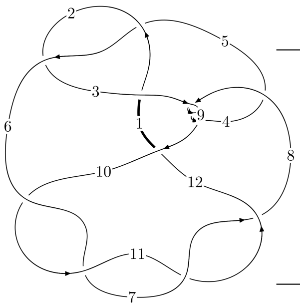
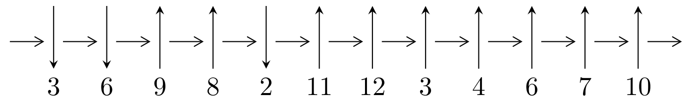
$12n_{0466}$ ($K12n_{0466}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -296878516u^{31} - 276724358u^{30} + \cdots + 4411717721b - 537239537,$$
$$-397220095u^{31} - 1740337107u^{30} + \cdots + 882343442a - 7870777298,\ u^{32} + 2u^{31} + \cdots + 6u + 1 \rangle$$
$$I_2^u = \langle b - 1,\ a^2 + 2a - 2u - 3,\ u^2 + u - 1 \rangle$$
$$I_3^u = \langle b + 1,\ a - 1,\ u^2 - u - 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 38 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.
$\boldsymbol{I^u_1 = \langle -2.97\times10^{8}u^{31} - 2.77\times10^{8}u^{30} + \cdots + 4.41\times10^{8}b - 5.37\times10^{8},\ -3.97\times10^{8}u^{31} - 1.74\times10^{9}u^{30} + \cdots + 8.82\times10^{8}a - 7.87\times10^{9},\ u^{32} + 2u^{31} + \cdots + 6u + 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.450188u^{31} + 1.97240u^{30} + \cdots - 8.67806u + 8.92031\\0.672932u^{31} + 0.627249u^{30} + \cdots + 0.391427u + 1.21776\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-2.40634u^{31} - 3.60527u^{30} + \cdots + 10.8122u - 12.0712\\0.218460u^{31} - 0.291561u^{30} + \cdots + 2.47123u - 1.19894\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1.12312u^{31} + 2.59965u^{30} + \cdots - 8.28663u + 10.1381\\0.672932u^{31} + 0.627249u^{30} + \cdots + 0.391427u + 1.21776\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^5+2u^3+u\\u^5-3u^3+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-1.26155u^{31} - 2.69290u^{30} + \cdots + 10.8624u - 9.38644\\-1.03259u^{31} - 0.976097u^{30} + \cdots - 1.09592u - 1.51802\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.145728u^{31} - 1.66532u^{30} + \cdots + 12.4977u - 7.36530\\-1.43787u^{31} - 1.24356u^{30} + \cdots - 2.16974u - 1.82405\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{619975605}{441171721}u^{31} - \frac{1193144219}{441171721}u^{30} + \cdots + \frac{5092498689}{441171721}u + \frac{1186500205}{441171721}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} + 37u^{31} + \cdots + 305u + 1$
c_2, c_5	$u^{32} + 3u^{31} + \cdots - 7u - 1$
c_3, c_8, c_9	$u^{32} + u^{31} + \cdots - 4u + 4$
c_4	$u^{32} - 3u^{31} + \cdots + 12u - 4$
c_6, c_7, c_{10} c_{11}	$u^{32} + 2u^{31} + \cdots + 6u + 1$
c_{12}	$u^{32} + 4u^{31} + \cdots - 20u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} - 77y^{31} + \cdots - 68569y + 1$
c_2, c_5	$y^{32} - 37y^{31} + \cdots - 305y + 1$
c_3, c_8, c_9	$y^{32} - 27y^{31} + \cdots - 208y + 16$
c_4	$y^{32} + 33y^{31} + \cdots - 336y + 16$
c_6, c_7, c_{10} c_{11}	$y^{32} - 36y^{31} + \cdots - 56y + 1$
c_{12}	$y^{32} + 36y^{31} + \cdots - 568y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.647923 + 0.702860I$ $a = -0.11556 - 1.50516I$ $b = -1.60683 + 0.23584I$	$-5.40621 + 7.69916I$	$6.58632 - 5.74078I$
$u = 0.647923 - 0.702860I$ $a = -0.11556 + 1.50516I$ $b = -1.60683 - 0.23584I$	$-5.40621 - 7.69916I$	$6.58632 + 5.74078I$
