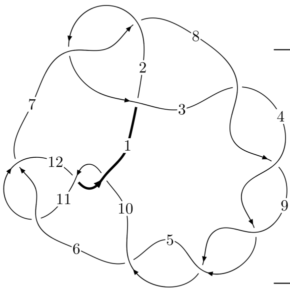
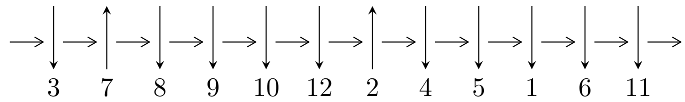
$12a_{0502}$ ($K12a_{0502}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{45} - u^{44} + \cdots - 3u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 45 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. $I_1^u = \langle u^{45} - u^{44} + \cdots - 3u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^9 + 2u^7 + u^5 - 2u^3 - u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{12} + 3u^{10} + 3u^8 - 2u^6 - 4u^4 - u^2 + 1 \\ -u^{12} - 4u^{10} - 6u^8 - 2u^6 + 3u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{15} - 4u^{13} - 6u^{11} + 8u^7 + 6u^5 - 2u^3 - 2u \\ u^{15} + 5u^{13} + 10u^{11} + 7u^9 - 4u^7 - 8u^5 - 2u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{20} + 5u^{18} + 11u^{16} + 10u^{14} - 7u^{10} - 3u^8 - 2u^6 - 3u^4 - u^2 + 1 \\ u^{22} + 6u^{20} + \cdots + 4u^4 + 3u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{37} + 10u^{35} + \cdots - 9u^5 + u \\ u^{39} + 11u^{37} + \cdots + 4u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{43} + 4u^{42} + \cdots + 20u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{45} + 27u^{44} + \cdots + 3u - 1$
c_2, c_7	$u^{45} + u^{44} + \cdots - 3u - 1$
c_3, c_4, c_5 c_8, c_9	$u^{45} - u^{44} + \cdots + 11u - 1$
c_6, c_{11}	$u^{45} + u^{44} + \cdots - 3u - 1$
c_{10}, c_{12}	$u^{45} + 17u^{44} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{45} - 17y^{44} + \cdots + 55y - 1$
c_2, c_7	$y^{45} + 27y^{44} + \cdots + 3y - 1$
c_3, c_4, c_5 c_8, c_9	$y^{45} - 61y^{44} + \cdots + 99y - 1$
c_6, c_{11}	$y^{45} - 17y^{44} + \cdots + 3y - 1$
c_{10}, c_{12}	$y^{45} + 23y^{44} + \cdots - 17y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.427459 + 0.911225I$	$0.85804 + 6.50089I$	$-8.32802 - 9.97393I$
$u = \quad 0.427459 - 0.911225I$	$0.85804 - 6.50089I$	$-8.32802 + 9.97393I$
$u = \quad 0.070383 + 1.016090I$	$-1.72179 - 2.04025I$	$-15.9831 + 3.0595I$
$u = \quad 0.070383 - 1.016090I$	$-1.72179 + 2.04025I$	$-15.9831 - 3.0595I$
$u = -0.408478 + 0.865533I$	$1.39393 - 1.34908I$	$-6.37203 + 4.08552I$
$u = -0.408478 - 0.865533I$	$1.39393 + 1.34908I$	$-6.37203 - 4.08552I$
$u = \quad 0.283223 + 1.012980I$	$-3.30573 + 2.64852I$	$-17.4700 - 5.8251I$
$u = \quad 0.283223 - 1.012980I$	$-3.30573 - 2.64852I$	$-17.4700 + 5.8251I$
$u = \quad 0.935027$	-15.9659	-15.5090
$u = \quad 0.930328 + 0.019398I$	$-11.70540 - 7.28312I$	$-11.98320 + 4.60308I$
$u = \quad 0.930328 - 0.019398I$	$-11.70540 + 7.28312I$	$-11.98320 - 4.60308I$
$u = -0.923476 + 0.012954I$	$-10.00250 + 1.76256I$	$-9.73819 - 0.10950I$
$u = -0.923476 - 0.012954I$	$-10.00250 - 1.76256I$	$-9.73819 + 0.10950I$
