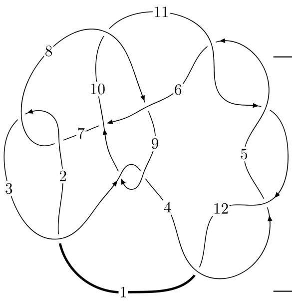
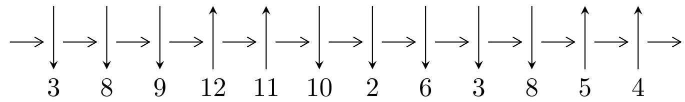
$12n_{0661}$ $(K12n_{0661})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.88753 \times 10^{16} u^{26} - 7.56446 \times 10^{16} u^{25} + \cdots + 3.81765 \times 10^{17} b - 2.36711 \times 10^{17},$$
$$7.72254 \times 10^{17} u^{26} + 1.53152 \times 10^{18} u^{25} + \cdots + 3.81765 \times 10^{17} a + 1.17596 \times 10^{19},\ u^{27} + 2u^{26} + \cdots + 13u +$$
$$I_2^u = \langle -u^{12} + u^{11} - 8u^{10} + 7u^9 - 24u^8 + 17u^7 - 33u^6 + 15u^5 - 19u^4 - 2u^2 + b - 4u,$$
$$u^{12} - u^{11} + 8u^{10} - 7u^9 + 24u^8 - 17u^7 + 33u^6 - 15u^5 + 20u^4 - u^3 + 5u^2 + a + 2u + 2,$$
$$u^{13} - u^{12} + 9u^{11} - 8u^{10} + 31u^9 - 23u^8 + 50u^7 - 26u^6 + 36u^5 - 5u^4 + 8u^3 + 6u^2 + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 40 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. $I^u_1 = \langle -1.89\times10^{16}u^{26} - 7.56\times10^{16}u^{25} + \cdots + 3.82\times10^{17}b - 2.37\times10^{17},\ 7.72\times10^{17}u^{26} + 1.53\times10^{18}u^{25} + \cdots + 3.82\times10^{17}a + 1.18\times10^{19},\ u^{27} + 2u^{26} + \cdots + 13u + 1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-2.02285u^{26} - 4.01168u^{25} + \cdots + 52.8694u - 30.8031\\0.0494422u^{26} + 0.198144u^{25} + \cdots - 4.98870u + 0.620042\end{pmatrix}$$
$$a_3 = \begin{pmatrix}2.30870u^{26} + 4.40950u^{25} + \cdots - 64.8476u + 32.0288\\-0.147916u^{26} - 0.156483u^{25} + \cdots + 5.40884u - 0.571583\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u^2+1\\-u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1.84488u^{26} - 3.63901u^{25} + \cdots + 46.6032u - 30.4259\\-0.0335197u^{26} + 0.124979u^{25} + \cdots - 3.47040u + 0.729526\end{pmatrix}$$
$$a_2 = \begin{pmatrix}5.51519u^{26} + 10.4146u^{25} + \cdots - 140.640u + 79.5005\\-0.539565u^{26} - 0.738431u^{25} + \cdots + 12.0070u - 1.51404\end{pmatrix}$$
$$a_7 = \begin{pmatrix}6.44254u^{26} + 12.6459u^{25} + \cdots - 163.824u + 94.6771\\0.187806u^{26} + 0.130509u^{25} + \cdots + 3.17687u - 2.60252\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-4.41532u^{26} - 8.66985u^{25} + \cdots + 116.266u - 63.9888\\-0.0901988u^{26} - 0.0255952u^{25} + \cdots + 1.47740u + 1.99746\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{512696248127693729}{381765450474394411}u^{26} - \frac{1173688396623260553}{381765450474394411}u^{25} + \cdots + \frac{2397498641688258979З}{381765450474394411}u - \frac{7032162693009829437}{381765450474394411}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27} + 43u^{26} + \cdots + 32307u + 14641$
c_2, c_7	$u^{27} + u^{26} + \cdots - 451u - 121$
c_3, c_9	$u^{27} - u^{26} + \cdots + 57u + 173$
c_4, c_5, c_{11} c_{12}	$u^{27} + 2u^{26} + \cdots + 13u + 1$
c_6	$u^{27} - 30u^{25} + \cdots + 20449u - 8017$
