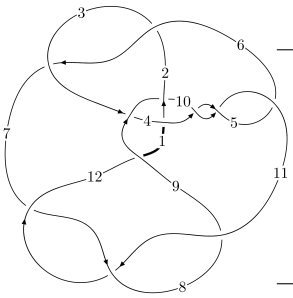
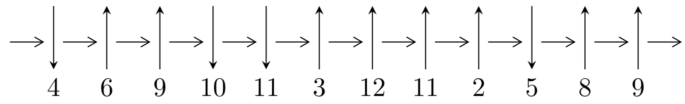
$12n_{0768}$ ($K12n_{0768}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -2.92778 \times 10^{21} u^{25} + 2.56531 \times 10^{22} u^{24} + \cdots + 3.87990 \times 10^{23} b - 1.26738 \times 10^{24},$$
$$2.71108 \times 10^{23} u^{25} + 1.09424 \times 10^{24} u^{24} + \cdots + 1.20277 \times 10^{25} a - 1.27374 \times 10^{26},\ u^{26} - u^{25} + \cdots + 12u + 3$$
$$I_2^u = \langle -u^{13} + 6u^{11} + u^{10} - 14u^9 - 6u^8 + 14u^7 + 15u^6 - 3u^5 - 18u^4 - 5u^3 + 9u^2 + b + 3u - 1,$$
$$-u^{13} + u^{12} + 6u^{11} - 4u^{10} - 15u^9 + 2u^8 + 19u^7 + 13u^6 - 12u^5 - 22u^4 + 10u^2 + a + 5u - 1,$$
$$u^{14} - 7u^{12} - u^{11} + 19u^{10} + 7u^9 - 23u^8 - 20u^7 + 8u^6 + 28u^5 + 7u^4 - 17u^3 - 6u^2 + 2u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 40 representations.

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[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. $\boldsymbol{I_1^u = \langle -2.93 \times 10^{21} u^{25} + 2.57 \times 10^{22} u^{24} + \cdots + 3.88 \times 10^{23} b - 1.27 \times 10^{24},\ 2.71 \times 10^{23} u^{25} + 1.09 \times 10^{24} u^{24} + \cdots + 1.20 \times 10^{25} a - 1.27 \times 10^{26},\ u^{26} - u^{25} + \cdots + 12u + 31 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0225403u^{25} - 0.0909766u^{24} + \cdots + 5.26309u + 10.5900 \\ 0.00754601u^{25} - 0.0661178u^{24} + \cdots - 2.55257u + 3.26654 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.0460308u^{25} - 0.0975533u^{24} + \cdots + 3.67107u + 8.88673 \\ -0.0159445u^{25} - 0.0726945u^{24} + \cdots - 4.14458u + 1.56324 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.0228681u^{25} - 0.107777u^{24} + \cdots - 0.424141u + 6.30289 \\ 0.105094u^{25} - 0.0463805u^{24} + \cdots - 7.82285u - 2.16744 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.0714029u^{25} - 0.131292u^{24} + \cdots + 7.63526u + 15.5015 \\ 0.00756581u^{25} - 0.0451761u^{24} + \cdots - 2.33987u + 1.11953 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.466848u^{25} + 0.229048u^{24} + \cdots + 25.8666u + 8.47181 \\ 0.0444585u^{25} + 0.0166367u^{24} + \cdots - 2.65167u - 3.76153 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.192283u^{25} - 0.0910018u^{24} + \cdots + 9.67536u + 12.5203 \\ -0.00596389u^{25} - 0.0322573u^{24} + \cdots - 0.739325u + 2.56438 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.235482u^{25} - 0.154199u^{24} + \cdots - 20.6106u - 7.26827 \\ 0.0223603u^{25} - 0.0205281u^{24} + \cdots - 3.27390u - 0.0676271 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{4665250220351004701496 1}{12933012695409998982217 3}u^{25} + \frac{997443364978766688762 71}{387990380862299969466519}u^{24} + \cdots + \frac{746704207515424761891 2122}{387990380862299969466519}u - \frac{1919651047154391762384890}{387990380862299969466519}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{26} - 24u^{24} + \cdots - 352u + 41$
