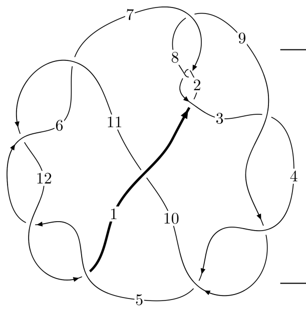
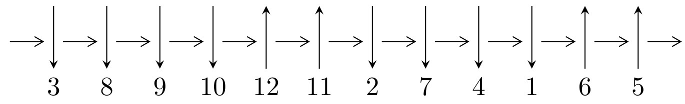
$12a_{0731}$ ($K12a_{0731}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{52} - u^{51} + \cdots - u^2 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 52 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. $I_1^u = \langle u^{52} - u^{51} + \cdots - u^2 - 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^3 + 2u \\ u^5 + 3u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^4 + 3u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^9 + 6u^7 + 11u^5 + 6u^3 + u \\ u^9 + 5u^7 + 7u^5 + 2u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{14} - 9u^{12} - 30u^{10} - 45u^8 - 30u^6 - 8u^4 + 2u^2 + 1 \\ -u^{14} - 8u^{12} - 23u^{10} - 28u^8 - 14u^6 - 4u^4 + u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^{19} - 12u^{17} + \cdots + 11u^3 + 2u \\ -u^{19} - 11u^{17} + \cdots + 3u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{38} + 23u^{36} + \cdots + 2u^2 + 1 \\ u^{38} + 22u^{36} + \cdots + 6u^4 + u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^{22} + 13u^{20} + \cdots - 15u^4 + 1 \\ u^{24} + 14u^{22} + \cdots - 30u^6 - 10u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{51} - 4u^{50} + \cdots - 12u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{52} + 19u^{51} + \cdots - 2u + 1$
c_2, c_7	$u^{52} + u^{51} + \cdots - 2u - 1$
c_3, c_4, c_9	$u^{52} - u^{51} + \cdots - 8u - 4$
c_5, c_6, c_{11} c_{12}	$u^{52} - u^{51} + \cdots - u^2 - 1$
c_{10}	$u^{52} - 17u^{51} + \cdots - 26192u + 2993$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{52} + 29y^{51} + \cdots + 18y + 1$
c_2, c_7	$y^{52} - 19y^{51} + \cdots + 2y + 1$
c_3, c_4, c_9	$y^{52} - 55y^{51} + \cdots - 184y + 16$
c_5, c_6, c_{11} c_{12}	$y^{52} + 61y^{51} + \cdots + 2y + 1$
c_{10}	$y^{52} - 31y^{51} + \cdots - 170476614y + 8958049$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.417129 + 0.833683I$	$-6.57030 - 3.29491I$	$-10.38217 + 1.00924I$
$u = 0.417129 - 0.833683I$	$-6.57030 + 3.29491I$	$-10.38217 - 1.00924I$
$u = 0.447855 + 0.817464I$	$-10.54530 + 3.62754I$	$-13.7524 - 4.1082I$
$u = 0.447855 - 0.817464I$	$-10.54530 - 3.62754I$	$-13.7524 + 4.1082I$
$u = 0.468982 + 0.795969I$	$-6.17965 + 10.49310I$	$-9.45880 - 8.85692I$
$u = 0.468982 - 0.795969I$	$-6.17965 - 10.49310I$	$-9.45880 + 8.85692I$
$u = -0.415985 + 0.814109I$	$-4.96278 - 2.01233I$	$-8.04647 + 3.92304I$
$u = -0.415985 - 0.814109I$	$-4.96278 + 2.01233I$	$-8.04647 - 3.92304I$
$u = -0.456551 + 0.790170I$	$-4.67136 - 5.01095I$	$-7.40961 + 4.34724I$
$u = -0.456551 - 0.790170I$	$-4.67136 + 5.01095I$	$-7.40961 - 4.34724I$
$u = -0.307728 + 0.673902I$	$-3.04997 - 2.38050I$	$-13.2356 + 6.5396I$
$u = -0.307728 - 0.673902I$	$-3.04997 + 2.38050I$	$-13.2356 - 6.5396I$
$u = -0.431177 + 0.595940I$	$1.33174 - 6.67291I$	$-4.55025 + 10.19057I$