c_8	$u^{27} - 5u^{26} + \cdots - 38u + 7$
c_{10}	$u^{27} - 22u^{25} + \cdots + 125u - 21$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} - 111y^{26} + \cdots + 6730511623y - 214358881$
c_2, c_7	$y^{27} - 43y^{26} + \cdots + 32307y - 14641$
c_3, c_9	$y^{27} - 11y^{26} + \cdots + 147185y - 29929$
c_4, c_5, c_{11} c_{12}	$y^{27} + 38y^{26} + \cdots + 237y - 1$
c_6	$y^{27} - 60y^{26} + \cdots - 129367431y - 64272289$
c_8	$y^{27} - 7y^{26} + \cdots + 1402y - 49$
c_{10}	$y^{27} - 44y^{26} + \cdots - 965y - 441$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.038928 + 1.096540I$ $a = 0.339795 - 0.956003I$ $b = -0.047794 + 0.583517I$	$-1.18227 + 2.78711I$	$-8.53482 - 4.99224I$
$u = 0.038928 - 1.096540I$ $a = 0.339795 + 0.956003I$ $b = -0.047794 - 0.583517I$	$-1.18227 - 2.78711I$	$-8.53482 + 4.99224I$
$u = -0.060221 + 1.114710I$ $a = -0.818699 + 1.150860I$ $b = 0.00282 - 2.15523I$	$-11.46510 - 0.44076I$	$-9.43738 - 0.19503I$
$u = -0.060221 - 1.114710I$ $a = -0.818699 - 1.150860I$ $b = 0.00282 + 2.15523I$	$-11.46510 + 0.44076I$	$-9.43738 + 0.19503I$
$u = -1.18869$ $a = -0.494164$ $b = 0.786510$	-9.76195	-9.69870
$u = -0.319861 + 0.734406I$ $a = 1.137130 - 0.483412I$ $b = 0.082638 - 0.422987I$	$-2.86657 - 2.08543I$	$-10.74476 + 3.06559I$
$u = -0.319861 - 0.734406I$ $a = 1.137130 + 0.483412I$ $b = 0.082638 + 0.422987I$	$-2.86657 + 2.08543I$	$-10.74476 - 3.06559I$
$u = 0.374600 + 0.697774I$ $a = -0.765943 - 0.335826I$ $b = 0.067516 + 0.335617I$	$-0.19323 + 1.53182I$	$-2.51900 - 3.03384I$
$u = 0.374600 - 0.697774I$ $a = -0.765943 + 0.335826I$ $b = 0.067516 - 0.335617I$	$-0.19323 - 1.53182I$	$-2.51900 + 3.03384I$
$u = 0.445707 + 1.146890I$ $a = -0.198922 + 0.327688I$ $b = 0.275375 + 0.416461I$	$-0.824285 + 1.070290I$	$-8.64760 + 1.85610I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.445707 - 1.146890I$ $a = -0.198922 - 0.327688I$ $b = 0.275375 - 0.416461I$	$-0.824285 - 1.070290I$	$-8.64760 - 1.85610I$
$u = -0.803778 + 1.109510I$ $a = -0.585598 + 0.655588I$ $b = -0.0328420 - 0.1176830I$	$-13.1170 - 6.5745I$	$-9.22636 + 4.44172I$
$u = -0.803778 - 1.109510I$ $a = -0.585598 - 0.655588I$ $b = -0.0328420 + 0.1176830I$	$-13.1170 + 6.5745I$	$-9.22636 - 4.44172I$
$u = -0.11687 + 1.62312I$ $a = -1.64946 + 0.43051I$ $b = 3.21083 - 0.53420I$	$-11.01260 - 3.84052I$	$-10.07314 + 2.86056I$
$u = -0.11687 - 1.62312I$ $a = -1.64946 - 0.43051I$ $b = 3.21083 + 0.53420I$	$-11.01260 + 3.84052I$	$-10.07314 - 2.86056I$
$u = 0.11486 + 1.65386I$ $a = 1.306150 - 0.183873I$ $b = -2.63732 + 0.04241I$	$-8.53404 + 3.33702I$	$-6.52566 + 0.I$
$u = 0.11486 - 1.65386I$ $a = 1.306150 + 0.183873I$ $b = -2.63732 - 0.04241I$	$-8.53404 - 3.33702I$	$-6.52566 + 0.I$
$u = 0.314955 + 0.040141I$ $a = -1.52461 - 0.75675I$ $b = -0.092808 + 1.092340I$	$2.49846 + 1.59988I$	$3.26170 - 4.46285I$
