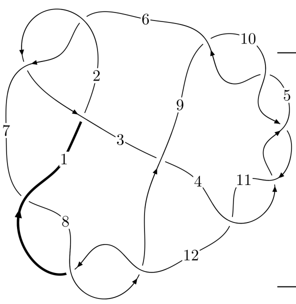
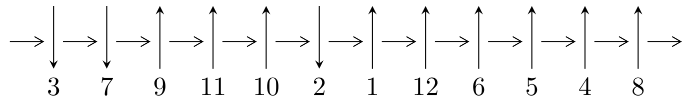
$12a_{0596}$ ($K12a_{0596}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{40} + u^{39} + \cdots + 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 40 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. $I_1^u = \langle u^{40} + u^{39} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^8 - 5u^6 - 7u^4 - 2u^2 + 1 \\ u^8 + 4u^6 + 4u^4 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^7 - 4u^5 - 4u^3 - 2u \\ -u^9 - 5u^7 - 7u^5 - 2u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{13} + 8u^{11} + 23u^9 + 30u^7 + 20u^5 + 6u^3 + u \\ u^{15} + 9u^{13} + 30u^{11} + 45u^9 + 28u^7 + 2u^5 - 2u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{31} - 20u^{29} + \cdots + 32u^5 + 14u^3 \\ u^{31} + 19u^{29} + \cdots - 4u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{19} - 12u^{17} + \cdots - 7u^3 - 2u \\ -u^{21} - 13u^{19} + \cdots - 5u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{39} + 4u^{38} + \cdots - 4u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{40} + 23u^{39} + \cdots + 4u + 1$
c_2, c_6	$u^{40} - u^{39} + \cdots - 2u + 1$
c_3	$u^{40} - u^{39} + \cdots + 754u + 841$
c_4, c_5, c_9 c_{10}, c_{11}	$u^{40} - u^{39} + \cdots - 2u + 1$
c_7, c_8, c_{12}	$u^{40} - 3u^{39} + \cdots - 21u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{40} - 11y^{39} + \cdots + 20y + 1$
c_2, c_6	$y^{40} - 23y^{39} + \cdots - 4y + 1$
c_3	$y^{40} + 29y^{39} + \cdots + 9950712y + 707281$
c_4, c_5, c_9 c_{10}, c_{11}	$y^{40} + 53y^{39} + \cdots - 4y + 1$
c_7, c_8, c_{12}	$y^{40} + 45y^{39} + \cdots + 727y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.248211 + 0.953098I$	$-4.01639 + 6.06670I$	$-0.90138 - 8.69429I$
$u = 0.248211 - 0.953098I$	$-4.01639 - 6.06670I$	$-0.90138 + 8.69429I$
$u = 0.117192 + 1.023580I$	$-5.72072 - 0.02204I$	$-5.47578 + 0.I$
$u = 0.117192 - 1.023580I$	$-5.72072 + 0.02204I$	$-5.47578 + 0.I$
$u = -0.182685 + 0.912775I$	$-2.08526 - 2.08141I$	$2.66146 + 4.19643I$
$u = -0.182685 - 0.912775I$	$-2.08526 + 2.08141I$	$2.66146 - 4.19643I$
$u = 0.283961 + 1.074480I$	$-8.88770 + 4.42504I$	$0. - 3.76885I$
$u = 0.283961 - 1.074480I$	$-8.88770 - 4.42504I$	$0. + 3.76885I$
$u = -0.301843 + 1.075410I$	$-12.5035 - 9.2934I$	$-3.70345 + 6.82215I$
$u = -0.301843 - 1.075410I$	$-12.5035 + 9.2934I$	$-3.70345 - 6.82215I$
$u = -0.277115 + 1.093940I$	$-12.82410 + 0.19992I$	$-4.32816 + 0.I$
