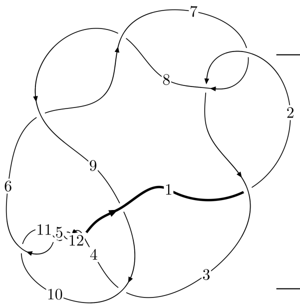
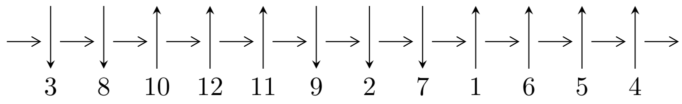
$12a_{0774}$ $(K12a_{0774})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{44} - u^{43} + \cdots - u^2 + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 44 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. $I_1^u = \langle u^{44} - u^{43} + \cdots - u^2 + 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^9 - 2u^7 + 3u^5 - 4u^3 + u \\ u^9 - u^7 + 3u^5 - 2u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{18} + 3u^{16} - 8u^{14} + 15u^{12} - 19u^{10} + 21u^8 - 14u^6 + 6u^4 - u^2 + 1 \\ -u^{18} + 2u^{16} - 7u^{14} + 10u^{12} - 15u^{10} + 14u^8 - 10u^6 + 4u^4 - u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^5 + u \\ -u^7 + u^5 - 2u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{21} - 2u^{19} + \cdots - 4u^3 + u \\ -u^{23} + 3u^{21} + \cdots - 2u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{37} - 4u^{35} + \cdots + 5u^5 + u \\ -u^{39} + 5u^{37} + \cdots - 2u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{34} + 5u^{32} + \cdots - u^2 + 1 \\ -u^{34} + 4u^{32} + \cdots - 4u^6 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{43} - 24u^{41} + \cdots - 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_8	$u^{44} + 11u^{43} + \cdots + 2u + 1$
c_2, c_7	$u^{44} + u^{43} + \cdots - u^2 + 1$
c_3	$u^{44} + u^{43} + \cdots - 20u + 1$
c_4, c_5, c_{10} c_{11}, c_{12}	$u^{44} + u^{43} + \cdots + 2u + 1$
c_9	$u^{44} - 7u^{43} + \cdots - 82u + 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_8	$y^{44} + 45y^{43} + \cdots + 22y + 1$
c_2, c_7	$y^{44} - 11y^{43} + \cdots - 2y + 1$
c_3	$y^{44} + y^{43} + \cdots - 146y + 1$
c_4, c_5, c_{10} c_{11}, c_{12}	$y^{44} + 57y^{43} + \cdots - 2y + 1$
c_9	$y^{44} + 5y^{43} + \cdots - 662y + 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.973577 + 0.164922I$	$-15.0825 + 1.6902I$	$-8.15131 + 0.48221I$
$u = 0.973577 - 0.164922I$	$-15.0825 - 1.6902I$	$-8.15131 - 0.48221I$
$u = 0.953126 + 0.350659I$	$-4.40949 - 6.07307I$	$-4.94666 + 8.49917I$
$u = 0.953126 - 0.350659I$	$-4.40949 + 6.07307I$	$-4.94666 - 8.49917I$
$u = -0.895823 + 0.344349I$	$-0.76004 + 3.52272I$	$0.90093 - 8.67149I$
$u = -0.895823 - 0.344349I$	$-0.76004 - 3.52272I$	$0.90093 + 8.67149I$
$u = -0.984525 + 0.354824I$	$-13.9897 + 7.4569I$	$-5.72896 - 6.66961I$
$u = -0.984525 - 0.354824I$	$-13.9897 - 7.4569I$	$-5.72896 + 6.66961I$
$u = -0.925891 + 0.175432I$	$-5.40173 - 0.74499I$	$-8.08077 + 0.34406I$
$u = -0.925891 - 0.175432I$	$-5.40173 + 0.74499I$	$-8.08077 - 0.34406I$
$u = 0.827466 + 0.255178I$	$-1.38547 - 0.92460I$	$-2.73817 + 0.09424I$
$u = 0.827466 - 0.255178I$	$-1.38547 + 0.92460I$	$-2.73817 - 0.09424I$
$u = -0.615862 + 0.604835I$	$-9.75255 + 2.21449I$	$0.08262 - 3.14030I$