$u = 0.314955 - 0.040141I$ $a = -1.52461 + 0.75675I$ $b = -0.092808 - 1.092340I$	$2.49846 - 1.59988I$	$3.26170 + 4.46285I$
$u = -0.291278$ $a = -0.909250$ $b = -0.503041$	-0.940177	-10.5360

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.02099 + 1.78831I$ $a = 1.199340 + 0.558142I$ $b = -2.31418 - 0.09316I$	$17.2683 - 0.8391I$	0
$u = -0.02099 - 1.78831I$ $a = 1.199340 - 0.558142I$ $b = -2.31418 + 0.09316I$	$17.2683 + 0.8391I$	0
$u = -0.23930 + 1.77241I$ $a = 1.50180 + 0.12267I$ $b = -2.92542 - 0.18853I$	$16.5332 - 10.9055I$	0
$u = -0.23930 - 1.77241I$ $a = 1.50180 - 0.12267I$ $b = -2.92542 + 0.18853I$	$16.5332 + 10.9055I$	0
$u = 0.04590 + 1.81690I$ $a = -1.197200 - 0.034284I$ $b = 2.33171 - 0.21126I$	$-12.44700 + 3.08894I$	0
$u = 0.04590 - 1.81690I$ $a = -1.197200 + 0.034284I$ $b = 2.33171 + 0.21126I$	$-12.44700 - 3.08894I$	0
$u = -0.0678774$ $a = -33.0841$ $b = 0.875475$	-7.70070	-21.8510

II.

$$\boldsymbol{I_2^u = \langle -u^{12}+u^{11}+\cdots+b-4u,\ u^{12}-u^{11}+\cdots+a+2,\ u^{13}-u^{12}+\cdots+6u^2+1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{12}+u^{11}+\cdots-2u-2 \\ u^{12}-u^{11}+8u^{10}-7u^9+24u^8-17u^7+33u^6-15u^5+19u^4+2u^2+4u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{12}-u^{11}+\cdots+9u^2+4u \\ u^9-u^8+6u^7-5u^6+12u^5-7u^4+9u^3+u+2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{12}+u^{11}+\cdots+u-2 \\ 2u^{12}-2u^{11}+\cdots+2u^2+5u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^{12}-3u^{11}+\cdots+u-1 \\ u^{11}+7u^9+17u^7+u^6+17u^5+4u^4+10u^3+5u^2+5u+2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{12}-u^{11}+\cdots-6u+3 \\ -u^{12}-6u^{10}+\cdots-2u-1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{10}+2u^9-8u^8+13u^7-24u^6+29u^5-31u^4+23u^3-13u^2+3u \\ -u^{12}+2u^{11}+\cdots-3u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= 2u^{12}-4u^{11}+19u^{10}-31u^9+70u^8-87u^7+119u^6-101u^5+82u^4-37u^3+7u^2+u-11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 16y^{12} + \cdots - 10y - 1$
c_2, c_7	$y^{13} - 12y^{12} + \cdots + 6y - 1$
c_3, c_9	$y^{13} + 8y^{12} + \cdots - 8y - 1$
c_4, c_5, c_{11} c_{12}	$y^{13} + 17y^{12} + \cdots - 12y - 1$
c_6	$y^{13} - 5y^{12} + \cdots - 4y - 1$
c_8	$y^{13} + 4y^{12} + \cdots + 5y - 1$
c_{10}	$y^{13} - 17y^{12} + \cdots - 10y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.133548 + 1.037260I$ $a = -0.533043 + 0.773593I$ $b = 0.502915 - 0.004440I$	$-0.15268 + 2.04240I$	$-3.65004 - 2.96160I$
$u = 0.133548 - 1.037260I$ $a = -0.533043 - 0.773593I$ $b = 0.502915 + 0.004440I$	$-0.15268 - 2.04240I$	$-3.65004 + 2.96160I$
$u = 0.595022 + 0.705190I$ $a = -0.707954 - 0.450630I$ $b = 0.334443 - 0.017859I$	$-0.95065 + 2.25169I$	$-8.21474 - 6.15376I$
