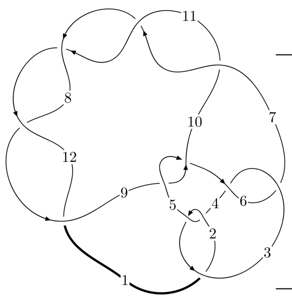
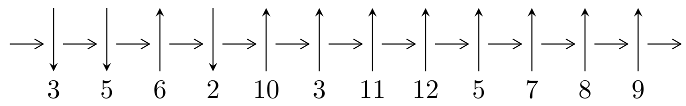
$12n_{0113}$ ($K12n_{0113}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -647354734u^{28} + 978901627u^{27} + \cdots + 2060324449b - 1184912620,$$
$$- 64940111u^{28} + 106362659u^{27} + \cdots + 206032449a + 214765723,\ u^{29} - 2u^{28} + \cdots + u - 1\rangle$$
$$I_2^u = \langle u^2 + b - u - 2,\ a,\ u^3 - u^2 - 2u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 32 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.
$\boldsymbol{I_1^u = \langle -6.47\times 10^8 u^{28} + 9.79\times 10^8 u^{27} + \cdots + 2.06\times 10^8 b - 1.18\times 10^9,\ -6.49\times 10^7 u^{28} + 1.06\times 10^8 u^{27} + \cdots + 2.06\times 10^8 a + 2.15\times 10^8,\ u^{29} - 2u^{28} + \cdots + u - 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.315194u^{28} - 0.516242u^{27} + \cdots + 1.82950u - 1.04239 \\ 3.14200u^{28} - 4.75120u^{27} + \cdots + 6.60148u + 5.75110 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.839121u^{28} + 0.843763u^{27} + \cdots - 1.98749u - 0.119530 \\ 0.215298u^{28} - 0.607510u^{27} + \cdots + 1.52402u + 1.00763 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.05442u^{28} + 1.45127u^{27} + \cdots - 3.51151u - 1.12716 \\ 0.215298u^{28} - 0.607510u^{27} + \cdots + 1.52402u + 1.00763 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 2.20636u^{28} - 2.61370u^{27} + \cdots + 2.80648u - 0.296715 \\ 3.57260u^{28} - 4.96622u^{27} + \cdots + 5.64951u + 5.76636 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^4 + 3u^2 - 1 \\ u^6 - 4u^4 + 3u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 3.16326u^{28} - 3.35382u^{27} + \cdots - 0.465478u + 0.381491 \\ 3.74875u^{28} - 5.35442u^{27} + \cdots + 5.78774u + 6.35427 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 + 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{3792380055}{68677483}u^{28} + \frac{5628748625}{68677483}u^{27} + \cdots - \frac{5070709179}{68677483}u - \frac{6687860995}{68677483}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} + 30u^{28} + \cdots + 530u + 1$
c_2, c_4	$u^{29} - 4u^{28} + \cdots + 18u - 1$
c_3, c_6	$u^{29} + 5u^{28} + \cdots + 84u - 8$
c_5, c_9	$u^{29} + 2u^{28} + \cdots - u - 1$
c_7, c_8, c_{10} c_{11}, c_{12}	$u^{29} - 2u^{28} + \cdots + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} - 58y^{28} + \cdots + 261102y - 1$
c_2, c_4	$y^{29} - 30y^{28} + \cdots + 530y - 1$
c_3, c_6	$y^{29} + 21y^{28} + \cdots + 2256y - 64$
c_5, c_9	$y^{29} + 30y^{27} + \cdots + 9y - 1$
c_7, c_8, c_{10} c_{11}, c_{12}	$y^{29} - 36y^{28} + \cdots + 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.871800 + 0.572952I$ $a = -1.34659 + 0.79448I$ $b = -1.48468 - 0.59106I$	$-6.35449 - 8.78908I$	$6.18505 + 6.40374I$
$u = -0.871800 - 0.572952I$ $a = -1.34659 - 0.79448I$ $b = -1.48468 + 0.59106I$	$-6.35449 + 8.78908I$	$6.18505 - 6.40374I$
$u = 0.915102 + 0.577424I$ $a = -0.630350 - 1.126710I$ $b = -1.262120 - 0.106799I$	$-6.10118 + 0.29510I$	$5.18889 - 1.16439I$
$u = 0.915102 - 0.577424I$ $a = -0.630350 + 1.126710I$ $b = -1.262120 + 0.106799I$	$-6.10118 - 0.29510I$	$5.18889 + 1.16439I$
$u = -1.14574$ $a = 0.540876$ $b = -0.0550040$	5.50698	18.3420
$u = -0.020234 + 0.793792I$ $a = 1.86337 - 0.55939I$ $b = 1.41720 - 0.34042I$	$-8.92001 + 4.25864I$	$2.72812 - 2.59912I$
$u = -0.020234 - 0.793792I$ $a = 1.86337 + 0.55939I$ $b = 1.41720 + 0.34042I$	$-8.92001 - 4.25864I$	$2.72812 + 2.59912I$
$u = -0.699728 + 0.338099I$ $a = 1.36237 - 1.32693I$ $b = 0.968494 + 0.555673I$	$0.16525 - 3.96735I$	$8.32283 + 8.62955I$
$u = -0.699728 - 0.338099I$ $a = 1.36237 + 1.32693I$ $b = 0.968494 - 0.555673I$	$0.16525 + 3.96735I$	$8.32283 - 8.62955I$
$u = 0.680274 + 0.194448I$ $a = 0.272779 + 0.785923I$ $b = 1.128350 - 0.317013I$	$0.478397 + 0.446224I$	$9.33081 - 0.68417I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.680274 - 0.194448I$ $a = 0.272779 - 0.785923I$ $b = 1.128350 + 0.317013I$	$0.478397 - 0.446224I$	$9.33081 + 0.68417I$
$u = -0.439691 + 0.314107I$ $a = -1.42146 - 2.04429I$ $b = -0.346882 - 0.207064I$	$-2.81354 - 1.22096I$	$1.65575 + 5.11958I$
$u = -0.439691 - 0.314107I$ $a = -1.42146 + 2.04429I$ $b = -0.346882 + 0.207064I$	$-2.81354 + 1.22096I$	$1.65575 - 5.11958I$
$u = 0.536642$ $a = -0.443928$ $b = -3.69157$	-0.846423	87.1400
$u = 1.55407 + 0.03946I$ $a = 0.992776 - 0.855482I$ $b = 0.766756 + 0.115816I$	$3.99647 + 2.19066I$	0
$u = 1.55407 - 0.03946I$ $a = 0.992776 + 0.855482I$ $b = 0.766756 - 0.115816I$	$3.99647 - 2.19066I$	0
$u = -1.59090$ $a = 0.405019$ $b = 3.31575$	6.62367	25.1550
$u = 0.394545$ $a = -0.532583$ $b = 0.353791$	0.662854	15.1320
$u = -0.079696 + 0.381721I$ $a = -2.52365 + 0.46294I$ $b = -0.986678 + 0.376786I$	$-1.55597 + 1.38501I$	$1.25824 - 2.95729I$
$u = -0.079696 - 0.381721I$ $a = -2.52365 - 0.46294I$ $b = -0.986678 - 0.376786I$	$-1.55597 - 1.38501I$	$1.25824 + 2.95729I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.61444 + 0.08862I$ $a = -0.653048 - 0.970484I$ $b = -1.011500 + 0.774939I$	$8.13246 + 5.52553I$	0
$u = 1.61444 - 0.08862I$ $a = -0.653048 + 0.970484I$ $b = -1.011500 - 0.774939I$	$8.13246 - 5.52553I$	0
$u = -1.62438 + 0.04713I$ $a = -0.178840 + 0.450917I$ $b = -1.17354 - 1.05585I$	$8.53322 - 1.28090I$	0
$u = -1.62438 - 0.04713I$ $a = -0.178840 - 0.450917I$ $b = -1.17354 + 1.05585I$	$8.53322 + 1.28090I$	0
$u = 1.66621 + 0.17240I$ $a = 0.679212 + 0.775786I$ $b = 1.53044 - 0.82697I$	$2.31087 + 11.70390I$	0
$u = 1.66621 - 0.17240I$ $a = 0.679212 - 0.775786I$ $b = 1.53044 + 0.82697I$	$2.31087 - 11.70390I$	0
$u = -1.68491 + 0.18549I$ $a = 0.244062 - 0.717045I$ $b = 1.081240 + 0.132670I$	$2.80677 - 3.35130I$	0
$u = -1.68491 - 0.18549I$ $a = 0.244062 + 0.717045I$ $b = 1.081240 - 0.132670I$	$2.80677 + 3.35130I$	0
$u = 1.78613$ $a = -0.290652$ $b = -0.177069$	16.3052	0

