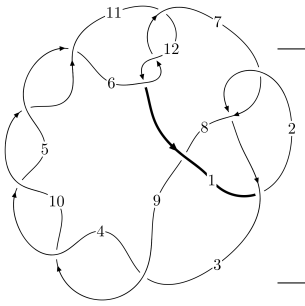
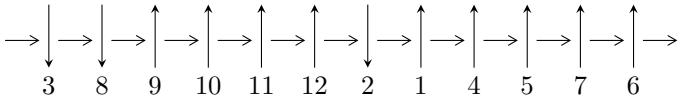
$12a_{0717}$ $(K12a_{0717})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{44} + u^{43} + \cdots + 3u^2 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 44 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. $I_1^u = \langle u^{44} + u^{43} + \cdots + 3u^2 - 1 \rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -u^6 - 3u^4 - 2u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^9 + 4u^7 + 5u^5 - 3u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{12} + 5u^{10} + 9u^8 + 4u^6 - 6u^4 - 5u^2 + 1 \\ -u^{12} - 4u^{10} - 6u^8 - 2u^6 + 3u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{15} - 6u^{13} - 14u^{11} - 12u^9 + 6u^7 + 16u^5 + 4u^3 - 4u \\ u^{15} + 5u^{13} + 10u^{11} + 7u^9 - 4u^7 - 8u^5 - 2u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{34} + 13u^{32} + \cdots - 3u^2 + 1 \\ -u^{34} - 12u^{32} + \cdots - 12u^4 - u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{18} - 7u^{16} - 20u^{14} - 25u^{12} - u^{10} + 31u^8 + 24u^6 - 6u^4 - 9u^2 + 1 \\ u^{20} + 8u^{18} + 26u^{16} + 40u^{14} + 17u^{12} - 32u^{10} - 42u^8 - 6u^6 + 11u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{42} + 4u^{41} + \cdots + 16u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{44}+19u^{43}+\cdots+6u+1$
c_2, c_7	$u^{44}+u^{43}+\cdots+3u^2-1$
c_3, c_4, c_5 c_9, c_{10}	$u^{44}-u^{43}+\cdots-10u-1$
c_6, c_{11}, c_{12}	$u^{44}+u^{43}+\cdots+3u^2-1$
c_8	$u^{44}+3u^{43}+\cdots-6u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{44} + 13y^{43} + \cdots + 22y + 1$
c_2, c_7	$y^{44} - 19y^{43} + \cdots - 6y + 1$
c_3, c_4, c_5 c_9, c_{10}	$y^{44} - 59y^{43} + \cdots - 54y + 1$
c_6, c_{11}, c_{12}	$y^{44} + 33y^{43} + \cdots - 6y + 1$
c_8	$y^{44} - 7y^{43} + \cdots - 82y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.082710 + 1.034130I$	$-1.54661 + 2.05611I$	$8.37488 - 3.95223I$
$u = 0.082710 - 1.034130I$	$-1.54661 - 2.05611I$	$8.37488 + 3.95223I$
$u = 0.936863 + 0.009278I$	$16.2934 + 1.8100I$	$14.1723 - 0.1493I$
$u = 0.936863 - 0.009278I$	$16.2934 - 1.8100I$	$14.1723 + 0.1493I$
$u = -0.935926 + 0.016671I$	$14.5097 - 7.3192I$	$11.79267 + 4.65141I$
$u = -0.935926 - 0.016671I$	$14.5097 + 7.3192I$	$11.79267 - 4.65141I$
$u = -0.922774$	10.3646	8.49180
$u = 0.334170 + 1.145250I$	$0.99109 - 2.19513I$	$8.38399 + 2.00652I$
$u = 0.334170 - 1.145250I$	$0.99109 + 2.19513I$	$8.38399 - 2.00652I$
$u = 0.111285 + 1.222780I$	$-3.02800 + 1.82177I$	$4.52707 - 4.00785I$
$u = 0.111285 - 1.222780I$	$-3.02800 - 1.82177I$	$4.52707 + 4.00785I$
