cdots-16u+41)$
c_4	$(u^2-u+1)(u^4+2u^3+\cdots-2u+1)(u^{20}-2u^{19}+\cdots+2204u+839)$
c_5	$((u^2-u+1)^3)(u^{20}-4u^{19}+\cdots-2u+1)$
c_6	$((u-1)^2)(u+1)^4(u^{20}+3u^{19}+\cdots-19u+7)$
c_7, c_8, c_{11}	$u^2(u^2-2)^2(u^{20}-u^{19}+\cdots-12u+4)$
c_9	$((u-1)^4)(u+1)^2(u^{20}+3u^{19}+\cdots-19u+7)$
c_{10}	$(u^2-u+1)(u^2+u+1)^2(u^{20}+2u^{19}+\cdots-2u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y^2+y+1)^3)(y^{20}+28y^{19}+\cdots+74y+1)$
c_2	$((y^2+y+1)^3)(y^{20}-68y^{19}+\cdots-1654y+1)$
c_3	$(y^2+y+1)(y^4+6y^3+35y^2+6y+1)$ $\cdot(y^{20}+16y^{19}+\cdots+10814y+1681)$
c_4	$(y^2+y+1)(y^4+6y^3+35y^2+6y+1)$ $\cdot(y^{20}-52y^{19}+\cdots+5336234y+703921)$
c_6, c_9	$((y-1)^6)(y^{20}-29y^{19}+\cdots+297y+49)$
c_7, c_8, c_{11}	$y^2(y-2)^4(y^{20}-15y^{19}+\cdots-48y+16)$
c_{10}	$((y^2+y+1)^3)(y^{20}+4y^{19}+\cdots+2y+1)$