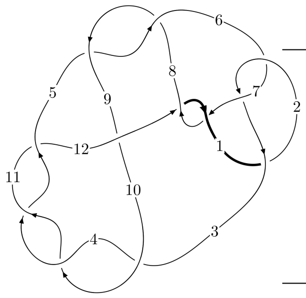
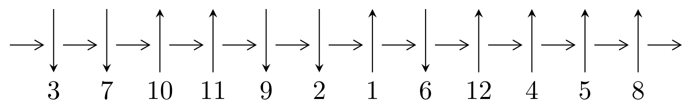
$12a_{0649}$ ($K12a_{0649}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{63} + u^{62} + \cdots + 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 63 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. $I_1^u = \langle u^{63} + u^{62} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - u^5 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^9 + 2u^7 - u^5 - 2u^3 + u \\ -u^9 + 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{17} - 4u^{15} + 7u^{13} - 4u^{11} - 3u^9 + 6u^7 - 2u^5 + u \\ u^{17} - 5u^{15} + 11u^{13} - 12u^{11} + 5u^9 + 2u^7 - 2u^5 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^8 + 3u^6 - 3u^4 + 1 \\ -u^{10} + 2u^8 - u^6 - 2u^4 + u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{27} - 8u^{25} + \cdots - 3u^3 + 2u \\ u^{29} - 7u^{27} + \cdots + u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{44} - 11u^{42} + \cdots + u^2 + 1 \\ u^{44} - 12u^{42} + \cdots - 3u^4 + 2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{54} + 15u^{52} + \cdots - 2u^2 + 1 \\ -u^{56} + 14u^{54} + \cdots - 13u^8 + 10u^6 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{61} - 64u^{59} + \cdots - 8u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{63} + 33u^{62} + \cdots + 4u + 1$
c_2, c_6	$u^{63} - u^{62} + \cdots + 2u - 1$
c_3, c_4, c_{10} c_{11}	$u^{63} + u^{62} + \cdots + 2u^2 - 1$
c_5, c_8	$u^{63} - 5u^{62} + \cdots - 384u + 41$
c_7, c_{12}	$u^{63} - 3u^{62} + \cdots + 164u - 9$
c_9	$u^{63} + 19u^{62} + \cdots + 38968u + 4073$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} - 5y^{62} + \cdots - 8y - 1$
c_2, c_6	$y^{63} - 33y^{62} + \cdots + 4y - 1$
c_3, c_4, c_{10} c_{11}	$y^{63} - 73y^{62} + \cdots + 4y - 1$
c_5, c_8	$y^{63} + 47y^{62} + \cdots - 36224y - 1681$
c_7, c_{12}	$y^{63} + 43y^{62} + \cdots + 27400y - 81$
c_9	$y^{63} - 25y^{62} + \cdots + 96017920y - 16589329$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.807336 + 0.596819I$	$13.3335 + 7.7246I$	$10.00998 - 6.36298I$
$u = -0.807336 - 0.596819I$	$13.3335 - 7.7246I$	$10.00998 + 6.36298I$
$u = 0.797322 + 0.579716I$	$5.11223 - 5.63114I$	$8.39389 + 7.97661I$
$u = 0.797322 - 0.579716I$	$5.11223 + 5.63114I$	$8.39389 - 7.97661I$
$u = -0.971710$	4.41099	-0.384110
$u = -0.924847 + 0.292781I$	$-0.45640 + 3.17636I$	$1.88577 - 8.75054I$
$u = -0.924847 - 0.292781I$	$-0.45640 - 3.17636I$	$1.88577 + 8.75054I$
$u = -0.771159 + 0.561770I$	$2.89928 + 2.24328I$	$4.38244 - 3.59011I$
$u = -0.771159 - 0.561770I$	$2.89928 - 2.24328I$	$4.38244 + 3.59011I$
$u = -0.734481 + 0.605389I$	$13.54260 - 3.01261I$	$10.67968 - 0.23092I$
$u = -0.734481 - 0.605389I$	$13.54260 + 3.01261I$	$10.67968 + 0.23092I$
$u = 0.961610 + 0.434304I$	$7.01116 - 4.42511I$	$6.14172 + 6.08207I$
$u = 0.961610 - 0.434304I$	$7.01116 + 4.42511I$	$6.14172 - 6.08207I$
$u = 0.741982 + 0.582849I$	$5.27071 + 1.03217I$	$9.12178 - 1.02959I$
$u = 0.741982 - 0.582849I$	$5.27071 - 1.03217I$	$9.12178 + 1.02959I$
$u = 0.858425 + 0.141613I$	$-1.43959 - 0.53362I$	$-4.53498 + 0.33396I$
$u = 0.858425 - 0.141613I$	$-1.43959 + 0.53362I$	$-4.53498 - 0.33396I$
$u = 1.103660 + 0.285741I$	$7.32672 - 4.55583I$	0
$u = 1.103660 - 0.285741I$	$7.32672 + 4.55583I$	0
$u = -1.114240 + 0.357197I$	$-0.73485 + 3.08669I$	0
