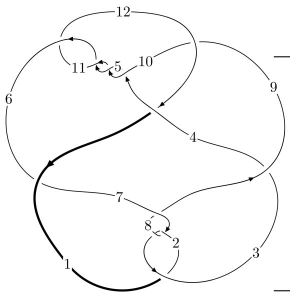
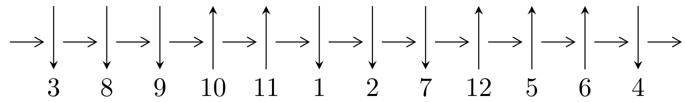
$12a_{0728}$ $(K12a_{0728})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{66} + u^{65} + \cdots + u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 66 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. $I_1^u = \langle u^{66} + u^{65} + \cdots + u + 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^7 - 4u^5 + 4u^3 \\ -u^7 + 3u^5 - 2u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{16} - 9u^{14} + 31u^{12} - 50u^{10} + 37u^8 - 12u^6 + 4u^4 + 1 \\ -u^{16} + 8u^{14} - 24u^{12} + 34u^{10} - 26u^8 + 14u^6 - 4u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^5 - 2u^3 - u \\ -u^7 + 3u^5 - 2u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^{14} + 7u^{12} - 16u^{10} + 11u^8 + 2u^6 + 1 \\ u^{16} - 8u^{14} + 24u^{12} - 34u^{10} + 26u^8 - 14u^6 + 4u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{39} + 22u^{37} + \cdots + 8u^5 - 4u^3 \\ u^{39} - 21u^{37} + \cdots - 2u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{37} + 20u^{35} + \cdots + 6u^3 - u \\ u^{39} - 21u^{37} + \cdots - 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{64} + 148u^{62} + \cdots + 8u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{66} + 23u^{65} + \cdots + 3u + 1$
c_2, c_7	$u^{66} + u^{65} + \cdots + u + 1$
c_3, c_6	$u^{66} - u^{65} + \cdots - 31u + 13$
c_4, c_5, c_{10} c_{11}	$u^{66} + u^{65} + \cdots + u + 1$
c_9	$u^{66} + 17u^{65} + \cdots - 47u - 1$
c_{12}	$u^{66} - 5u^{65} + \cdots - 87u + 99$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{66} + 41y^{65} + \cdots + 25y + 1$
c_2, c_7	$y^{66} - 23y^{65} + \cdots - 3y + 1$
c_3, c_6	$y^{66} - 43y^{65} + \cdots - 779y + 169$
c_4, c_5, c_{10} c_{11}	$y^{66} - 75y^{65} + \cdots - 3y + 1$
c_9	$y^{66} - 3y^{65} + \cdots - 1027y + 1$
c_{12}	$y^{66} + 13y^{65} + \cdots + 97965y + 9801$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.679043 + 0.513026I$	$-0.55757 + 11.85450I$	$-1.19937 - 10.55626I$
$u = 0.679043 - 0.513026I$	$-0.55757 - 11.85450I$	$-1.19937 + 10.55626I$
$u = -0.677457 + 0.502396I$	$0.69647 - 6.29635I$	$0.87137 + 6.02383I$
$u = -0.677457 - 0.502396I$	$0.69647 + 6.29635I$	$0.87137 - 6.02383I$
$u = -0.827357 + 0.134311I$	$1.73099 + 5.80754I$	$2.42706 - 4.28002I$
$u = -0.827357 - 0.134311I$	$1.73099 - 5.80754I$	$2.42706 + 4.28002I$
$u = 0.651675 + 0.512229I$	$-5.26765 + 5.51347I$	$-6.43351 - 6.58815I$
$u = 0.651675 - 0.512229I$	$-5.26765 - 5.51347I$	$-6.43351 + 6.58815I$
$u = -0.723236 + 0.392345I$	$4.90890 - 5.70748I$	$4.77595 + 8.10333I$
$u = -0.723236 - 0.392345I$	$4.90890 + 5.70748I$	$4.77595 - 8.10333I$
$u = 0.729599 + 0.367618I$	$5.06598 + 0.17301I$	$5.53090 - 1.90980I$
$u = 0.729599 - 0.367618I$	$5.06598 - 0.17301I$	$5.53090 + 1.90980I$
$u = 0.787704 + 0.158558I$	$2.78482 - 0.42194I$	$4.71831 - 0.92383I$
$u = 0.787704 - 0.158558I$	$2.78482 + 0.42194I$	$4.71831 + 0.92383I$
$u = 0.613057 + 0.504763I$	$-1.89419 - 0.91996I$	$-3.47927 - 1.04849I$
$u = 0.613057 - 0.504763I$	$-1.89419 + 0.91996I$	$-3.47927 + 1.04849I$
$u = -0.633845 + 0.477974I$	$-0.41391 - 3.88997I$	$-0.23971 + 6.90287I$
$u = -0.633845 - 0.477974I$	$-0.41391 + 3.88997I$	$-0.23971 - 6.90287I$
$u = -0.792968$	-2.47755	-2.65410