$u = -0.934535$ $a = 0.920748$ $b = -1.27591$	0.214319	11.1130
$u = -0.528252 + 0.752905I$ $a = 0.219575 - 1.040740I$ $b = 1.65258 + 0.07144I$	$-9.84928 - 2.50165I$	$2.86477 + 2.84418I$
$u = -0.528252 - 0.752905I$ $a = 0.219575 + 1.040740I$ $b = 1.65258 - 0.07144I$	$-9.84928 + 2.50165I$	$2.86477 - 2.84418I$
$u = 0.383863 + 0.766338I$ $a = -0.382365 - 0.514382I$ $b = -1.62188 - 0.11406I$	$-6.19158 - 2.80814I$	$5.10038 + 0.76938I$
$u = 0.383863 - 0.766338I$ $a = -0.382365 + 0.514382I$ $b = -1.62188 + 0.11406I$	$-6.19158 + 2.80814I$	$5.10038 - 0.76938I$
$u = -0.750792$ $a = -1.84633$ $b = 0.310110$	5.68749	17.7080
$u = 0.505153 + 0.538065I$ $a = 0.446790 + 1.310620I$ $b = 0.571805 - 0.732824I$	$1.93515 + 4.07265I$	$8.92952 - 7.04568I$
$u = 0.505153 - 0.538065I$ $a = 0.446790 - 1.310620I$ $b = 0.571805 + 0.732824I$	$1.93515 - 4.07265I$	$8.92952 + 7.04568I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.395138 + 0.481331I$ $a = -0.551243 - 0.194239I$ $b = 0.642691 + 0.571386I$	$1.68006 - 0.53375I$	$7.96422 - 0.32995I$
$u = 0.395138 - 0.481331I$ $a = -0.551243 + 0.194239I$ $b = 0.642691 - 0.571386I$	$1.68006 + 0.53375I$	$7.96422 + 0.32995I$
$u = -1.40514 + 0.25786I$ $a = 0.848313 + 0.771560I$ $b = -1.59035 - 0.06318I$	$-0.512682 - 0.890588I$	$8.15263 + 0.I$
$u = -1.40514 - 0.25786I$ $a = 0.848313 - 0.771560I$ $b = -1.59035 + 0.06318I$	$-0.512682 + 0.890588I$	$8.15263 + 0.I$
$u = 1.44428 + 0.09174I$ $a = 0.42149 - 1.57076I$ $b = -0.611773 + 0.763659I$	$4.34598 + 2.60375I$	$7.93484 - 3.36675I$
$u = 1.44428 - 0.09174I$ $a = 0.42149 + 1.57076I$ $b = -0.611773 - 0.763659I$	$4.34598 - 2.60375I$	$7.93484 + 3.36675I$
$u = 1.44949$ $a = 0.265813$ $b = 1.38846$	8.83218	9.93110
$u = -1.45288 + 0.07180I$ $a = -0.88013 + 1.22133I$ $b = 0.795382 - 0.670343I$	$7.57700 - 1.16778I$	$11.36341 + 0.54162I$
$u = -1.45288 - 0.07180I$ $a = -0.88013 - 1.22133I$ $b = 0.795382 + 0.670343I$	$7.57700 + 1.16778I$	$11.36341 - 0.54162I$
$u = -1.51955 + 0.16796I$ $a = -0.08132 - 1.78171I$ $b = 0.464019 + 0.904411I$	$8.62955 - 6.62987I$	$12.50269 + 5.26876I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.51955 - 0.16796I$ $a = -0.08132 + 1.78171I$ $b = 0.464019 - 0.904411I$	$8.62955 + 6.62987I$	$12.50269 - 5.26876I$
$u = -0.299017 + 0.362824I$ $a = -0.106458 + 1.400860I$ $b = -0.751935 - 0.325766I$	$-1.32881 - 1.04587I$	$0.13410 + 4.26985I$
$u = -0.299017 - 0.362824I$ $a = -0.106458 - 1.400860I$ $b = -0.751935 + 0.325766I$	$-1.32881 + 1.04587I$	$0.13410 - 4.26985I$
$u = 1.52451 + 0.26507I$ $a = -0.93070 + 1.22794I$ $b = 1.61492 - 0.22198I$	$-3.16368 + 6.23347I$	$6.00000 - 3.63332I$
$u = 1.52451 - 0.26507I$ $a = -0.93070 - 1.22794I$ $b = 1.61492 + 0.22198I$	$-3.16368 - 6.23347I$	$6.00000 + 3.63332I$
$u = 0.451835$ $a = 0.432993$ $b = 0.202201$	0.642131	15.9520
$u = -1.58469$ $a = -0.466896$ $b = 0.692717$	7.78318	17.5750
