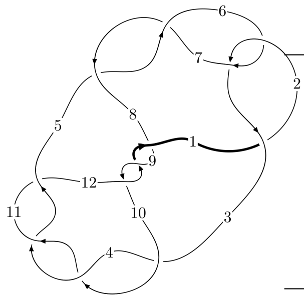
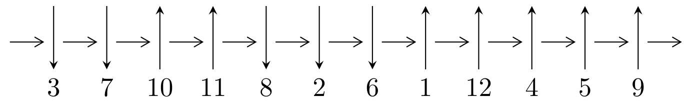
$12a_{0643}$ $(K12a_{0643})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{49} + u^{48} + \cdots - u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 49 representations.

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[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. $I_1^u = \langle u^{49} + u^{48} + \cdots - u - 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^3 - 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^4 - 3u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^8 - 5u^6 + 7u^4 - 2u^2 + 1 \\ -u^8 + 4u^6 - 4u^4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{16} - 9u^{14} + 31u^{12} - 50u^{10} + 39u^8 - 22u^6 + 18u^4 - 4u^2 + 1 \\ u^{18} - 10u^{16} + 39u^{14} - 74u^{12} + 71u^{10} - 40u^8 + 26u^6 - 12u^4 + u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^{12} - 7u^{10} + 17u^8 - 16u^6 + 6u^4 - 5u^2 + 1 \\ -u^{12} + 6u^{10} - 12u^8 + 8u^6 - u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{25} + 14u^{23} + \cdots + 10u^3 - u \\ u^{25} - 13u^{23} + \cdots - 2u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{38} - 21u^{36} + \cdots - 4u^2 + 1 \\ -u^{38} + 20u^{36} + \cdots + 6u^4 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{47} - 104u^{45} + \cdots + 20u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7	$u^{49} + 13u^{48} + \cdots + 5u + 1$
c_2, c_6	$u^{49} - u^{48} + \cdots + u - 1$
c_3, c_4, c_{10} c_{11}	$u^{49} + u^{48} + \cdots - u - 1$
c_8, c_9, c_{12}	$u^{49} + 7u^{48} + \cdots + 161u + 23$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7	$y^{49} + 47y^{48} + \cdots - 31y - 1$
c_2, c_6	$y^{49} - 13y^{48} + \cdots + 5y - 1$
c_3, c_4, c_{10} c_{11}	$y^{49} - 53y^{48} + \cdots + 5y - 1$
c_8, c_9, c_{12}	$y^{49} + 43y^{48} + \cdots + 345y - 529$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.560911 + 0.617051I$	$0.03209 + 9.92723I$	$2.33908 - 8.45290I$
$u = 0.560911 - 0.617051I$	$0.03209 - 9.92723I$	$2.33908 + 8.45290I$
$u = -0.559395 + 0.605036I$	$0.64373 - 3.84055I$	$3.42430 + 3.63759I$
$u = -0.559395 - 0.605036I$	$0.64373 + 3.84055I$	$3.42430 - 3.63759I$
$u = 0.520007 + 0.625859I$	$-6.71020 + 5.18683I$	$-3.12443 - 7.10198I$
$u = 0.520007 - 0.625859I$	$-6.71020 - 5.18683I$	$-3.12443 + 7.10198I$
$u = 0.476220 + 0.632465I$	$-6.83957 - 0.92356I$	$-3.72094 + 0.59194I$
$u = 0.476220 - 0.632465I$	$-6.83957 + 0.92356I$	$-3.72094 - 0.59194I$
$u = -0.495924 + 0.601686I$	$-3.64428 - 2.05071I$	$2.75570 + 3.41592I$
$u = -0.495924 - 0.601686I$	$-3.64428 + 2.05071I$	$2.75570 - 3.41592I$
$u = 0.427267 + 0.638885I$	$-0.36215 - 5.67314I$	$1.21064 + 2.36655I$
$u = 0.427267 - 0.638885I$	$-0.36215 + 5.67314I$	$1.21064 - 2.36655I$