$u = -0.568943 + 0.415813I$	$-0.39703 - 3.45284I$	$-3.45398 + 8.62120I$
$u = -0.568943 - 0.415813I$	$-0.39703 + 3.45284I$	$-3.45398 - 8.62120I$
$u = 0.613967 + 0.254014I$	$1.141260 + 0.707260I$	$5.14650 - 1.61154I$
$u = 0.613967 - 0.254014I$	$1.141260 - 0.707260I$	$5.14650 + 1.61154I$
$u = 0.305227 + 0.549680I$	$-2.79055 + 4.56037I$	$-6.01762 - 5.67931I$
$u = 0.305227 - 0.549680I$	$-2.79055 - 4.56037I$	$-6.01762 + 5.67931I$
$u = 0.257589 + 0.569515I$	$-6.41719 - 1.79856I$	$-9.70751 + 0.42464I$
$u = 0.257589 - 0.569515I$	$-6.41719 + 1.79856I$	$-9.70751 - 0.42464I$
$u = 0.219617 + 0.585188I$	$-1.89948 - 8.09919I$	$-4.62425 + 5.17915I$
$u = 0.219617 - 0.585188I$	$-1.89948 + 8.09919I$	$-4.62425 - 5.17915I$
$u = -0.214284 + 0.568263I$	$-0.65140 + 2.62175I$	$-2.68943 - 0.54084I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.214284-0.568263I$	$-0.65140-2.62175I$	$-2.68943+0.54084I$
$u=-0.283990+0.514586I$	$-1.43586+0.43361I$	$-4.03138+0.14632I$
$u=-0.283990-0.514586I$	$-1.43586-0.43361I$	$-4.03138-0.14632I$
$u=-1.41960$	-1.56697	0
$u=-1.42823+0.03822I$	$2.50333-6.46643I$	0
$u=-1.42823-0.03822I$	$2.50333+6.46643I$	0
$u=\ \ 1.44500+0.02800I$	$3.88317+1.19867I$	0
$u=\ \ 1.44500-0.02800I$	$3.88317-1.19867I$	0
$u=-0.022017+0.498619I$	$2.90632+2.69811I$	$-0.00578-3.20875I$
$u=-0.022017-0.498619I$	$2.90632-2.69811I$	$-0.00578+3.20875I$
$u=-0.289584+0.387063I$	$-1.153330+0.503988I$	$-7.19528-0.72282I$
$u=-0.289584-0.387063I$	$-1.153330-0.503988I$	$-7.19528+0.72282I$
$u=\ \ 1.56691+0.04064I$	$5.24690+0.15185I$	0
$u=\ \ 1.56691-0.04064I$	$5.24690-0.15185I$	0
$u=\ \ 1.56474+0.10431I$	$6.81950+5.27330I$	0
$u=\ \ 1.56474-0.10431I$	$6.81950-5.27330I$	0
$u=-1.57332+0.14112I$	$5.46608-1.41931I$	0
$u=-1.57332-0.14112I$	$5.46608+1.41931I$	0
$u=-1.58537+0.07956I$	$8.69743-1.98171I$	0
$u=-1.58537-0.07956I$	$8.69743+1.98171I$	0
$u=\ \ 1.58430+0.13594I$	$7.09486+6.13313I$	0
$u=\ \ 1.58430-0.13594I$	$7.09486-6.13313I$	0
$u=-1.58678+0.14853I$	$2.28564-7.94476I$	0
$u=-1.58678-0.14853I$	$2.28564+7.94476I$	0
$u=\ \ 1.59661+0.14658I$	$8.39199+8.70234I$	0
$u=\ \ 1.59661-0.14658I$	$8.39199-8.70234I$	0
$u=-1.59684+0.15037I$	$7.1378-14.3160I$	0
$u=-1.59684-0.15037I$	$7.1378+14.3160I$	0
$u=-1.60867+0.05463I$	$10.92240-0.43188I$	0
$u=-1.60867-0.05463I$	$10.92240+0.43188I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.61183 + 0.04577I$	$9.98754 - 5.09815I$	0
$u = 1.61183 - 0.04577I$	$9.98754 + 5.09815I$	0
$u = 1.60946 + 0.11086I$	$12.8693 + 7.5849I$	0
$u = 1.60946 - 0.11086I$	$12.8693 - 7.5849I$	0
$u = -1.61013 + 0.10411I$	$13.05570 - 1.93744I$	0
$u = -1.61013 - 0.10411I$	$13.05570 + 1.93744I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{66} + 23u^{65} + \cdots + 3u + 1$
c_2, c_7	$u^{66} + u^{65} + \cdots + u + 1$
c_3, c_6	$u^{66} - u^{65} + \cdots - 31u + 13$
c_4, c_5, c_{10} c_{11}	$u^{66} + u^{65} + \cdots + u + 1$
c_9	$u^{66} + 17u^{65} + \cdots - 47u - 1$
c_{12}	$u^{66} - 5u^{65} + \cdots - 87u + 99$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{66} + 41y^{65} + \cdots + 25y + 1$
c_2, c_7	$y^{66} - 23y^{65} + \cdots - 3y + 1$
c_3, c_6	$y^{66} - 43y^{65} + \cdots - 779y + 169$
c_4, c_5, c_{10} c_{11}	$y^{66} - 75y^{65} + \cdots - 3y + 1$
c_9	$y^{66} - 3y^{65} + \cdots - 1027y + 1$
c_{12}	$y^{66} + 13y^{65} + \cdots + 97965y + 9801$