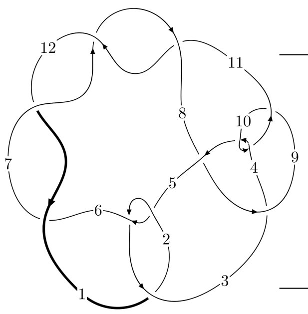
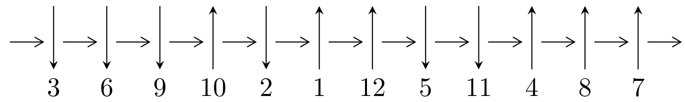
$12a_{0378}$ $(K12a_{0378})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^8 - 2u^6 - 2u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^5 + 2u^3 + u \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{13} + 4u^{11} + 7u^9 + 6u^7 + 2u^5 + u \\ u^{13} + 3u^{11} + 5u^9 + 4u^7 + 2u^5 + u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{21} + 6u^{19} + 17u^{17} + 28u^{15} + 28u^{13} + 16u^{11} + 5u^9 + 2u^7 + 3u^5 + 2u^3 + u \\ u^{21} + 5u^{19} + 13u^{17} + 20u^{15} + 20u^{13} + 13u^{11} + 7u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{29} + 8u^{27} + \cdots + 4u^5 + u \\ u^{29} + 7u^{27} + \cdots + u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{43} + 10u^{41} + \cdots + 6u^7 - u^3 \\ u^{45} + 11u^{43} + \cdots + u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{37} + 10u^{35} + \cdots + 2u^3 + u \\ u^{37} + 9u^{35} + \cdots + u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{61} - 4u^{60} + \cdots + 4u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{63} + 37u^{62} + \cdots + 16u^3 + 1$
c_2, c_5	$u^{63} + u^{62} + \cdots + 2u + 1$
c_3	$u^{63} - u^{62} + \cdots - 386u + 317$
c_4, c_{10}	$u^{63} + u^{62} + \cdots + 2u + 1$
c_6, c_7, c_{11} c_{12}	$u^{63} + 3u^{62} + \cdots + 16u + 1$
c_8	$u^{63} + 5u^{62} + \cdots + 360u + 31$
c_9	$u^{63} + 31u^{62} + \cdots + 16u^3 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} - 21y^{62} + \cdots - 64y^2 - 1$
c_2, c_5	$y^{63} - 37y^{62} + \cdots + 16y^3 - 1$
c_3	$y^{63} - 25y^{62} + \cdots + 1252156y - 100489$
c_4, c_{10}	$y^{63} + 31y^{62} + \cdots + 16y^3 - 1$
c_6, c_7, c_{11} c_{12}	$y^{63} + 79y^{62} + \cdots - 80y - 1$
c_8	$y^{63} - 13y^{62} + \cdots + 27176y - 961$
c_9	$y^{63} + 3y^{62} + \cdots + 128y^2 - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.621935 + 0.782730I$	$-9.96990 + 2.39006I$	$-4.17438 + 0.I$
$u = -0.621935 - 0.782730I$	$-9.96990 - 2.39006I$	$-4.17438 + 0.I$
$u = 0.438527 + 0.907377I$	$-1.96094 - 0.80799I$	$-3.24469 + 2.24299I$
$u = 0.438527 - 0.907377I$	$-1.96094 + 0.80799I$	$-3.24469 - 2.24299I$
$u = -0.630886 + 0.761128I$	$-9.90322 - 7.24194I$	$-3.95069 + 6.24276I$
$u = -0.630886 - 0.761128I$	$-9.90322 + 7.24194I$	$-3.95069 - 6.24276I$
$u = 0.618288 + 0.768075I$	$-6.12298 + 2.40025I$	$-0.83833 - 3.23354I$
$u = 0.618288 - 0.768075I$	$-6.12298 - 2.40025I$	$-0.83833 + 3.23354I$
$u = -0.473047 + 1.008350I$	$-0.44679 - 2.73565I$	0
$u = -0.473047 - 1.008350I$	$-0.44679 + 2.73565I$	0
$u = 0.309687 + 1.086540I$	$-4.07179 + 0.35561I$	0
$u = 0.309687 - 1.086540I$	$-4.07179 - 0.35561I$	0
$u = 0.281866 + 0.810813I$	$-2.03136 - 0.82581I$	$-5.70235 + 1.89666I$
$u = 0.281866 - 0.810813I$	$-2.03136 + 0.82581I$	$-5.70235 - 1.89666I$
$u = 0.563966 + 0.645928I$	$-1.23878 + 4.99873I$	$-1.02686 - 8.32445I$
$u = 0.563966 - 0.645928I$	$-1.23878 - 4.99873I$	$-1.02686 + 8.32445I$
$u = -0.274490 + 1.109110I$	$-6.89845 + 3.68623I$	0
$u = -0.274490 - 1.109110I$	$-6.89845 - 3.68623I$	0
$u = -0.512226 + 1.042810I$	$0.00316 - 3.27794I$	0
$u = -0.512226 - 1.042810I$	$0.00316 + 3.27794I$	0
$u = 0.795174 + 0.261887I$	$-12.4090 - 9.0599I$	$-4.87131 + 5.08954I$
$u = 0.795174 - 0.261887I$	$-12.4090 + 9.0599I$	$-4.87131 - 5.08954I$
