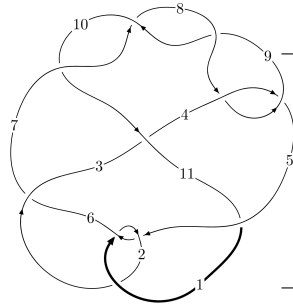
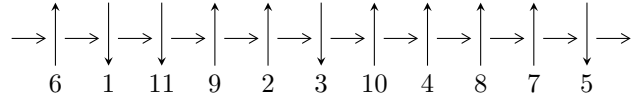


11a<sub>93</sub> (K11a<sub>93</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

**Ideals for irreducible components<sup>2</sup> of  $X_{\text{par}}$**

$$I_1^u = \langle u^{46} - u^{45} + \dots - u + 1 \rangle$$

\* 1 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 46 representations.

<sup>1</sup>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>).

<sup>2</sup>All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\text{I. } I_1^u = \langle u^{46} - u^{45} + \dots - u + 1 \rangle$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^4 - u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ -u^6 - u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{10} - u^8 + 2u^6 - u^4 - u^2 + 1 \\ -u^{12} + 2u^{10} - 4u^8 + 4u^6 - 3u^4 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{13} - 2u^{11} + 5u^9 - 6u^7 + 6u^5 - 4u^3 + u \\ u^{13} - u^{11} + 3u^9 - 2u^7 + 2u^5 - u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{35} - 4u^{33} + \dots - 7u^3 + 2u \\ -u^{37} + 5u^{35} + \dots - u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{22} + 3u^{20} + \dots - 2u^2 + 1 \\ -u^{22} + 2u^{20} + \dots + 4u^4 - u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{22} + 3u^{20} + \dots - 2u^2 + 1 \\ -u^{22} + 2u^{20} + \dots + 4u^4 - u^2 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-4u^{44} + 4u^{43} + \dots - 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_5$	$u^{46} - u^{45} + \dots - 3u + 1$
$c_2$	$u^{46} + 25u^{45} + \dots - u + 1$
$c_3$	$u^{46} - 7u^{45} + \dots + 25u + 101$
$c_4, c_8$	$u^{46} + u^{45} + \dots + u + 1$
$c_6, c_{11}$	$u^{46} + u^{45} + \dots + 11u + 2$
$c_7, c_9, c_{10}$	$u^{46} - 11u^{45} + \dots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_5$	$y^{46} + 25y^{45} + \dots - y + 1$
$c_2$	$y^{46} - 7y^{45} + \dots - 17y + 1$
$c_3$	$y^{46} - 19y^{45} + \dots + 139967y + 10201$
$c_4, c_8$	$y^{46} - 11y^{45} + \dots - y + 1$
$c_6, c_{11}$	$y^{46} - 39y^{45} + \dots + 239y + 4$
$c_7, c_9, c_{10}$	$y^{46} + 49y^{45} + \dots - 9y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.926616 + 0.410566I$	$-0.61712 + 4.64033I$	$3.90866 - 6.37467I$
$u = 0.926616 - 0.410566I$	$-0.61712 - 4.64033I$	$3.90866 + 6.37467I$
$u = -0.914147 + 0.454246I$	$-4.39692 - 0.74190I$	$-1.01050 + 2.76153I$
$u = -0.914147 - 0.454246I$	$-4.39692 + 0.74190I$	$-1.01050 - 2.76153I$
$u = 0.911781 + 0.304147I$	$2.15395 + 4.51135I$	$7.09548 - 8.74151I$
$u = 0.911781 - 0.304147I$	$2.15395 - 4.51135I$	$7.09548 + 8.74151I$
$u = -0.954952 + 0.418436I$	$-3.69312 - 9.28862I$	$0.73867 + 9.25644I$
$u = -0.954952 - 0.418436I$	$-3.69312 + 9.28862I$	$0.73867 - 9.25644I$
$u = 0.930509 + 0.048833I$	$-1.66163 - 4.02262I$	$4.31758 + 3.30145I$
$u = 0.930509 - 0.048833I$	$-1.66163 + 4.02262I$	$4.31758 - 3.30145I$
$u = -0.890449 + 0.239219I$	$2.52825 - 0.40745I$	$9.12909 + 0.87770I$
$u = -0.890449 - 0.239219I$	$2.52825 + 0.40745I$	$9.12909 - 0.87770I$
$u = -0.814350 + 0.077554I$	$1.220450 - 0.051921I$	$8.69452 + 0.37904I$
