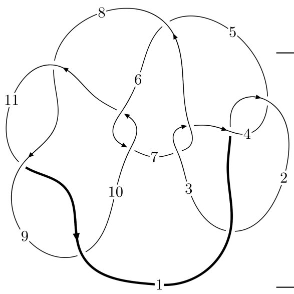
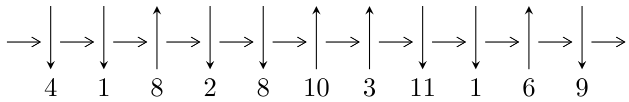
$11n_{25}$ ($K11n_{25}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -78512077u^{27} - 145372804u^{26} + \cdots + 67221149b - 176175,$$
$$-62468877u^{27} - 129722654u^{26} + \cdots + 67221149a + 343854265,\ u^{28} + 2u^{27} + \cdots - 5u + 1\rangle$$
$$I_2^u = \langle u^4 + u^3 - u^2 + b - u,\ u^4 + u^3 - 2u^2 + a - u + 1,\ u^5 + u^4 - 2u^3 - u^2 + u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 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.
$\boldsymbol{I_1^u = \langle -7.85\times 10^7 u^{27} - 1.45\times 10^8 u^{26} + \cdots + 6.72\times 10^7 b - 1.76\times 10^5,\ -6.25\times 10^7 u^{27} - 1.30\times 10^8 u^{26} + \cdots + 6.72\times 10^7 a + 3.44\times 10^8,\ u^{28} + 2u^{27} + \cdots - 5u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.929304u^{27} + 1.92979u^{26} + \cdots + 11.1441u - 5.11527 \\ 1.16797u^{27} + 2.16261u^{26} + \cdots + 2.86935u + 0.00262083 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.01767u^{27} + 2.01755u^{26} + \cdots + 12.4640u - 4.97118 \\ 0.885451u^{27} + 1.93727u^{26} + \cdots + 3.16598u - 0.0228994 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.929304u^{27} + 1.92979u^{26} + \cdots + 11.1441u - 5.11527 \\ 1.40015u^{27} + 2.23327u^{26} + \cdots + 3.44274u + 0.0738023 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.823260u^{27} + 0.824473u^{26} + \cdots + 0.360292u + 0.711827 \\ -2.02865u^{27} - 1.42566u^{26} + \cdots + 4.66019u - 0.824392 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1.43559u^{27} - 1.43578u^{26} + \cdots + 3.66414u - 1.71740 \\ 1.00626u^{27} + 1.00303u^{26} + \cdots - 0.736587u + 0.00303364 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2.44185u^{27} - 2.43882u^{26} + \cdots + 4.40073u - 1.72043 \\ 1.00626u^{27} + 1.00303u^{26} + \cdots - 0.736587u + 0.00303364 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2.44185u^{27} - 2.43882u^{26} + \cdots + 4.40073u - 1.72043 \\ 1.00626u^{27} + 1.00303u^{26} + \cdots - 0.736587u + 0.00303364 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{337541215}{67221149}u^{27} - \frac{737621299}{67221149}u^{26} + \cdots - \frac{124989334}{67221149}u - \frac{310642967}{67221149}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{28} - 6u^{27} + \cdots + 5u - 1$
c_2	$u^{28} + 6u^{27} + \cdots + 17u + 1$
c_3, c_7	$u^{28} + 3u^{27} + \cdots + 128u + 32$
c_5	$u^{28} - 6u^{27} + \cdots - 3079u - 1609$
c_6, c_{10}	$u^{28} - 2u^{27} + \cdots + u - 1$
c_8, c_9, c_{11}	$u^{28} - 2u^{27} + \cdots + 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{28} - 6y^{27} + \cdots - 17y + 1$
c_2	$y^{28} + 38y^{27} + \cdots - 17y + 1$
c_3, c_7	$y^{28} - 33y^{27} + \cdots - 14848y + 1024$
c_5	$y^{28} + 22y^{27} + \cdots + 19658749y + 2588881$
c_6, c_{10}	$y^{28} + 6y^{27} + \cdots + 5y + 1$
c_8, c_9, c_{11}	$y^{28} - 22y^{27} + \cdots + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.078918 + 0.962099I$ $a = -2.18951 + 0.08530I$ $b = -2.13157 + 0.38039I$	$7.91461 - 7.14026I$	$-1.25171 + 4.70902I$
$u = 0.078918 - 0.962099I$ $a = -2.18951 - 0.08530I$ $b = -2.13157 - 0.38039I$	$7.91461 + 7.14026I$	$-1.25171 - 4.70902I$
