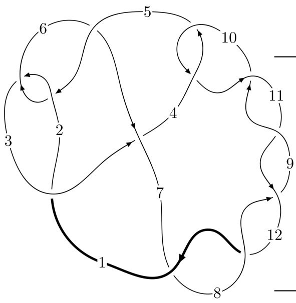
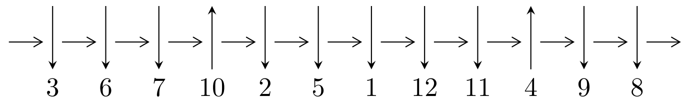
$12a_{0239}$ $(K12a_{0239})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{43} + u^{42} + \cdots + 4u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 43 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. $I_1^u = \langle u^{43} + u^{42} + \cdots + 4u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^8 + u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^9 + 2u^7 - 3u^5 + 2u^3 - u \\ -u^{11} + u^9 - 2u^7 + u^5 - u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{16} + 3u^{14} - 7u^{12} + 10u^{10} - 11u^8 + 8u^6 - 4u^4 + 1 \\ -u^{18} + 2u^{16} - 5u^{14} + 6u^{12} - 7u^{10} + 6u^8 - 4u^6 + 2u^4 - u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{23} + 4u^{21} + \cdots + 4u^3 - 2u \\ -u^{25} + 3u^{23} + \cdots - 3u^5 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{30} + 5u^{28} + \cdots + 2u^2 + 1 \\ -u^{32} + 4u^{30} + \cdots + 4u^4 - 2u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{37} + 6u^{35} + \cdots + 4u^3 - 3u \\ -u^{39} + 5u^{37} + \cdots + 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{42} + 28u^{40} + \cdots - 48u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{43} + 13u^{42} + \cdots - 2u + 1$
c_2, c_5	$u^{43} + u^{42} + \cdots + 4u + 1$
c_3	$u^{43} - u^{42} + \cdots + 1822u + 673$
c_4, c_{10}	$u^{43} + u^{42} + \cdots + 2u + 1$
c_7, c_8, c_9 c_{11}, c_{12}	$u^{43} + 7u^{42} + \cdots - 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{43} + 35y^{42} + \cdots - 58y - 1$
c_2, c_5	$y^{43} - 13y^{42} + \cdots - 2y - 1$
c_3	$y^{43} + 23y^{42} + \cdots - 3215146y - 452929$
c_4, c_{10}	$y^{43} + 7y^{42} + \cdots - 2y - 1$
c_7, c_8, c_9 c_{11}, c_{12}	$y^{43} + 59y^{42} + \cdots + 22y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.981082 + 0.196833I$	$0.87304 - 5.10243I$	$-8.09536 + 7.65334I$
$u = \ \ 0.981082 - 0.196833I$	$0.87304 + 5.10243I$	$-8.09536 - 7.65334I$
$u = -0.756864 + 0.703321I$	$1.54506 - 1.29052I$	$-6.15207 + 4.41135I$
$u = -0.756864 - 0.703321I$	$1.54506 + 1.29052I$	$-6.15207 - 4.41135I$
$u = -0.929614 + 0.243471I$	$1.314580 + 0.224610I$	$-6.30893 - 0.94565I$
$u = -0.929614 - 0.243471I$	$1.314580 - 0.224610I$	$-6.30893 + 0.94565I$
$u = \ \ 0.944630 + 0.064820I$	$-3.51261 - 1.97345I$	$-16.2504 + 5.9015I$
$u = \ \ 0.944630 - 0.064820I$	$-3.51261 + 1.97345I$	$-16.2504 - 5.9015I$
$u = -1.043590 + 0.271851I$	$10.99790 - 0.10309I$	$-5.84751 - 1.12875I$
$u = -1.043590 - 0.271851I$	$10.99790 + 0.10309I$	$-5.84751 + 1.12875I$
$u = \ \ 1.047870 + 0.262426I$	$10.93510 - 6.66217I$	$-6.01718 + 5.66740I$
$u = \ \ 1.047870 - 0.262426I$	$10.93510 + 6.66217I$	$-6.01718 - 5.66740I$
$u = -0.881434 + 0.648427I$	$-0.47533 + 2.51394I$	$-12.27687 - 2.56334I$
