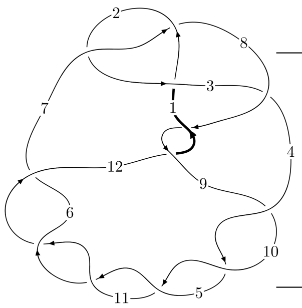
$12a_{0538}$ $(K12a_{0538})$



A knot diagram[1]

Linearized knot diagam

$$\begin{array}{ccccccccccccccccccccccccc} \rightarrow & \downarrow & \rightarrow & \uparrow & \rightarrow & \downarrow & \rightarrow & \downarrow & \rightarrow & \downarrow & \rightarrow & \downarrow & \rightarrow & \uparrow & \rightarrow & \downarrow & \rightarrow & \downarrow & \rightarrow & \downarrow & \rightarrow & \downarrow & \rightarrow & \downarrow & \rightarrow \\ & 3 & & 7 & & 8 & & 10 & & 11 & & 12 & & 2 & & 1 & & 4 & & 5 & & 6 & & 9 & \end{array}$$

Solving Sequence

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

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

$$I_1^u = \langle u^{41} - u^{40} + \cdots - 3u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 41 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. $I_1^u = \langle u^{41} - u^{40} + \cdots - 3u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^{10} + 2u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{16} - 3u^{14} - 5u^{12} - 4u^{10} - u^8 + 1 \\ u^{16} + 4u^{14} + 8u^{12} + 10u^{10} + 8u^8 + 6u^6 + 4u^4 + 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{29} + 6u^{27} + \cdots - 2u^3 - u \\ -u^{29} - 7u^{27} + \cdots - u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{13} + 2u^{11} + 3u^9 + 2u^7 + 2u^5 + 2u^3 + u \\ u^{15} + 3u^{13} + 6u^{11} + 7u^9 + 6u^7 + 4u^5 + 2u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{26} - 5u^{24} + \cdots - u^2 + 1 \\ -u^{28} - 6u^{26} + \cdots - 8u^6 - 3u^4 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{39} - 8u^{37} + \cdots + 2u^3 + 2u \\ -u^{40} + u^{39} + \cdots - 2u + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{39} + 4u^{38} - 36u^{37} + 36u^{36} - 168u^{35} + 172u^{34} - 520u^{33} + 548u^{32} - 1184u^{31} + 1284u^{30} - 2104u^{29} + 2324u^{28} - 3052u^{27} + 3364u^{26} - 3756u^{25} + 4012u^{24} - 4040u^{23} + 4072u^{22} - 3848u^{21} + 3628u^{20} - 3236u^{19} + 2888u^{18} - 2396u^{17} + 2040u^{16} - 1584u^{15} + 1260u^{14} - 944u^{13} + 676u^{12} - 484u^{11} + 312u^{10} - 188u^9 + 100u^8 - 52u^7 + 8u^6 - 8u^5 - 12u^4 + 12u^3 - 8u^2 + 12u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{41} + 19u^{40} + \cdots + 5u - 1$
c_2, c_7	$u^{41} + u^{40} + \cdots - 3u - 1$
c_3	$u^{41} - u^{40} + \cdots + 7u - 5$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$u^{41} + u^{40} + \cdots - 3u - 1$
c_8, c_{12}	$u^{41} + 5u^{40} + \cdots - 161u - 39$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{41} + 7y^{40} + \cdots + 61y - 1$
c_2, c_7	$y^{41} + 19y^{40} + \cdots + 5y - 1$
c_3	$y^{41} - 5y^{40} + \cdots + 869y - 25$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$y^{41} - 57y^{40} + \cdots + 5y - 1$
c_8, c_{12}	$y^{41} + 23y^{40} + \cdots - 3563y - 1521$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.184893 + 0.994464I$	$-1.51339 - 0.94191I$	$-13.19182 + 4.87111I$
$u = 0.184893 - 0.994464I$	$-1.51339 + 0.94191I$	$-13.19182 - 4.87111I$
$u = -0.326237 + 0.909164I$	$-0.68099 - 1.40662I$	$-7.42529 + 4.24722I$
$u = -0.326237 - 0.909164I$	$-0.68099 + 1.40662I$	$-7.42529 - 4.24722I$
$u = -0.704783 + 0.594687I$	$-11.28020 - 3.60891I$	$-10.18311 + 3.00606I$
