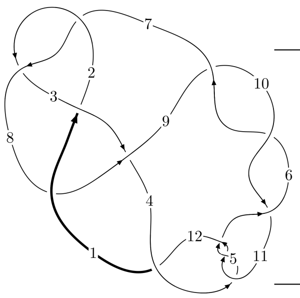
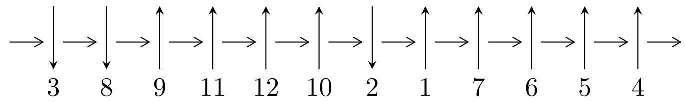
$12a_{0738}$ ($K12a_{0738}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{59} - u^{58} + \cdots + u^2 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 59 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. $I_1^u = \langle u^{59} - u^{58} + \cdots + u^2 - 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ -u^6 + 2u^4 - u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^9 - 4u^7 + 5u^5 - 3u \\ -u^9 + 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{22} - 9u^{20} + \cdots - 4u^2 + 1 \\ -u^{22} + 8u^{20} + \cdots + 4u^4 + 3u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^{21} - 8u^{19} + \cdots - 4u^3 - 3u \\ u^{23} - 9u^{21} + \cdots - 4u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{51} + 20u^{49} + \cdots + 20u^5 + 7u^3 \\ u^{51} - 19u^{49} + \cdots - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{56} + 84u^{54} + \cdots + 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{59} + 29u^{58} + \cdots + 2u + 1$
c_2, c_7	$u^{59} + u^{58} + \cdots + u^2 - 1$
c_3	$u^{59} - u^{58} + \cdots - 214u - 61$
c_4, c_5, c_{11}	$u^{59} - u^{58} + \cdots + u^2 - 1$
c_6, c_9, c_{10} c_{12}	$u^{59} + 3u^{58} + \cdots + 26u + 5$
c_8	$u^{59} + 3u^{58} + \cdots + 274u - 187$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{59} + 3y^{58} + \cdots - 18y - 1$
c_2, c_7	$y^{59} - 29y^{58} + \cdots + 2y - 1$
c_3	$y^{59} + 11y^{58} + \cdots + 17370y - 3721$
c_4, c_5, c_{11}	$y^{59} - 45y^{58} + \cdots + 2y - 1$
c_6, c_9, c_{10} c_{12}	$y^{59} + 71y^{58} + \cdots - 54y - 25$
c_8	$y^{59} + 23y^{58} + \cdots - 139226y - 34969$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.049650 + 0.244074I$	$-1.46822 + 3.88519I$	$2.11458 - 3.15684I$
$u = -1.049650 - 0.244074I$	$-1.46822 - 3.88519I$	$2.11458 + 3.15684I$
$u = -0.015995 + 0.915634I$	$-14.7136 - 0.7721I$	$-3.56410 - 0.31715I$
$u = -0.015995 - 0.915634I$	$-14.7136 + 0.7721I$	$-3.56410 + 0.31715I$
$u = -0.029257 + 0.912896I$	$-12.9183 - 9.0890I$	$-1.27230 + 5.79658I$
$u = -0.029257 - 0.912896I$	$-12.9183 + 9.0890I$	$-1.27230 - 5.79658I$
$u = \quad 0.024127 + 0.908325I$	$-10.26760 + 4.09935I$	$1.75919 - 2.25179I$
$u = \quad 0.024127 - 0.908325I$	$-10.26760 - 4.09935I$	$1.75919 + 2.25179I$
$u = \quad 0.008156 + 0.888471I$	$-7.74257 + 2.40406I$	$2.67885 - 3.26207I$
$u = \quad 0.008156 - 0.888471I$	$-7.74257 - 2.40406I$	$2.67885 + 3.26207I$
$u = \quad 1.096820 + 0.205121I$	$1.080150 + 0.480738I$	$6.00000 + 0.I$
$u = \quad 1.096820 - 0.205121I$	$1.080150 - 0.480738I$	$6.00000 + 0.I$
$u = -1.128910 + 0.272160I$	$-2.42286 - 3.69043I$	0
$u = -1.128910 - 0.272160I$	$-2.42286 + 3.69043I$	0
$u = \quad 1.16156$	2.06866	6.00000
$u = \quad 1.269780 + 0.147882I$	$2.98114 - 0.20812I$	0
$u = \quad 1.269780 - 0.147882I$	$2.98114 + 0.20812I$	0
$u = \quad 1.256570 + 0.266869I$	$-1.39782 + 3.10898I$	0
$u = \quad 1.256570 - 0.266869I$	$-1.39782 - 3.10898I$	0
$u = -1.272580 + 0.192297I$	$3.97948 - 4.12493I$	0
