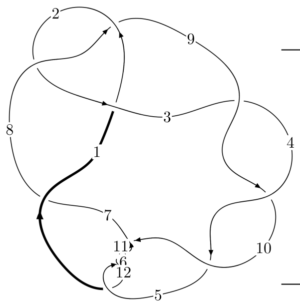
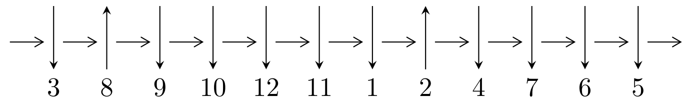
$12a_{0733}$ $(K12a_{0733})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{36} - u^{35} + \cdots + u^2 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 36 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. $I_1^u = \langle u^{36} - u^{35} + \cdots + u^2 - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^9 + 2u^7 + u^5 - 2u^3 - u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^8 - 2u^6 - 2u^4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^{20} - 5u^{18} - 11u^{16} - 10u^{14} + 2u^{12} + 13u^{10} + 9u^8 - 2u^6 - 5u^4 - u^2 + 1 \\ -u^{22} - 6u^{20} - 17u^{18} - 26u^{16} - 20u^{14} + 13u^{10} + 10u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{34} - 9u^{32} + \cdots - u^2 + 1 \\ -u^{35} + u^{34} + \cdots + u^2 - 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^{23} + 6u^{21} + \cdots + 6u^5 + 2u^3 \\ -u^{23} - 7u^{21} + \cdots - 3u^5 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$

$4u^{35} - 4u^{34} + 40u^{33} - 36u^{32} + 188u^{31} - 156u^{30} + 524u^{29} - 408u^{28} + 908u^{27} - 688u^{26} + 880u^{25} - 720u^{24} + 124u^{23} - 340u^{22} - 868u^{21} + 236u^{20} - 1120u^{19} + 600u^{18} - 444u^{17} + 592u^{16} + 280u^{15} + 332u^{14} + 360u^{13} + 20u^{12} + 84u^{11} - 172u^{10} - 60u^9 - 156u^8 - 24u^7 - 52u^6 + 16u^5 + 4u^4 + 20u^3 - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36} + 21u^{35} + \cdots - 2u + 1$
c_2, c_8	$u^{36} - u^{35} + \cdots + u^2 - 1$
c_3, c_4, c_7 c_9	$u^{36} + u^{35} + \cdots - 6u - 5$
c_5, c_6, c_{10} c_{11}, c_{12}	$u^{36} + u^{35} + \cdots - 4u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} - 11y^{35} + \cdots - 30y + 1$
c_2, c_8	$y^{36} + 21y^{35} + \cdots - 2y + 1$
c_3, c_4, c_7 c_9	$y^{36} - 43y^{35} + \cdots - 166y + 25$
c_5, c_6, c_{10} c_{11}, c_{12}	$y^{36} + 45y^{35} + \cdots - 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.282875 + 1.062700I$	$-1.68586 + 0.53085I$	$-10.75192 + 0.82754I$
$u = \ \ 0.282875 - 1.062700I$	$-1.68586 - 0.53085I$	$-10.75192 - 0.82754I$
$u = \ \ 0.891515 + 0.048885I$	$2.90046 - 5.74969I$	$-5.68594 + 2.68814I$
$u = \ \ 0.891515 - 0.048885I$	$2.90046 + 5.74969I$	$-5.68594 - 2.68814I$
$u = \ \ 0.890163$	-8.32989	-11.7240
$u = -0.888293 + 0.024901I$	$-5.76957 + 3.65801I$	$-7.50646 - 3.88825I$
$u = -0.888293 - 0.024901I$	$-5.76957 - 3.65801I$	$-7.50646 + 3.88825I$
$u = \ \ 0.498093 + 0.734304I$	$12.00850 + 2.05861I$	$-1.12178 - 3.75231I$
