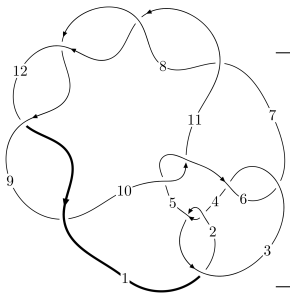
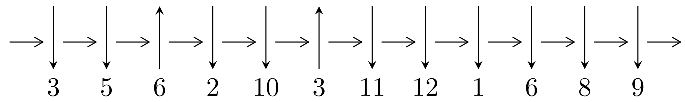
$12n_{0114}$ ($K12n_{0114}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.14531 \times 10^{57} u^{35} - 4.14356 \times 10^{58} u^{34} + \cdots + 1.76003 \times 10^{57} b - 1.59371 \times 10^{59},$$
$$1.28899 \times 10^{58} u^{35} + 5.88274 \times 10^{58} u^{34} + \cdots + 1.76003 \times 10^{57} a + 2.33162 \times 10^{59},\ u^{36} + 5u^{35} + \cdots + 100u +$$

$$I_1^v = \langle a,\ -2v^2 + b - 11v - 5,\ v^3 + 6v^2 + 5v + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 39 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. $\boldsymbol{I_1^u = \langle -9.15 \times 10^{57} u^{35} - 4.14 \times 10^{58} u^{34} + \cdots + 1.76 \times 10^{57} b - 1.59 \times 10^{59},\ 1.29 \times 10^{58} u^{35} + 5.88 \times 10^{58} u^{34} + \cdots + 1.76 \times 10^{57} a + 2.33 \times 10^{59},\ u^{36} + 5u^{35} + \cdots + 100u + 8 \rangle}$

