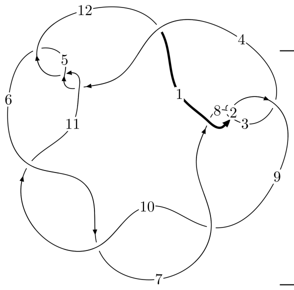
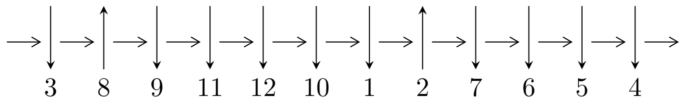
$12a_{0740}$ $(K12a_{0740})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{56} + u^{55} + \cdots - 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 56 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. $I_1^u = \langle u^{56} + u^{55} + \cdots - 2u - 1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^3 + 2u \\ -u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{18} + 7u^{16} - 20u^{14} + 27u^{12} - 11u^{10} - 13u^8 + 16u^6 - 6u^4 + u^2 + 1 \\ u^{20} - 8u^{18} + 26u^{16} - 40u^{14} + 19u^{12} + 24u^{10} - 30u^8 + 2u^6 + 5u^4 + 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^9 + 4u^7 - 5u^5 + 3u \\ -u^9 + 3u^7 - 3u^5 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{22} - 9u^{20} + \cdots - 4u^2 + 1 \\ u^{22} - 8u^{20} + \cdots - 4u^4 - 3u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{51} + 20u^{49} + \cdots + 11u^3 - 2u \\ -u^{51} + 19u^{49} + \cdots + 5u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{53} + 80u^{51} + \cdots - 12u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{56} + 29u^{55} + \cdots - 10u^2 + 1$
c_2, c_8	$u^{56} - u^{55} + \cdots - 2u^3 - 1$
c_3, c_7	$u^{56} + u^{55} + \cdots + 80u - 53$
c_4, c_5, c_{11}	$u^{56} + u^{55} + \cdots - 2u - 1$
c_6, c_9, c_{10} c_{12}	$u^{56} - 3u^{55} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} - 3y^{55} + \cdots - 20y + 1$
c_2, c_8	$y^{56} + 29y^{55} + \cdots - 10y^2 + 1$
c_3, c_7	$y^{56} - 35y^{55} + \cdots - 20180y + 2809$
c_4, c_5, c_{11}	$y^{56} - 43y^{55} + \cdots + 30y^2 + 1$
c_6, c_9, c_{10} c_{12}	$y^{56} + 65y^{55} + \cdots + 20y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.966138 + 0.146675I$	$-4.03618 + 3.76547I$	$-9.86305 - 3.31528I$
$u = \ \ 0.966138 - 0.146675I$	$-4.03618 - 3.76547I$	$-9.86305 + 3.31528I$
$u = -0.005719 + 0.906711I$	$11.65310 + 2.42579I$	$-0.94991 - 3.21386I$
$u = -0.005719 - 0.906711I$	$11.65310 - 2.42579I$	$-0.94991 + 3.21386I$
$u = \ \ 0.036344 + 0.901122I$	$6.27142 - 9.00482I$	$-5.29022 + 5.83508I$
$u = \ \ 0.036344 - 0.901122I$	$6.27142 + 9.00482I$	$-5.29022 - 5.83508I$
$u = -1.090050 + 0.140449I$	$-1.55041 + 0.38680I$	$-5.72495 + 0.I$
$u = -1.090050 - 0.140449I$	$-1.55041 - 0.38680I$	$-5.72495 + 0.I$
$u = -0.028384 + 0.898900I$	$8.99836 + 4.05002I$	$-2.11311 - 2.32433I$
$u = -0.028384 - 0.898900I$	$8.99836 - 4.05002I$	$-2.11311 + 2.32433I$
$u = \ \ 0.028330 + 0.883702I$	$4.64419 - 0.64348I$	$-7.26111 - 0.24240I$
$u = \ \ 0.028330 - 0.883702I$	$4.64419 + 0.64348I$	$-7.26111 + 0.24240I$
$u = -1.167310 + 0.233432I$	$-0.432854 + 1.119920I$	0
$u = -1.167310 - 0.233432I$	$-0.432854 - 1.119920I$	0
$u = \ \ 1.244770 + 0.102397I$	$-4.72176 - 2.16923I$	0
$u = \ \ 1.244770 - 0.102397I$	$-4.72176 + 2.16923I$	0
$u = \ \ 1.225110 + 0.251359I$	$-0.95561 - 5.19909I$	0
$u = \ \ 1.225110 - 0.251359I$	$-0.95561 + 5.19909I$	0
