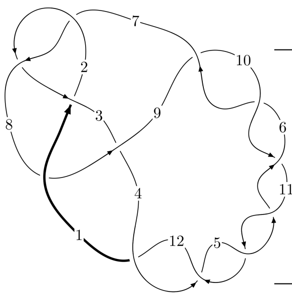
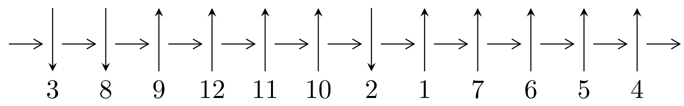
$12a_{0744}$ ($K12a_{0744}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{30} + u^{29} + \cdots + u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 30 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. $\boldsymbol{I_1^u = \langle u^{30} + u^{29} + \cdots + u + 1 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 + 2u \\ u^5 + 3u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{10} - 7u^8 - 16u^6 - 13u^4 - u^2 + 1 \\ u^{10} + 6u^8 + 11u^6 + 8u^4 + 3u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{11} - 8u^9 - 22u^7 - 24u^5 - 9u^3 - 2u \\ -u^{13} - 9u^{11} - 29u^9 - 40u^7 - 22u^5 - 3u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{25} - 18u^{23} + \cdots + 6u^3 + u \\ u^{25} + 17u^{23} + \cdots + 5u^5 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$-4u^{28} - 4u^{27} - 88u^{26} - 84u^{25} - 852u^{24} - 772u^{23} - 4776u^{22} - 4080u^{21} - 17160u^{20} - 13704u^{19} - 41328u^{18} - 30524u^{17} - 67796u^{16} - 45664u^{15} - 75468u^{14} - 45464u^{13} - 55764u^{12} - 29136u^{11} - 26120u^{10} - 11080u^9 - 7012u^8 - 1872u^7 - 744u^6 + 176u^5 + 72u^4 + 96u^3 + 16u^2 + 4u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} + 15u^{29} + \cdots + u + 1$
c_2, c_7	$u^{30} + u^{29} + \cdots + u + 1$
c_3	$u^{30} - u^{29} + \cdots - u + 13$
c_4, c_5, c_6 c_9, c_{10}, c_{11} c_{12}	$u^{30} + u^{29} + \cdots + u + 1$
c_8	$u^{30} + 3u^{29} + \cdots + 39u + 21$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} + y^{29} + \cdots + 15y + 1$
c_2, c_7	$y^{30} - 15y^{29} + \cdots - y + 1$
c_3	$y^{30} + 9y^{29} + \cdots - 261y + 169$
c_4, c_5, c_6 c_9, c_{10}, c_{11} c_{12}	$y^{30} + 45y^{29} + \cdots - y + 1$
c_8	$y^{30} + 13y^{29} + \cdots + 2175y + 441$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.170414 + 0.834214I$	$-5.24114 + 0.43257I$	$-4.60975 + 0.66672I$
$u = -0.170414 - 0.834214I$	$-5.24114 - 0.43257I$	$-4.60975 - 0.66672I$
$u = -0.294203 + 0.768569I$	$-3.91612 - 7.01709I$	$-1.64398 + 8.27896I$
$u = -0.294203 - 0.768569I$	$-3.91612 + 7.01709I$	$-1.64398 - 8.27896I$
$u = \quad 0.242623 + 0.722037I$	$-1.51083 + 2.43874I$	$1.60861 - 4.80918I$
$u = \quad 0.242623 - 0.722037I$	$-1.51083 - 2.43874I$	$1.60861 + 4.80918I$
$u = \quad 0.038851 + 1.290960I$	$-6.26416 + 2.28369I$	$1.00616 - 3.59603I$
$u = \quad 0.038851 - 1.290960I$	$-6.26416 - 2.28369I$	$1.00616 + 3.59603I$
$u = \quad 0.106749 + 1.375700I$	$-8.52804 + 3.68968I$	$0. - 2.69220I$
$u = \quad 0.106749 - 1.375700I$	$-8.52804 - 3.68968I$	$0. + 2.69220I$
$u = -0.132490 + 1.392830I$	$-11.13310 - 8.56839I$	$-3.01367 + 6.28743I$
$u = -0.132490 - 1.392830I$	$-11.13310 + 8.56839I$	$-3.01367 - 6.28743I$
$u = -0.07468 + 1.41582I$	$-12.80400 - 0.46762I$	$-5.38297 + 0.I$
$u = -0.07468 - 1.41582I$	$-12.80400 + 0.46762I$	$-5.38297 + 0.I$
$u = \quad 0.212525 + 0.515943I$	$-0.30214 + 1.56902I$	$3.13445 - 6.62609I$
$u = \quad 0.212525 - 0.515943I$	$-0.30214 - 1.56902I$	$3.13445 + 6.62609I$
$u = -0.343660 + 0.336994I$	$-1.59918 + 2.04479I$	$1.77407 + 0.99321I$
$u = -0.343660 - 0.336994I$	$-1.59918 - 2.04479I$	$1.77407 - 0.99321I$
$u = -0.431998 + 0.168856I$	$-1.04292 - 4.61082I$	$4.50728 + 7.35119I$
$u = -0.431998 - 0.168856I$	$-1.04292 + 4.61082I$	$4.50728 - 7.35119I$
$u = \quad 0.364754 + 0.087964I$	$0.963752 + 0.420717I$	$10.43938 - 2.37744I$
$u = \quad 0.364754 - 0.087964I$	$0.963752 - 0.420717I$	$10.43938 + 2.37744I$
$u = \quad 0.00718 + 1.81845I$	$-17.8624 + 2.4789I$	0
$u = \quad 0.00718 - 1.81845I$	$-17.8624 - 2.4789I$	0
$u = \quad 0.02668 + 1.83606I$	$18.9070 + 4.3501I$	0
$u = \quad 0.02668 - 1.83606I$	$18.9070 - 4.3501I$	0
$u = -0.03325 + 1.83999I$	$16.2143 - 9.3978I$	0
$u = -0.03325 - 1.83999I$	$16.2143 + 9.3978I$	0
$u = -0.01867 + 1.84515I$	$14.3797 - 0.9432I$	0
$u = -0.01867 - 1.84515I$	$14.3797 + 0.9432I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{30} + 15u^{29} + \cdots + u + 1$
c_2, c_7	$u^{30} + u^{29} + \cdots + u + 1$
c_3	$u^{30} - u^{29} + \cdots - u + 13$
c_4, c_5, c_6 c_9, c_{10}, c_{11} c_{12}	$u^{30} + u^{29} + \cdots + u + 1$
c_8	$u^{30} + 3u^{29} + \cdots + 39u + 21$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} + y^{29} + \cdots + 15y + 1$
c_2, c_7	$y^{30} - 15y^{29} + \cdots - y + 1$
c_3	$y^{30} + 9y^{29} + \cdots - 261y + 169$
c_4, c_5, c_6 c_9, c_{10}, c_{11} c_{12}	$y^{30} + 45y^{29} + \cdots - y + 1$
c_8	$y^{30} + 13y^{29} + \cdots + 2175y + 441$