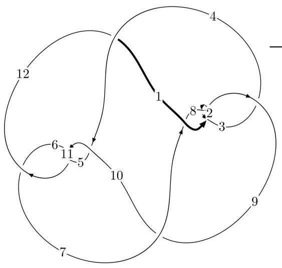
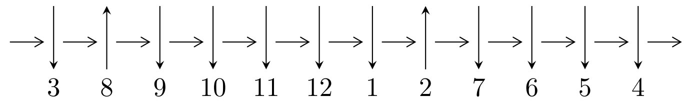
$12a_{0727}$ ($K12a_{0727}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{78} - u^{77} + \cdots + u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 78 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. $I_1^u = \langle u^{78} - u^{77} + \cdots + u - 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u^5 + 2u^3 + u \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{13} - 4u^{11} - 7u^9 - 6u^7 - 2u^5 + u \\ -u^{13} - 3u^{11} - 5u^9 - 4u^7 - 2u^5 + u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{32} - 9u^{30} + \cdots + 2u^2 + 1 \\ -u^{32} - 8u^{30} + \cdots + 4u^4 + 2u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{12} - 3u^{10} - 5u^8 - 4u^6 - 2u^4 + u^2 + 1 \\ -u^{14} - 4u^{12} - 7u^{10} - 6u^8 - 2u^6 + u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{31} - 8u^{29} + \cdots + 4u^3 + 2u \\ -u^{33} - 9u^{31} + \cdots + 2u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^{77} - 20u^{75} + \cdots - 2u^3 + u \\ -u^{77} + u^{76} + \cdots + u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{77} - 4u^{76} + \cdots + 24u^3 - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{78} + 41u^{77} + \cdots - u + 1$
c_2, c_8	$u^{78} - u^{77} + \cdots + u - 1$
c_3, c_7	$u^{78} + u^{77} + \cdots - 377u - 53$
c_4, c_6	$u^{78} - u^{77} + \cdots - 3u - 1$
c_5, c_{10}, c_{11}	$u^{78} + u^{77} + \cdots - 3u - 1$
c_9, c_{12}	$u^{78} - 7u^{77} + \cdots + 17u + 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{78} - 7y^{77} + \cdots - 25y + 1$
c_2, c_8	$y^{78} + 41y^{77} + \cdots - y + 1$
c_3, c_7	$y^{78} - 55y^{77} + \cdots - 132377y + 2809$
c_4, c_6	$y^{78} - 43y^{77} + \cdots - y + 1$
c_5, c_{10}, c_{11}	$y^{78} + 65y^{77} + \cdots - y + 1$
c_9, c_{12}	$y^{78} + 45y^{77} + \cdots + 351y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.578901 + 0.820690I$	$5.58025 - 9.66694I$	$-3.02999 + 8.66670I$
$u = -0.578901 - 0.820690I$	$5.58025 + 9.66694I$	$-3.02999 - 8.66670I$
$u = 0.564180 + 0.819146I$	$0.77390 + 5.79656I$	$-8.00000 - 7.45829I$
$u = 0.564180 - 0.819146I$	$0.77390 - 5.79656I$	$-8.00000 + 7.45829I$
$u = 0.126915 + 0.981484I$	$-0.758555 - 1.060210I$	$-12.70969 + 0.I$
$u = 0.126915 - 0.981484I$	$-0.758555 + 1.060210I$	$-12.70969 + 0.I$
$u = -0.188582 + 0.998058I$	$-4.15960 - 2.63280I$	$-15.9415 + 4.4696I$
$u = -0.188582 - 0.998058I$	$-4.15960 + 2.63280I$	$-15.9415 - 4.4696I$