$u = \ \ 1.30697$	-6.22222	0
$u = \ \ 1.294490 + 0.219824I$	$-3.63173 - 5.28884I$	0
$u = \ \ 1.294490 - 0.219824I$	$-3.63173 + 5.28884I$	0
$u = -1.306120 + 0.197397I$	$-7.41440 + 1.49252I$	0
$u = -1.306120 - 0.197397I$	$-7.41440 - 1.49252I$	0
$u = \ \ 1.253840 + 0.421699I$	$0.85056 - 4.02651I$	0
$u = \ \ 1.253840 - 0.421699I$	$0.85056 + 4.02651I$	0
$u = -1.324320 + 0.015856I$	$-9.57385 + 4.23364I$	0
$u = -1.324320 - 0.015856I$	$-9.57385 - 4.23364I$	0
$u = \ \ 1.250890 + 0.441220I$	$2.51555 + 4.21199I$	0
$u = \ \ 1.250890 - 0.441220I$	$2.51555 - 4.21199I$	0
$u = -1.310570 + 0.227530I$	$-6.63163 + 9.90909I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.310570 - 0.227530I$	$-6.63163 - 9.90909I$	0
$u = -1.257710 + 0.436717I$	$5.19296 + 0.72097I$	0
$u = -1.257710 - 0.436717I$	$5.19296 - 0.72097I$	0
$u = -1.279070 + 0.437088I$	$7.70069 + 2.37410I$	0
$u = -1.279070 - 0.437088I$	$7.70069 - 2.37410I$	0
$u = \quad 0.199264 + 0.611623I$	$-1.94679 - 6.93022I$	$-6.93561 + 8.02369I$
$u = \quad 0.199264 - 0.611623I$	$-1.94679 + 6.93022I$	$-6.93561 - 8.02369I$
$u = \quad 1.288170 + 0.434128I$	$7.63163 - 7.21669I$	0
$u = \quad 1.288170 - 0.434128I$	$7.63163 + 7.21669I$	0
$u = -1.300160 + 0.412494I$	$0.50431 + 5.28588I$	0
$u = -1.300160 - 0.412494I$	$0.50431 - 5.28588I$	0
$u = \quad 1.303070 + 0.422656I$	$4.84936 - 8.77757I$	0
$u = \quad 1.303070 - 0.422656I$	$4.84936 + 8.77757I$	0
$u = -0.042518 + 0.626099I$	$2.87687 + 2.02638I$	$-0.63182 - 4.64721I$
$u = -0.042518 - 0.626099I$	$2.87687 - 2.02638I$	$-0.63182 + 4.64721I$
$u = -1.308980 + 0.422388I$	$2.07579 + 13.73950I$	0
$u = -1.308980 - 0.422388I$	$2.07579 - 13.73950I$	0
$u = -0.166435 + 0.582590I$	$0.87541 + 2.42282I$	$-3.19232 - 4.86886I$
$u = -0.166435 - 0.582590I$	$0.87541 - 2.42282I$	$-3.19232 + 4.86886I$
$u = \quad 0.581831 + 0.132630I$	$-4.09488 - 3.93251I$	$-12.13433 + 4.90398I$
$u = \quad 0.581831 - 0.132630I$	$-4.09488 + 3.93251I$	$-12.13433 - 4.90398I$
$u = \quad 0.224976 + 0.537140I$	$-2.70624 + 1.11644I$	$-8.57012 + 1.60454I$
$u = \quad 0.224976 - 0.537140I$	$-2.70624 - 1.11644I$	$-8.57012 - 1.60454I$
$u = -0.459240$	-1.08734	-10.0590
$u = -0.233743 + 0.256345I$	$-0.484744 + 0.884850I$	$-8.86461 - 7.46301I$
$u = -0.233743 - 0.256345I$	$-0.484744 - 0.884850I$	$-8.86461 + 7.46301I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{56} + 29u^{55} + \cdots - 10u^2 + 1$
c_2, c_8	$u^{56} - u^{55} + \cdots - 2u^3 - 1$
c_3, c_7	$u^{56} + u^{55} + \cdots + 80u - 53$
c_4, c_5, c_{11}	$u^{56} + u^{55} + \cdots - 2u - 1$
c_6, c_9, c_{10} c_{12}	$u^{56} - 3u^{55} + \cdots - 4u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} - 3y^{55} + \cdots - 20y + 1$
c_2, c_8	$y^{56} + 29y^{55} + \cdots - 10y^2 + 1$
c_3, c_7	$y^{56} - 35y^{55} + \cdots - 20180y + 2809$
c_4, c_5, c_{11}	$y^{56} - 43y^{55} + \cdots + 30y^2 + 1$
c_6, c_9, c_{10} c_{12}	$y^{56} + 65y^{55} + \cdots + 20y + 1$