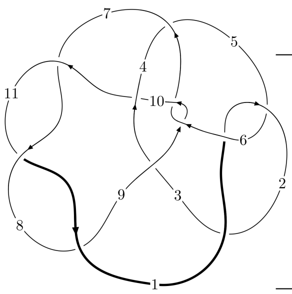
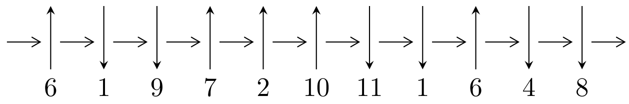
$11n_{82}$ ($K11n_{82}$)



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 $X_{\mathbf{par}}$

$$I_1^u = \langle -30181087379u^{14} - 63482369835u^{13} + \cdots + 2862093283348b - 329512457510,$$
$$222459805170u^{14} + 486064128543u^{13} + \cdots + 286209328348a + 3182822169919,$$
$$u^{15} + 2u^{14} + \cdots + 10u - 1\rangle$$
$$I_2^u = \langle b^2 - 2,\ a - u - 1,\ u^2 + u + 1\rangle$$
$$I_3^u = \langle b,\ a + u + 1,\ u^2 + u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 21 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. $\boldsymbol{I^u_1 = \langle -3.02\times 10^{10}u^{14} - 6.35\times 10^{10}u^{13} + \cdots + 2.86\times 10^{11}b - 3.30\times 10^{11},\ 2.22\times 10^{11}u^{14} + 4.86\times 10^{11}u^{13} + \cdots + 2.86\times 10^{11}a + 3.18\times 10^{12},\ u^{15} + 2u^{14} + \cdots + 10u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^2+1\\-u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.777263u^{14} - 1.69828u^{13} + \cdots - 20.7871u - 11.1206\\0.105451u^{14} + 0.221804u^{13} + \cdots + 3.04137u + 1.15130\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.777263u^{14} - 1.69828u^{13} + \cdots - 20.7871u - 11.1206\\0.0983887u^{14} + 0.190365u^{13} + \cdots + 2.38106u + 1.29506\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1.21619u^{14} + 2.44009u^{13} + \cdots + 22.7698u + 12.4895\\-0.0983778u^{14} - 0.210858u^{13} + \cdots - 1.81717u - 1.45285\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-1.42791u^{14} - 2.95841u^{13} + \cdots - 31.0375u - 14.0034\\0.156497u^{14} + 0.304479u^{13} + \cdots + 2.72370u + 1.69949\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.671811u^{14} - 1.47648u^{13} + \cdots - 17.7458u - 9.96931\\0.105451u^{14} + 0.221804u^{13} + \cdots + 3.04137u + 1.15130\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}1.29506u^{14} + 2.68850u^{13} + \cdots + 27.7863u + 15.3316\\-0.150085u^{14} - 0.291905u^{13} + \cdots - 3.03487u - 1.79788\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}1.29506u^{14} + 2.68850u^{13} + \cdots + 27.7863u + 15.3316\\-0.150085u^{14} - 0.291905u^{13} + \cdots - 3.03487u - 1.79788\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{127706987601}{286209328348}u^{14} - \frac{268342154629}{286209328348}u^{13} + \cdots - \frac{2023089158227}{286209328348}u - \frac{132460189755}{71552332087}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{15} - 2u^{14} + \cdots + 10u + 1$
c_2	$u^{15} + 26u^{14} + \cdots + 130u - 1$
c_3	$u^{15} - 27u^{13} + \cdots - 294u + 181$
c_4	$u^{15} + 2u^{14} + \cdots - 26u - 29$
c_6, c_9	$u^{15} - 3u^{14} + \cdots + 11u + 7$
c_7, c_8, c_{11}	$u^{15} + u^{14} + \cdots - 12u + 4$
c_{10}	$u^{15} + 2u^{14} + \cdots + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{15} + 26y^{14} + \cdots + 130y - 1$
c_2	$y^{15} - 70y^{14} + \cdots + 19426y - 1$
c_3	$y^{15} - 54y^{14} + \cdots + 330786y - 32761$
c_4	$y^{15} + 18y^{14} + \cdots - 5646y - 841$
c_6, c_9	$y^{15} + y^{14} + \cdots - 61y - 49$
c_7, c_8, c_{11}	$y^{15} - 25y^{14} + \cdots + 112y - 16$
c_{10}	$y^{15} + 2y^{14} + \cdots + 10y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.803098 + 0.748670I$ $a = 0.646315 + 0.226464I$ $b = -0.574139 - 0.064590I$	$0.89161 - 2.83187I$	$-3.17067 + 6.54660I$
$u = -0.803098 - 0.748670I$ $a = 0.646315 - 0.226464I$ $b = -0.574139 + 0.064590I$	$0.89161 + 2.83187I$	$-3.17067 - 6.54660I$
$u = 0.289457 + 0.470166I$ $a = -1.237560 - 0.324915I$ $b = 0.565034 + 0.450274I$	$-1.172960 - 0.777601I$	$-6.04145 + 2.77158I$
$u = 0.289457 - 0.470166I$ $a = -1.237560 + 0.324915I$ $b = 0.565034 - 0.450274I$	$-1.172960 + 0.777601I$	$-6.04145 - 2.77158I$
$u = -0.231441 + 0.401782I$ $a = -1.51486 - 1.67785I$ $b = -0.280610 + 0.385572I$	$1.80414 - 1.09347I$	$2.23827 - 2.22165I$
$u = -0.231441 - 0.401782I$ $a = -1.51486 + 1.67785I$ $b = -0.280610 - 0.385572I$	$1.80414 + 1.09347I$	$2.23827 + 2.22165I$
$u = 0.31482 + 1.53771I$ $a = 0.672510 + 0.519039I$ $b = -1.36446 - 0.54656I$	$-7.20728 - 4.71372I$	$-5.60542 + 4.01319I$
$u = 0.31482 - 1.53771I$ $a = 0.672510 - 0.519039I$ $b = -1.36446 + 0.54656I$	$-7.20728 + 4.71372I$	$-5.60542 - 4.01319I$
$u = -0.70342 + 1.47150I$ $a = -0.520487 + 0.299718I$ $b = 1.49730 - 0.27028I$	$-6.05090 - 1.57623I$	$-5.49718 + 1.52700I$
$u = -0.70342 - 1.47150I$ $a = -0.520487 - 0.299718I$ $b = 1.49730 + 0.27028I$	$-6.05090 + 1.57623I$	$-5.49718 - 1.52700I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.0846656$ $a = -13.3666$ $b = 1.46557$	-3.38897	-2.51440
$u = 0.44610 + 2.10573I$ $a = 0.766270 - 0.413924I$ $b = -1.95777 + 0.08885I$	$-19.5760 + 1.0165I$	$-5.21772 + 0.08752I$
$u = 0.44610 - 2.10573I$ $a = 0.766270 + 0.413924I$ $b = -1.95777 - 0.08885I$	$-19.5760 - 1.0165I$	$-5.21772 - 0.08752I$
$u = -0.35476 + 2.19036I$ $a = -0.628878 - 0.529570I$ $b = 1.88186 + 0.21032I$	$-18.8095 - 8.6900I$	$-4.44865 + 3.93161I$
$u = -0.35476 - 2.19036I$ $a = -0.628878 + 0.529570I$ $b = 1.88186 - 0.21032I$	$-18.8095 + 8.6900I$	$-4.44865 - 3.93161I$