$u = -0.277115 - 1.093940I$	$-12.82410 - 0.19992I$	$-4.32816 + 0.I$
$u = -0.118741 + 0.767347I$	$-1.15473 - 1.71800I$	$3.78782 + 5.33255I$
$u = -0.118741 - 0.767347I$	$-1.15473 + 1.71800I$	$3.78782 - 5.33255I$
$u = -0.524526 + 0.359238I$	$-8.27118 + 2.92235I$	$0.018759 + 0.340430I$
$u = -0.524526 - 0.359238I$	$-8.27118 - 2.92235I$	$0.018759 - 0.340430I$
$u = -0.543635 + 0.321474I$	$-8.14588 - 6.41600I$	$0.52066 + 6.62008I$
$u = -0.543635 - 0.321474I$	$-8.14588 + 6.41600I$	$0.52066 - 6.62008I$
$u = 0.519024 + 0.331037I$	$-4.50292 + 1.69411I$	$3.60459 - 3.64134I$
$u = 0.519024 - 0.331037I$	$-4.50292 - 1.69411I$	$3.60459 + 3.64134I$
$u = 0.453642 + 0.166928I$	$-0.58804 + 3.66392I$	$5.56569 - 8.50417I$
$u = 0.453642 - 0.166928I$	$-0.58804 - 3.66392I$	$5.56569 + 8.50417I$
$u = 0.254529 + 0.390325I$	$-1.46728 - 1.22301I$	$0.316991 + 0.035733I$
$u = 0.254529 - 0.390325I$	$-1.46728 + 1.22301I$	$0.316991 - 0.035733I$
$u = -0.384789 + 0.059847I$	$0.863513 - 0.154779I$	$12.21167 + 1.48627I$
$u = -0.384789 - 0.059847I$	$0.863513 + 0.154779I$	$12.21167 - 1.48627I$
$u = -0.01216 + 1.68251I$	$-9.97115 - 2.05842I$	0
$u = -0.01216 - 1.68251I$	$-9.97115 + 2.05842I$	0
$u = -0.03998 + 1.70308I$	$-11.41770 - 2.91186I$	0
$u = -0.03998 - 1.70308I$	$-11.41770 + 2.91186I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.05707 + 1.70742I$	$-13.4627 + 7.2396I$	0
$u = \quad 0.05707 - 1.70742I$	$-13.4627 - 7.2396I$	0
$u = \quad 0.02782 + 1.72703I$	$-15.5783 + 0.5569I$	0
$u = \quad 0.02782 - 1.72703I$	$-15.5783 - 0.5569I$	0
$u = \quad 0.07357 + 1.74076I$	$-18.9466 + 5.9094I$	0
$u = \quad 0.07357 - 1.74076I$	$-18.9466 - 5.9094I$	0
$u = -0.07874 + 1.74141I$	$16.9187 - 10.8760I$	0
$u = -0.07874 - 1.74141I$	$16.9187 + 10.8760I$	0
$u = -0.07081 + 1.74611I$	$16.4862 - 1.2511I$	0
$u = -0.07081 - 1.74611I$	$16.4862 + 1.2511I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{40} + 23u^{39} + \cdots + 4u + 1$
c_2, c_6	$u^{40} - u^{39} + \cdots - 2u + 1$
c_3	$u^{40} - u^{39} + \cdots + 754u + 841$
c_4, c_5, c_9 c_{10}, c_{11}	$u^{40} - u^{39} + \cdots - 2u + 1$
c_7, c_8, c_{12}	$u^{40} - 3u^{39} + \cdots - 21u + 8$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{40} - 11y^{39} + \cdots + 20y + 1$
c_2, c_6	$y^{40} - 23y^{39} + \cdots - 4y + 1$
c_3	$y^{40} + 29y^{39} + \cdots + 9950712y + 707281$
c_4, c_5, c_9 c_{10}, c_{11}	$y^{40} + 53y^{39} + \cdots - 4y + 1$
c_7, c_8, c_{12}	$y^{40} + 45y^{39} + \cdots + 727y + 64$