$u = -1.114240 - 0.357197I$	$-0.73485 - 3.08669I$	0
$u = -0.200631 + 0.794151I$	$10.38970 - 8.95920I$	$8.29474 + 4.99884I$
$u = -0.200631 - 0.794151I$	$10.38970 + 8.95920I$	$8.29474 - 4.99884I$
$u = 0.193476 + 0.779461I$	$2.31625 + 6.69956I$	$6.24548 - 6.73377I$
$u = 0.193476 - 0.779461I$	$2.31625 - 6.69956I$	$6.24548 + 6.73377I$
$u = -0.254888 + 0.737304I$	$11.42830 + 1.53659I$	$9.80270 - 0.48128I$
$u = -0.254888 - 0.737304I$	$11.42830 - 1.53659I$	$9.80270 + 0.48128I$
$u = 1.166850 + 0.360700I$	$-3.54242 - 0.43587I$	0
$u = 1.166850 - 0.360700I$	$-3.54242 + 0.43587I$	0
$u = -0.186925 + 0.753807I$	$0.40491 - 3.15228I$	$2.37370 + 2.31233I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.186925 - 0.753807I$	$0.40491 + 3.15228I$	$2.37370 - 2.31233I$
$u = -1.181980 + 0.345078I$	$-1.80137 - 3.07345I$	0
$u = -1.181980 - 0.345078I$	$-1.80137 + 3.07345I$	0
$u = 0.070169 + 0.760914I$	$3.95236 + 3.34328I$	$4.11045 - 3.28316I$
$u = 0.070169 - 0.760914I$	$3.95236 - 3.34328I$	$4.11045 + 3.28316I$
$u = 1.191770 + 0.334933I$	$6.16317 + 5.31923I$	0
$u = 1.191770 - 0.334933I$	$6.16317 - 5.31923I$	0
$u = 0.222898 + 0.726961I$	$3.10820 + 0.15733I$	$8.25846 + 1.53332I$
$u = 0.222898 - 0.726961I$	$3.10820 - 0.15733I$	$8.25846 - 1.53332I$
$u = -1.141590 + 0.528482I$	$8.83894 + 3.23888I$	0
$u = -1.141590 - 0.528482I$	$8.83894 - 3.23888I$	0
$u = 1.179730 + 0.439001I$	$-5.98396 - 2.56449I$	0
$u = 1.179730 - 0.439001I$	$-5.98396 + 2.56449I$	0
$u = -1.190440 + 0.416970I$	$0.292282 + 0.762436I$	0
$u = -1.190440 - 0.416970I$	$0.292282 - 0.762436I$	0
$u = 1.150390 + 0.517447I$	$0.40909 - 4.85871I$	0
$u = 1.150390 - 0.517447I$	$0.40909 + 4.85871I$	0
$u = -1.180060 + 0.458564I$	$-5.84513 + 5.94356I$	0
$u = -1.180060 - 0.458564I$	$-5.84513 - 5.94356I$	0
$u = -0.027218 + 0.730004I$	$-2.55159 - 1.61131I$	$-0.22743 + 4.58020I$
$u = -0.027218 - 0.730004I$	$-2.55159 + 1.61131I$	$-0.22743 - 4.58020I$
$u = -1.166670 + 0.516614I$	$-2.45072 + 7.90304I$	0
$u = -1.166670 - 0.516614I$	$-2.45072 - 7.90304I$	0
$u = 1.186890 + 0.476518I$	$0.71091 - 7.86927I$	0
$u = 1.186890 - 0.476518I$	$0.71091 + 7.86927I$	0
$u = 1.172460 + 0.524704I$	$-0.55674 - 11.54750I$	0
$u = 1.172460 - 0.524704I$	$-0.55674 + 11.54750I$	0
$u = -1.175300 + 0.530872I$	$7.5181 + 13.8713I$	0
$u = -1.175300 - 0.530872I$	$7.5181 - 13.8713I$	0
$u = 0.476432 + 0.503510I$	$8.37645 + 0.49060I$	$10.31482 + 0.06254I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.476432 - 0.503510I$	$8.37645 - 0.49060I$	$10.31482 - 0.06254I$
$u = -0.430431 + 0.317615I$	$0.981121 - 0.128738I$	$10.38339 + 0.79799I$
$u = -0.430431 - 0.317615I$	$0.981121 + 0.128738I$	$10.38339 - 0.79799I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{63} + 33u^{62} + \cdots + 4u + 1$
c_2, c_6	$u^{63} - u^{62} + \cdots + 2u - 1$
c_3, c_4, c_{10} c_{11}	$u^{63} + u^{62} + \cdots + 2u^2 - 1$
c_5, c_8	$u^{63} - 5u^{62} + \cdots - 384u + 41$
c_7, c_{12}	$u^{63} - 3u^{62} + \cdots + 164u - 9$
c_9	$u^{63} + 19u^{62} + \cdots + 38968u + 4073$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} - 5y^{62} + \cdots - 8y - 1$
c_2, c_6	$y^{63} - 33y^{62} + \cdots + 4y - 1$
c_3, c_4, c_{10} c_{11}	$y^{63} - 73y^{62} + \cdots + 4y - 1$
c_5, c_8	$y^{63} + 47y^{62} + \cdots - 36224y - 1681$
c_7, c_{12}	$y^{63} + 43y^{62} + \cdots + 27400y - 81$
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