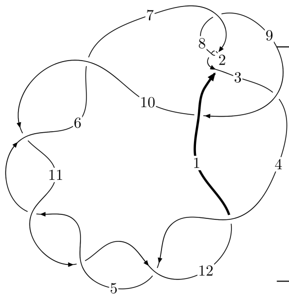
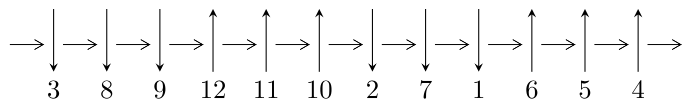
$12a_{0743}$ $(K12a_{0743})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{39} + u^{38} + \cdots + 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 39 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. $I_1^u = \langle u^{39} + u^{38} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^8 + u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 + 2u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^9 + 2u^7 - 3u^5 + 2u^3 - u \\ -u^{11} + u^9 - 2u^7 + u^5 - u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{21} - 4u^{19} + \cdots - 2u^3 + u \\ u^{23} - 3u^{21} + \cdots + 2u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{20} - 3u^{18} + 7u^{16} - 10u^{14} + 10u^{12} - 7u^{10} + u^8 + 2u^6 - 3u^4 + u^2 + 1 \\ u^{20} - 4u^{18} + 10u^{16} - 18u^{14} + 23u^{12} - 24u^{10} + 18u^8 - 10u^6 + 3u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{32} + 5u^{30} + \cdots + 2u^2 + 1 \\ -u^{32} + 6u^{30} + \cdots - 2u^4 + 2u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{33} + 6u^{31} + \cdots + 4u^3 - u \\ -u^{35} + 5u^{33} + \cdots + u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{38} + 28u^{36} + 4u^{35} - 120u^{34} - 24u^{33} + 368u^{32} + 100u^{31} - 884u^{30} - 296u^{29} + 1736u^{28} + 700u^{27} - 2852u^{26} - 1356u^{25} + 3980u^{24} + 2200u^{23} - 4744u^{22} - 3040u^{21} + 4832u^{20} + 3580u^{19} - 4176u^{18} - 3616u^{17} + 3012u^{16} + 3108u^{15} - 1756u^{14} - 2248u^{13} + 776u^{12} + 1356u^{11} - 220u^{10} - 652u^9 + 16u^8 + 260u^7 + 12u^6 - 88u^5 + 32u^3 - 4u^2 - 20u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{39} + 13u^{38} + \cdots - 4u + 1$
c_2, c_7	$u^{39} + u^{38} + \cdots + 2u + 1$
c_3	$u^{39} - u^{38} + \cdots + 20u + 13$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$u^{39} + u^{38} + \cdots + 2u + 1$
c_9	$u^{39} + 7u^{38} + \cdots - 92u - 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{39} + 27y^{38} + \cdots - 4y - 1$
c_2, c_7	$y^{39} - 13y^{38} + \cdots - 4y - 1$
c_3	$y^{39} - 9y^{38} + \cdots + 1752y - 169$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$y^{39} + 55y^{38} + \cdots - 4y - 1$
c_9	$y^{39} - 5y^{38} + \cdots + 960y - 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.991889 + 0.082450I$	$-3.38654 - 2.37032I$	$-8.66369 + 6.45303I$
$u = 0.991889 - 0.082450I$	$-3.38654 + 2.37032I$	$-8.66369 - 6.45303I$
$u = 0.669840 + 0.792447I$	$-2.96109 + 4.19895I$	$-3.45915 - 2.96726I$
$u = 0.669840 - 0.792447I$	$-2.96109 - 4.19895I$	$-3.45915 + 2.96726I$
$u = -0.704805 + 0.763405I$	$2.32305 - 2.08285I$	$0.48249 + 4.55796I$
$u = -0.704805 - 0.763405I$	$2.32305 + 2.08285I$	$0.48249 - 4.55796I$
$u = -0.654698 + 0.815515I$	$-13.8160 - 5.2888I$	$-3.98413 + 1.89357I$
$u = -0.654698 - 0.815515I$	$-13.8160 + 5.2888I$	$-3.98413 - 1.89357I$