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

(i) Arc colorings

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

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

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

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

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

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

$$a_7 = \begin{pmatrix} -u-1 \\ -b \end{pmatrix}$$

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

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

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

$$a_{11} = \begin{pmatrix} -bu-b-1 \\ -2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -bu-b-1 \\ -2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u$

(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
$u = -0.500000 + 0.866025I$ $a = 0.500000 + 0.866025I$ $b = 1.41421$	$-3.28987 - 2.02988I$	$-2.00000 + 3.46410I$
$u = -0.500000 + 0.866025I$ $a = 0.500000 + 0.866025I$ $b = -1.41421$	$-3.28987 - 2.02988I$	$-2.00000 + 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 0.500000 - 0.866025I$ $b = 1.41421$	$-3.28987 + 2.02988I$	$-2.00000 - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 0.500000 - 0.866025I$ $b = -1.41421$	$-3.28987 + 2.02988I$	$-2.00000 - 3.46410I$

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, c_3 c_4	$u^2 + u + 1$
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	$((u^2+u+1)^3)(u^{15}-2u^{14}+\cdots+10u+1)$
c_2	$((u^2+u+1)^3)(u^{15}+26u^{14}+\cdots+130u-1)$
c_3	$(u^2+u+1)(u^4-2u^3+\cdots+2u+1)(u^{15}-27u^{13}+\cdots-294u+181)$
c_4	$(u^2+u+1)(u^4+2u^3+\cdots-2u+1)(u^{15}+2u^{14}+\cdots-26u-29)$
c_5	$((u^2-u+1)^3)(u^{15}-2u^{14}+\cdots+10u+1)$
c_6	$((u-1)^4)(u+1)^2(u^{15}-3u^{14}+\cdots+11u+7)$
c_7, c_8, c_{11}	$u^2(u^2-2)^2(u^{15}+u^{14}+\cdots-12u+4)$
c_9	$((u-1)^2)(u+1)^4(u^{15}-3u^{14}+\cdots+11u+7)$
c_{10}	$(u^2-u+1)(u^2+u+1)^2(u^{15}+2u^{14}+\cdots+2u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y^2+y+1)^3)(y^{15}+26y^{14}+\cdots+130y-1)$
c_2	$((y^2+y+1)^3)(y^{15}-70y^{14}+\cdots+19426y-1)$
c_3	$(y^2+y+1)(y^4+6y^3+35y^2+6y+1)$ $\cdot(y^{15}-54y^{14}+\cdots+330786y-32761)$
c_4	$(y^2+y+1)(y^4+6y^3+\cdots+6y+1)(y^{15}+18y^{14}+\cdots-5646y-841)$
c_6, c_9	$((y-1)^6)(y^{15}+y^{14}+\cdots-61y-49)$
c_7, c_8, c_{11}	$y^2(y-2)^4(y^{15}-25y^{14}+\cdots+112y-16)$
c_{10}	$((y^2+y+1)^3)(y^{15}+2y^{14}+\cdots+10y-1)$