$u = -0.332008 + 1.184600I$	$2.37614 - 2.74113I$	$10.71959 + 3.57074I$
$u = -0.332008 - 1.184600I$	$2.37614 + 2.74113I$	$10.71959 - 3.57074I$
$u = 0.735559 + 0.086101I$	$4.16453 + 6.09152I$	$11.57779 - 6.23652I$
$u = 0.735559 - 0.086101I$	$4.16453 - 6.09152I$	$11.57779 + 6.23652I$
$u = -0.737441 + 0.045521I$	$5.81912 - 1.13182I$	$14.6136 + 0.8297I$
$u = -0.737441 - 0.045521I$	$5.81912 + 1.13182I$	$14.6136 - 0.8297I$
$u = 0.254973 + 1.238130I$	$-2.72721 + 3.14387I$	$2.66290 - 3.97664I$
$u = 0.254973 - 1.238130I$	$-2.72721 - 3.14387I$	$2.66290 + 3.97664I$
$u = -0.052643 + 1.271300I$	$-6.04499 + 0.87730I$	$-2.26593 + 0.I$
$u = -0.052643 - 1.271300I$	$-6.04499 - 0.87730I$	$-2.26593 + 0.I$
$u = -0.125668 + 1.277410I$	$-5.21494 - 5.74437I$	$0. + 7.95874I$
$u = -0.125668 - 1.277410I$	$-5.21494 + 5.74437I$	$0. - 7.95874I$
$u = -0.317064 + 1.252810I$	$1.82759 - 4.91922I$	$6.00000 + 0.I$
$u = -0.317064 - 1.252810I$	$1.82759 + 4.91922I$	$6.00000 + 0.I$
$u = 0.310157 + 1.277730I$	$-0.05454 + 9.83837I$	$0. - 8.98455I$
$u = 0.310157 - 1.277730I$	$-0.05454 - 9.83837I$	$0. + 8.98455I$
$u = -0.463937 + 1.280720I$	$10.59120 + 2.33116I$	0
$u = -0.463937 - 1.280720I$	$10.59120 - 2.33116I$	0
$u = -0.447547 + 1.289390I$	$6.35891 - 4.89040I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.447547-1.289390I$	$6.35891+4.89040I$	0
$u=\ \ 0.461829+1.286920I$	$12.32910+3.17505I$	0
$u=\ \ 0.461829-1.286920I$	$12.32910-3.17505I$	0
$u=\ \ 0.455030+1.300690I$	$12.21970+6.77393I$	0
$u=\ \ 0.455030-1.300690I$	$12.21970-6.77393I$	0
$u=-0.451869+1.305610I$	$10.3943-12.2700I$	0
$u=-0.451869-1.305610I$	$10.3943+12.2700I$	0
$u=\ \ 0.612221$	1.07090	8.97140
$u=-0.406842+0.274492I$	$-0.57374-3.95128I$	$7.80963+8.87694I$
$u=-0.406842-0.274492I$	$-0.57374+3.95128I$	$7.80963-8.87694I$
$u=-0.161520+0.396177I$	$-1.30168+1.57408I$	$3.52762-0.39378I$
$u=-0.161520-0.396177I$	$-1.30168-1.57408I$	$3.52762+0.39378I$
$u=\ \ 0.405167+0.094355I$	$0.790867+0.101940I$	$13.27829-1.93262I$
$u=\ \ 0.405167-0.094355I$	$0.790867-0.101940I$	$13.27829+1.93262I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{44}+19u^{43}+\cdots+6u+1$
c_2, c_7	$u^{44}+u^{43}+\cdots+3u^2-1$
c_3, c_4, c_5 c_9, c_{10}	$u^{44}-u^{43}+\cdots-10u-1$
c_6, c_{11}, c_{12}	$u^{44}+u^{43}+\cdots+3u^2-1$
c_8	$u^{44}+3u^{43}+\cdots-6u+1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{44} + 13y^{43} + \cdots + 22y + 1$
c_2, c_7	$y^{44} - 19y^{43} + \cdots - 6y + 1$
c_3, c_4, c_5 c_9, c_{10}	$y^{44} - 59y^{43} + \cdots - 54y + 1$
c_6, c_{11}, c_{12}	$y^{44} + 33y^{43} + \cdots - 6y + 1$
c_8	$y^{44} - 7y^{43} + \cdots - 82y + 1$