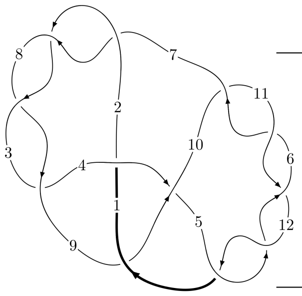
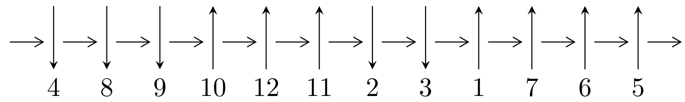
$12a_{1138}$ $(K12a_{1138})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{39} - u^{38} + \cdots + 4u^3 - 1 \rangle$$

* 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. $I_1^u = \langle u^{39} - u^{38} + \cdots + 4u^3 - 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4 - 3u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^9 - 6u^7 + 11u^5 - 6u^3 + u \\ u^9 - 5u^7 + 7u^5 - 2u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{18} + 11u^{16} - 48u^{14} + 105u^{12} - 121u^{10} + 75u^8 - 30u^6 + 8u^4 - u^2 + 1 \\ -u^{18} + 10u^{16} - 39u^{14} + 74u^{12} - 71u^{10} + 38u^8 - 18u^6 + 4u^4 - u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 + 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{17} - 10u^{15} + 39u^{13} - 74u^{11} + 71u^9 - 38u^7 + 18u^5 - 4u^3 + u \\ -u^{19} + 11u^{17} - 48u^{15} + 105u^{13} - 121u^{11} + 75u^9 - 30u^7 + 8u^5 - u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{31} + 18u^{29} + \cdots - 12u^7 + 2u \\ u^{33} - 19u^{31} + \cdots - 2u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{32} - 19u^{30} + \cdots - 2u^2 + 1 \\ u^{32} - 18u^{30} + \cdots + 12u^8 - 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{36} - 84u^{34} + 788u^{32} + 4u^{31} - 4352u^{30} - 72u^{29} + 15712u^{28} + 568u^{27} - 38992u^{26} - 2576u^{25} + 68272u^{24} + 7412u^{23} - 85520u^{22} - 14120u^{21} + 77072u^{20} + 18120u^{19} - 49428u^{18} - 15728u^{17} + 21212u^{16} + 9112u^{15} - 4912u^{14} - 3220u^{13} - 12u^{12} + 432u^{11} + 284u^{10} + 36u^9 + 88u^8 + 52u^7 - 84u^6 - 64u^5 + 44u^4 + 20u^3 - 4u^2 - 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{39} - 11u^{38} + \cdots + 360u - 41$
c_2, c_3, c_7 c_8	$u^{39} + u^{38} + \cdots + 4u^3 + 1$
c_4	$u^{39} - u^{38} + \cdots + 112u + 29$
c_5, c_6, c_{10} c_{11}, c_{12}	$u^{39} - u^{38} + \cdots - 2u + 1$
c_9	$u^{39} - 5u^{38} + \cdots + 112u - 95$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{39} - 9y^{38} + \cdots + 3156y - 1681$
c_2, c_3, c_7 c_8	$y^{39} - 45y^{38} + \cdots - 10y^2 - 1$
c_4	$y^{39} + 11y^{38} + \cdots + 5352y - 841$
c_5, c_6, c_{10} c_{11}, c_{12}	$y^{39} + 51y^{38} + \cdots - 2y^2 - 1$
c_9	$y^{39} + 19y^{38} + \cdots - 71816y - 9025$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.841792 + 0.292424I$	$-15.1182 + 1.5057I$	$-8.40858 + 0.97265I$
$u = \quad 0.841792 - 0.292424I$	$-15.1182 - 1.5057I$	$-8.40858 - 0.97265I$
$u = -0.729257 + 0.492469I$	$-13.7612 + 8.1189I$	$-6.01582 - 6.71736I$
$u = -0.729257 - 0.492469I$	$-13.7612 - 8.1189I$	$-6.01582 + 6.71736I$
$u = \quad 0.707989 + 0.470053I$	$-4.12575 - 6.63014I$	$-5.12153 + 8.45771I$
$u = \quad 0.707989 - 0.470053I$	$-4.12575 + 6.63014I$	$-5.12153 - 8.45771I$
