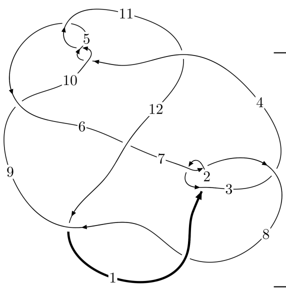
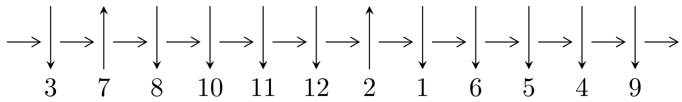
$12a_{0540}$ $(K12a_{0540})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{82} - u^{81} + \cdots + 3u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 82 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. $I_1^u = \langle u^{82} - u^{81} + \cdots + 3u - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^7 - 2u^5 - 2u^3 \\ u^9 + u^7 + u^5 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1 \\ -u^{14} - 2u^{12} - 3u^{10} - 2u^8 - 2u^6 - 2u^4 - u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{25} + 6u^{23} + \cdots + 2u^3 + u \\ -u^{27} - 5u^{25} + \cdots - u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{43} - 10u^{41} + \cdots - 8u^5 - 3u^3 \\ u^{45} + 9u^{43} + \cdots - u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{22} - 5u^{20} + \cdots - 3u^4 + 1 \\ -u^{22} - 4u^{20} + \cdots - 2u^4 - u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{71} - 16u^{69} + \cdots + 2u^3 + 2u \\ -u^{71} - 15u^{69} + \cdots - 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{80} - 4u^{79} + \cdots + 16u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{82} + 37u^{81} + \cdots - 3u + 1$
c_2, c_7	$u^{82} + u^{81} + \cdots - 3u - 1$
c_3	$u^{82} - u^{81} + \cdots + 13u - 2$
c_4, c_5, c_{10}	$u^{82} - u^{81} + \cdots - 3u - 1$
c_6	$u^{82} + u^{81} + \cdots - 1107u - 521$
c_8, c_{12}	$u^{82} + 5u^{81} + \cdots - 208u - 16$
c_9, c_{11}	$u^{82} + 3u^{81} + \cdots + 503u + 88$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{82} + 17y^{81} + \cdots - 31y + 1$
c_2, c_7	$y^{82} + 37y^{81} + \cdots - 3y + 1$
c_3	$y^{82} - 3y^{81} + \cdots - 281y + 4$
c_4, c_5, c_{10}	$y^{82} - 67y^{81} + \cdots - 3y + 1$
c_6	$y^{82} + 17y^{81} + \cdots + 5469401y + 271441$
c_8, c_{12}	$y^{82} + 65y^{81} + \cdots - 5920y + 256$
c_9, c_{11}	$y^{82} + 57y^{81} + \cdots - 88625y + 7744$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.133466 + 1.000640I$	$-1.27367 - 1.16757I$	0
$u = 0.133466 - 1.000640I$	$-1.27367 + 1.16757I$	0
$u = -0.532862 + 0.830572I$	$-0.02430 - 6.14834I$	0
$u = -0.532862 - 0.830572I$	$-0.02430 + 6.14834I$	0
$u = 0.524056 + 0.795819I$	$4.00847 + 2.15498I$	$0. - 3.78589I$
$u = 0.524056 - 0.795819I$	$4.00847 - 2.15498I$	$0. + 3.78589I$
$u = -0.284834 + 0.897551I$	$-0.67768 - 1.28884I$	$-8.00000 + 4.92802I$
$u = -0.284834 - 0.897551I$	$-0.67768 + 1.28884I$	$-8.00000 - 4.92802I$
$u = -0.170246 + 1.062460I$	$-6.83445 + 2.33727I$	0
