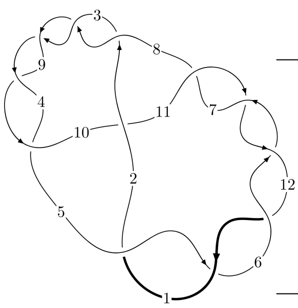
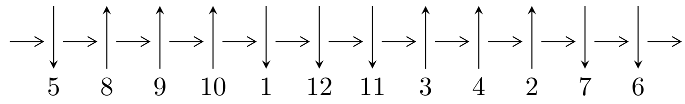
$12a_{1278}$ ($K12a_{1278}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{20} - u^{19} + \cdots + 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 20 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. $I_1^u = \langle u^{20} - u^{19} + \cdots + 2u - 1 \rangle$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

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

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

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

$$a_1 = \begin{pmatrix} -u^8 + 5u^6 - 7u^4 + 2u^2 + 1 \\ u^{10} - 6u^8 + 11u^6 - 6u^4 + u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{14} + 9u^{12} - 30u^{10} + 45u^8 - 28u^6 + 2u^4 + 2u^2 + 1 \\ u^{16} - 10u^{14} + 38u^{12} - 68u^{10} + 58u^8 - 22u^6 + 4u^4 - 2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{13} + 8u^{11} - 23u^9 + 30u^7 - 20u^5 + 6u^3 - u \\ u^{13} - 7u^{11} + 15u^9 - 8u^7 - 4u^5 + 3u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{19} + 12u^{17} + \cdots - 7u^3 + 2u \\ u^{19} - 11u^{17} + 46u^{15} - 89u^{13} + 73u^{11} - 5u^9 - 22u^7 + 2u^5 + 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{17} + 48u^{15} - 228u^{13} + 544u^{11} - 4u^{10} - 684u^9 + 28u^8 + 432u^7 - 64u^6 - 116u^5 + 52u^4 + 32u^3 - 12u^2 - 24u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_7, c_{11}, c_{12}	$u^{20} + u^{19} + \cdots - 2u - 1$
c_2, c_3, c_4 c_8, c_9	$u^{20} - u^{19} + \cdots + 2u - 1$
c_{10}	$u^{20} - 5u^{19} + \cdots - 238u + 95$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_7, c_{11}, c_{12}	$y^{20} + 29y^{19} + \cdots + 6y + 1$
c_2, c_3, c_4 c_8, c_9	$y^{20} - 27y^{19} + \cdots + 6y + 1$
c_{10}	$y^{20} - 19y^{19} + \cdots - 60634y + 9025$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.957042 + 0.156119I$	$3.42442 - 2.40418I$	$8.88830 + 6.40859I$
$u = -0.957042 - 0.156119I$	$3.42442 + 2.40418I$	$8.88830 - 6.40859I$
$u = \quad 1.053290 + 0.250152I$	$9.25346 + 4.00690I$	$11.03271 - 4.36295I$
$u = \quad 1.053290 - 0.250152I$	$9.25346 - 4.00690I$	$11.03271 + 4.36295I$
$u = \quad 0.872181$	1.81973	3.09740
$u = -1.102630 + 0.306812I$	$-19.0311 - 4.8024I$	$11.07225 + 3.50232I$
$u = -1.102630 - 0.306812I$	$-19.0311 + 4.8024I$	$11.07225 - 3.50232I$
$u = \quad 0.352552 + 0.563000I$	$15.8889 + 1.8393I$	$6.96532 - 3.24641I$
$u = \quad 0.352552 - 0.563000I$	$15.8889 - 1.8393I$	$6.96532 + 3.24641I$
$u = -0.313620 + 0.473687I$	$5.00086 - 1.54932I$	$6.51491 + 4.26161I$
$u = -0.313620 - 0.473687I$	$5.00086 + 1.54932I$	$6.51491 - 4.26161I$
$u = \quad 0.153630 + 0.311091I$	$0.036981 + 0.768397I$	$1.20151 - 8.96620I$
$u = \quad 0.153630 - 0.311091I$	$0.036981 - 0.768397I$	$1.20151 + 8.96620I$
$u = -1.70374$	11.1012	4.65580
$u = \quad 1.71447 + 0.03374I$	$12.98260 + 3.12195I$	$9.08784 - 4.56508I$
$u = \quad 1.71447 - 0.03374I$	$12.98260 - 3.12195I$	$9.08784 + 4.56508I$
$u = -1.73483 + 0.06198I$	$19.2194 - 5.2785I$	$11.51082 + 3.23526I$
$u = -1.73483 - 0.06198I$	$19.2194 + 5.2785I$	$11.51082 - 3.23526I$
$u = \quad 1.74996 + 0.07966I$	$-8.82272 + 6.42667I$	$11.84974 - 2.46747I$
$u = \quad 1.74996 - 0.07966I$	$-8.82272 - 6.42667I$	$11.84974 + 2.46747I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_7, c_{11}, c_{12}	$u^{20} + u^{19} + \cdots - 2u - 1$
c_2, c_3, c_4 c_8, c_9	$u^{20} - u^{19} + \cdots + 2u - 1$
c_{10}	$u^{20} - 5u^{19} + \cdots - 238u + 95$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_7, c_{11}, c_{12}	$y^{20} + 29y^{19} + \cdots + 6y + 1$
c_2, c_3, c_4 c_8, c_9	$y^{20} - 27y^{19} + \cdots + 6y + 1$
c_{10}	$y^{20} - 19y^{19} + \cdots - 60634y + 9025$