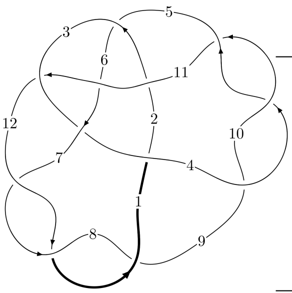
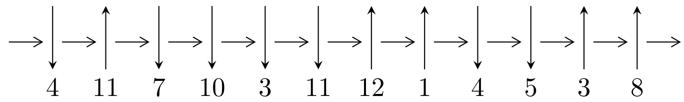
$12n_{0708}$ ($K12n_{0708}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$3{,}7 \xrightarrow[c_3]{} 4{,}11 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_7]{} 8 \xrightarrow[c_2]{} 2 \xrightarrow[c_1]{} 1 \xrightarrow[c_6]{} 6 \xrightarrow[c_5]{} 5 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_9]{} 9 \twoheadrightarrow c_4, c_8, c_{12}$$

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

$$\begin{aligned}
I_1^u = \langle & 1.10576 \times 10^{47} u^{33} - 8.01097 \times 10^{47} u^{32} + \cdots + 1.80128 \times 10^{49} b + 1.32887 \times 10^{49}, \\
& -1.30799 \times 10^{49} u^{33} + 3.04903 \times 10^{49} u^{32} + \cdots + 8.46601 \times 10^{50} a + 1.20480 \times 10^{51}, \\
& u^{34} - 3u^{33} + \cdots + 119u - 47 \rangle \\
I_2^u = \langle & u^8 + 2u^7 - u^6 - 2u^5 + u^4 + b - 1,\ -u^8 - 2u^7 + u^6 + 2u^5 - u^4 - u^3 - u^2 + a + u + 1, \\
& u^{10} + 2u^9 - u^8 - u^7 + 2u^6 - u^5 + u^4 - 2u^2 + u - 1 \rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 44 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. $\boldsymbol{I^u_1 = \langle 1.11 \times 10^{47} u^{33} - 8.01 \times 10^{47} u^{32} + \cdots + 1.80 \times 10^{49} b + 1.33 \times 10^{49},\ -1.31 \times 10^{49} u^{33} + 3.05 \times 10^{49} u^{32} + \cdots + 8.47 \times 10^{50} a + 1.20 \times 10^{51},\ u^{34} - 3u^{33} + \cdots + 119u - 47 \rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0154499u^{33} - 0.0360149u^{32} + \cdots + 0.941098u - 1.42310 \\ -0.00613876u^{33} + 0.0444738u^{32} + \cdots + 2.98012u - 0.737735 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.00931114u^{33} + 0.00845885u^{32} + \cdots + 3.92122u - 2.16083 \\ -0.00613876u^{33} + 0.0444738u^{32} + \cdots + 2.98012u - 0.737735 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.00533206u^{33} - 0.0235388u^{32} + \cdots - 3.14642u + 1.53400 \\ 0.0239032u^{33} - 0.0742285u^{32} + \cdots - 2.18646u + 0.793400 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0232060u^{33} - 0.0633719u^{32} + \cdots - 1.53624u + 0.592137 \\ -0.00632519u^{33} + 0.0366325u^{32} + \cdots + 3.07109u - 0.769781 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0236972u^{33} - 0.0414540u^{32} + \cdots + 1.18747u - 0.471217 \\ -0.000941418u^{33} - 0.00268565u^{32} + \cdots + 0.310591u + 0.329618 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0248174u^{33} + 0.0762449u^{32} + \cdots + 3.20943u - 0.350085 \\ 0.00624624u^{33} - 0.0255551u^{32} + \cdots - 2.16938u + 1.09068 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0185712u^{33} + 0.0506897u^{32} + \cdots + 1.04004u + 