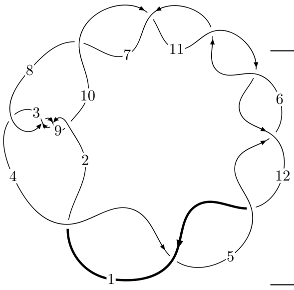
$12a_{1166}$ $(K12a_{1166})$



A knot diagram[1]

Linearized knot diagam

$$\to\downarrow\to\uparrow\to\uparrow\to\downarrow\to\downarrow\to\downarrow\to\downarrow\to\uparrow\to\uparrow\to\downarrow\to\downarrow\to\downarrow\to$$

$$4 \quad 9 \quad 8 \quad 1 \quad 12 \quad 11 \quad 10 \quad 3 \quad 2 \quad 7 \quad 6 \quad 5$$

Solving Sequence

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

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

$$I_1^u = \langle u^{16} - u^{15} + \cdots + 4u^2 + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 16 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. $I^u_1 = \langle u^{16} - u^{15} + 13u^{14} - 12u^{13} + 67u^{12} - 56u^{11} + 174u^{10} - 128u^9 + 239u^8 - 148u^7 + 166u^6 - 80u^5 + 50u^4 - 16u^3 + 4u^2 + 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^3 - 2u \\ u^5 + 3u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^4 + 3u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{12} + 9u^{10} + 29u^8 + 40u^6 + 22u^4 + 5u^2 + 1 \\ u^{12} + 8u^{10} + 22u^8 + 24u^6 + 7u^4 - 2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{11} - 8u^9 - 22u^7 - 24u^5 - 7u^3 + 2u \\ u^{13} + 9u^{11} + 29u^9 + 40u^7 + 22u^5 + 5u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{14} - 4u^{13} + 48u^{12} - 44u^{11} + 224u^{10} - 184u^9 + 512u^8 - 364u^7 + 592u^6 - 344u^5 + 320u^4 - 136u^3 + 64u^2 - 16u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_{10} c_{11}, c_{12}	$u^{16} - u^{15} + \cdots + 4u^2 + 1$
c_2, c_3, c_8 c_9	$u^{16} + u^{15} + \cdots + 4u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_{10} c_{11}, c_{12}	$y^{16} + 25y^{15} + \cdots + 8y + 1$
c_2, c_3, c_8 c_9	$y^{16} + 17y^{15} + \cdots + 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.266756 + 0.861670I$	$-2.78433 - 3.76215I$	$-1.09418 + 4.53358I$
$u = 0.266756 - 0.861670I$	$-2.78433 + 3.76215I$	$-1.09418 - 4.53358I$
$u = -0.094119 + 0.885317I$	$3.49312 + 1.66857I$	$3.40247 - 4.85811I$
$u = -0.094119 - 0.885317I$	$3.49312 - 1.66857I$	$3.40247 + 4.85811I$
$u = 0.11360 + 1.44941I$	$5.02280 - 5.17293I$	$0.10018 + 3.19792I$
$u = 0.11360 - 1.44941I$	$5.02280 + 5.17293I$	$0.10018 - 3.19792I$
$u = -0.03738 + 1.46774I$	$11.53240 + 2.15406I$	$3.63368 - 3.21855I$
$u = -0.03738 - 1.46774I$	$11.53240 - 2.15406I$	$3.63368 + 3.21855I$
$u = 0.438466 + 0.268135I$	$-6.29237 - 1.42936I$	$-6.44952 + 4.15175I$
$u = 0.438466 - 0.268135I$	$-6.29237 + 1.42936I$	$-6.44952 - 4.15175I$
$u = -0.206108 + 0.255692I$	$-0.105962 + 0.719255I$	$-3.55239 - 9.63825I$
$u = -0.206108 - 0.255692I$	$-0.105962 - 0.719255I$	$-3.55239 + 9.63825I$
$u = 0.02776 + 1.85644I$	$17.5528 - 5.9083I$	$0.36622 + 2.67952I$
$u = 0.02776 - 1.85644I$	$17.5528 + 5.9083I$	$0.36622 - 2.67952I$
$u = -0.00897 + 1.86144I$	$-15.2590 + 2.3986I$	$3.59355 - 2.68294I$
$u = -0.00897 - 1.86144I$	$-15.2590 - 2.3986I$	$3.59355 + 2.68294I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_{10} c_{11}, c_{12}	$u^{16} - u^{15} + \cdots + 4u^2 + 1$
c_2, c_3, c_8 c_9	$u^{16} + u^{15} + \cdots + 4u^2 + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_{10} c_{11}, c_{12}	$y^{16} + 25y^{15} + \cdots + 8y + 1$
c_2, c_3, c_8 c_9	$y^{16} + 17y^{15} + \cdots + 8y + 1$