$u = \ \ 0.498093 - 0.734304I$	$12.00850 - 2.05861I$	$-1.12178 + 3.75231I$
$u = -0.375034 + 1.064500I$	$-3.45066 - 3.25878I$	$-14.9165 + 5.6693I$
$u = -0.375034 - 1.064500I$	$-3.45066 + 3.25878I$	$-14.9165 - 5.6693I$
$u = -0.210685 + 1.118540I$	$6.42157 + 0.49356I$	$-9.63907 + 0.32963I$
$u = -0.210685 - 1.118540I$	$6.42157 - 0.49356I$	$-9.63907 - 0.32963I$
$u = \ \ 0.444121 + 1.051070I$	$-0.51949 + 5.89850I$	$-7.49197 - 8.58873I$
$u = \ \ 0.444121 - 1.051070I$	$-0.51949 - 5.89850I$	$-7.49197 + 8.58873I$
$u = -0.490379 + 1.047610I$	$8.45002 - 7.20201I$	$-5.83680 + 6.79259I$
$u = -0.490379 - 1.047610I$	$8.45002 + 7.20201I$	$-5.83680 - 6.79259I$
$u = -0.405042 + 0.735070I$	$2.86862 - 1.80232I$	$-0.91103 + 4.87236I$
$u = -0.405042 - 0.735070I$	$2.86862 + 1.80232I$	$-0.91103 - 4.87236I$
$u = \ \ 0.149662 + 0.790037I$	$-0.605604 + 0.932135I$	$-9.94128 - 6.89796I$
$u = \ \ 0.149662 - 0.790037I$	$-0.605604 - 0.932135I$	$-9.94128 + 6.89796I$
$u = -0.622331 + 0.303894I$	$10.53390 + 2.88470I$	$-2.43200 - 2.46197I$
$u = -0.622331 - 0.303894I$	$10.53390 - 2.88470I$	$-2.43200 + 2.46197I$
$u = \ \ 0.439815 + 1.266880I$	$-1.13178 - 1.06458I$	$-9.26896 - 0.31777I$
$u = \ \ 0.439815 - 1.266880I$	$-1.13178 + 1.06458I$	$-9.26896 + 0.31777I$
$u = -0.454338 + 1.261880I$	$-9.69160 - 1.09254I$	$-10.99035 - 0.80742I$
$u = -0.454338 - 1.261880I$	$-9.69160 + 1.09254I$	$-10.99035 + 0.80742I$
$u = -0.481098 + 1.254150I$	$-9.49472 - 8.55149I$	$-10.56405 + 6.84602I$
$u = -0.481098 - 1.254150I$	$-9.49472 + 8.55149I$	$-10.56405 - 6.84602I$
$u = \ \ 0.468539 + 1.259380I$	$-12.15810 + 4.83267I$	$-14.8489 - 3.1819I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.468539 - 1.259380I$	$-12.15810 - 4.83267I$	$-14.8489 + 3.1819I$
$u = \quad 0.493269 + 1.250710I$	$-0.73827 + 10.71510I$	$-8.69637 - 5.67492I$
$u = \quad 0.493269 - 1.250710I$	$-0.73827 - 10.71510I$	$-8.69637 + 5.67492I$
$u = \quad 0.539657 + 0.237187I$	$1.69494 - 1.97215I$	$-3.23018 + 4.60396I$
$u = \quad 0.539657 - 0.237187I$	$1.69494 + 1.97215I$	$-3.23018 - 4.60396I$
$u = -0.450859$	-0.804226	-12.6090

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{36}+21u^{35}+\cdots-2u+1$
c_2, c_8	$u^{36}-u^{35}+\cdots+u^2-1$
c_3, c_4, c_7 c_9	$u^{36}+u^{35}+\cdots-6u-5$
c_5, c_6, c_{10} c_{11}, c_{12}	$u^{36}+u^{35}+\cdots-4u-1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} - 11y^{35} + \cdots - 30y + 1$
c_2, c_8	$y^{36} + 21y^{35} + \cdots - 2y + 1$
c_3, c_4, c_7 c_9	$y^{36} - 43y^{35} + \cdots - 166y + 25$
c_5, c_6, c_{10} c_{11}, c_{12}	$y^{36} + 45y^{35} + \cdots - 2y + 1$