0.740599 \\ 0.00624624u^{33} - 0.0255551u^{32} + \cdots - 2.16938u + 1.09068 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0156673u^{33} - 0.0416737u^{32} + \cdots + 3.51356u - 2.20491 \\ -0.0217802u^{33} + 0.0517956u^{32} + \cdots - 0.173101u + 1.00253 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0250751u^{33} - 0.0635130u^{32} + \cdots + 3.23816u - 1.45281 \\ -0.0328754u^{33} + 0.0519114u^{32} + \cdots - 0.490626u + 1.30257 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.338570u^{33} + 0.808896u^{32} + \cdots + 19.1088u + 0.740160$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{34} - 4u^{33} + \cdots + 612u - 536$
c_2, c_{11}	$u^{34} - 2u^{33} + \cdots + 22u + 1$
c_3	$u^{34} + 3u^{33} + \cdots - 119u - 47$
c_4, c_9, c_{10}	$u^{34} + u^{33} + \cdots - 3u - 1$
c_5	$u^{34} - 2u^{33} + \cdots - 30u + 25$
c_6	$u^{34} - u^{33} + \cdots - 80u - 8$
c_7, c_8, c_{12}	$u^{34} + 2u^{33} + \cdots - 11u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{34} + 52y^{33} + \cdots + 3454640y + 287296$
c_2, c_{11}	$y^{34} - 40y^{33} + \cdots - 426y + 1$
c_3	$y^{34} + 7y^{33} + \cdots + 23815y + 2209$
c_4, c_9, c_{10}	$y^{34} - 23y^{33} + \cdots - 9y + 1$
c_5	$y^{34} + 44y^{33} + \cdots - 27550y + 625$
c_6	$y^{34} + 53y^{33} + \cdots - 6560y + 64$
c_7, c_8, c_{12}	$y^{34} - 44y^{33} + \cdots - 261y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.469797 + 0.926681I$ $a = 0.173533 + 0.105962I$ $b = -0.73202 + 1.30784I$	$6.31099 - 6.15435I$	$0.40584 + 7.42268I$
$u = 0.469797 - 0.926681I$ $a = 0.173533 - 0.105962I$ $b = -0.73202 - 1.30784I$	$6.31099 + 6.15435I$	$0.40584 - 7.42268I$
$u = 0.055016 + 0.907256I$ $a = -2.57529 + 0.34754I$ $b = 1.334640 - 0.108463I$	$2.75863 - 1.86345I$	$3.58957 + 3.82529I$
$u = 0.055016 - 0.907256I$ $a = -2.57529 - 0.34754I$ $b = 1.334640 + 0.108463I$	$2.75863 + 1.86345I$	$3.58957 - 3.82529I$
$u = -0.597332 + 0.940180I$ $a = 0.729498 - 0.532364I$ $b = -1.41321 - 0.68276I$	$8.66900 + 2.33850I$	$4.06570 - 4.09223I$
$u = -0.597332 - 0.940180I$ $a = 0.729498 + 0.532364I$ $b = -1.41321 + 0.68276I$	$8.66900 - 2.33850I$	$4.06570 + 4.09223I$
$u = 0.548448 + 0.661548I$ $a = -0.395572 + 0.002411I$ $b = 0.361280 - 0.917030I$	$-0.97085 - 3.73329I$	$-3.26740 + 7.90292I$
$u = 0.548448 - 0.661548I$ $a = -0.395572 - 0.002411I$ $b = 0.361280 + 0.917030I$	$-0.97085 + 3.73329I$	$-3.26740 - 7.90292I$
$u = -0.838637$ $a = -1.95743$ $b = 0.627035$	-4.25399	2.99560
$u = 0.526405 + 1.043420I$ $a = -0.384792 + 1.231010I$ $b = -0.333049 + 0.008900I$	$6.57922 + 1.93235I$	$0.558019 - 0.700654I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.526405 - 1.043420I$ $a = -0.384792 - 1.231010I$ $b = -0.333049 - 0.008900I$	$6.57922 - 1.93235I$	$0.558019 + 0.700654I$