c_2, c_6	$u^{26} - 4u^{25} + \cdots - 322u - 529$
c_3	$u^{26} - u^{25} + \cdots - 12769u - 1781$
c_4, c_5, c_{10}	$u^{26} + u^{25} + \cdots - 12u + 31$
c_7, c_8, c_{11}	$u^{26} + u^{25} + \cdots - 34u - 4$
c_9	$u^{26} + 2u^{25} + \cdots + 36u - 19$
c_{12}	$u^{26} - u^{25} + \cdots - 304218u - 40564$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{26} - 48y^{25} + \cdots + 19924y + 1681$
c_2, c_6	$y^{26} + 12y^{25} + \cdots - 348082y + 279841$
c_3	$y^{26} + 69y^{25} + \cdots - 266466469y + 3171961$
c_4, c_5, c_{10}	$y^{26} - 33y^{25} + \cdots - 12482y + 961$
c_7, c_8, c_{11}	$y^{26} + 43y^{25} + \cdots - 716y + 16$
c_9	$y^{26} + 6y^{25} + \cdots + 1782y + 361$
c_{12}	$y^{26} + 147y^{25} + \cdots - 80260701260y + 1645438096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.764982 + 0.335496I$ $a = 0.043942 - 0.279919I$ $b = 1.019140 - 0.401366I$	$-1.38320 - 3.64635I$	$1.35824 + 7.32767I$
$u = 0.764982 - 0.335496I$ $a = 0.043942 + 0.279919I$ $b = 1.019140 + 0.401366I$	$-1.38320 + 3.64635I$	$1.35824 - 7.32767I$
$u = 0.777607 + 0.118039I$ $a = 2.55907 - 0.95852I$ $b = -0.478055 - 0.742412I$	$-13.15060 - 0.37776I$	$-1.22408 - 1.34498I$
$u = 0.777607 - 0.118039I$ $a = 2.55907 + 0.95852I$ $b = -0.478055 + 0.742412I$	$-13.15060 + 0.37776I$	$-1.22408 + 1.34498I$
$u = 0.842907 + 0.881469I$ $a = -0.571747 + 0.134450I$ $b = -0.469429 - 0.674553I$	$-1.203930 - 0.496037I$	$0.79686 - 2.54300I$
$u = 0.842907 - 0.881469I$ $a = -0.571747 - 0.134450I$ $b = -0.469429 + 0.674553I$	$-1.203930 + 0.496037I$	$0.79686 + 2.54300I$
$u = -0.719777$ $a = -0.187725$ $b = -1.16272$	2.17524	2.79410
$u = 0.159981 + 0.568954I$ $a = 0.445478 + 0.461168I$ $b = -0.321692 + 0.362997I$	$0.333623 - 1.008960I$	$5.28376 + 6.66934I$
$u = 0.159981 - 0.568954I$ $a = 0.445478 - 0.461168I$ $b = -0.321692 - 0.362997I$	$0.333623 + 1.008960I$	$5.28376 - 6.66934I$
$u = -1.40068 + 0.23284I$ $a = -0.23778 + 1.47903I$ $b = 0.413279 + 0.877413I$	$-4.79645 + 4.01069I$	$0.34699 - 9.12487I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.40068 - 0.23284I$ $a = -0.23778 - 1.47903I$ $b = 0.413279 - 0.877413I$	$-4.79645 - 4.01069I$	$0.34699 + 9.12487I$
$u = -0.571043$ $a = 2.07972$ $b = 0.907867$	2.93787	-5.61080
$u = -0.484610 + 0.243441I$ $a = -1.71290 + 0.53126I$ $b = 0.461065 + 0.861987I$	$-3.51192 + 0.62346I$	$-2.84586 - 0.67416I$
$u = -0.484610 - 0.243441I$ $a = -1.71290 - 0.53126I$ $b = 0.461065 - 0.861987I$	$-3.51192 - 0.62346I$	$-2.84586 + 0.67416I$
$u = 1.52698 + 0.20871I$ $a = 0.133555 + 1.387270I$ $b = -1.051380 + 0.928731I$	$-10.29450 - 2.62985I$	$-1.70383 + 1.78381I$
$u = 1.52698 - 0.20871I$ $a = 0.133555 - 1.387270I$ $b = -1.051380 - 0.928731I$	$-10.29450 + 2.62985I$	$-1.70383 - 1.78381I$
$u = -0.82721 + 1.33251I$ $a = 0.352400 - 0.194950I$ $b = -0.445225 - 1.242010I$	$-15.2105 + 4.3640I$	$-1.41577 - 3.17462I$