$u = 0.792169 + 0.247301I$	$-12.62010 + 0.73676I$	$-5.26880 - 0.86219I$
$u = 0.792169 - 0.247301I$	$-12.62010 - 0.73676I$	$-5.26880 + 0.86219I$
$u = -0.788814 + 0.256117I$	$-8.63854 + 4.09024I$	$-1.84772 - 2.15081I$
$u = -0.788814 - 0.256117I$	$-8.63854 - 4.09024I$	$-1.84772 + 2.15081I$
$u = -0.335883 + 1.123950I$	$-7.59429 - 3.78030I$	0
$u = -0.335883 - 1.123950I$	$-7.59429 + 3.78030I$	0
$u = 0.444654 + 1.090310I$	$-4.15081 + 3.62964I$	0
$u = 0.444654 - 1.090310I$	$-4.15081 - 3.62964I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.530104 + 1.071360I$	$-0.56847 + 7.03450I$	0
$u = 0.530104 - 1.071360I$	$-0.56847 - 7.03450I$	0
$u = -0.286256 + 1.181430I$	$-13.08250 + 0.76656I$	0
$u = -0.286256 - 1.181430I$	$-13.08250 - 0.76656I$	0
$u = 0.280566 + 1.184730I$	$-16.9082 - 5.7443I$	0
$u = 0.280566 - 1.184730I$	$-16.9082 + 5.7443I$	0
$u = -0.720190 + 0.301321I$	$-2.72172 + 6.49499I$	$-2.54742 - 7.00667I$
$u = -0.720190 - 0.301321I$	$-2.72172 - 6.49499I$	$-2.54742 + 7.00667I$
$u = 0.291741 + 1.185570I$	$-17.0499 + 4.1182I$	0
$u = 0.291741 - 1.185570I$	$-17.0499 - 4.1182I$	0
$u = 0.531414 + 1.112570I$	$-2.57205 + 7.06874I$	0
$u = 0.531414 - 1.112570I$	$-2.57205 - 7.06874I$	0
$u = -0.505728 + 0.573150I$	$0.85780 - 1.28412I$	$3.73246 + 4.21223I$
$u = -0.505728 - 0.573150I$	$0.85780 + 1.28412I$	$3.73246 - 4.21223I$
$u = -0.514558 + 1.129920I$	$-6.38558 - 3.99438I$	0
$u = -0.514558 - 1.129920I$	$-6.38558 + 3.99438I$	0
$u = -0.544940 + 1.121930I$	$-5.10210 - 11.30890I$	0
$u = -0.544940 - 1.121930I$	$-5.10210 + 11.30890I$	0
$u = -0.572727 + 0.467677I$	$1.68698 - 1.08392I$	$5.60962 + 3.91399I$
$u = -0.572727 - 0.467677I$	$1.68698 + 1.08392I$	$5.60962 - 3.91399I$
$u = 0.620953 + 0.393540I$	$1.38897 - 2.48970I$	$3.99601 + 5.45980I$
$u = 0.620953 - 0.393540I$	$1.38897 + 2.48970I$	$3.99601 - 5.45980I$
$u = 0.673225 + 0.294907I$	$-0.22891 - 2.41591I$	$0.95752 + 3.52560I$
$u = 0.673225 - 0.294907I$	$-0.22891 + 2.41591I$	$0.95752 - 3.52560I$
$u = -0.685484 + 0.219433I$	$-3.79957 - 0.58028I$	$-5.57705 + 0.79096I$
$u = -0.685484 - 0.219433I$	$-3.79957 + 0.58028I$	$-5.57705 - 0.79096I$
$u = -0.549892 + 1.156170I$	$-11.2870 - 9.0785I$	0
$u = -0.549892 - 1.156170I$	$-11.2870 + 9.0785I$	0
$u = 0.547368 + 1.159540I$	$-15.3064 + 4.2467I$	0
$u = 0.547368 - 1.159540I$	$-15.3064 - 4.2467I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.553587 + 1.157060I$	$-15.0484 + 14.0814I$	0
$u = 0.553587 - 1.157060I$	$-15.0484 - 14.0814I$	0
$u = 0.487531$	-1.48768	-6.31320

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{63} + 37u^{62} + \cdots + 16u^3 + 1$
c_2, c_5	$u^{63} + u^{62} + \cdots + 2u + 1$
c_3	$u^{63} - u^{62} + \cdots - 386u + 317$
c_4, c_{10}	$u^{63} + u^{62} + \cdots + 2u + 1$
c_6, c_7, c_{11} c_{12}	$u^{63} + 3u^{62} + \cdots + 16u + 1$
c_8	$u^{63} + 5u^{62} + \cdots + 360u + 31$
c_9	$u^{63} + 31u^{62} + \cdots + 16u^3 - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} - 21y^{62} + \cdots - 64y^2 - 1$
c_2, c_5	$y^{63} - 37y^{62} + \cdots + 16y^3 - 1$
c_3	$y^{63} - 25y^{62} + \cdots + 1252156y - 100489$
c_4, c_{10}	$y^{63} + 31y^{62} + \cdots + 16y^3 - 1$
c_6, c_7, c_{11} c_{12}	$y^{63} + 79y^{62} + \cdots - 80y - 1$
c_8	$y^{63} - 13y^{62} + \cdots + 27176y - 961$
c_9	$y^{63} + 3y^{62} + \cdots + 128y^2 - 1$