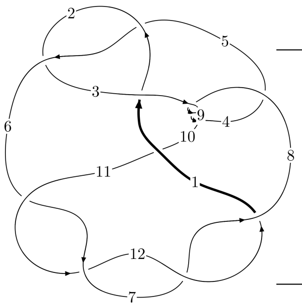
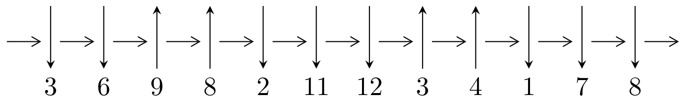
$12n_{0467}$ ($K12n_{0467}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 140613342u^{26} + 233504827u^{25} + \cdots + 1306898116b + 2324027520, \\ & 315767111u^{26} + 587740472u^{25} + \cdots + 1306898116a - 1648431188,\ u^{27} + u^{26} + \cdots - 4u - 4\rangle \\ I_2^u = \langle & 2b - 2a + u,\ 2a^2 - 2au - 2a + u - 1,\ u^2 - 2\rangle \end{aligned}$$

$$I_1^v = \langle a,\ b + v + 1,\ v^2 + v - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 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. $\boldsymbol{I^u_1 = \langle 1.41\times10^{8}u^{26}+2.34\times10^{8}u^{25}+\cdots+1.31\times10^{9}b+2.32\times10^{9},\ 3.16\times10^{8}u^{26}+5.88\times10^{8}u^{25}+\cdots+1.31\times10^{9}a-1.65\times10^{9},\ u^{27}+u^{26}+\cdots-4u-4\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^3+2u \\ -u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.241616u^{26}-0.449722u^{25}+\cdots-13.1892u+1.26133 \\ -0.107593u^{26}-0.178671u^{25}+\cdots-2.19364u-1.77828 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.134023u^{26}-0.271051u^{25}+\cdots-10.9955u+3.03961 \\ -0.107593u^{26}-0.178671u^{25}+\cdots-2.19364u-1.77828 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.134023u^{26}-0.271051u^{25}+\cdots-10.9955u+3.03961 \\ 0.0945547u^{26}-0.183568u^{25}+\cdots-3.27784u-2.32639 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.673320u^{26}-0.574468u^{25}+\cdots-15.4301u+0.529920 \\ -0.102694u^{26}+0.0537208u^{25}+\cdots-3.65606u-0.825481 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.00809889u^{26}+0.000418223u^{25}+\cdots+2.05151u+3.50212 \\ 0.355054u^{26}+0.372385u^{25}+\cdots+7.65668u+1.09099 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.409090u^{26}+0.0395121u^{25}+\cdots-4.08989u+7.12801 \\ -0.180513u^{26}+0.126995u^{25}+\cdots+3.62778u+1.76201 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{9879130}{326724529}u^{26}+\frac{101640265}{326724529}u^{25}+\cdots-\frac{4373584718}{326724529}u+\frac{3242559308}{326724529}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27}+7u^{26}+\cdots+73u+1$
c_2, c_5	$u^{27}+3u^{26}+\cdots+7u+1$
c_3, c_8, c_9	$u^{27}+u^{26}+\cdots-4u-4$
c_4	$u^{27}-3u^{26}+\cdots+612u+220$
c_6, c_7, c_{11} c_{12}	$u^{27}-2u^{26}+\cdots-6u+1$
c_{10}	$u^{27}-2u^{26}+\cdots-20u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} + 33y^{26} + \cdots + 4113y - 1$
c_2, c_5	$y^{27} - 7y^{26} + \cdots + 73y - 1$
c_3, c_8, c_9	$y^{27} - 37y^{26} + \cdots + 336y - 16$
c_4	$y^{27} - 97y^{26} + \cdots + 1370704y - 48400$
c_6, c_7, c_{11} c_{12}	$y^{27} - 30y^{26} + \cdots + 32y - 1$
c_{10}	$y^{27} + 42y^{26} + \cdots + 160y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.910258 + 0.590456I$ $a = 2.00698 + 1.21820I$ $b = 1.50366 - 0.20859I$	$-3.25530 + 7.25549I$	$-5.95539 - 6.08777I$
$u = 0.910258 - 0.590456I$ $a = 2.00698 - 1.21820I$ $b = 1.50366 + 0.20859I$	$-3.25530 - 7.25549I$	$-5.95539 + 6.08777I$
$u = -1.017290 + 0.392893I$ $a = 1.59907 - 0.86702I$ $b = 1.384080 + 0.097780I$	$-2.42951 - 1.33319I$	$-4.55270 + 1.10070I$
$u = -1.017290 - 0.392893I$ $a = 1.59907 + 0.86702I$ $b = 1.384080 - 0.097780I$	$-2.42951 + 1.33319I$	$-4.55270 - 1.10070I$
$u = -1.028180 + 0.401751I$ $a = -0.842937 + 0.402129I$ $b = -0.466581 - 0.606665I$	$3.20449 - 4.27323I$	$-1.36721 + 6.77417I$
$u = -1.028180 - 0.401751I$ $a = -0.842937 - 0.402129I$ $b = -0.466581 + 0.606665I$	$3.20449 + 4.27323I$	$-1.36721 - 6.77417I$
$u = 1.132760 + 0.119465I$ $a = -0.399911 + 0.146187I$ $b = -0.444802 - 0.471118I$	$3.11947 + 0.51181I$	$-0.345493 + 0.472617I$
$u = 1.132760 - 0.119465I$ $a = -0.399911 - 0.146187I$ $b = -0.444802 + 0.471118I$	$3.11947 - 0.51181I$	$-0.345493 - 0.472617I$
$u = 0.068539 + 0.776104I$ $a = -2.94508 - 0.05064I$ $b = -1.42888 - 0.10362I$	$-5.79751 - 2.66305I$	$-8.58849 + 2.68063I$
$u = 0.068539 - 0.776104I$ $a = -2.94508 + 0.05064I$ $b = -1.42888 + 0.10362I$	$-5.79751 + 2.66305I$	$-8.58849 - 2.68063I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.701128$ $a = -0.723697$ $b = 1.54174$	-9.07206	-6.92100
$u = 1.38081$ $a = -0.782809$ $b = -0.202634$	3.22160	2.65910
$u = -1.43515$ $a = 1.63913$ $b = 1.62828$	-3.96458	-1.96340
$u = 0.093206 + 0.505933I$ $a = 0.909549 - 0.188312I$ $b = 0.279075 - 0.365424I$	$-0.272367 + 1.017390I$	$-4.41879 - 6.56996I$
$u = 0.093206 - 0.505933I$ $a = 0.909549 + 0.188312I$ $b = 0.279075 + 0.365424I$	$-0.272367 - 1.017390I$	$-4.41879 + 6.56996I$
$u = -0.462517$ $a = 1.41263$ $b = 0.790251$	-1.60060	-3.53340
$u = -1.60836$ $a = -0.0902962$ $b = -1.36994$	-1.00091	-6.04390
$u = 0.389158$ $a = -3.32064$ $b = -1.64070$	-10.0949	1.45710
$u = -0.327289$ $a = 3.18758$ $b = -0.436653$	-2.27386	5.71450
$u = -1.70507 + 0.18041I$ $a = -1.29573 + 0.99047I$ $b = -1.58969 - 0.26870I$	$5.77830 - 10.34990I$	$-4.51654 + 4.83744I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.70507-0.18041I$ $a=-1.29573-0.99047I$ $b=-1.58969+0.26870I$	$5.77830+10.34990I$	$-4.51654-4.83744I$
$u=1.74296+0.07415I$ $a=-1.029860-0.595198I$ $b=-1.47829+0.32375I$	$7.48038+3.07161I$	$-3.06454-1.05246I$
$u=1.74296-0.07415I$ $a=-1.029860+0.595198I$ $b=-1.47829-0.32375I$	$7.48038-3.07161I$	$-3.06454+1.05246I$
$u=1.74801+0.11240I$ $a=0.591464+0.471611I$ $b=0.634607-0.775759I$	$13.1108+6.4432I$	$-1.45116-4.64591I$
$u=1.74801-0.11240I$ $a=0.591464-0.471611I$ $b=0.634607+0.775759I$	$13.1108-6.4432I$	$-1.45116+4.64591I$
$u=-1.76409+0.02868I$ $a=0.245519+0.313706I$ $b=0.451661-0.831495I$	$13.66050-1.13182I$	$-0.424228-0.165787I$
$u=-1.76409-0.02868I$ $a=0.245519-0.313706I$ $b=0.451661+0.831495I$	$13.66050+1.13182I$	$-0.424228+0.165787I$

