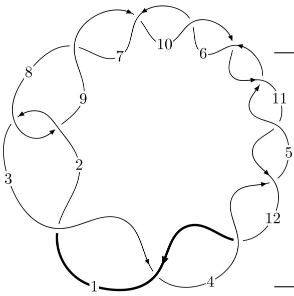
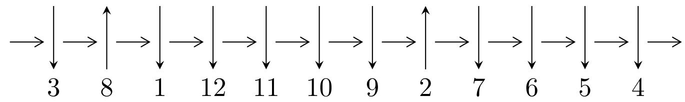
$12a_{0803}$ ($K12a_{0803}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{10} + u^9 + 9u^8 + 8u^7 + 28u^6 + 21u^5 + 35u^4 + 20u^3 + 15u^2 + 5u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 10 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. $\boldsymbol{I^u_1 = \langle u^{10} + u^9 + 9u^8 + 8u^7 + 28u^6 + 21u^5 + 35u^4 + 20u^3 + 15u^2 + 5u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^9 - 4u^8 - 36u^7 - 32u^6 - 112u^5 - 84u^4 - 140u^3 - 80u^2 - 60u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7 c_9, c_{10}, c_{11} c_{12}	$u^{10} + u^9 + 9u^8 + 8u^7 + 28u^6 + 21u^5 + 35u^4 + 20u^3 + 15u^2 + 5u + 1$
c_2, c_8	$u^{10} - u^9 + u^8 + 4u^6 - 3u^5 + 3u^4 + 3u^2 - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7 c_9, c_{10}, c_{11} c_{12}	$y^{10} + 17y^9 + \cdots + 5y + 1$
c_2, c_8	$y^{10} + y^9 + 9y^8 + 8y^7 + 28y^6 + 21y^5 + 35y^4 + 20y^3 + 15y^2 + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.143160 + 0.750904I$	$2.80855 + 2.01562I$	$1.02004 - 5.14009I$
$u = -0.143160 - 0.750904I$	$2.80855 - 2.01562I$	$1.02004 + 5.14009I$
$u = -0.077356 + 1.254400I$	$9.46500 + 2.79918I$	$1.80410 - 3.17670I$
$u = -0.077356 - 1.254400I$	$9.46500 - 2.79918I$	$1.80410 + 3.17670I$
$u = -0.03400 + 1.65519I$	$-19.6410 + 3.2955I$	$1.95039 - 2.41562I$
$u = -0.03400 - 1.65519I$	$-19.6410 - 3.2955I$	$1.95039 + 2.41562I$
$u = -0.237002 + 0.228003I$	$-0.265356 + 0.793433I$	$-6.76524 - 8.43244I$
$u = -0.237002 - 0.228003I$	$-0.265356 - 0.793433I$	$-6.76524 + 8.43244I$
$u = -0.00849 + 1.91177I$	$-5.52666 + 3.57388I$	$1.99071 - 2.09226I$
$u = -0.00849 - 1.91177I$	$-5.52666 - 3.57388I$	$1.99071 + 2.09226I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7 c_9, c_{10}, c_{11} c_{12}	$u^{10} + u^9 + 9u^8 + 8u^7 + 28u^6 + 21u^5 + 35u^4 + 20u^3 + 15u^2 + 5u + 1$
c_2, c_8	$u^{10} - u^9 + u^8 + 4u^6 - 3u^5 + 3u^4 + 3u^2 - u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_6, c_7 c_9, c_{10}, c_{11} c_{12}	$y^{10} + 17y^9 + \cdots + 5y + 1$
c_2, c_8	$y^{10} + y^9 + 9y^8 + 8y^7 + 28y^6 + 21y^5 + 35y^4 + 20y^3 + 15y^2 + 5y + 1$