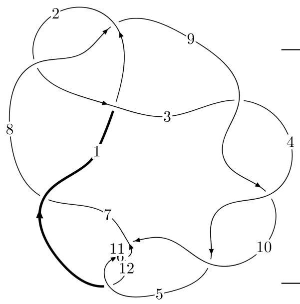
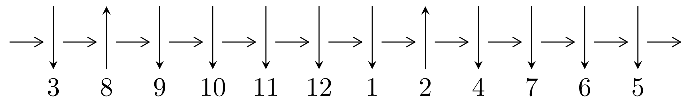
$12a_{0724}$ $(K12a_{0724})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{53} - u^{52} + \cdots - u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 53 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. $I_1^u = \langle u^{53} - u^{52} + \cdots - u - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^9 + 2u^7 + u^5 - 2u^3 - u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^8 - 2u^6 - 2u^4 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{20} - 5u^{18} - 11u^{16} - 10u^{14} + 2u^{12} + 13u^{10} + 9u^8 - 2u^6 - 5u^4 - u^2 + 1 \\ -u^{22} - 6u^{20} - 17u^{18} - 26u^{16} - 20u^{14} + 13u^{10} + 10u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{23} + 6u^{21} + \cdots + 6u^5 + 2u^3 \\ -u^{23} - 7u^{21} + \cdots - 3u^5 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{51} + 14u^{49} + \cdots - u^3 - 2u \\ u^{52} - u^{51} + \cdots + 2u + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{52} - 4u^{51} + \cdots - 8u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{53} + 31u^{52} + \cdots + 3u - 1$
c_2, c_8	$u^{53} - u^{52} + \cdots - u - 1$
c_3, c_4, c_7 c_9	$u^{53} + u^{52} + \cdots + 17u - 5$
c_5, c_6, c_{11}	$u^{53} - u^{52} + \cdots - 3u - 1$
c_{10}, c_{12}	$u^{53} + 3u^{52} + \cdots - 15u - 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{53} - 17y^{52} + \cdots + 35y - 1$
c_2, c_8	$y^{53} + 31y^{52} + \cdots + 3y - 1$
c_3, c_4, c_7 c_9	$y^{53} - 65y^{52} + \cdots + 899y - 25$
c_5, c_6, c_{11}	$y^{53} - 45y^{52} + \cdots + 3y - 1$
c_{10}, c_{12}	$y^{53} + 23y^{52} + \cdots + 39y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.128755 + 1.019230I$	$-4.90434 - 2.79376I$	$-17.4626 + 3.5787I$
$u = -0.128755 - 1.019230I$	$-4.90434 + 2.79376I$	$-17.4626 - 3.5787I$
$u = -0.911842$	-15.0851	-15.7790
$u = 0.452670 + 0.785816I$	$-0.74858 + 5.61733I$	$-7.84958 - 7.79371I$
$u = 0.452670 - 0.785816I$	$-0.74858 - 5.61733I$	$-7.84958 + 7.79371I$
$u = 0.904077 + 0.035348I$	$-10.76820 - 8.15829I$	$-12.92275 + 4.70754I$
$u = 0.904077 - 0.035348I$	$-10.76820 + 8.15829I$	$-12.92275 - 4.70754I$
$u = -0.894263 + 0.030410I$	$-5.73332 + 4.23818I$	$-8.49578 - 3.55105I$
$u = -0.894263 - 0.030410I$	$-5.73332 - 4.23818I$	$-8.49578 + 3.55105I$
$u = -0.435840 + 1.018520I$	$-3.18288 - 2.63277I$	$-11.73208 + 4.34581I$
$u = -0.435840 - 1.018520I$	$-3.18288 + 2.63277I$	$-11.73208 - 4.34581I$
$u = 0.270662 + 1.080700I$	$-1.60759 + 0.28866I$	$-11.63603 + 0.60703I$
$u = 0.270662 - 1.080700I$	$-1.60759 - 0.28866I$	$-11.63603 - 0.60703I$
$u = 0.885161 + 0.012504I$	$-7.93829 - 0.20732I$	$-11.52979 - 0.97702I$
$u = 0.885161 - 0.012504I$	$-7.93829 + 0.20732I$	$-11.52979 + 0.97702I$
$u = -0.366265 + 1.058630I$	$-3.39452 - 3.18652I$	$-15.1026 + 5.9997I$
$u = -0.366265 - 1.058630I$	$-3.39452 + 3.18652I$	$-15.1026 - 5.9997I$