$u = -0.572947 + 1.025320I$ $a = 0.483665 - 1.056480I$ $b = -1.052410 - 0.236751I$	$8.94084 + 2.54032I$	$3.06411 - 2.90404I$
$u = -0.572947 - 1.025320I$ $a = 0.483665 + 1.056480I$ $b = -1.052410 + 0.236751I$	$8.94084 - 2.54032I$	$3.06411 + 2.90404I$
$u = 0.001919 + 0.788798I$ $a = -1.54872 + 0.07110I$ $b = 1.52564 + 0.31114I$	$2.45487 + 1.58321I$	$5.81072 - 4.19715I$
$u = 0.001919 - 0.788798I$ $a = -1.54872 - 0.07110I$ $b = 1.52564 - 0.31114I$	$2.45487 - 1.58321I$	$5.81072 + 4.19715I$
$u = 0.758673$ $a = 0.528592$ $b = -0.0495765$	-0.995684	-12.7630
$u = 0.603373 + 0.439110I$ $a = 0.858658 - 0.248549I$ $b = 0.056009 + 0.383780I$	$-1.379030 - 0.087279I$	$-5.81206 - 0.48445I$
$u = 0.603373 - 0.439110I$ $a = 0.858658 + 0.248549I$ $b = 0.056009 - 0.383780I$	$-1.379030 + 0.087279I$	$-5.81206 + 0.48445I$
$u = -0.716829 + 1.057590I$ $a = 1.24846 - 0.72721I$ $b = -1.51816 - 0.17886I$	$8.00595 + 3.00523I$	$3.73808 - 2.90092I$
$u = -0.716829 - 1.057590I$ $a = 1.24846 + 0.72721I$ $b = -1.51816 + 0.17886I$	$8.00595 - 3.00523I$	$3.73808 + 2.90092I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.691711 + 1.120790I$ $a = 1.60001 + 0.60370I$ $b = -1.48377 + 0.32078I$	$5.01121 - 8.11532I$	$0.18101 + 6.85241I$
$u = 0.691711 - 1.120790I$ $a = 1.60001 - 0.60370I$ $b = -1.48377 - 0.32078I$	$5.01121 + 8.11532I$	$0.18101 - 6.85241I$
$u = 0.881012 + 0.992412I$ $a = 1.080060 + 0.559009I$ $b = -1.51362 - 0.11800I$	$4.18213 + 1.75454I$	$1.44552 - 1.15085I$
$u = 0.881012 - 0.992412I$ $a = 1.080060 - 0.559009I$ $b = -1.51362 + 0.11800I$	$4.18213 - 1.75454I$	$1.44552 + 1.15085I$
$u = -0.202533 + 0.473694I$ $a = -0.566502 + 0.966055I$ $b = 0.571429 + 0.385434I$	$1.190200 + 0.722922I$	$4.39709 - 2.39918I$
$u = -0.202533 - 0.473694I$ $a = -0.566502 - 0.966055I$ $b = 0.571429 - 0.385434I$	$1.190200 - 0.722922I$	$4.39709 + 2.39918I$
$u = -1.48547$ $a = 0.692495$ $b = -0.738006$	-7.70081	-22.1680
$u = -1.49245$ $a = -0.0553962$ $b = 0.874161$	-3.40883	-1.08290
$u = 1.13577 + 1.43590I$ $a = -1.174670 - 0.437080I$ $b = 1.65946 - 0.37041I$	$14.0582 - 11.9947I$	0
$u = 1.13577 - 1.43590I$ $a = -1.174670 + 0.437080I$ $b = 1.65946 + 0.37041I$	$14.0582 + 11.9947I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.29108+1.38239I$ $a=-1.068980+0.541449I$ $b=\ \ 1.65562+0.16606I$	$18.1169+4.9950I$	0
$u=-1.29108-1.38239I$ $a=-1.068980-0.541449I$ $b=\ \ 1.65562-0.16606I$	$18.1169-4.9950I$	0
$u=\ \ 1.49621+1.30271I$ $a=-0.882637-0.559769I$ $b=\ \ 1.52536+0.01034I$	$13.07780+1.99862I$	0
$u=\ \ 1.49621-1.30271I$ $a=-0.882637+0.559769I$ $b=\ \ 1.52536-0.01034I$	$13.07780-1.99862I$	0

II.