$u = -0.704479 + 0.284841I$	$6.18625 - 5.62397I$	$8.20284 + 7.44163I$
$u = -0.704479 - 0.284841I$	$6.18625 + 5.62397I$	$8.20284 - 7.44163I$
$u = 0.713643 + 0.254169I$	$6.35954 - 0.46452I$	$8.91385 - 1.90377I$
$u = 0.713643 - 0.254169I$	$6.35954 + 0.46452I$	$8.91385 + 1.90377I$
$u = -0.422467 + 0.623036I$	$0.241870 - 0.331522I$	$2.23641 + 2.72098I$
$u = -0.422467 - 0.623036I$	$0.241870 + 0.331522I$	$2.23641 - 2.72098I$
$u = -0.532270 + 0.310164I$	$-0.30816 - 2.90516I$	$2.46540 + 10.23509I$
$u = -0.532270 - 0.310164I$	$-0.30816 + 2.90516I$	$2.46540 - 10.23509I$
$u = 0.520805 + 0.098950I$	$0.915760 + 0.180719I$	$10.81102 - 1.07325I$
$u = 0.520805 - 0.098950I$	$0.915760 - 0.180719I$	$10.81102 + 1.07325I$
$u = 1.47464$	4.15570	0
$u = -1.46681 + 0.17475I$	$5.75336 + 2.79499I$	0
$u = -1.46681 - 0.17475I$	$5.75336 - 2.79499I$	0
$u = 1.47025 + 0.15964I$	$6.35276 + 3.07627I$	0
$u = 1.47025 - 0.15964I$	$6.35276 - 3.07627I$	0
$u = -0.018932 + 0.494011I$	$4.06337 + 2.97682I$	$1.62274 - 2.67695I$
$u = -0.018932 - 0.494011I$	$4.06337 - 2.97682I$	$1.62274 + 2.67695I$
$u = -1.50000 + 0.18635I$	$-0.38185 - 2.00071I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.50000 - 0.18635I$	$-0.38185 + 2.00071I$	0
$u = \quad 1.52570 + 0.07002I$	$6.56231 + 4.18845I$	0
$u = \quad 1.52570 - 0.07002I$	$6.56231 - 4.18845I$	0
$u = \quad 1.51740 + 0.17555I$	$2.98662 + 4.82517I$	0
$u = \quad 1.51740 - 0.17555I$	$2.98662 - 4.82517I$	0
$u = -1.53569 + 0.02648I$	$7.87105 - 0.63646I$	0
$u = -1.53569 - 0.02648I$	$7.87105 + 0.63646I$	0
$u = -1.52436 + 0.19081I$	$0.02148 - 8.13412I$	0
$u = -1.52436 - 0.19081I$	$0.02148 + 8.13412I$	0
$u = \quad 1.54446 + 0.18517I$	$7.61861 + 6.71468I$	0
$u = \quad 1.54446 - 0.18517I$	$7.61861 - 6.71468I$	0
$u = -1.54457 + 0.19039I$	$7.0056 - 12.8676I$	0
$u = -1.54457 - 0.19039I$	$7.0056 + 12.8676I$	0
$u = \quad 1.57843 + 0.06718I$	$13.8962 + 6.8465I$	0
$u = \quad 1.57843 - 0.06718I$	$13.8962 - 6.8465I$	0
$u = -1.57914 + 0.05931I$	$14.09970 - 0.61960I$	0
$u = -1.57914 - 0.05931I$	$14.09970 + 0.61960I$	0
$u = -0.208356 + 0.345987I$	$-1.242340 + 0.536977I$	$-4.83102 - 0.57363I$
$u = -0.208356 - 0.345987I$	$-1.242340 - 0.536977I$	$-4.83102 + 0.57363I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7	$u^{49} + 13u^{48} + \cdots + 5u + 1$
c_2, c_6	$u^{49} - u^{48} + \cdots + u - 1$
c_3, c_4, c_{10} c_{11}	$u^{49} + u^{48} + \cdots - u - 1$
c_8, c_9, c_{12}	$u^{49} + 7u^{48} + \cdots + 161u + 23$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7	$y^{49} + 47y^{48} + \cdots - 31y - 1$
c_2, c_6	$y^{49} - 13y^{48} + \cdots + 5y - 1$
c_3, c_4, c_{10} c_{11}	$y^{49} - 53y^{48} + \cdots + 5y - 1$
c_8, c_9, c_{12}	$y^{49} + 43y^{48} + \cdots + 345y - 529$