$u = -0.82721 - 1.33251I$ $a = 0.352400 + 0.194950I$ $b = -0.445225 + 1.242010I$	$-15.2105 - 4.3640I$	$-1.41577 + 3.17462I$
$u = 1.65746 + 0.14713I$ $a = 0.159581 + 0.992092I$ $b = 0.250667 + 1.107520I$	$-5.67875 - 1.02437I$	$-0.521896 - 0.910763I$
$u = 1.65746 - 0.14713I$ $a = 0.159581 - 0.992092I$ $b = 0.250667 - 1.107520I$	$-5.67875 + 1.02437I$	$-0.521896 + 0.910763I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.77337 + 0.06842I$ $a = 0.294799 - 0.960179I$ $b = 1.44079 - 1.23613I$	$16.7710 + 1.3129I$	$-1.252333 - 0.225172I$
$u = -1.77337 - 0.06842I$ $a = 0.294799 + 0.960179I$ $b = 1.44079 + 1.23613I$	$16.7710 - 1.3129I$	$-1.252333 + 0.225172I$
$u = 1.74642 + 0.44620I$ $a = -0.080704 - 1.254640I$ $b = 1.18154 - 1.35502I$	$16.0643 - 11.0020I$	$-1.09431 + 4.10898I$
$u = 1.74642 - 0.44620I$ $a = -0.080704 + 1.254640I$ $b = 1.18154 + 1.35502I$	$16.0643 + 11.0020I$	$-1.09431 - 4.10898I$
$u = -1.84505 + 0.14739I$ $a = -0.154266 - 1.018760I$ $b = -0.87327 - 1.36223I$	$-11.74950 + 5.10402I$	$-1.81943 - 2.88501I$
$u = -1.84505 - 0.14739I$ $a = -0.154266 + 1.018760I$ $b = -0.87327 + 1.36223I$	$-11.74950 - 5.10402I$	$-1.81943 + 2.88501I$

II.

$$\boldsymbol{I_2^u = \langle -u^{13}+6u^{11}+\cdots+b-1,\ -u^{13}+u^{12}+\cdots+a-1,\ u^{14}-7u^{12}+\cdots+2u+1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{13}-u^{12}+\cdots-5u+1 \\ u^{13}-6u^{11}+\cdots-3u+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{13}+u^{12}+\cdots-4u^2-7u \\ u^{13}+2u^{12}+\cdots-3u^2-5u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{13}+2u^{12}+\cdots+10u^3+3 \\ 2u^{12}-u^{11}+\cdots-u+1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{13}-6u^{11}+\cdots-5u^2-8u \\ u^{13}-6u^{11}+\cdots-2u+1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{13}-5u^{11}-u^{10}+8u^9+4u^8-u^7-5u^6-6u^5-u^3+3u^2+6u \\ u^{12}+u^{11}+\cdots+u-2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -3u^{13}+4u^{12}+\cdots+20u^2-2u \\ -2u^{13}+5u^{12}+\cdots-3u-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -4u^{13}+5u^{12}+\cdots-5u-7 \\ -3u^{13}+6u^{12}+\cdots-8u-4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $=$
$-2u^{13}-3u^{12}+16u^{11}+20u^{10}-44u^9-56u^8+40u^7+84u^6+28u^5-71u^4-68u^3+24u^2+27u+7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{14} - 17y^{13} + \cdots - 2y + 1$
c_2, c_6	$y^{14} - 9y^{13} + \cdots - 8y + 1$
c_3	$y^{14} + 8y^{13} + \cdots - 3y + 1$
c_4, c_5, c_{10}	$y^{14} - 14y^{13} + \cdots - 16y + 1$
c_7, c_8, c_{11}	$y^{14} + 18y^{13} + \cdots - 6y + 1$
c_9	$y^{14} - 3y^{13} + \cdots + 8y + 1$
c_{12}	$y^{14} + 22y^{13} + \cdots - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.388251+0.920456I$ $a=\ \ 0.055423-0.175899I$ $b=\ \ 0.169523+0.638462I$	$-1.29955+1.48242I$	$0.47756-5.07450I$
$u=-0.388251-0.920456I$ $a=\ \ 0.055423+0.175899I$ $b=\ \ 0.169523-0.638462I$	$-1.29955-1.48242I$	$0.47756+5.07450I$
$u=\ \ 1.132050+0.372393I$ $a=\ \ 1.77286+0.32994I$ $b=-0.171528+0.571644I$	$-13.37670-1.61202I$	$-3.25492+4.00039I$
