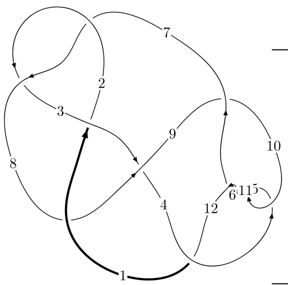
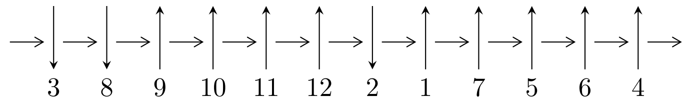
$12a_{0720}$ ($K12a_{0720}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{56} + u^{55} + \cdots + 2u^2 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 56 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. $I_1^u = \langle u^{56} + u^{55} + \cdots + 2u^2 - 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^7 + 4u^5 - 4u^3 + 2u \\ u^7 - 3u^5 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^7 - 4u^5 + 4u^3 - 2u \\ -u^9 + 5u^7 - 7u^5 + 2u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{18} - 11u^{16} + 48u^{14} - 107u^{12} + 133u^{10} - 95u^8 + 34u^6 - 2u^4 - 3u^2 + 1 \\ -u^{20} + 12u^{18} + \cdots + 5u^4 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^{23} - 14u^{21} + \cdots - 4u^3 - 2u \\ -u^{23} + 13u^{21} + \cdots - 2u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{45} - 28u^{43} + \cdots + 6u^3 + u \\ -u^{47} + 29u^{45} + \cdots - 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{52} + 132u^{50} + \cdots + 12u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{56} + 27u^{55} + \cdots + 4u + 1$
c_2, c_7	$u^{56} + u^{55} + \cdots + 2u^2 - 1$
c_3	$u^{56} - u^{55} + \cdots - 10u - 1$
c_4, c_5, c_6 c_{10}, c_{11}	$u^{56} + u^{55} + \cdots + 2u^2 - 1$
c_8	$u^{56} + 3u^{55} + \cdots - 168u - 11$
c_9, c_{12}	$u^{56} + 5u^{55} + \cdots + 180u + 41$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} + 5y^{55} + \cdots + 20y + 1$
c_2, c_7	$y^{56} - 27y^{55} + \cdots - 4y + 1$
c_3	$y^{56} - 3y^{55} + \cdots - 132y + 1$
c_4, c_5, c_6 c_{10}, c_{11}	$y^{56} - 71y^{55} + \cdots - 4y + 1$
c_8	$y^{56} + 17y^{55} + \cdots - 34956y + 121$
c_9, c_{12}	$y^{56} + 33y^{55} + \cdots - 26332y + 1681$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.000570+0.044415I$	$5.23276-0.91933I$	$15.9080+0.I$
$u=-1.000570-0.044415I$	$5.23276+0.91933I$	$15.9080+0.I$
$u=0.911585+0.375481I$	$-1.58449+11.37680I$	$6.00000-9.66829I$
$u=0.911585-0.375481I$	$-1.58449-11.37680I$	$6.00000+9.66829I$
$u=1.012670+0.088406I$	$3.47067+5.61232I$	$12.19644-6.38197I$
$u=1.012670-0.088406I$	$3.47067-5.61232I$	$12.19644+6.38197I$
$u=-0.905678+0.361326I$	$0.84033-6.42701I$	$10.11884+6.13576I$
$u=-0.905678-0.361326I$	$0.84033+6.42701I$	$10.11884-6.13576I$
$u=-0.904513+0.305928I$	$2.52237-4.64171I$	$11.91273+7.20822I$
$u=-0.904513-0.305928I$	$2.52237+4.64171I$	$11.91273-7.20822I$
$u=0.878496+0.372437I$	$-3.56192+3.49701I$	$3.83737-3.80502I$
$u=0.878496-0.372437I$	$-3.56192-3.49701I$	$3.83737+3.80502I$
$u=0.898756+0.245046I$	$1.83352+0.17402I$	$10.78063-0.76974I$
$u=0.898756-0.245046I$	$1.83352-0.17402I$	$10.78063+0.76974I$
$u=-0.783787+0.371605I$	$-4.13801-3.02974I$	$2.90976+4.77465I$
$u=-0.783787-0.371605I$	$-4.13801+3.02974I$	$2.90976-4.77465I$
$u=-0.726144+0.377443I$	$-2.67936+4.78083I$	$5.11849-1.99129I$
$u=-0.726144-0.377443I$	$-2.67936-4.78083I$	$5.11849+1.99129I$