$u = -0.438529 + 0.736447I$	$3.30946 - 1.89439I$	$-2.29810 + 4.47995I$
$u = -0.438529 - 0.736447I$	$3.30946 + 1.89439I$	$-2.29810 - 4.47995I$
$u = 0.459270 + 1.056820I$	$-0.23945 + 6.31415I$	$-8.00000 - 7.97292I$
$u = 0.459270 - 1.056820I$	$-0.23945 - 6.31415I$	$-8.00000 + 7.97292I$
$u = -0.271764 + 1.127110I$	$-6.33973 + 3.10223I$	$-16.8942 - 2.0365I$
$u = -0.271764 - 1.127110I$	$-6.33973 - 3.10223I$	$-16.8942 + 2.0365I$
$u = -0.471846 + 1.075850I$	$-4.85947 - 10.15110I$	$-13.4245 + 9.4204I$
$u = -0.471846 - 1.075850I$	$-4.85947 + 10.15110I$	$-13.4245 - 9.4204I$
$u = 0.147653 + 0.799603I$	$-0.621747 + 0.938340I$	$-10.16569 - 6.80292I$
$u = 0.147653 - 0.799603I$	$-0.621747 - 0.938340I$	$-10.16569 + 6.80292I$
$u = 0.443085 + 0.672743I$	$-0.43986 - 1.77287I$	$-6.55805 - 0.17659I$
$u = 0.443085 - 0.672743I$	$-0.43986 + 1.77287I$	$-6.55805 + 0.17659I$
$u = 0.386940 + 1.130380I$	$-9.24218 + 3.74726I$	$-18.6066 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.386940 - 1.130380I$	$-9.24218 - 3.74726I$	$-18.6066 + 0.I$
$u = -0.626369 + 0.230684I$	$-2.49578 + 5.92364I$	$-10.03468 - 5.69400I$
$u = -0.626369 - 0.230684I$	$-2.49578 - 5.92364I$	$-10.03468 + 5.69400I$
$u = 0.461426 + 1.259080I$	$-11.80210 + 4.57211I$	0
$u = 0.461426 - 1.259080I$	$-11.80210 - 4.57211I$	0
$u = 0.474991 + 1.254660I$	$-11.70120 + 5.05761I$	0
$u = 0.474991 - 1.254660I$	$-11.70120 - 5.05761I$	0
$u = -0.452029 + 1.266230I$	$-9.69650 - 0.52013I$	0
$u = -0.452029 - 1.266230I$	$-9.69650 + 0.52013I$	0
$u = -0.485137 + 1.256070I$	$-9.45189 - 9.16998I$	0
$u = -0.485137 - 1.256070I$	$-9.45189 + 9.16998I$	0
$u = 0.450332 + 1.273070I$	$-14.7839 - 3.3745I$	0
$u = 0.450332 - 1.273070I$	$-14.7839 + 3.3745I$	0
$u = 0.489645 + 1.259800I$	$-14.4913 + 13.1415I$	0
$u = 0.489645 - 1.259800I$	$-14.4913 - 13.1415I$	0
$u = 0.647347$	-6.05533	-14.6560
$u = -0.472487 + 1.271320I$	$-18.9745 - 4.9215I$	0
$u = -0.472487 - 1.271320I$	$-18.9745 + 4.9215I$	0
$u = 0.573524 + 0.250742I$	$1.98282 - 2.24507I$	$-4.39655 + 3.93832I$
$u = 0.573524 - 0.250742I$	$1.98282 + 2.24507I$	$-4.39655 - 3.93832I$
$u = -0.505614 + 0.326260I$	$-1.29579 - 1.22009I$	$-7.56412 + 0.50390I$
$u = -0.505614 - 0.326260I$	$-1.29579 + 1.22009I$	$-7.56412 - 0.50390I$
$u = -0.436579$	-0.780224	-12.8270

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{53} + 31u^{52} + \cdots + 3u - 1$
c_2, c_8	$u^{53} - u^{52} + \cdots - u - 1$
c_3, c_4, c_7 c_9	$u^{53} + u^{52} + \cdots + 17u - 5$
c_5, c_6, c_{11}	$u^{53} - u^{52} + \cdots - 3u - 1$
c_{10}, c_{12}	$u^{53} + 3u^{52} + \cdots - 15u - 3$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{53} - 17y^{52} + \cdots + 35y - 1$
c_2, c_8	$y^{53} + 31y^{52} + \cdots + 3y - 1$
c_3, c_4, c_7 c_9	$y^{53} - 65y^{52} + \cdots + 899y - 25$
c_5, c_6, c_{11}	$y^{53} - 45y^{52} + \cdots + 3y - 1$
c_{10}, c_{12}	$y^{53} + 23y^{52} + \cdots + 39y - 9$