$$\boldsymbol{I_2^u = \langle u^8+2u^7-u^6-2u^5+u^4+b-1,\ -u^8-2u^7+\cdots+a+1,\ u^{10}+2u^9+\cdots+u-1\rangle}$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^8+2u^7-u^6-2u^5+u^4+u^3+u^2-u-1 \\ -u^8-2u^7+u^6+2u^5-u^4+1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^3+u^2-u \\ -u^8-2u^7+u^6+2u^5-u^4+1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^7+2u^6-u^5-2u^4+u^3 \\ u^9+2u^8-u^7-u^6+2u^5-2u^4+u^2-u+1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^9+3u^8+u^7-2u^6+u^5+u^4+u^2-2u-1 \\ -u^3-u^2+u+1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^9+3u^8+u^7-2u^6+u^5+u^4-u^3-u-1 \\ -u^5-u^4-u^2+u+1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2u^9-4u^8+3u^7+4u^6-5u^5+u^4-u^2+5u-2 \\ u^9+2u^8-u^7-u^6+2u^5-u^4+u^3-2u+1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^9-2u^8+2u^7+3u^6-3u^5+u^3-u^2+3u-1 \\ u^9+2u^8-u^7-u^6+2u^5-u^4+u^3-2u+1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^7+u^6-2u^5+u^3+2u-2 \\ u^9+u^8-3u^7-u^6+3u^5+u^3-u^2-u+1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2+u-1 \\ -u^7-u^6+2u^5+u^4-u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^9+4u^8+3u^7+4u^6-4u^5-u^4+7u^3-3u^2+2u-4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{10}+3u^9+6u^8+6u^7+u^6-11u^5-14u^4-u^3+8u^2+3u-1$
c_2	$u^{10}+3u^9-2u^8-14u^7-5u^6+23u^5+16u^4-15u^3-11u^2+4u+1$
c_3	$u^{10}+2u^9-u^8-u^7+2u^6-u^5+u^4-2u^2+u-1$
c_4	$u^{10}-6u^8-u^7+13u^6+4u^5-13u^4-5u^3+6u^2+3u-1$
c_5	$u^{10}+u^9+2u^8-u^6-u^5-2u^4-u^3+u^2+2u-1$
c_6	$u^{10}+2u^8-2u^7-u^6-4u^5-2u^4+3u^3-2u^2+3u+1$
c_7, c_8	$u^{10}+u^9-6u^8-6u^7+11u^6+11u^5-4u^4-5u^3-4u^2-u+1$
c_9, c_{10}	$u^{10}-6u^8+u^7+13u^6-4u^5-13u^4+5u^3+6u^2-3u-1$
c_{11}	$u^{10}-3u^9-2u^8+14u^7-5u^6-23u^5+16u^4+15u^3-11u^2-4u+1$
c_{12}	$u^{10}-u^9-6u^8+6u^7+11u^6-11u^5-4u^4+5u^3-4u^2+u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{10} + 3y^9 + \cdots - 25y + 1$
c_2, c_{11}	$y^{10} - 13y^9 + \cdots - 38y + 1$
c_3	$y^{10} - 6y^9 + 9y^8 + y^7 - 4y^6 + y^5 - 3y^4 - 6y^3 + 2y^2 + 3y + 1$
c_4, c_9, c_{10}	$y^{10} - 12y^9 + \cdots - 21y + 1$
c_5	$y^{10} + 3y^9 + 2y^8 - 6y^7 - 3y^6 + y^5 - 4y^4 + y^3 + 9y^2 - 6y + 1$
c_6	$y^{10} + 4y^9 + 2y^8 - 12y^7 - 27y^6 - 6y^5 + 48y^4 + 21y^3 - 18y^2 - 13y + 1$
c_7, c_8, c_{12}	$y^{10} - 13y^9 + \cdots - 9y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.748756 + 0.648482I$ $a = 0.375274 + 0.762613I$ $b = -1.50876 + 0.37799I$	$8.36725 - 1.33489I$	$1.94242 - 2.46421I$
$u = 0.748756 - 0.648482I$ $a = 0.375274 - 0.762613I$ $b = -1.50876 - 0.37799I$	$8.36725 + 1.33489I$	$1.94242 + 2.46421I$