$u = 0.586068 + 0.770581I$	$9.87181 + 2.31305I$	$0.87298 - 3.50878I$
$u = 0.586068 - 0.770581I$	$9.87181 - 2.31305I$	$0.87298 + 3.50878I$
$u = -0.524243 + 0.802290I$	$3.35909 - 2.09213I$	$-4.14215 + 3.78128I$
$u = -0.524243 - 0.802290I$	$3.35909 + 2.09213I$	$-4.14215 - 3.78128I$
$u = 0.228006 + 1.032790I$	$0.23030 + 6.39957I$	0
$u = 0.228006 - 1.032790I$	$0.23030 - 6.39957I$	0
$u = -0.536678 + 0.763397I$	$3.42631 - 2.16410I$	$-2.80015 + 4.33324I$
$u = -0.536678 - 0.763397I$	$3.42631 + 2.16410I$	$-2.80015 - 4.33324I$
$u = -0.587628 + 0.712984I$	$5.88785 + 5.05739I$	$-2.00225 - 2.01742I$
$u = -0.587628 - 0.712984I$	$5.88785 - 5.05739I$	$-2.00225 + 2.01742I$
$u = 0.566932 + 0.711290I$	$1.08131 - 1.28672I$	$-6.69250 + 0.65759I$
$u = 0.566932 - 0.711290I$	$1.08131 + 1.28672I$	$-6.69250 - 0.65759I$
$u = 0.436106 + 1.077000I$	$0.62586 + 6.51824I$	0
$u = 0.436106 - 1.077000I$	$0.62586 - 6.51824I$	0
$u = 0.794491 + 0.182712I$	$2.53319 - 10.66910I$	$-4.99373 + 6.90803I$
$u = 0.794491 - 0.182712I$	$2.53319 + 10.66910I$	$-4.99373 - 6.90803I$
$u = -0.787999 + 0.174370I$	$-2.22038 + 6.64799I$	$-9.69976 - 5.44355I$
$u = -0.787999 - 0.174370I$	$-2.22038 - 6.64799I$	$-9.69976 + 5.44355I$
$u = -0.454756 + 0.666376I$	$3.63436 - 1.97058I$	$-2.14073 + 3.77447I$
$u = -0.454756 - 0.666376I$	$3.63436 + 1.97058I$	$-2.14073 - 3.77447I$
$u = -0.336071 + 1.154890I$	$3.31959 + 0.07641I$	0
$u = -0.336071 - 1.154890I$	$3.31959 - 0.07641I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.417832 + 1.133420I$	$-3.94716 - 3.62664I$	0
$u = -0.417832 - 1.133420I$	$-3.94716 + 3.62664I$	0
$u = 0.773320 + 0.160143I$	$0.56432 - 2.64520I$	$-6.76601 + 1.68251I$
$u = 0.773320 - 0.160143I$	$0.56432 + 2.64520I$	$-6.76601 - 1.68251I$
$u = -0.758374 + 0.212450I$	$7.37800 + 3.50504I$	$-0.66245 - 2.81741I$
$u = -0.758374 - 0.212450I$	$7.37800 - 3.50504I$	$-0.66245 + 2.81741I$
$u = 0.374455 + 1.156650I$	$-2.70435 + 0.70430I$	0
$u = 0.374455 - 1.156650I$	$-2.70435 - 0.70430I$	0
$u = -0.771864 + 0.021540I$	$-2.45068 + 4.03806I$	$-9.57286 - 3.60585I$
$u = -0.771864 - 0.021540I$	$-2.45068 - 4.03806I$	$-9.57286 + 3.60585I$
$u = 0.770221$	-6.34762	-13.9660
$u = 0.512327 + 1.132430I$	$1.51982 + 0.85953I$	0
$u = 0.512327 - 1.132430I$	$1.51982 - 0.85953I$	0
$u = 0.369523 + 1.188730I$	$-3.41759 + 1.14172I$	0
$u = 0.369523 - 1.188730I$	$-3.41759 - 1.14172I$	0
$u = 0.733419 + 0.176644I$	$1.09971 - 2.87927I$	$-4.76575 + 4.38124I$
$u = 0.733419 - 0.176644I$	$1.09971 + 2.87927I$	$-4.76575 - 4.38124I$