$u = 0.595022 - 0.705190I$ $a = -0.707954 + 0.450630I$ $b = 0.334443 + 0.017859I$	$-0.95065 - 2.25169I$	$-8.21474 + 6.15376I$
$u = -0.18499 + 1.50758I$ $a = -1.06900 + 1.10979I$ $b = 1.96964 - 2.19015I$	$-12.75340 - 2.45911I$	$-12.84063 + 2.25061I$
$u = -0.18499 - 1.50758I$ $a = -1.06900 - 1.10979I$ $b = 1.96964 + 2.19015I$	$-12.75340 + 2.45911I$	$-12.84063 - 2.25061I$
$u = -0.458933$ $a = -3.86284$ $b = 0.172095$	-7.33687	0.945020
$u = 0.01093 + 1.55303I$ $a = 0.566263 - 0.677012I$ $b = -1.203680 + 0.099823I$	$-4.99307 - 1.29173I$	$-8.47906 + 1.03783I$
$u = 0.01093 - 1.55303I$ $a = 0.566263 + 0.677012I$ $b = -1.203680 - 0.099823I$	$-4.99307 + 1.29173I$	$-8.47906 - 1.03783I$
$u = 0.047246 + 0.397006I$ $a = -1.63460 - 0.77504I$ $b = 0.15026 + 1.40825I$	$1.86356 - 1.48404I$	$-10.17394 + 1.43832I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.047246 - 0.397006I$ $a = -1.63460 + 0.77504I$ $b = \quad 0.15026 - 1.40825I$	$1.86356 + 1.48404I$	$-10.17394 - 1.43832I$
$u = \quad 0.12770 + 1.61697I$ $a = \quad 1.309750 - 0.068445I$ $b = -2.83963 + 0.06093I$	$-8.95416 + 4.67635I$	$-7.61410 - 5.21153I$
$u = \quad 0.12770 - 1.61697I$ $a = \quad 1.309750 + 0.068445I$ $b = -2.83963 - 0.06093I$	$-8.95416 - 4.67635I$	$-7.61410 + 5.21153I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{13}-12u^{12}+\cdots+6u-1)(u^{27}+43u^{26}+\cdots+32307u+14641)$
c_2	$(u^{13}-6u^{11}+\cdots+3u^2-1)(u^{27}+u^{26}+\cdots-451u-121)$
c_3	$(u^{13}+4u^{11}+u^{10}+3u^9+3u^8-3u^7+u^6-u^5-5u^4+2u^3-4u^2-1)$ $\cdot(u^{27}-u^{26}+\cdots+57u+173)$
c_4, c_5	$(u^{13}-u^{12}+\cdots+6u^2+1)(u^{27}+2u^{26}+\cdots+13u+1)$
c_6	$(u^{13}-u^{12}+\cdots-4u+1)(u^{27}-30u^{25}+\cdots+20449u-8017)$
c_7	$(u^{13}-6u^{11}+\cdots-3u^2+1)(u^{27}+u^{26}+\cdots-451u-121)$
c_8	$(u^{13}+4u^{12}+\cdots-u-1)(u^{27}-5u^{26}+\cdots-38u+7)$
c_9	$(u^{13}+4u^{11}-u^{10}+3u^9-3u^8-3u^7-u^6-u^5+5u^4+2u^3+4u^2+1)$ $\cdot(u^{27}-u^{26}+\cdots+57u+173)$
c_{10}	$(u^{13}+5u^{12}+\cdots+4u+1)(u^{27}-22u^{25}+\cdots+125u-21)$
c_{11}, c_{12}	$(u^{13}+u^{12}+\cdots-6u^2-1)(u^{27}+2u^{26}+\cdots+13u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{13} - 16y^{12} + \cdots - 10y - 1)$ $\cdot\,(y^{27} - 111y^{26} + \cdots + 6730511623y - 214358881)$
c_2, c_7	$(y^{13} - 12y^{12} + \cdots + 6y - 1)(y^{27} - 43y^{26} + \cdots + 32307y - 14641)$
c_3, c_9	$(y^{13} + 8y^{12} + \cdots - 8y - 1)(y^{27} - 11y^{26} + \cdots + 147185y - 29929)$
c_4, c_5, c_{11} c_{12}	$(y^{13} + 17y^{12} + \cdots - 12y - 1)(y^{27} + 38y^{26} + \cdots + 237y - 1)$
c_6	$(y^{13} - 5y^{12} + \cdots - 4y - 1)$ $\cdot\,(y^{27} - 60y^{26} + \cdots - 129367431y - 64272289)$
c_8	$(y^{13} + 4y^{12} + \cdots + 5y - 1)(y^{27} - 7y^{26} + \cdots + 1402y - 49)$
c_{10}	$(y^{13} - 17y^{12} + \cdots - 10y - 1)(y^{27} - 44y^{26} + \cdots - 965y - 441)$