$u = -0.881434 - 0.648427I$	$-0.47533 - 2.51394I$	$-12.27687 + 2.56334I$
$u = -0.740624 + 0.806639I$	$7.37925 - 4.23077I$	$-1.23707 + 3.77450I$
$u = -0.740624 - 0.806639I$	$7.37925 + 4.23077I$	$-1.23707 - 3.77450I$
$u = \ \ 0.829061 + 0.730502I$	$3.10908 - 1.97013I$	$-0.14053 + 3.02879I$
$u = \ \ 0.829061 - 0.730502I$	$3.10908 + 1.97013I$	$-0.14053 - 3.02879I$
$u = \ \ 0.768437 + 0.807890I$	$7.89054 - 1.19457I$	$0.07490 + 2.40588I$
$u = \ \ 0.768437 - 0.807890I$	$7.89054 + 1.19457I$	$0.07490 - 2.40588I$
$u = -0.743419 + 0.860690I$	$18.3406 - 5.9453I$	$-0.14706 + 2.39501I$
$u = -0.743419 - 0.860690I$	$18.3406 + 5.9453I$	$-0.14706 - 2.39501I$
$u = \ \ 0.748999 + 0.860570I$	$18.4432 - 0.9130I$	$0. + 2.08674I$
$u = \ \ 0.748999 - 0.860570I$	$18.4432 + 0.9130I$	$0. - 2.08674I$
$u = \ \ 0.908733 + 0.720344I$	$2.86472 - 3.56465I$	$-0.69891 + 3.15154I$
$u = \ \ 0.908733 - 0.720344I$	$2.86472 + 3.56465I$	$-0.69891 - 3.15154I$
$u = -0.949064 + 0.695827I$	$0.96736 + 6.68062I$	$-8.00000 - 9.76370I$
$u = -0.949064 - 0.695827I$	$0.96736 - 6.68062I$	$-8.00000 + 9.76370I$
$u = -0.820533$	-1.33344	-6.72830
$u = \ \ 0.970139 + 0.751383I$	$7.27360 - 4.66202I$	$-1.06940 + 2.91522I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.970139 - 0.751383I$	$7.27360 + 4.66202I$	$-1.06940 - 2.91522I$
$u = -0.984689 + 0.740034I$	$6.63575 + 10.04490I$	$-2.84536 - 8.98965I$
$u = -0.984689 - 0.740034I$	$6.63575 - 10.04490I$	$-2.84536 + 8.98965I$
$u = \quad 1.004250 + 0.770086I$	$17.6531 - 5.1564I$	$-1.23638 + 2.77428I$
$u = \quad 1.004250 - 0.770086I$	$17.6531 + 5.1564I$	$-1.23638 - 2.77428I$
$u = -1.007150 + 0.767415I$	$17.5245 + 12.0059I$	$-1.48619 - 7.25027I$
$u = -1.007150 - 0.767415I$	$17.5245 - 12.0059I$	$-1.48619 + 7.25027I$
$u = -0.006311 + 0.719292I$	$14.3770 + 3.4048I$	$0.02476 - 2.29191I$
$u = -0.006311 - 0.719292I$	$14.3770 - 3.4048I$	$0.02476 + 2.29191I$
$u = -0.040172 + 0.592095I$	$4.05883 + 2.55865I$	$-0.12462 - 3.69570I$
$u = -0.040172 - 0.592095I$	$4.05883 - 2.55865I$	$-0.12462 + 3.69570I$
$u = -0.210006 + 0.307936I$	$-0.306844 + 0.937929I$	$-5.73290 - 7.19292I$
$u = -0.210006 - 0.307936I$	$-0.306844 - 0.937929I$	$-5.73290 + 7.19292I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{43} + 13u^{42} + \cdots - 2u + 1$
c_2, c_5	$u^{43} + u^{42} + \cdots + 4u + 1$
c_3	$u^{43} - u^{42} + \cdots + 1822u + 673$
c_4, c_{10}	$u^{43} + u^{42} + \cdots + 2u + 1$
c_7, c_8, c_9 c_{11}, c_{12}	$u^{43} + 7u^{42} + \cdots - 2u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{43} + 35y^{42} + \cdots - 58y - 1$
c_2, c_5	$y^{43} - 13y^{42} + \cdots - 2y - 1$
c_3	$y^{43} + 23y^{42} + \cdots - 3215146y - 452929$
c_4, c_{10}	$y^{43} + 7y^{42} + \cdots - 2y - 1$
c_7, c_8, c_9 c_{11}, c_{12}	$y^{43} + 59y^{42} + \cdots + 22y - 1$