$u=\ \ 1.132050-0.372393I$ $a=\ \ 1.77286-0.32994I$ $b=-0.171528-0.571644I$	$-13.37670+1.61202I$	$-3.25492-4.00039I$
$u=\ \ 1.28132$ $a=\ \ 0.283790$ $b=\ \ 1.39820$	0.241511	-0.487210
$u=-1.290010+0.033553I$ $a=-0.507609+0.986318I$ $b=-1.39611+0.51797I$	$-4.48352-1.89225I$	$-0.38957+1.57022I$
$u=-1.290010-0.033553I$ $a=-0.507609-0.986318I$ $b=-1.39611-0.51797I$	$-4.48352+1.89225I$	$-0.38957-1.57022I$
$u=-1.38089+0.32443I$ $a=-0.496730+1.151660I$ $b=\ \ 0.353075+0.853393I$	$-5.02225+3.24893I$	$-3.06027-0.56445I$
$u=-1.38089-0.32443I$ $a=-0.496730-1.151660I$ $b=\ \ 0.353075-0.853393I$	$-5.02225-3.24893I$	$-3.06027+0.56445I$
$u=\ \ 1.45042+0.21038I$ $a=-0.11773+1.53514I$ $b=-0.623035+1.209470I$	$-7.62759-4.80166I$	$-1.22227+4.11227I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.45042 - 0.21038I$ $a = -0.11773 - 1.53514I$ $b = -0.623035 - 1.209470I$	$-7.62759 + 4.80166I$	$-1.22227 - 4.11227I$
$u = 0.434339$ $a = -2.22641$ $b = -1.03128$	3.32890	16.1810
$u = -0.381146 + 0.175722I$ $a = 1.76509 - 0.05508I$ $b = 0.984611 + 0.552289I$	$-1.22934 + 2.47209I$	$1.10273 - 1.06165I$
$u = -0.381146 - 0.175722I$ $a = 1.76509 + 0.05508I$ $b = 0.984611 - 0.552289I$	$-1.22934 - 2.47209I$	$1.10273 + 1.06165I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{14}-5u^{13}+\cdots-u^2+1)(u^{26}-24u^{24}+\cdots-352u+41)$
c_2	$(u^{14}-3u^{13}+8u^{11}-9u^{10}+13u^8-16u^7+14u^5-9u^4-3u^3+4u^2-1)$ $\cdot(u^{26}-4u^{25}+\cdots-322u-529)$
c_3	$(u^{14}+4u^{12}+5u^{10}+2u^9-3u^8+4u^7-u^6-u^5+u^4+2u^3+u^2-u-1)$ $\cdot(u^{26}-u^{25}+\cdots-12769u-1781)$
c_4, c_5	$(u^{14}-7u^{12}+\cdots-2u+1)(u^{26}+u^{25}+\cdots-12u+31)$
c_6	$(u^{14}+3u^{13}-8u^{11}-9u^{10}+13u^8+16u^7-14u^5-9u^4+3u^3+4u^2-1)$ $\cdot(u^{26}-4u^{25}+\cdots-322u-529)$
c_7, c_8	$(u^{14}+9u^{12}+\cdots+2u-1)(u^{26}+u^{25}+\cdots-34u-4)$
c_9	$(u^{14}+u^{13}-u^{12}-2u^{11}-u^{10}+u^9+u^8-4u^7+3u^6-2u^5-5u^4-4u^2-1)$ $\cdot(u^{26}+2u^{25}+\cdots+36u-19)$
c_{10}	$(u^{14}-7u^{12}+\cdots+2u+1)(u^{26}+u^{25}+\cdots-12u+31)$
c_{11}	$(u^{14}+9u^{12}+\cdots-2u-1)(u^{26}+u^{25}+\cdots-34u-4)$
c_{12}	$(u^{14}+11u^{12}+\cdots-2u-1)(u^{26}-u^{25}+\cdots-304218u-40564)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{14} - 17y^{13} + \cdots - 2y + 1)(y^{26} - 48y^{25} + \cdots + 19924y + 1681)$
c_2, c_6	$(y^{14} - 9y^{13} + \cdots - 8y + 1)(y^{26} + 12y^{25} + \cdots - 348082y + 279841)$
c_3	$(y^{14} + 8y^{13} + \cdots - 3y + 1)$ $\cdot (y^{26} + 69y^{25} + \cdots - 266466469y + 3171961)$
c_4, c_5, c_{10}	$(y^{14} - 14y^{13} + \cdots - 16y + 1)(y^{26} - 33y^{25} + \cdots - 12482y + 961)$
c_7, c_8, c_{11}	$(y^{14} + 18y^{13} + \cdots - 6y + 1)(y^{26} + 43y^{25} + \cdots - 716y + 16)$
c_9	$(y^{14} - 3y^{13} + \cdots + 8y + 1)(y^{26} + 6y^{25} + \cdots + 1782y + 361)$
c_{12}	$(y^{14} + 22y^{13} + \cdots - 4y + 1)$ $\cdot (y^{26} + 147y^{25} + \cdots - 80260701260y + 1645438096)$