$u = -0.774155 + 0.278442I$	$-5.35026 - 0.56012I$	$-8.31402 - 0.25589I$
$u = -0.774155 - 0.278442I$	$-5.35026 + 0.56012I$	$-8.31402 + 0.25589I$
$u = -0.668788 + 0.436144I$	$-0.40953 + 3.91689I$	$0.46864 - 8.35859I$
$u = -0.668788 - 0.436144I$	$-0.40953 - 3.91689I$	$0.46864 + 8.35859I$
$u = \quad 0.635570 + 0.340805I$	$-1.13161 - 1.10437I$	$-2.87714 + 0.84766I$
$u = \quad 0.635570 - 0.340805I$	$-1.13161 + 1.10437I$	$-2.87714 - 0.84766I$
$u = -0.451697 + 0.506497I$	$-9.02178 + 1.76146I$	$-1.28786 - 3.92479I$
$u = -0.451697 - 0.506497I$	$-9.02178 - 1.76146I$	$-1.28786 + 3.92479I$
$u = -0.136161 + 0.598793I$	$-12.02260 - 4.41211I$	$-2.43306 + 1.96254I$
$u = -0.136161 - 0.598793I$	$-12.02260 + 4.41211I$	$-2.43306 - 1.96254I$
$u = \quad 0.143045 + 0.548355I$	$-2.49224 + 3.13322I$	$-1.35770 - 3.51211I$
$u = \quad 0.143045 - 0.548355I$	$-2.49224 - 3.13322I$	$-1.35770 + 3.51211I$
$u = \quad 0.394285 + 0.400255I$	$-0.58188 - 1.38142I$	$-0.08240 + 6.03363I$
$u = \quad 0.394285 - 0.400255I$	$-0.58188 + 1.38142I$	$-0.08240 - 6.03363I$
$u = \quad 1.49254$	-4.41211	0
$u = \quad 1.49483 + 0.09365I$	$-15.3639 - 3.7798I$	0
$u = \quad 1.49483 - 0.09365I$	$-15.3639 + 3.7798I$	0
$u = -1.50080 + 0.04783I$	$-6.77867 + 2.73633I$	0
$u = -1.50080 - 0.04783I$	$-6.77867 - 2.73633I$	0
$u = -0.196225 + 0.449165I$	$0.943197 - 0.763976I$	$6.20859 + 2.38716I$
$u = -0.196225 - 0.449165I$	$0.943197 + 0.763976I$	$6.20859 - 2.38716I$
$u = -1.59322 + 0.10217I$	$-8.77741 + 2.76966I$	0
$u = -1.59322 - 0.10217I$	$-8.77741 - 2.76966I$	0
$u = \quad 1.59721 + 0.12385I$	$-8.12235 - 5.98293I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.59721 - 0.12385I$	$-8.12235 + 5.98293I$	0
$u = -1.60787 + 0.13573I$	$-11.9998 + 8.8902I$	0
$u = -1.60787 - 0.13573I$	$-11.9998 - 8.8902I$	0
$u = \ \ 1.61669 + 0.08086I$	$-13.52220 - 0.80582I$	0
$u = \ \ 1.61669 - 0.08086I$	$-13.52220 + 0.80582I$	0
$u = \ \ 1.61512 + 0.14352I$	$17.7470 - 10.5062I$	0
$u = \ \ 1.61512 - 0.14352I$	$17.7470 + 10.5062I$	0
$u = -1.63463 + 0.07714I$	$15.8667 - 0.1255I$	0
$u = -1.63463 - 0.07714I$	$15.8667 + 0.1255I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{39} - 11u^{38} + \cdots + 360u - 41$
c_2, c_3, c_7 c_8	$u^{39} + u^{38} + \cdots + 4u^3 + 1$
c_4	$u^{39} - u^{38} + \cdots + 112u + 29$
c_5, c_6, c_{10} c_{11}, c_{12}	$u^{39} - u^{38} + \cdots - 2u + 1$
c_9	$u^{39} - 5u^{38} + \cdots + 112u - 95$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{39} - 9y^{38} + \cdots + 3156y - 1681$
c_2, c_3, c_7 c_8	$y^{39} - 45y^{38} + \cdots - 10y^2 - 1$
c_4	$y^{39} + 11y^{38} + \cdots + 5352y - 841$
c_5, c_6, c_{10} c_{11}, c_{12}	$y^{39} + 51y^{38} + \cdots - 2y^2 - 1$
c_9	$y^{39} + 19y^{38} + \cdots - 71816y - 9025$