$u = 1.062800 + 0.195424I$ $a = -0.155091 - 0.173758I$ $b = 0.944249 + 0.890794I$	$-2.13241 - 0.82619I$	$-5.35184 - 1.04773I$
$u = 1.062800 - 0.195424I$ $a = -0.155091 + 0.173758I$ $b = 0.944249 - 0.890794I$	$-2.13241 + 0.82619I$	$-5.35184 + 1.04773I$
$u = -0.064858 + 0.917024I$ $a = 2.10546 - 0.51061I$ $b = 1.81015 - 0.32496I$	$8.51104 + 0.29713I$	$-0.154356 - 0.088934I$
$u = -0.064858 - 0.917024I$ $a = 2.10546 + 0.51061I$ $b = 1.81015 + 0.32496I$	$8.51104 - 0.29713I$	$-0.154356 + 0.088934I$
$u = 1.08514$ $a = -1.05851$ $b = -3.52629$	-3.64067	25.0750
$u = -1.206550 + 0.074740I$ $a = 1.56629 - 0.83850I$ $b = 0.209734 + 0.919216I$	$-5.80044 + 1.71298I$	$-12.51650 - 3.41779I$
$u = -1.206550 - 0.074740I$ $a = 1.56629 + 0.83850I$ $b = 0.209734 - 0.919216I$	$-5.80044 - 1.71298I$	$-12.51650 + 3.41779I$
$u = -1.184170 + 0.243247I$ $a = -0.333050 - 1.009550I$ $b = 0.117217 + 0.500518I$	$-2.65368 + 4.42550I$	$-6.50791 - 7.50568I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.184170 - 0.243247I$ $a = -0.333050 + 1.009550I$ $b = 0.117217 - 0.500518I$	$-2.65368 - 4.42550I$	$-6.50791 + 7.50568I$
$u = 0.429683 + 0.631440I$ $a = -0.286291 - 0.034580I$ $b = 0.231084 + 0.498413I$	$-0.69638 - 1.96456I$	$-1.12748 + 4.70329I$
$u = 0.429683 - 0.631440I$ $a = -0.286291 + 0.034580I$ $b = 0.231084 - 0.498413I$	$-0.69638 + 1.96456I$	$-1.12748 - 4.70329I$
$u = 1.29906$ $a = -0.104420$ $b = 0.740536$	-2.76755	-1.63490
$u = -1.238710 + 0.461764I$ $a = -1.08774 + 1.05934I$ $b = -1.71542 - 0.63051I$	$4.88950 + 4.61956I$	$-3.15122 - 3.64430I$
$u = -1.238710 - 0.461764I$ $a = -1.08774 - 1.05934I$ $b = -1.71542 + 0.63051I$	$4.88950 - 4.61956I$	$-3.15122 + 3.64430I$
$u = 1.236490 + 0.512229I$ $a = 0.561715 + 1.232250I$ $b = 2.01617 - 0.03791I$	$4.35345 + 1.91548I$	$-3.75065 - 1.71492I$
$u = 1.236490 - 0.512229I$ $a = 0.561715 - 1.232250I$ $b = 2.01617 + 0.03791I$	$4.35345 - 1.91548I$	$-3.75065 + 1.71492I$
$u = 1.338030 + 0.423130I$ $a = -0.503580 - 1.252560I$ $b = -1.76982 - 0.03806I$	$4.11604 - 5.09421I$	$-3.90084 + 3.07789I$
$u = 1.338030 - 0.423130I$ $a = -0.503580 + 1.252560I$ $b = -1.76982 + 0.03806I$	$4.11604 + 5.09421I$	$-3.90084 - 3.07789I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.35468+0.45041I$ $a=\ \ 0.88989-1.31460I$ $b=\ \ 2.05008+0.73045I$	$3.42542+12.18300I$	$-4.89577-7.01706I$
$u=-1.35468-0.45041I$ $a=\ \ 0.88989+1.31460I$ $b=\ \ 2.05008-0.73045I$	$3.42542-12.18300I$	$-4.89577+7.01706I$
$u=-0.018893+0.524896I$ $a=-0.530824-0.538417I$ $b=-0.574926+0.352337I$	$0.76347-1.52310I$	$1.12747+4.03193I$
$u=-0.018893-0.524896I$ $a=-0.530824+0.538417I$ $b=-0.574926-0.352337I$	$0.76347+1.52310I$	$1.12747-4.03193I$
$u=-1.46446+0.20354I$ $a=\ \ 0.333881-0.215100I$ $b=-0.390847+0.079026I$	$-6.89024+4.97150I$	$-3.93501-6.51666I$
$u=-1.46446-0.20354I$ $a=\ \ 0.333881+0.215100I$ $b=-0.390847-0.079026I$	$-6.89024-4.97150I$	$-3.93501+6.51666I$
$u=\ \ 0.194298+0.209673I$ $a=-3.28968+1.85114I$ $b=\ \ 0.596766+1.022050I$	$-1.90419-0.70187I$	$-5.30439-2.49815I$
$u=\ \ 0.194298-0.209673I$ $a=-3.28968-1.85114I$ $b=\ \ 0.596766-1.022050I$	$-1.90419+0.70187I$	$-5.30439+2.49815I$

II.