$u = -1.58841 + 0.23470I$ $a = 0.92703 + 1.56136I$ $b = -1.56211 - 0.33651I$	$2.01653 - 11.20740I$	0
$u = -1.58841 - 0.23470I$ $a = 0.92703 - 1.56136I$ $b = -1.56211 + 0.33651I$	$2.01653 + 11.20740I$	0
$u = 1.61270$ $a = -0.848466$ $b = -0.0619566$	13.8091	18.0020

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.68667$ $a = 1.46963$ $b = -1.31101$	9.57646	6.00000
$u = -0.145893$ $a = 9.44166$ $b = 1.06237$	3.33910	1.65970

II. $I^u_2 = \langle b-1,\ a^2+2a-2u-3,\ u^2+u-1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\u-1\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\-u+1\end{pmatrix}$$
$$a_3 = \begin{pmatrix}a\\1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\-u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}au-2\\-au-2u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}a+1\\1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-a\\-1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-au-u+1\\au-a+u-2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u-1)^4$
c_2	$(u+1)^4$
c_3, c_4, c_8 c_9	$(u^2-2)^2$
c_6, c_7, c_{12}	$(u^2+u-1)^2$
c_{10}, c_{11}	$(u^2-u-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$(y-1)^4$
c_3, c_4, c_8 c_9	$(y-2)^4$
c_6, c_7, c_{10} c_{11}, c_{12}	$(y^2-3y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 1.28825$ $b = 1.00000$	4.27683	12.0000
$u = 0.618034$ $a = -3.28825$ $b = 1.00000$	4.27683	12.0000
$u = -1.61803$ $a = -0.125968$ $b = 1.00000$	12.1725	12.0000
$u = -1.61803$ $a = -1.87403$ $b = 1.00000$	12.1725	12.0000

III. $I_3^u = \langle b+1,\ a-1,\ u^2-u-1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u-1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^2$
c_3, c_4, c_8 c_9	u^2
c_5	$(u+1)^2$
c_6, c_7	$u^2 - u - 1$
c_{10}, c_{11}, c_{12}	$u^2 + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$(y-1)^2$
c_3, c_4, c_8 c_9	y^2
c_6, c_7, c_{10} c_{11}, c_{12}	$y^2 - 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.618034$ $a=\quad 1.00000$ $b=-1.00000$	-0.657974	2.00000
$u=\quad 1.61803$ $a=\quad 1.00000$ $b=-1.00000$	7.23771	2.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{32}+37u^{31}+\cdots+305u+1)$
c_2	$((u-1)^2)(u+1)^4(u^{32}+3u^{31}+\cdots-7u-1)$
c_3, c_8, c_9	$u^2(u^2-2)^2(u^{32}+u^{31}+\cdots-4u+4)$
c_4	$u^2(u^2-2)^2(u^{32}-3u^{31}+\cdots+12u-4)$
c_5	$((u-1)^4)(u+1)^2(u^{32}+3u^{31}+\cdots-7u-1)$
c_6, c_7	$(u^2-u-1)(u^2+u-1)^2(u^{32}+2u^{31}+\cdots+6u+1)$
c_{10}, c_{11}	$((u^2-u-1)^2)(u^2+u-1)(u^{32}+2u^{31}+\cdots+6u+1)$
c_{12}	$((u^2+u-1)^3)(u^{32}+4u^{31}+\cdots-20u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^{32}-77y^{31}+\cdots-68569y+1)$
c_2, c_5	$((y-1)^6)(y^{32}-37y^{31}+\cdots-305y+1)$
c_3, c_8, c_9	$y^2(y-2)^4(y^{32}-27y^{31}+\cdots-208y+16)$
c_4	$y^2(y-2)^4(y^{32}+33y^{31}+\cdots-336y+16)$
c_6, c_7, c_{10} c_{11}	$((y^2-3y+1)^3)(y^{32}-36y^{31}+\cdots-56y+1)$
c_{12}	$((y^2-3y+1)^3)(y^{32}+36y^{31}+\cdots-568y+1)$