$u = -1.272580 - 0.192297I$	$3.97948 + 4.12493I$	0
$u = -1.292070 + 0.025357I$	$5.86156 - 0.82447I$	0
$u = -1.292070 - 0.025357I$	$5.86156 + 0.82447I$	0
$u = \quad 1.303410 + 0.050369I$	$4.08832 + 5.40748I$	0
$u = \quad 1.303410 - 0.050369I$	$4.08832 - 5.40748I$	0
$u = -1.284990 + 0.240189I$	$2.75808 - 5.72388I$	0
$u = -1.284990 - 0.240189I$	$2.75808 + 5.72388I$	0
$u = \quad 1.296950 + 0.252884I$	$0.47013 + 10.52840I$	0
$u = \quad 1.296950 - 0.252884I$	$0.47013 - 10.52840I$	0
$u = -0.154537 + 0.652088I$	$-4.02672 - 7.30062I$	$-0.57198 + 8.02266I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.154537 - 0.652088I$	$-4.02672 + 7.30062I$	$-0.57198 - 8.02266I$
$u = -0.082927 + 0.664867I$	$-5.50022 + 0.23449I$	$-3.62552 + 0.57133I$
$u = -0.082927 - 0.664867I$	$-5.50022 - 0.23449I$	$-3.62552 - 0.57133I$
$u = -1.261370 + 0.449534I$	$-9.10474 + 4.22835I$	0
$u = -1.261370 - 0.449534I$	$-9.10474 - 4.22835I$	0
$u = 1.264440 + 0.443767I$	$-6.42613 + 0.72715I$	0
$u = 1.264440 - 0.443767I$	$-6.42613 - 0.72715I$	0
$u = 1.273510 + 0.421789I$	$-3.81526 + 2.28316I$	0
$u = 1.273510 - 0.421789I$	$-3.81526 - 2.28316I$	0
$u = -1.273610 + 0.447529I$	$-10.81480 - 4.09220I$	0
$u = -1.273610 - 0.447529I$	$-10.81480 + 4.09220I$	0
$u = -1.286810 + 0.419585I$	$-3.71576 - 7.08524I$	0
$u = -1.286810 - 0.419585I$	$-3.71576 + 7.08524I$	0
$u = 0.135360 + 0.620016I$	$-1.62134 + 2.64544I$	$2.55643 - 4.49292I$
$u = 0.135360 - 0.620016I$	$-1.62134 - 2.64544I$	$2.55643 + 4.49292I$
$u = 1.298440 + 0.437752I$	$-10.62320 + 5.60619I$	0
$u = 1.298440 - 0.437752I$	$-10.62320 - 5.60619I$	0
$u = -1.302440 + 0.430305I$	$-6.13573 - 8.88432I$	0
$u = -1.302440 - 0.430305I$	$-6.13573 + 8.88432I$	0
$u = 1.307160 + 0.432172I$	$-8.7535 + 13.8960I$	0
$u = 1.307160 - 0.432172I$	$-8.7535 - 13.8960I$	0
$u = 0.143619 + 0.486456I$	$-0.31966 + 1.64759I$	$3.71266 - 6.34085I$
$u = 0.143619 - 0.486456I$	$-0.31966 - 1.64759I$	$3.71266 + 6.34085I$
$u = -0.436286 + 0.252853I$	$-1.03116 - 4.55655I$	$4.61891 + 7.76047I$
$u = -0.436286 - 0.252853I$	$-1.03116 + 4.55655I$	$4.61891 - 7.76047I$
$u = -0.280522 + 0.375413I$	$-1.54969 + 2.03091I$	$2.13878 + 1.09449I$
$u = -0.280522 - 0.375413I$	$-1.54969 - 2.03091I$	$2.13878 - 1.09449I$
$u = 0.392822 + 0.121836I$	$0.952284 + 0.399884I$	$10.51926 - 2.51736I$
$u = 0.392822 - 0.121836I$	$0.952284 - 0.399884I$	$10.51926 + 2.51736I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{59} + 29u^{58} + \cdots + 2u + 1$
c_2, c_7	$u^{59} + u^{58} + \cdots + u^2 - 1$
c_3	$u^{59} - u^{58} + \cdots - 214u - 61$
c_4, c_5, c_{11}	$u^{59} - u^{58} + \cdots + u^2 - 1$
c_6, c_9, c_{10} c_{12}	$u^{59} + 3u^{58} + \cdots + 26u + 5$
c_8	$u^{59} + 3u^{58} + \cdots + 274u - 187$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{59} + 3y^{58} + \cdots - 18y - 1$
c_2, c_7	$y^{59} - 29y^{58} + \cdots + 2y - 1$
c_3	$y^{59} + 11y^{58} + \cdots + 17370y - 3721$
c_4, c_5, c_{11}	$y^{59} - 45y^{58} + \cdots + 2y - 1$
c_6, c_9, c_{10} c_{12}	$y^{59} + 71y^{58} + \cdots - 54y - 25$
c_8	$y^{59} + 23y^{58} + \cdots - 139226y - 34969$