$u = -0.814350 - 0.077554I$	$1.220450 + 0.051921I$	$8.69452 - 0.37904I$
$u = -0.845736 + 0.830186I$	$-4.84996 + 2.01035I$	$0. - 3.31970I$
$u = -0.845736 - 0.830186I$	$-4.84996 - 2.01035I$	$0. + 3.31970I$
$u = 0.871966 + 0.808985I$	$-3.65550 + 2.31659I$	$2.70777 - 2.80879I$
$u = 0.871966 - 0.808985I$	$-3.65550 - 2.31659I$	$2.70777 + 2.80879I$
$u = 0.918456 + 0.798302I$	$-3.51223 + 3.71082I$	$3.02524 - 2.42011I$
$u = 0.918456 - 0.798302I$	$-3.51223 - 3.71082I$	$3.02524 + 2.42011I$
$u = -0.851134 + 0.882685I$	$-8.86024 + 1.86315I$	$-6 - 1.106545 + 0.10I$
$u = -0.851134 - 0.882685I$	$-8.86024 - 1.86315I$	$-6 - 1.106545 + 0.10I$
$u = 0.845372 + 0.890503I$	$-12.13790 - 6.72244I$	$-4.11786 + 3.49282I$
$u = 0.845372 - 0.890503I$	$-12.13790 + 6.72244I$	$-4.11786 - 3.49282I$
$u = 0.862272 + 0.887980I$	$-12.90310 + 2.35522I$	$-5.23797 - 2.80998I$
$u = 0.862272 - 0.887980I$	$-12.90310 - 2.35522I$	$-5.23797 + 2.80998I$
$u = -0.943172 + 0.803061I$	$-4.55090 - 8.11388I$	$0. + 8.45293I$
$u = -0.943172 - 0.803061I$	$-4.55090 + 8.11388I$	$0. - 8.45293I$
$u = 0.640742 + 0.410350I$	$-1.44816 + 1.63407I$	$-3.46961 - 5.26360I$
$u = 0.640742 - 0.410350I$	$-1.44816 - 1.63407I$	$-3.46961 + 5.26360I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.907049 + 0.844230I$	$-8.35989 - 3.13875I$	$-5.65909 + 2.64059I$
$u = -0.907049 - 0.844230I$	$-8.35989 + 3.13875I$	$-5.65909 - 2.64059I$
$u = -0.391409 + 0.635070I$	$-6.04130 - 3.27213I$	$-5.13047 + 3.47488I$
$u = -0.391409 - 0.635070I$	$-6.04130 + 3.27213I$	$-5.13047 - 3.47488I$
$u = -0.966860 + 0.834394I$	$-8.49402 - 8.22551I$	$0. + 5.24210I$
$u = -0.966860 - 0.834394I$	$-8.49402 + 8.22551I$	$0. - 5.24210I$
$u = 0.963540 + 0.844204I$	$-12.58150 + 4.05580I$	$-4.67518 + 0.I$
$u = 0.963540 - 0.844204I$	$-12.58150 - 4.05580I$	$-4.67518 + 0.I$
$u = -0.313493 + 0.645402I$	$-5.71816 + 5.39161I$	$-4.52962 - 3.70458I$
$u = -0.313493 - 0.645402I$	$-5.71816 - 5.39161I$	$-4.52962 + 3.70458I$
$u = 0.974549 + 0.835372I$	$-11.7284 + 13.1112I$	$0. - 8.32350I$
$u = 0.974549 - 0.835372I$	$-11.7284 - 13.1112I$	$0. + 8.32350I$
$u = 0.339399 + 0.599164I$	$-2.45150 - 0.89325I$	$-1.50590 + 0.29908I$
$u = 0.339399 - 0.599164I$	$-2.45150 + 0.89325I$	$-1.50590 - 0.29908I$
$u = 0.107548 + 0.462569I$	$-0.09670 - 1.71368I$	$-0.09766 + 4.16841I$
$u = 0.107548 - 0.462569I$	$-0.09670 + 1.71368I$	$-0.09766 - 4.16841I$

## II. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1, c_5$	$u^{46} - u^{45} + \dots - 3u + 1$
$c_2$	$u^{46} + 25u^{45} + \dots - u + 1$
$c_3$	$u^{46} - 7u^{45} + \dots + 25u + 101$
$c_4, c_8$	$u^{46} + u^{45} + \dots + u + 1$
$c_6, c_{11}$	$u^{46} + u^{45} + \dots + 11u + 2$
$c_7, c_9, c_{10}$	$u^{46} - 11u^{45} + \dots - u + 1$

### III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1, c_5$	$y^{46} + 25y^{45} + \dots - y + 1$
$c_2$	$y^{46} - 7y^{45} + \dots - 17y + 1$
$c_3$	$y^{46} - 19y^{45} + \dots + 139967y + 10201$
$c_4, c_8$	$y^{46} - 11y^{45} + \dots - y + 1$
$c_6, c_{11}$	$y^{46} - 39y^{45} + \dots + 239y + 4$
$c_7, c_9, c_{10}$	$y^{46} + 49y^{45} + \dots - 9y + 1$