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

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^4-u^3+2u^2+u-1 \\ -u^4-u^3+u^2+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^4-u^3+2u^2+u-1 \\ -u^4-u^3+u^2+u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^4-u^3+2u^2+u-1 \\ -u^4-u^3+u^2+2u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^4+u^2+1 \\ u^4-2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^4+u^2+1 \\ u^4-2u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^4-5u^3+2u^2+8u-10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_7	y^5
c_5	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_6, c_{10}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_8, c_9, c_{11}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.21774$ $a = -0.821196$ $b = -1.30408$	-4.04602	-10.7190
$u = 0.309916 + 0.549911I$ $a = -0.77780 + 1.38013I$ $b = 0.428550 + 1.039280I$	$-1.97403 - 1.53058I$	$-6.52924 + 5.40154I$
$u = 0.309916 - 0.549911I$ $a = -0.77780 - 1.38013I$ $b = 0.428550 - 1.039280I$	$-1.97403 + 1.53058I$	$-6.52924 - 5.40154I$
$u = -1.41878 + 0.21917I$ $a = 0.688402 + 0.106340I$ $b = -0.276511 + 0.728237I$	$-7.51750 + 4.40083I$	$-11.11126 - 1.16747I$
$u = -1.41878 - 0.21917I$ $a = 0.688402 - 0.106340I$ $b = -0.276511 - 0.728237I$	$-7.51750 - 4.40083I$	$-11.11126 + 1.16747I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{28}-6u^{27}+\cdots+5u-1)$
c_2	$((u+1)^5)(u^{28}+6u^{27}+\cdots+17u+1)$
c_3, c_7	$u^5(u^{28}+3u^{27}+\cdots+128u+32)$
c_4	$((u+1)^5)(u^{28}-6u^{27}+\cdots+5u-1)$
c_5	$(u^5-3u^4+4u^3-u^2-u+1)(u^{28}-6u^{27}+\cdots-3079u-1609)$
c_6	$(u^5-u^4+2u^3-u^2+u-1)(u^{28}-2u^{27}+\cdots+u-1)$
c_8, c_9	$(u^5+u^4-2u^3-u^2+u-1)(u^{28}-2u^{27}+\cdots+5u+1)$
c_{10}	$(u^5+u^4+2u^3+u^2+u+1)(u^{28}-2u^{27}+\cdots+u-1)$
c_{11}	$(u^5-u^4-2u^3+u^2+u+1)(u^{28}-2u^{27}+\cdots+5u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^5)(y^{28} - 6y^{27} + \cdots - 17y + 1)$
c_2	$((y-1)^5)(y^{28} + 38y^{27} + \cdots - 17y + 1)$
c_3, c_7	$y^5(y^{28} - 33y^{27} + \cdots - 14848y + 1024)$
c_5	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)$ $\cdot (y^{28} + 22y^{27} + \cdots + 19658749y + 2588881)$
c_6, c_{10}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{28} + 6y^{27} + \cdots + 5y + 1)$
c_8, c_9, c_{11}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{28} - 22y^{27} + \cdots + 5y + 1)$