(i) Arc colorings

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

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -7.32365u^{35} - 33.4240u^{34} + \cdots - 1373.93u - 132.476 \\ 5.19610u^{35} + 23.5425u^{34} + \cdots + 929.199u + 90.5501 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.85572u^{35} - 13.0958u^{34} + \cdots - 534.587u - 49.9748 \\ 6.43037u^{35} + 29.3531u^{34} + \cdots + 1194.14u + 116.627 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -8.36579u^{35} - 38.2406u^{34} + \cdots - 1566.57u - 152.043 \\ -7.62009u^{35} - 34.5272u^{34} + \cdots - 1350.03u - 129.988 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.12755u^{35} - 9.88152u^{34} + \cdots - 444.735u - 41.9259 \\ 5.19610u^{35} + 23.5425u^{34} + \cdots + 929.199u + 90.5501 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -7.87506u^{35} - 36.0437u^{34} + \cdots - 1496.97u - 147.313 \\ -6.09885u^{35} - 27.8847u^{34} + \cdots - 1136.15u - 110.850 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.77621u^{35} + 8.15902u^{34} + \cdots + 360.821u + 36.4622 \\ -6.09885u^{35} - 27.8847u^{34} + \cdots - 1136.15u - 110.850 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.77621u^{35} + 8.15902u^{34} + \cdots + 360.821u + 36.4622 \\ -6.43037u^{35} - 29.3531u^{34} + \cdots - 1194.14u - 116.627 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -7.53767u^{35} - 34.2907u^{34} + \cdots - 1382.29u - 132.035 \\ -7.62009u^{35} - 34.5272u^{34} + \cdots - 1350.03u - 129.988 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6.83261u^{35} - 31.8751u^{34} + \cdots - 1561.72u - 175.808$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36} + 16u^{35} + \cdots + 1288u + 1$
c_2, c_4	$u^{36} - 4u^{35} + \cdots + 40u - 1$
c_3, c_6	$u^{36} + 5u^{35} + \cdots + 100u + 8$
c_5, c_{10}	$u^{36} - 2u^{35} + \cdots + u - 1$
c_7, c_8, c_9 c_{11}, c_{12}	$u^{36} + 2u^{35} + \cdots + 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} + 12y^{35} + \cdots - 1626228y + 1$
c_2, c_4	$y^{36} - 16y^{35} + \cdots - 1288y + 1$
c_3, c_6	$y^{36} - 21y^{35} + \cdots - 2896y + 64$
c_5, c_{10}	$y^{36} - 10y^{35} + \cdots - 15y + 1$
c_7, c_8, c_9 c_{11}, c_{12}	$y^{36} - 46y^{35} + \cdots - 15y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.951665 + 0.111092I$ $a = -0.431237 - 0.863781I$ $b = -1.016850 + 0.561715I$	$-7.17502 - 0.39945I$	$-11.42530 - 2.21050I$
$u = -0.951665 - 0.111092I$ $a = -0.431237 + 0.863781I$ $b = -1.016850 - 0.561715I$	$-7.17502 + 0.39945I$	$-11.42530 + 2.21050I$
$u = -1.135690 + 0.254702I$ $a = 0.146387 - 0.970130I$ $b = 1.133020 + 0.740784I$	$0.62483 - 2.04170I$	$-10.35918 + 1.70065I$
$u = -1.135690 - 0.254702I$ $a = 0.146387 + 0.970130I$ $b = 1.133020 - 0.740784I$	$0.62483 + 2.04170I$	$-10.35918 - 1.70065I$
$u = 1.170730 + 0.165186I$ $a = -0.146630 - 1.072540I$ $b = 0.723486 + 1.096980I$	$0.80642 + 2.95434I$	$-10.23945 - 4.42135I$
$u = 1.170730 - 0.165186I$ $a = -0.146630 + 1.072540I$ $b = 0.723486 - 1.096980I$	$0.80642 - 2.95434I$	$-10.23945 + 4.42135I$
$u = 1.093820 + 0.450940I$ $a = 0.198422 + 1.111360I$ $b = -0.80338 - 1.18468I$	$-8.47527 + 5.02113I$	$-12.68797 - 4.01507I$
$u = 1.093820 - 0.450940I$ $a = 0.198422 - 1.111360I$ $b = -0.80338 + 1.18468I$	$-8.47527 - 5.02113I$	$-12.68797 + 4.01507I$
$u = -0.124199 + 0.801257I$ $a = 0.665075 - 0.293846I$ $b = 0.553901 - 0.383757I$	$-0.98172 + 1.29447I$	$-8.27671 - 4.94353I$
$u = -0.124199 - 0.801257I$ $a = 0.665075 + 0.293846I$ $b = 0.553901 + 0.383757I$	$-0.98172 - 1.29447I$	$-8.27671 + 4.94353I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.362629 + 0.610597I$ $a = 2.69945 + 2.81797I$ $b = 0.262208 - 0.537409I$	$-10.67130 - 0.80920I$	$-11.8725 - 7.9012I$
$u = 0.362629 - 0.610597I$ $a = 2.69945 - 2.81797I$ $b = 0.262208 + 0.537409I$	$-10.67130 + 0.80920I$	$-11.8725 + 7.9012I$
$u = 1.299370 + 0.175302I$ $a = 0.109102 - 0.984674I$ $b = -0.711387 + 0.963106I$	$3.93613 + 0.48813I$	$-8.00000 + 0.I$
$u = 1.299370 - 0.175302I$ $a = 0.109102 + 0.984674I$ $b = -0.711387 - 0.963106I$	$3.93613 - 0.48813I$	$-8.00000 + 0.I$
$u = -1.33664$ $a = -0.884238$ $b = 0.733489$	-5.20604	-20.5790
$u = -1.274050 + 0.484036I$ $a = -0.061622 + 1.057230I$ $b = -1.131720 - 0.834492I$	$2.62931 - 6.16336I$	0
$u = -1.274050 - 0.484036I$ $a = -0.061622 - 1.057230I$ $b = -1.131720 + 0.834492I$	$2.62931 + 6.16336I$	0
$u = -0.620095$ $a = -0.352428$ $b = -1.23303$	-7.22329	-9.44110
$u = -0.368042 + 1.337050I$ $a = 0.0916710 + 0.0573874I$ $b = -0.721465 + 0.368329I$	$-3.57709 + 3.06628I$	0
$u = -0.368042 - 1.337050I$ $a = 0.0916710 - 0.0573874I$ $b = -0.721465 - 0.368329I$	$-3.57709 - 3.06628I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.38770 + 0.55268I$ $a = -0.100698 + 0.877700I$ $b = 0.738741 - 0.854400I$	$1.86604 + 3.97837I$	0
$u = 1.38770 - 0.55268I$ $a = -0.100698 - 0.877700I$ $b = 0.738741 + 0.854400I$	$1.86604 - 3.97837I$	0
$u = -1.32289 + 0.71008I$ $a = -0.001088 - 1.100240I$ $b = 1.13619 + 0.89382I$	$-0.47169 - 10.13360I$	0
$u = -1.32289 - 0.71008I$ $a = -0.001088 + 1.100240I$ $b = 1.13619 - 0.89382I$	$-0.47169 + 10.13360I$	0
$u = 0.109684 + 0.468653I$ $a = -4.34383 - 0.78050I$ $b = -0.305755 + 0.402075I$	$-2.47816 - 0.36322I$	$-22.4241 - 7.2894I$
$u = 0.109684 - 0.468653I$ $a = -4.34383 + 0.78050I$ $b = -0.305755 - 0.402075I$	$-2.47816 + 0.36322I$	$-22.4241 + 7.2894I$
$u = -0.457715$ $a = -0.349404$ $b = 1.88779$	-18.9939	0.748010
$u = -0.419542$ $a = 3.94537$ $b = -0.449274$	-2.16435	6.04220
$u = -1.35964 + 0.90324I$ $a = 0.041014 + 1.132360I$ $b = -1.13264 - 0.93383I$	$-9.5740 - 12.5541I$	0
$u = -1.35964 - 0.90324I$ $a = 0.041014 - 1.132360I$ $b = -1.13264 + 0.93383I$	$-9.5740 + 12.5541I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.55670 + 0.88459I$ $a = 0.149365 - 0.795837I$ $b = -0.795627 + 0.795592I$	$-6.45728 + 5.83835I$	0
$u = 1.55670 - 0.88459I$ $a = 0.149365 + 0.795837I$ $b = -0.795627 - 0.795592I$	$-6.45728 - 5.83835I$	0
$u = -1.82632$ $a = 0.746253$ $b = -0.820048$	-14.0797	0
$u = -0.53066 + 1.74778I$ $a = -0.267774 + 0.061830I$ $b = 0.804398 - 0.366712I$	$-12.28810 + 3.87987I$	0
$u = -0.53066 - 1.74778I$ $a = -0.267774 - 0.061830I$ $b = 0.804398 + 0.366712I$	$-12.28810 - 3.87987I$	0
$u = -0.167275$ $a = 2.39925$ $b = 0.414843$	-0.738035	-13.3280

