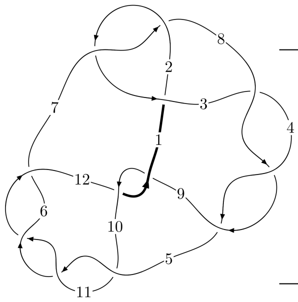
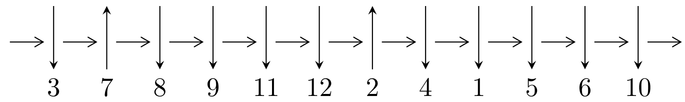
$12a_{0519}$ $(K12a_{0519})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{55} + u^{54} + \cdots - 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 55 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. $I^u_1 = \langle u^{55} + u^{54} + \cdots - 2u - 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^9 + 2u^7 + u^5 - 2u^3 - u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{14} - 3u^{12} - 4u^{10} - u^8 + 1 \\ -u^{16} - 4u^{14} - 8u^{12} - 8u^{10} - 4u^8 + 2u^6 + 4u^4 + 2u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{34} + 9u^{32} + \cdots - u^2 + 1 \\ -u^{34} - 10u^{32} + \cdots + 6u^4 + 3u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{25} + 6u^{23} + \cdots + 2u^3 + u \\ u^{27} + 7u^{25} + \cdots + 3u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{50} - 13u^{48} + \cdots - u^2 + 1 \\ -u^{52} - 14u^{50} + \cdots - 18u^6 - 5u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{53} + 4u^{52} + \cdots - 4u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{55}+31u^{54}+\cdots+4u-1$
c_2, c_7	$u^{55}+u^{54}+\cdots-2u-1$
c_3, c_4, c_8	$u^{55}-u^{54}+\cdots+u-2$
c_5, c_6, c_{10} c_{11}	$u^{55}+u^{54}+\cdots-2u-1$
c_9, c_{12}	$u^{55}-11u^{54}+\cdots+8u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{55} - 13y^{54} + \cdots + 68y - 1$
c_2, c_7	$y^{55} + 31y^{54} + \cdots + 4y - 1$
c_3, c_4, c_8	$y^{55} - 57y^{54} + \cdots + 293y - 4$
c_5, c_6, c_{10} c_{11}	$y^{55} - 61y^{54} + \cdots + 4y - 1$
c_9, c_{12}	$y^{55} + 23y^{54} + \cdots - 36y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.102308 + 0.993927I$	$-1.51781 + 1.35357I$	$-14.4750 - 4.2304I$
$u = -0.102308 - 0.993927I$	$-1.51781 - 1.35357I$	$-14.4750 + 4.2304I$
$u = -0.485253 + 0.877654I$	$-4.60903 - 0.50394I$	$-9.84299 + 3.20622I$
$u = -0.485253 - 0.877654I$	$-4.60903 + 0.50394I$	$-9.84299 - 3.20622I$
$u = 0.479095 + 0.928930I$	$1.53724 + 2.73421I$	$-6.40413 - 2.99488I$
$u = 0.479095 - 0.928930I$	$1.53724 - 2.73421I$	$-6.40413 + 2.99488I$
$u = -0.328532 + 0.998033I$	$-3.02866 - 2.73775I$	$-17.4070 + 6.3920I$
$u = -0.328532 - 0.998033I$	$-3.02866 + 2.73775I$	$-17.4070 - 6.3920I$
$u = 0.116890 + 1.065220I$	$-8.61843 - 3.30249I$	$-17.5441 + 2.1403I$
$u = 0.116890 - 1.065220I$	$-8.61843 + 3.30249I$	$-17.5441 - 2.1403I$
$u = -0.491393 + 0.960867I$	$1.09428 - 6.52024I$	$-8.28646 + 9.91432I$
$u = -0.491393 - 0.960867I$	$1.09428 + 6.52024I$	$-8.28646 - 9.91432I$
$u = 0.503891 + 0.983618I$	$-5.90815 + 9.04807I$	$-12.0898 - 8.5316I$
$u = 0.503891 - 0.983618I$	$-5.90815 - 9.04807I$	$-12.0898 + 8.5316I$
$u = 0.243423 + 0.854516I$	$-0.623812 + 1.209860I$	$-7.64614 - 4.90268I$
$u = 0.243423 - 0.854516I$	$-0.623812 - 1.209860I$	$-7.64614 + 4.90268I$
$u = -0.870822$	-14.9278	-15.7210