$u = -0.704783 - 0.594687I$	$-11.28020 + 3.60891I$	$-10.18311 - 3.00606I$
$u = -0.178198 + 1.087930I$	$-6.59012 + 2.77027I$	$-17.1418 - 2.7652I$
$u = -0.178198 - 1.087930I$	$-6.59012 - 2.77027I$	$-17.1418 + 2.7652I$
$u = 0.416484 + 1.021060I$	$-2.94716 + 3.14297I$	$-16.2536 - 6.2768I$
$u = 0.416484 - 1.021060I$	$-2.94716 - 3.14297I$	$-16.2536 + 6.2768I$
$u = 0.682369 + 0.551619I$	$-1.05424 + 2.63533I$	$-9.41238 - 3.91934I$
$u = 0.682369 - 0.551619I$	$-1.05424 - 2.63533I$	$-9.41238 + 3.91934I$
$u = 0.782799 + 0.379135I$	$-12.41790 - 6.21468I$	$-11.22155 + 2.89024I$
$u = 0.782799 - 0.379135I$	$-12.41790 + 6.21468I$	$-11.22155 - 2.89024I$
$u = 0.176585 + 1.127330I$	$-17.3002 - 3.7251I$	$-17.4761 + 1.6666I$
$u = 0.176585 - 1.127330I$	$-17.3002 + 3.7251I$	$-17.4761 - 1.6666I$
$u = -0.755772 + 0.394629I$	$-1.86778 + 5.03167I$	$-10.41788 - 4.02250I$
$u = -0.755772 - 0.394629I$	$-1.86778 - 5.03167I$	$-10.41788 + 4.02250I$
$u = -0.606936 + 0.980785I$	$-12.42340 - 1.42472I$	$-12.03958 + 2.60670I$
$u = -0.606936 - 0.980785I$	$-12.42340 + 1.42472I$	$-12.03958 - 2.60670I$
$u = -0.695732 + 0.480590I$	$3.22968 - 0.39612I$	$-4.26312 + 3.61739I$
$u = -0.695732 - 0.480590I$	$3.22968 + 0.39612I$	$-4.26312 - 3.61739I$
$u = 0.722948 + 0.432712I$	$2.97485 - 2.70484I$	$-5.59126 + 4.77948I$
$u = 0.722948 - 0.432712I$	$2.97485 + 2.70484I$	$-5.59126 - 4.77948I$
$u = 0.575889 + 1.009940I$	$-2.41083 + 2.23503I$	$-11.92132 - 1.73873I$
$u = 0.575889 - 1.009940I$	$-2.41083 - 2.23503I$	$-11.92132 + 1.73873I$
$u = -0.421289 + 1.102850I$	$-8.91985 - 3.72236I$	$-18.4297 + 4.1960I$
$u = -0.421289 - 1.102850I$	$-8.91985 + 3.72236I$	$-18.4297 - 4.1960I$
$u = -0.578382 + 1.056610I$	$1.52744 - 4.51839I$	$-7.10529 + 1.88338I$
$u = -0.578382 - 1.056610I$	$1.52744 + 4.51839I$	$-7.10529 - 1.88338I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.421891 + 1.134710I$	$19.4645 + 3.9367I$	$-18.3892 - 3.6616I$
$u = \quad 0.421891 - 1.134710I$	$19.4645 - 3.9367I$	$-18.3892 + 3.6616I$
$u = \quad 0.582220 + 1.082150I$	$1.06240 + 7.69869I$	$-9.15502 - 9.24426I$
$u = \quad 0.582220 - 1.082150I$	$1.06240 - 7.69869I$	$-9.15502 + 9.24426I$
$u = -0.584962 + 1.104120I$	$-3.95871 - 10.11040I$	$-13.5525 + 8.1060I$
$u = -0.584962 - 1.104120I$	$-3.95871 + 10.11040I$	$-13.5525 - 8.1060I$
$u = \quad 0.589263 + 1.117610I$	$-14.6038 + 11.3740I$	$-14.2742 - 6.8674I$
$u = \quad 0.589263 - 1.117610I$	$-14.6038 - 11.3740I$	$-14.2742 + 6.8674I$
$u = \quad 0.681978$	-16.8040	-14.2280
$u = -0.606927$	-5.94459	-14.4600
$u = \quad 0.358849$	-0.680410	-14.4230

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{41} + 19u^{40} + \cdots + 5u - 1$
c_2, c_7	$u^{41} + u^{40} + \cdots - 3u - 1$
c_3	$u^{41} - u^{40} + \cdots + 7u - 5$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$u^{41} + u^{40} + \cdots - 3u - 1$
c_8, c_{12}	$u^{41} + 5u^{40} + \cdots - 161u - 39$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{41} + 7y^{40} + \cdots + 61y - 1$
c_2, c_7	$y^{41} + 19y^{40} + \cdots + 5y - 1$
c_3	$y^{41} - 5y^{40} + \cdots + 869y - 25$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$y^{41} - 57y^{40} + \cdots + 5y - 1$
c_8, c_{12}	$y^{41} + 23y^{40} + \cdots - 3563y - 1521$