II. $\boldsymbol{I_1^v = \langle a,\ -2v^2 + b - 11v - 5,\ v^3 + 6v^2 + 5v + 1\rangle}$

(i) Arc colorings

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

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ 2v^2 + 11v + 5 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ v^2 + 6v + 5 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -2v^2 - 11v - 5 \\ -3v^2 - 17v - 9 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2v^2 + 11v + 5 \\ 2v^2 + 11v + 5 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -v^2 - 6v - 4 \\ -v^2 - 6v - 5 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} v^2 + 7v + 4 \\ v^2 + 6v + 5 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} v^2 + 6v + 4 \\ v^2 + 6v + 5 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -v^2 - 6v - 4 \\ -3v^2 - 17v - 9 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6v^2 - 29v - 37$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^3$
c_3, c_6	y^3
c_5, c_7, c_8 c_9, c_{10}, c_{11} c_{12}	$y^3 - 5y^2 + 6y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.643104$ $a = 0$ $b = -1.24698$	-7.98968	-20.8310
$v = -0.307979$ $a = 0$ $b = 1.80194$	-19.2692	-28.6380
$v = -5.04892$ $a = 0$ $b = 0.445042$	-2.34991	-43.5310

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^3)(u^{36}+16u^{35}+\cdots+1288u+1)$
c_2	$((u-1)^3)(u^{36}-4u^{35}+\cdots+40u-1)$
c_3, c_6	$u^3(u^{36}+5u^{35}+\cdots+100u+8)$
c_4	$((u+1)^3)(u^{36}-4u^{35}+\cdots+40u-1)$
c_5	$(u^3-u^2-2u+1)(u^{36}-2u^{35}+\cdots+u-1)$
c_7, c_8, c_9	$(u^3-u^2-2u+1)(u^{36}+2u^{35}+\cdots+7u+1)$
c_{10}	$(u^3+u^2-2u-1)(u^{36}-2u^{35}+\cdots+u-1)$
c_{11}, c_{12}	$(u^3+u^2-2u-1)(u^{36}+2u^{35}+\cdots+7u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^3)(y^{36}+12y^{35}+\cdots-1626228y+1)$
c_2, c_4	$((y-1)^3)(y^{36}-16y^{35}+\cdots-1288y+1)$
c_3, c_6	$y^3(y^{36}-21y^{35}+\cdots-2896y+64)$
c_5, c_{10}	$(y^3-5y^2+6y-1)(y^{36}-10y^{35}+\cdots-15y+1)$
c_7, c_8, c_9 c_{11}, c_{12}	$(y^3-5y^2+6y-1)(y^{36}-46y^{35}+\cdots-15y+1)$