$u = -0.208200 + 0.833837I$	$-0.603828 - 1.131350I$	$-7.84077 + 5.39431I$
$u = -0.208200 - 0.833837I$	$-0.603828 + 1.131350I$	$-7.84077 - 5.39431I$
$u = \quad 0.358679 + 1.138370I$	$-4.13553 + 2.70881I$	$-12.96314 - 3.74313I$
$u = \quad 0.358679 - 1.138370I$	$-4.13553 - 2.70881I$	$-12.96314 + 3.74313I$
$u = \quad 0.440538 + 1.122380I$	$-3.51671 + 4.84200I$	$-11.51709 - 4.49120I$
$u = \quad 0.440538 - 1.122380I$	$-3.51671 - 4.84200I$	$-11.51709 + 4.49120I$
$u = -0.347703 + 1.175290I$	$-5.60707 + 2.21593I$	$-15.5378 - 1.9663I$
$u = -0.347703 - 1.175290I$	$-5.60707 - 2.21593I$	$-15.5378 + 1.9663I$
$u = -0.458823 + 1.138270I$	$-4.76002 - 10.14720I$	$-13.4545 + 9.2635I$
$u = -0.458823 - 1.138270I$	$-4.76002 + 10.14720I$	$-13.4545 - 9.2635I$
$u = -0.411367 + 1.171030I$	$-9.02942 - 4.07847I$	$-18.7916 + 4.0511I$
$u = -0.411367 - 1.171030I$	$-9.02942 + 4.07847I$	$-18.7916 - 4.0511I$
$u = -0.723185$	-5.63052	-15.3580
$u = -0.705456 + 0.119537I$	$-1.83649 + 5.83150I$	$-10.37227 - 5.87935I$
$u = -0.705456 - 0.119537I$	$-1.83649 - 5.83150I$	$-10.37227 + 5.87935I$
$u = -0.399313 + 0.551155I$	$2.22533 - 2.24395I$	$-3.65717 + 3.92179I$
$u = -0.399313 - 0.551155I$	$2.22533 + 2.24395I$	$-3.65717 - 3.92179I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.644426 + 0.110335I$	$-0.671592 - 0.750914I$	$-8.28728 + 0.79803I$
$u = 0.644426 - 0.110335I$	$-0.671592 + 0.750914I$	$-8.28728 - 0.79803I$
$u = -0.482704 + 1.275130I$	$-13.8679 - 6.7706I$	0
$u = -0.482704 - 1.275130I$	$-13.8679 + 6.7706I$	0
$u = -0.467992 + 1.280780I$	$-13.9791 - 3.1742I$	0
$u = -0.467992 - 1.280780I$	$-13.9791 + 3.1742I$	0
$u = 0.487764 + 1.277220I$	$-15.5609 + 12.3367I$	0
$u = 0.487764 - 1.277220I$	$-15.5609 - 12.3367I$	0
$u = 0.465467 + 1.286340I$	$-15.7305 - 2.3351I$	0
$u = 0.465467 - 1.286340I$	$-15.7305 + 2.3351I$	0
$u = 0.428207 + 0.461832I$	$2.03862 - 2.79869I$	$-4.43613 + 3.54362I$
$u = 0.428207 - 0.461832I$	$2.03862 + 2.79869I$	$-4.43613 - 3.54362I$
$u = 0.478105 + 1.284620I$	$19.5602 + 5.0232I$	0
$u = 0.478105 - 1.284620I$	$19.5602 - 5.0232I$	0
$u = 0.386025$	-0.813684	-12.1660

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{45} + 27u^{44} + \cdots + 3u - 1$
c_2, c_7	$u^{45} + u^{44} + \cdots - 3u - 1$
c_3, c_4, c_5 c_8, c_9	$u^{45} - u^{44} + \cdots + 11u - 1$
c_6, c_{11}	$u^{45} + u^{44} + \cdots - 3u - 1$
c_{10}, c_{12}	$u^{45} + 17u^{44} + \cdots + 3u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{45} - 17y^{44} + \cdots + 55y - 1$
c_2, c_7	$y^{45} + 27y^{44} + \cdots + 3y - 1$
c_3, c_4, c_5 c_8, c_9	$y^{45} - 61y^{44} + \cdots + 99y - 1$
c_6, c_{11}	$y^{45} - 17y^{44} + \cdots + 3y - 1$
c_{10}, c_{12}	$y^{45} + 23y^{44} + \cdots - 17y - 1$