II. $I_2^u = \langle u^2 + b - u - 2,\ a,\ u^3 - u^2 - 2u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u^2 - 7u - 14$

(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	u^3+u^2-2u-1
c_9, 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_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.24698$ $a = 0$ $b = -0.801938$	4.69981	7.16850
$u = 0.445042$ $a = 0$ $b = 2.24698$	-0.939962	-15.5310
$u = 1.80194$ $a = 0$ $b = 0.554958$	15.9794	-0.637730

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^3)(u^{29}+30u^{28}+\cdots+530u+1)$
c_2	$((u-1)^3)(u^{29}-4u^{28}+\cdots+18u-1)$
c_3, c_6	$u^3(u^{29}+5u^{28}+\cdots+84u-8)$
c_4	$((u+1)^3)(u^{29}-4u^{28}+\cdots+18u-1)$
c_5	$(u^3+u^2-2u-1)(u^{29}+2u^{28}+\cdots-u-1)$
c_7, c_8	$(u^3+u^2-2u-1)(u^{29}-2u^{28}+\cdots+u-1)$
c_9	$(u^3-u^2-2u+1)(u^{29}+2u^{28}+\cdots-u-1)$
c_{10}, c_{11}, c_{12}	$(u^3-u^2-2u+1)(u^{29}-2u^{28}+\cdots+u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^3)(y^{29}-58y^{28}+\cdots+261102y-1)$
c_2, c_4	$((y-1)^3)(y^{29}-30y^{28}+\cdots+530y-1)$
c_3, c_6	$y^3(y^{29}+21y^{28}+\cdots+2256y-64)$
c_5, c_9	$(y^3-5y^2+6y-1)(y^{29}+30y^{27}+\cdots+9y-1)$
c_7, c_8, c_{10} c_{11}, c_{12}	$(y^3-5y^2+6y-1)(y^{29}-36y^{28}+\cdots+9y-1)$