$u = 0.937843$ $a = 0.283456$ $b = 0.483130$	-0.498447	5.48800
$u = -0.186579 + 0.862945I$ $a = 1.14726 - 1.04811I$ $b = -1.26022 - 0.68934I$	$6.77164 + 4.55155I$	$1.99946 - 3.34420I$
$u = -0.186579 - 0.862945I$ $a = 1.14726 + 1.04811I$ $b = -1.26022 + 0.68934I$	$6.77164 - 4.55155I$	$1.99946 + 3.34420I$
$u = -1.12602$ $a = 1.14998$ $b = -0.183747$	-5.01118	-8.63130
$u = 0.213691 + 0.628245I$ $a = -2.16352 - 0.71377I$ $b = 1.357540 + 0.192129I$	$1.63959 + 1.30650I$	$-4.90826 - 0.15548I$
$u = 0.213691 - 0.628245I$ $a = -2.16352 + 0.71377I$ $b = 1.357540 - 0.192129I$	$1.63959 - 1.30650I$	$-4.90826 + 0.15548I$
$u = -1.55268$ $a = -0.662730$ $b = 0.883015$	-7.45391	10.7450
$u = -1.81088$ $a = 0.511259$ $b = -1.35950$	-0.854207	1.33140

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{10}+3u^9+6u^8+6u^7+u^6-11u^5-14u^4-u^3+8u^2+3u-1)$ $\cdot(u^{34}-4u^{33}+\cdots+612u-536)$
c_2	$(u^{10}+3u^9-2u^8-14u^7-5u^6+23u^5+16u^4-15u^3-11u^2+4u+1)$ $\cdot(u^{34}-2u^{33}+\cdots+22u+1)$
c_3	$(u^{10}+2u^9-u^8-u^7+2u^6-u^5+u^4-2u^2+u-1)$ $\cdot(u^{34}+3u^{33}+\cdots-119u-47)$
c_4	$(u^{10}-6u^8-u^7+13u^6+4u^5-13u^4-5u^3+6u^2+3u-1)$ $\cdot(u^{34}+u^{33}+\cdots-3u-1)$
c_5	$(u^{10}+u^9+2u^8-u^6-u^5-2u^4-u^3+u^2+2u-1)$ $\cdot(u^{34}-2u^{33}+\cdots-30u+25)$
c_6	$(u^{10}+2u^8-2u^7-u^6-4u^5-2u^4+3u^3-2u^2+3u+1)$ $\cdot(u^{34}-u^{33}+\cdots-80u-8)$
c_7, c_8	$(u^{10}+u^9-6u^8-6u^7+11u^6+11u^5-4u^4-5u^3-4u^2-u+1)$ $\cdot(u^{34}+2u^{33}+\cdots-11u-1)$
c_9, c_{10}	$(u^{10}-6u^8+u^7+13u^6-4u^5-13u^4+5u^3+6u^2-3u-1)$ $\cdot(u^{34}+u^{33}+\cdots-3u-1)$
c_{11}	$(u^{10}-3u^9-2u^8+14u^7-5u^6-23u^5+16u^4+15u^3-11u^2-4u+1)$ $\cdot(u^{34}-2u^{33}+\cdots+22u+1)$
c_{12}	$(u^{10}-u^9-6u^8+6u^7+11u^6-11u^5-4u^4+5u^3-4u^2+u+1)$ $\cdot(u^{34}+2u^{33}+\cdots-11u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{10} + 3y^9 + \cdots - 25y + 1)(y^{34} + 52y^{33} + \cdots + 3454640y + 287296)$
c_2, c_{11}	$(y^{10} - 13y^9 + \cdots - 38y + 1)(y^{34} - 40y^{33} + \cdots - 426y + 1)$
c_3	$(y^{10} - 6y^9 + 9y^8 + y^7 - 4y^6 + y^5 - 3y^4 - 6y^3 + 2y^2 + 3y + 1)$ $\cdot (y^{34} + 7y^{33} + \cdots + 23815y + 2209)$
c_4, c_9, c_{10}	$(y^{10} - 12y^9 + \cdots - 21y + 1)(y^{34} - 23y^{33} + \cdots - 9y + 1)$
c_5	$(y^{10} + 3y^9 + 2y^8 - 6y^7 - 3y^6 + y^5 - 4y^4 + y^3 + 9y^2 - 6y + 1)$ $\cdot (y^{34} + 44y^{33} + \cdots - 27550y + 625)$
c_6	$(y^{10} + 4y^9 + 2y^8 - 12y^7 - 27y^6 - 6y^5 + 48y^4 + 21y^3 - 18y^2 - 13y + 1)$ $\cdot (y^{34} + 53y^{33} + \cdots - 6560y + 64)$
c_7, c_8, c_{12}	$(y^{10} - 13y^9 + \cdots - 9y + 1)(y^{34} - 44y^{33} + \cdots - 261y + 1)$