$u = 0.333283 + 1.082310I$	$-10.49970 + 3.34960I$	$-17.9466 - 4.0527I$
$u = 0.333283 - 1.082310I$	$-10.49970 - 3.34960I$	$-17.9466 + 4.0527I$
$u = -0.861168 + 0.072729I$	$-10.59330 + 8.29227I$	$-12.98061 - 4.57740I$
$u = -0.861168 - 0.072729I$	$-10.59330 - 8.29227I$	$-12.98061 + 4.57740I$
$u = 0.845961 + 0.068541I$	$-3.20212 - 5.70812I$	$-9.97360 + 5.97545I$
$u = 0.845961 - 0.068541I$	$-3.20212 + 5.70812I$	$-9.97360 - 5.97545I$
$u = 0.840103$	-6.53703	-14.4920
$u = -0.825031 + 0.057929I$	$-2.24307 + 1.86074I$	$-7.46523 + 0.06131I$
$u = -0.825031 - 0.057929I$	$-2.24307 - 1.86074I$	$-7.46523 - 0.06131I$
$u = -0.514519 + 0.590131I$	$-3.81103 - 3.61233I$	$-7.78381 + 3.89227I$
$u = -0.514519 - 0.590131I$	$-3.81103 + 3.61233I$	$-7.78381 - 3.89227I$
$u = 0.503991 + 0.523196I$	$2.66446 + 1.32817I$	$-3.49967 - 4.01662I$
$u = 0.503991 - 0.523196I$	$2.66446 - 1.32817I$	$-3.49967 + 4.01662I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.726197$	-7.37532	-11.5790
$u = 0.572655 + 0.425482I$	$-4.35800 - 4.75776I$	$-8.70806 + 3.36680I$
$u = 0.572655 - 0.425482I$	$-4.35800 + 4.75776I$	$-8.70806 - 3.36680I$
$u = 0.463308 + 1.201860I$	$-10.77920 + 4.40954I$	0
$u = 0.463308 - 1.201860I$	$-10.77920 - 4.40954I$	0
$u = -0.530920 + 0.462145I$	$2.47339 + 2.35970I$	$-4.46729 - 4.22291I$
$u = -0.530920 - 0.462145I$	$2.47339 - 2.35970I$	$-4.46729 + 4.22291I$
$u = -0.431213 + 1.227700I$	$-6.07588 - 2.53923I$	0
$u = -0.431213 - 1.227700I$	$-6.07588 + 2.53923I$	0
$u = 0.423975 + 1.239910I$	$-7.15358 - 1.27519I$	0
$u = 0.423975 - 1.239910I$	$-7.15358 + 1.27519I$	0
$u = -0.485017 + 1.219700I$	$-5.68867 - 6.60293I$	0
$u = -0.485017 - 1.219700I$	$-5.68867 + 6.60293I$	0
$u = 0.459979 + 1.232640I$	$-10.22260 + 4.63419I$	0
$u = 0.459979 - 1.232640I$	$-10.22260 - 4.63419I$	0
$u = -0.421595 + 1.249750I$	$-14.6184 + 3.8161I$	0
$u = -0.421595 - 1.249750I$	$-14.6184 - 3.8161I$	0
$u = 0.492780 + 1.225990I$	$-6.65767 + 10.54660I$	0
$u = 0.492780 - 1.225990I$	$-6.65767 - 10.54660I$	0
$u = -0.497583 + 1.231530I$	$-14.0678 - 13.1961I$	0
$u = -0.497583 - 1.231530I$	$-14.0678 + 13.1961I$	0
$u = -0.464095 + 1.248480I$	$-18.7025 - 4.7501I$	0
$u = -0.464095 - 1.248480I$	$-18.7025 + 4.7501I$	0
$u = 0.653534$	-7.36372	-12.0180
$u = -0.350221$	-0.718328	-13.6840

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{55} + 31u^{54} + \cdots + 4u - 1$
c_2, c_7	$u^{55} + u^{54} + \cdots - 2u - 1$
c_3, c_4, c_8	$u^{55} - u^{54} + \cdots + u - 2$
c_5, c_6, c_{10} c_{11}	$u^{55} + u^{54} + \cdots - 2u - 1$
c_9, c_{12}	$u^{55} - 11u^{54} + \cdots + 8u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{55} - 13y^{54} + \cdots + 68y - 1$
c_2, c_7	$y^{55} + 31y^{54} + \cdots + 4y - 1$
c_3, c_4, c_8	$y^{55} - 57y^{54} + \cdots + 293y - 4$
c_5, c_6, c_{10} c_{11}	$y^{55} - 61y^{54} + \cdots + 4y - 1$
c_9, c_{12}	$y^{55} + 23y^{54} + \cdots - 36y - 1$