$u = 0.749661 + 0.738081I$	$3.08458 - 0.82025I$	$3.76726 + 3.28548I$
$u = 0.749661 - 0.738081I$	$3.08458 + 0.82025I$	$3.76726 - 3.28548I$
$u = -1.053450 + 0.104546I$	$-9.10965 + 4.03404I$	$-10.86562 - 4.28987I$
$u = -1.053450 - 0.104546I$	$-9.10965 - 4.03404I$	$-10.86562 + 4.28987I$
$u = -0.926938$	-1.84696	-2.83260
$u = 1.084680 + 0.113747I$	$19.2646 - 4.8999I$	$-10.88316 + 3.33845I$
$u = 1.084680 - 0.113747I$	$19.2646 + 4.8999I$	$-10.88316 - 3.33845I$
$u = 0.954725 + 0.548432I$	$-6.57750 - 1.92071I$	$-8.14899 + 2.64008I$
$u = 0.954725 - 0.548432I$	$-6.57750 + 1.92071I$	$-8.14899 - 2.64008I$
$u = -0.841615 + 0.719480I$	$-0.29950 + 2.71622I$	$-2.52778 - 3.64683I$
$u = -0.841615 - 0.719480I$	$-0.29950 - 2.71622I$	$-2.52778 + 3.64683I$
$u = -0.900993 + 0.649958I$	$-0.39055 + 2.53610I$	$-4.97104 - 1.73986I$
$u = -0.900993 - 0.649958I$	$-0.39055 - 2.53610I$	$-4.97104 + 1.73986I$
$u = -0.997812 + 0.527862I$	$-17.7602 + 1.5442I$	$-8.40581 - 2.83679I$
$u = -0.997812 - 0.527862I$	$-17.7602 - 1.5442I$	$-8.40581 + 2.83679I$
$u = 0.869652 + 0.772208I$	$-10.18350 - 2.90290I$	$-2.41886 + 2.81755I$
$u = 0.869652 - 0.772208I$	$-10.18350 + 2.90290I$	$-2.41886 - 2.81755I$
$u = 0.960196 + 0.698617I$	$2.44032 - 4.66537I$	$2.22438 + 2.85694I$
$u = 0.960196 - 0.698617I$	$2.44032 + 4.66537I$	$2.22438 - 2.85694I$
$u = -0.989811 + 0.703622I$	$1.46134 + 7.65649I$	$-1.60381 - 9.50795I$
$u = -0.989811 - 0.703622I$	$1.46134 - 7.65649I$	$-1.60381 + 9.50795I$
$u = 1.013930 + 0.706638I$	$-3.99832 - 9.85780I$	$-5.28411 + 7.75743I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.013930 - 0.706638I$	$-3.99832 + 9.85780I$	$-5.28411 - 7.75743I$
$u = -1.028300 + 0.710572I$	$-14.9463 + 11.0210I$	$-5.83190 - 6.59019I$
$u = -1.028300 - 0.710572I$	$-14.9463 - 11.0210I$	$-5.83190 + 6.59019I$
$u = -0.273540 + 0.656844I$	$-15.8067 + 2.7178I$	$-4.22928 - 2.39792I$
$u = -0.273540 - 0.656844I$	$-15.8067 - 2.7178I$	$-4.22928 + 2.39792I$
$u = 0.267258 + 0.577154I$	$-4.96129 - 2.11580I$	$-3.91393 + 3.51280I$
$u = 0.267258 - 0.577154I$	$-4.96129 + 2.11580I$	$-3.91393 - 3.51280I$
$u = -0.153346 + 0.396492I$	$0.057297 + 0.923048I$	$1.13344 - 7.42333I$
$u = -0.153346 - 0.396492I$	$0.057297 - 0.923048I$	$1.13344 + 7.42333I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{39} + 13u^{38} + \cdots - 4u + 1$
c_2, c_7	$u^{39} + u^{38} + \cdots + 2u + 1$
c_3	$u^{39} - u^{38} + \cdots + 20u + 13$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$u^{39} + u^{38} + \cdots + 2u + 1$
c_9	$u^{39} + 7u^{38} + \cdots - 92u - 7$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{39} + 27y^{38} + \cdots - 4y - 1$
c_2, c_7	$y^{39} - 13y^{38} + \cdots - 4y - 1$
c_3	$y^{39} - 9y^{38} + \cdots + 1752y - 169$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$y^{39} + 55y^{38} + \cdots - 4y - 1$
c_9	$y^{39} - 5y^{38} + \cdots + 960y - 49$