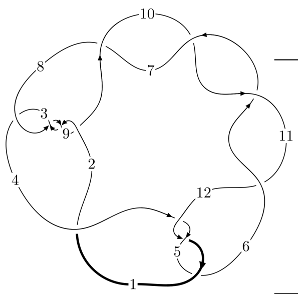
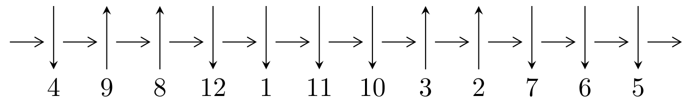
$12a_{1165}$ $(K12a_{1165})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{33} + u^{32} + \cdots + u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 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. $I_1^u = \langle u^{33} + u^{32} + \cdots + u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^9 + 4u^7 - 5u^5 + 3u \\ -u^9 + 3u^7 - 3u^5 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{12} - 5u^{10} + 9u^8 - 4u^6 - 6u^4 + 5u^2 + 1 \\ u^{12} - 4u^{10} + 6u^8 - 2u^6 - 3u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{28} + 11u^{26} + \cdots + 3u^2 + 1 \\ -u^{28} + 10u^{26} + \cdots + 9u^4 - 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{21} - 8u^{19} + \cdots - 4u^3 + 3u \\ -u^{23} + 9u^{21} + \cdots + 4u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{30} - 44u^{28} + 4u^{27} + 216u^{26} - 40u^{25} - 592u^{24} + 176u^{23} + 892u^{22} - 420u^{21} - 420u^{20} + 508u^{19} - 948u^{18} - 52u^{17} + 1812u^{16} - 716u^{15} - 808u^{14} + 840u^{13} - 896u^{12} - 64u^{11} + 1080u^{10} - 520u^9 - 56u^8 + 264u^7 - 352u^6 + 96u^5 + 64u^4 - 64u^3 + 48u^2 - 16u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_7 c_{10}, c_{11}	$u^{33} - 3u^{32} + \cdots + 9u - 3$
c_2, c_3, c_8 c_9	$u^{33} + u^{32} + \cdots + u + 1$
c_4, c_5, c_{12}	$u^{33} + u^{32} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_7 c_{10}, c_{11}	$y^{33} + 43y^{32} + \cdots - 15y - 9$
c_2, c_3, c_8 c_9	$y^{33} + 35y^{32} + \cdots - 7y - 1$
c_4, c_5, c_{12}	$y^{33} - 25y^{32} + \cdots - 7y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.007187+0.927489I$	$13.69600+2.31895I$	$1.75304-2.85786I$
$u=-0.007187-0.927489I$	$13.69600-2.31895I$	$1.75304+2.85786I$
$u=\ \ 0.022659+0.925236I$	$7.06487-5.65946I$	$-1.58265+2.87323I$
$u=\ \ 0.022659-0.925236I$	$7.06487+5.65946I$	$-1.58265-2.87323I$
$u=\ \ 1.089610+0.294783I$	$-5.38539+0.42351I$	$-5.40857+0.36274I$
$u=\ \ 1.089610-0.294783I$	$-5.38539-0.42351I$	$-5.40857-0.36274I$
$u=-1.14314$	-2.30256	-1.78270
$u=-1.182680+0.290002I$	$0.43739+1.77292I$	$-1.59025-0.21543I$
$u=-1.182680-0.290002I$	$0.43739-1.77292I$	$-1.59025+0.21543I$
$u=\ \ 1.234350+0.088067I$	$-4.21894-1.97469I$	$-11.37360+5.72658I$
$u=\ \ 1.234350-0.088067I$	$-4.21894+1.97469I$	$-11.37360-5.72658I$
$u=\ \ 1.244790+0.290367I$	$-0.08256-5.33404I$	$-3.84371+7.86352I$
$u=\ \ 1.244790-0.290367I$	$-0.08256+5.33404I$	$-3.84371-7.86352I$
$u=\ \ 0.124967+0.695815I$	$-2.55035-4.09733I$	$-2.17456+4.30313I$
$u=\ \ 0.124967-0.695815I$	$-2.55035+4.09733I$	$-2.17456-4.30313I$
$u=-1.303370+0.091971I$	$-11.41980+2.77587I$	$-12.69893-3.54173I$
$u=-1.303370-0.091971I$	$-11.41980-2.77587I$	$-12.69893+3.54173I$
$u=-0.042773+0.691881I$	$3.85716+1.79630I$	$2.14795-4.42092I$
$u=-0.042773-0.691881I$	$3.85716-1.79630I$	$2.14795+4.42092I$
$u=-1.290570+0.282135I$	$-6.93611+7.59600I$	$-7.80083-6.53721I$
$u=-1.290570-0.282135I$	$-6.93611-7.59600I$	$-7.80083+6.53721I$
$u=\ \ 1.271570+0.457494I$	$3.19600+0.72997I$	$-4.74001+0.15304I$
$u=\ \ 1.271570-0.457494I$	$3.19600-0.72997I$	$-4.74001-0.15304I$
$u=-1.285040+0.453763I$	$9.72993+2.60735I$	$-1.44806-0.13745I$
$u=-1.285040-0.453763I$	$9.72993-2.60735I$	$-1.44806+0.13745I$
$u=\ \ 1.296000+0.449004I$	$9.64446-7.23064I$	$-1.69264+5.79671I$
$u=\ \ 1.296000-0.449004I$	$9.64446+7.23064I$	$-1.69264-5.79671I$
$u=-1.306320+0.442632I$	$2.92604+10.54330I$	$-5.09643-5.66423I$
$u=-1.306320-0.442632I$	$2.92604-10.54330I$	$-5.09643+5.66423I$
$u=\ \ 0.391381+0.352338I$	$-6.35493-1.38874I$	$-6.74266+4.47575I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.391381 - 0.352338I$	$-6.35493 + 1.38874I$	$-6.74266 - 4.47575I$
$u = -0.185818 + 0.264071I$	$-0.115512 + 0.725231I$	$-3.81673 - 9.57308I$
$u = -0.185818 - 0.264071I$	$-0.115512 - 0.725231I$	$-3.81673 + 9.57308I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6, c_7 c_{10}, c_{11}	$u^{33} - 3u^{32} + \cdots + 9u - 3$
c_2, c_3, c_8 c_9	$u^{33} + u^{32} + \cdots + u + 1$
c_4, c_5, c_{12}	$u^{33} + u^{32} + \cdots + u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_7 c_{10}, c_{11}	$y^{33} + 43y^{32} + \cdots - 15y - 9$
c_2, c_3, c_8 c_9	$y^{33} + 35y^{32} + \cdots - 7y - 1$
c_4, c_5, c_{12}	$y^{33} - 25y^{32} + \cdots - 7y - 1$