$u = -0.356853 + 1.193820I$	$-6.31821 + 2.88878I$	0
$u = -0.356853 - 1.193820I$	$-6.31821 - 2.88878I$	0
$u = 0.349156 + 1.196430I$	$-1.62767 - 6.93096I$	0
$u = 0.349156 - 1.196430I$	$-1.62767 + 6.93096I$	0
$u = -0.498310 + 1.142680I$	$-3.33385 - 4.23839I$	0
$u = -0.498310 - 1.142680I$	$-3.33385 + 4.23839I$	0
$u = 0.153987 + 0.736438I$	$-0.528165 + 0.894862I$	$-9.40631 - 7.34603I$
$u = 0.153987 - 0.736438I$	$-0.528165 - 0.894862I$	$-9.40631 + 7.34603I$
$u = 0.694959 + 0.256300I$	$4.06421 + 3.75062I$	$-2.75383 - 2.73497I$
$u = 0.694959 - 0.256300I$	$4.06421 - 3.75062I$	$-2.75383 + 2.73497I$
$u = 0.508450 + 1.163050I$	$-1.75841 + 7.54329I$	0
$u = 0.508450 - 1.163050I$	$-1.75841 - 7.54329I$	0
$u = -0.524201 + 1.160870I$	$4.60438 - 8.30483I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.524201 - 1.160870I$	$4.60438 + 8.30483I$	0
$u = -0.440440 + 1.197610I$	$-6.00210 - 0.27240I$	0
$u = -0.440440 - 1.197610I$	$-6.00210 + 0.27240I$	0
$u = 0.449901 + 1.196690I$	$-9.82963 + 4.37268I$	0
$u = 0.449901 - 1.196690I$	$-9.82963 - 4.37268I$	0
$u = -0.458822 + 1.196290I$	$-5.87231 - 8.47661I$	0
$u = -0.458822 - 1.196290I$	$-5.87231 + 8.47661I$	0
$u = 0.513114 + 1.178070I$	$-2.41053 + 7.41642I$	0
$u = 0.513114 - 1.178070I$	$-2.41053 - 7.41642I$	0
$u = -0.520654 + 1.179930I$	$-5.17476 - 11.49350I$	0
$u = -0.520654 - 1.179930I$	$-5.17476 + 11.49350I$	0
$u = 0.524977 + 1.180090I$	$-0.4034 + 15.5519I$	0
$u = 0.524977 - 1.180090I$	$-0.4034 - 15.5519I$	0
$u = -0.663438 + 0.222302I$	$-0.669046 - 0.243771I$	$-7.95579 + 1.30313I$
$u = -0.663438 - 0.222302I$	$-0.669046 + 0.243771I$	$-7.95579 - 1.30313I$
$u = 0.523024 + 0.313762I$	$2.74897 - 2.61573I$	$-2.67127 + 3.03594I$
$u = 0.523024 - 0.313762I$	$2.74897 + 2.61573I$	$-2.67127 - 3.03594I$
$u = -0.525544$	-0.955751	-10.6020

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{78}+41u^{77}+\cdots-u+1$
c_2, c_8	$u^{78}-u^{77}+\cdots+u-1$
c_3, c_7	$u^{78}+u^{77}+\cdots-377u-53$
c_4, c_6	$u^{78}-u^{77}+\cdots-3u-1$
c_5, c_{10}, c_{11}	$u^{78}+u^{77}+\cdots-3u-1$
c_9, c_{12}	$u^{78}-7u^{77}+\cdots+17u+5$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{78} - 7y^{77} + \cdots - 25y + 1$
c_2, c_8	$y^{78} + 41y^{77} + \cdots - y + 1$
c_3, c_7	$y^{78} - 55y^{77} + \cdots - 132377y + 2809$
c_4, c_6	$y^{78} - 43y^{77} + \cdots - y + 1$
c_5, c_{10}, c_{11}	$y^{78} + 65y^{77} + \cdots - y + 1$
c_9, c_{12}	$y^{78} + 45y^{77} + \cdots + 351y + 25$