$u=0.738844+0.341726I$	$-0.169675-0.099501I$	$8.43884-1.67585I$
$u=0.738844-0.341726I$	$-0.169675+0.099501I$	$8.43884+1.67585I$
$u=0.796382$	1.22357	8.30190
$u=-0.082668+0.594287I$	$-4.61691-8.09385I$	$1.42454+7.00413I$
$u=-0.082668-0.594287I$	$-4.61691+8.09385I$	$1.42454-7.00413I$
$u=-0.043832+0.589687I$	$-6.36398-0.23859I$	$-1.54426+0.22557I$
$u=-0.043832-0.589687I$	$-6.36398+0.23859I$	$-1.54426-0.22557I$
$u=0.076108+0.575049I$	$-2.15243+3.25070I$	$4.40236-3.45612I$
$u=0.076108-0.575049I$	$-2.15243-3.25070I$	$4.40236+3.45612I$
$u=-0.379547+0.324636I$	$-0.88423-4.37253I$	$5.84758+8.42539I$
$u=-0.379547-0.324636I$	$-0.88423+4.37253I$	$5.84758-8.42539I$
$u=0.083930+0.484869I$	$-0.48384+1.92095I$	$5.05330-5.19671I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.083930 - 0.484869I$	$-0.48384 - 1.92095I$	$5.05330 + 5.19671I$
$u = \quad 0.415514 + 0.176437I$	$0.918390 + 0.285358I$	$11.31774 - 2.71319I$
$u = \quad 0.415514 - 0.176437I$	$0.918390 - 0.285358I$	$11.31774 + 2.71319I$
$u = -0.201404 + 0.389419I$	$-1.41046 + 1.90845I$	$3.11125 + 0.73678I$
$u = -0.201404 - 0.389419I$	$-1.41046 - 1.90845I$	$3.11125 - 0.73678I$
$u = \quad 1.63514 + 0.06538I$	$5.45645 - 3.31894I$	0
$u = \quad 1.63514 - 0.06538I$	$5.45645 + 3.31894I$	0
$u = -1.64865 + 0.06370I$	$8.15629 - 1.24210I$	0
$u = -1.64865 - 0.06370I$	$8.15629 + 1.24210I$	0
$u = \quad 1.65013 + 0.08002I$	$4.30534 + 4.63418I$	0
$u = \quad 1.65013 - 0.08002I$	$4.30534 - 4.63418I$	0
$u = -1.67906 + 0.09461I$	$5.37634 - 5.28030I$	0
$u = -1.67906 - 0.09461I$	$5.37634 + 5.28030I$	0
$u = -1.68308$	10.1668	0
$u = -1.68888 + 0.06630I$	$10.96880 - 1.40460I$	0
$u = -1.68888 - 0.06630I$	$10.96880 + 1.40460I$	0
$u = \quad 1.68815 + 0.09369I$	$9.93322 + 8.19069I$	0
$u = \quad 1.68815 - 0.09369I$	$9.93322 - 8.19069I$	0
$u = \quad 1.68987 + 0.07840I$	$11.65850 + 6.13019I$	0
$u = \quad 1.68987 - 0.07840I$	$11.65850 - 6.13019I$	0
$u = -1.68911 + 0.09828I$	$7.5229 - 13.2200I$	0
$u = -1.68911 - 0.09828I$	$7.5229 + 13.2200I$	0
$u = \quad 1.71055 + 0.00936I$	$14.8813 + 1.1210I$	0
$u = \quad 1.71055 - 0.00936I$	$14.8813 - 1.1210I$	0
$u = -1.71254 + 0.01833I$	$13.1646 - 6.0119I$	0
$u = -1.71254 - 0.01833I$	$13.1646 + 6.0119I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{56} + 27u^{55} + \cdots + 4u + 1$
c_2, c_7	$u^{56} + u^{55} + \cdots + 2u^2 - 1$
c_3	$u^{56} - u^{55} + \cdots - 10u - 1$
c_4, c_5, c_6 c_{10}, c_{11}	$u^{56} + u^{55} + \cdots + 2u^2 - 1$
c_8	$u^{56} + 3u^{55} + \cdots - 168u - 11$
c_9, c_{12}	$u^{56} + 5u^{55} + \cdots + 180u + 41$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} + 5y^{55} + \cdots + 20y + 1$
c_2, c_7	$y^{56} - 27y^{55} + \cdots - 4y + 1$
c_3	$y^{56} - 3y^{55} + \cdots - 132y + 1$
c_4, c_5, c_6 c_{10}, c_{11}	$y^{56} - 71y^{55} + \cdots - 4y + 1$
c_8	$y^{56} + 17y^{55} + \cdots - 34956y + 121$
c_9, c_{12}	$y^{56} + 33y^{55} + \cdots - 26332y + 1681$