II. $I_2^u = \langle 2b - 2a + u,\ 2a^2 - 2au - 2a + u - 1,\ u^2 - 2\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(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	$(u^2-u-1)^2$
c_{10}, c_{11}, c_{12}	$(u^2+u-1)^2$

(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
$u = 1.41421$ $a = 0.0890728$ $b = -0.618034$	2.30291	−8.00000
$u = 1.41421$ $a = 2.32514$ $b = 1.61803$	−5.59278	−8.00000
$u = -1.41421$ $a = 0.910927$ $b = 1.61803$	−5.59278	−8.00000
$u = -1.41421$ $a = -1.32514$ $b = -0.618034$	2.30291	−8.00000

III. $I^v_1 = \langle a,\ b+v+1,\ v^2+v-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -18$

(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, c_{10}	u^2+u-1
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_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.618034$ $a = 0$ $b = -1.61803$	-10.5276	-18.0000
$v = -1.61803$ $a = 0$ $b = 0.618034$	-2.63189	-18.0000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{27}+7u^{26}+\cdots+73u+1)$
c_2	$((u-1)^2)(u+1)^4(u^{27}+3u^{26}+\cdots+7u+1)$
c_3, c_8, c_9	$u^2(u^2-2)^2(u^{27}+u^{26}+\cdots-4u-4)$
c_4	$u^2(u^2-2)^2(u^{27}-3u^{26}+\cdots+612u+220)$
c_5	$((u-1)^4)(u+1)^2(u^{27}+3u^{26}+\cdots+7u+1)$
c_6, c_7	$((u^2-u-1)^2)(u^2+u-1)(u^{27}-2u^{26}+\cdots-6u+1)$
c_{10}	$((u^2+u-1)^3)(u^{27}-2u^{26}+\cdots-20u-1)$
c_{11}, c_{12}	$(u^2-u-1)(u^2+u-1)^2(u^{27}-2u^{26}+\cdots-6u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^{27}+33y^{26}+\cdots+4113y-1)$
c_2, c_5	$((y-1)^6)(y^{27}-7y^{26}+\cdots+73y-1)$
c_3, c_8, c_9	$y^2(y-2)^4(y^{27}-37y^{26}+\cdots+336y-16)$
c_4	$y^2(y-2)^4(y^{27}-97y^{26}+\cdots+1370704y-48400)$
c_6, c_7, c_{11} c_{12}	$((y^2-3y+1)^3)(y^{27}-30y^{26}+\cdots+32y-1)$
c_{10}	$((y^2-3y+1)^3)(y^{27}+42y^{26}+\cdots+160y-1)$