$u = -0.431177 - 0.595940I$	$1.33174 + 6.67291I$	$-4.55025 - 10.19057I$
$u = -0.075469 + 0.725881I$	$-0.97753 + 2.21512I$	$-11.08908 - 2.69956I$
$u = -0.075469 - 0.725881I$	$-0.97753 - 2.21512I$	$-11.08908 + 2.69956I$
$u = 0.417591 + 0.557999I$	$1.94823 + 1.38800I$	$-2.50449 - 4.64036I$
$u = 0.417591 - 0.557999I$	$1.94823 - 1.38800I$	$-2.50449 + 4.64036I$
$u = 0.636854$	-8.09348	-9.74010
$u = 0.633274 + 0.038957I$	$-3.92657 - 6.79204I$	$-5.72913 + 4.81858I$
$u = 0.633274 - 0.038957I$	$-3.92657 + 6.79204I$	$-5.72913 - 4.81858I$
$u = -0.614460 + 0.031464I$	$-2.42291 + 1.41178I$	$-3.50849 - 0.14454I$
$u = -0.614460 - 0.031464I$	$-2.42291 - 1.41178I$	$-3.50849 + 0.14454I$
$u = 0.241452 + 0.491984I$	$-0.158403 + 0.970828I$	$-3.16514 - 6.89693I$
$u = 0.241452 - 0.491984I$	$-0.158403 - 0.970828I$	$-3.16514 + 6.89693I$
$u = 0.435224 + 0.311244I$	$2.64348 + 1.66592I$	$0.51705 - 3.90838I$
$u = 0.435224 - 0.311244I$	$2.64348 - 1.66592I$	$0.51705 + 3.90838I$
$u = -0.459005 + 0.259005I$	$2.28374 + 3.52243I$	$-0.68639 - 3.07419I$
$u = -0.459005 - 0.259005I$	$2.28374 - 3.52243I$	$-0.68639 + 3.07419I$
$u = 0.01062 + 1.50422I$	$-3.13178 + 2.70355I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.01062 - 1.50422I$	$-3.13178 - 2.70355I$	0
$u = 0.09297 + 1.55850I$	$-5.18614 + 3.13538I$	0
$u = 0.09297 - 1.55850I$	$-5.18614 - 3.13538I$	0
$u = -0.10423 + 1.56695I$	$-5.96476 - 8.55636I$	0
$u = -0.10423 - 1.56695I$	$-5.96476 + 8.55636I$	0
$u = 0.04555 + 1.57078I$	$-7.31168 + 1.86434I$	0
$u = 0.04555 - 1.57078I$	$-7.31168 - 1.86434I$	0
$u = -0.07403 + 1.59817I$	$-10.82600 - 3.74121I$	0
$u = -0.07403 - 1.59817I$	$-10.82600 + 3.74121I$	0
$u = -0.02520 + 1.60559I$	$-8.95532 + 1.81146I$	0
$u = -0.02520 - 1.60559I$	$-8.95532 - 1.81146I$	0
$u = -0.386669$	-1.22216	-7.16550
$u = -0.13033 + 1.63602I$	$-12.9782 - 7.2412I$	0
$u = -0.13033 - 1.63602I$	$-12.9782 + 7.2412I$	0
$u = 0.13423 + 1.63834I$	$-14.5123 + 12.7892I$	0
$u = 0.13423 - 1.63834I$	$-14.5123 - 12.7892I$	0
$u = -0.11630 + 1.64091I$	$-13.39160 - 4.03746I$	0
$u = -0.11630 - 1.64091I$	$-13.39160 + 4.03746I$	0
$u = 0.12590 + 1.64441I$	$-18.9946 + 5.8156I$	0
$u = 0.12590 - 1.64441I$	$-18.9946 - 5.8156I$	0
$u = 0.11458 + 1.64704I$	$-15.1010 - 1.2710I$	0
$u = 0.11458 - 1.64704I$	$-15.1010 + 1.2710I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{52} + 19u^{51} + \cdots - 2u + 1$
c_2, c_7	$u^{52} + u^{51} + \cdots - 2u - 1$
c_3, c_4, c_9	$u^{52} - u^{51} + \cdots - 8u - 4$
c_5, c_6, c_{11} c_{12}	$u^{52} - u^{51} + \cdots - u^2 - 1$
c_{10}	$u^{52} - 17u^{51} + \cdots - 26192u + 2993$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{52} + 29y^{51} + \cdots + 18y + 1$
c_2, c_7	$y^{52} - 19y^{51} + \cdots + 2y + 1$
c_3, c_4, c_9	$y^{52} - 55y^{51} + \cdots - 184y + 16$
c_5, c_6, c_{11} c_{12}	$y^{52} + 61y^{51} + \cdots + 2y + 1$
c_{10}	$y^{52} - 31y^{51} + \cdots - 170476614y + 8958049$