$u = -0.615862 - 0.604835I$	$-9.75255 - 2.21449I$	$0.08262 + 3.14030I$
$u = -0.902990 + 0.718759I$	$-10.10340 + 2.72623I$	$-2.70072 - 3.12149I$
$u = -0.902990 - 0.718759I$	$-10.10340 - 2.72623I$	$-2.70072 + 3.12149I$
$u = 0.892831 + 0.769198I$	$-0.21070 - 2.90742I$	$-2.24337 + 2.68440I$
$u = 0.892831 - 0.769198I$	$-0.21070 + 2.90742I$	$-2.24337 - 2.68440I$
$u = 0.817945 + 0.876060I$	$-6.01810 + 5.50586I$	$0. - 1.93289I$
$u = 0.817945 - 0.876060I$	$-6.01810 - 5.50586I$	$0. + 1.93289I$
$u = -0.829954 + 0.866717I$	$3.36907 - 3.82326I$	$1.37231 + 3.41233I$
$u = -0.829954 - 0.866717I$	$3.36907 + 3.82326I$	$1.37231 - 3.41233I$
$u = 0.848035 + 0.857865I$	$6.75596 + 0.77249I$	$6.88350 - 1.61671I$
$u = 0.848035 - 0.857865I$	$6.75596 - 0.77249I$	$6.88350 + 1.61671I$
$u = -0.869487 + 0.843192I$	$5.36576 + 2.39601I$	$3.40471 - 4.61138I$
$u = -0.869487 - 0.843192I$	$5.36576 - 2.39601I$	$3.40471 + 4.61138I$
$u = -0.932920 + 0.818861I$	$5.16549 + 3.79714I$	$3.00062 + 0.I$
$u = -0.932920 - 0.818861I$	$5.16549 - 3.79714I$	$3.00062 + 0.I$
$u = 0.909164 + 0.854591I$	$-2.08909 - 3.16925I$	$2.00000 + 2.55615I$
$u = 0.909164 - 0.854591I$	$-2.08909 + 3.16925I$	$2.00000 - 2.55615I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.954586 + 0.818188I$	$6.42188 - 7.00665I$	$5.98798 + 6.76938I$
$u = 0.954586 - 0.818188I$	$6.42188 + 7.00665I$	$5.98798 - 6.76938I$
$u = -0.969590 + 0.814117I$	$2.93183 + 10.06920I$	$0. - 8.25971I$
$u = -0.969590 - 0.814117I$	$2.93183 - 10.06920I$	$0. + 8.25971I$
$u = 0.980677 + 0.812716I$	$-6.52850 - 11.77360I$	$0. + 6.74145I$
$u = 0.980677 - 0.812716I$	$-6.52850 + 11.77360I$	$0. - 6.74145I$
$u = 0.554006 + 0.459665I$	$-0.93127 - 1.66423I$	$1.39492 + 5.36634I$
$u = 0.554006 - 0.459665I$	$-0.93127 + 1.66423I$	$1.39492 - 5.36634I$
$u = -0.177999 + 0.637957I$	$-11.46970 - 3.90382I$	$-0.05667 + 2.21807I$
$u = -0.177999 - 0.637957I$	$-11.46970 + 3.90382I$	$-0.05667 - 2.21807I$
$u = 0.196554 + 0.570963I$	$-2.11354 + 2.70365I$	$0.96683 - 3.89024I$
$u = 0.196554 - 0.570963I$	$-2.11354 - 2.70365I$	$0.96683 + 3.89024I$
$u = -0.302925 + 0.453673I$	$1.018180 - 0.410960I$	$9.05285 + 1.73879I$
$u = -0.302925 - 0.453673I$	$1.018180 + 0.410960I$	$9.05285 - 1.73879I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6, c_8	$u^{44} + 11u^{43} + \cdots + 2u + 1$
c_2, c_7	$u^{44} + u^{43} + \cdots - u^2 + 1$
c_3	$u^{44} + u^{43} + \cdots - 20u + 1$
c_4, c_5, c_{10} c_{11}, c_{12}	$u^{44} + u^{43} + \cdots + 2u + 1$
c_9	$u^{44} - 7u^{43} + \cdots - 82u + 7$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_8	$y^{44} + 45y^{43} + \cdots + 22y + 1$
c_2, c_7	$y^{44} - 11y^{43} + \cdots - 2y + 1$
c_3	$y^{44} + y^{43} + \cdots - 146y + 1$
c_4, c_5, c_{10} c_{11}, c_{12}	$y^{44} + 57y^{43} + \cdots - 2y + 1$
c_9	$y^{44} + 5y^{43} + \cdots - 662y + 49$