$u = -0.170246 - 1.062460I$	$-6.83445 - 2.33727I$	0
$u = -0.749314 + 0.538316I$	$4.42162 - 7.61184I$	$-4.45987 + 5.77896I$
$u = -0.749314 - 0.538316I$	$4.42162 + 7.61184I$	$-4.45987 - 5.77896I$
$u = 0.752586 + 0.529461I$	$8.86798 + 3.35426I$	$0. - 3.38737I$
$u = 0.752586 - 0.529461I$	$8.86798 - 3.35426I$	$0. + 3.38737I$
$u = -0.525332 + 0.751819I$	$0.19898 + 1.80626I$	$-5.15609 + 0.I$
$u = -0.525332 - 0.751819I$	$0.19898 - 1.80626I$	$-5.15609 + 0.I$
$u = -0.755993 + 0.517707I$	$5.56056 + 0.94896I$	$-3.15680 + 0.I$
$u = -0.755993 - 0.517707I$	$5.56056 - 0.94896I$	$-3.15680 + 0.I$
$u = 0.287923 + 1.044900I$	$-4.82508 + 3.82270I$	0
$u = 0.287923 - 1.044900I$	$-4.82508 - 3.82270I$	0
$u = 0.081808 + 1.082030I$	$-0.0248733 - 0.0847749I$	0
$u = 0.081808 - 1.082030I$	$-0.0248733 + 0.0847749I$	0
$u = -0.098958 + 1.094980I$	$3.18345 + 4.26960I$	0
$u = -0.098958 - 1.094980I$	$3.18345 - 4.26960I$	0
$u = 0.781133 + 0.445371I$	$5.16257 - 1.98343I$	$-3.74120 + 0.I$
$u = 0.781133 - 0.445371I$	$5.16257 + 1.98343I$	$-3.74120 + 0.I$
$u = -0.785449 + 0.435883I$	$8.35181 + 6.28657I$	$-0.78678 - 3.84368I$
$u = -0.785449 - 0.435883I$	$8.35181 - 6.28657I$	$-0.78678 + 3.84368I$
$u = 0.787695 + 0.428827I$	$3.81832 - 10.53440I$	$-5.33981 + 6.01257I$
$u = 0.787695 - 0.428827I$	$3.81832 + 10.53440I$	$-5.33981 - 6.01257I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.109809 + 1.102990I$	$-1.33118 - 8.43930I$	0
$u = \quad 0.109809 - 1.102990I$	$-1.33118 + 8.43930I$	0
$u = -0.359135 + 1.056470I$	$-1.102440 - 0.747841I$	0
$u = -0.359135 - 1.056470I$	$-1.102440 + 0.747841I$	0
$u = -0.724858 + 0.480472I$	$3.67849 - 0.28703I$	$-3.38751 + 3.80148I$
$u = -0.724858 - 0.480472I$	$3.67849 + 0.28703I$	$-3.38751 - 3.80148I$
$u = \quad 0.743794 + 0.448446I$	$3.49632 - 2.84575I$	$-4.21837 + 4.55562I$
$u = \quad 0.743794 - 0.448446I$	$3.49632 + 2.84575I$	$-4.21837 - 4.55562I$
$u = \quad 0.430453 + 1.053190I$	$-3.25125 + 3.38062I$	0
$u = \quad 0.430453 - 1.053190I$	$-3.25125 - 3.38062I$	0
$u = \quad 0.365552 + 1.084130I$	$-5.57182 - 2.81011I$	0
$u = \quad 0.365552 - 1.084130I$	$-5.57182 + 2.81011I$	0
$u = -0.744053 + 0.414739I$	$-2.14948 + 4.40174I$	$-9.50950 - 3.74202I$
$u = -0.744053 - 0.414739I$	$-2.14948 - 4.40174I$	$-9.50950 + 3.74202I$
$u = \quad 0.679349 + 0.510566I$	$-1.62052 + 2.05298I$	$-8.39395 - 3.31884I$
$u = \quad 0.679349 - 0.510566I$	$-1.62052 - 2.05298I$	$-8.39395 + 3.31884I$
$u = \quad 0.495189 + 1.047400I$	$-3.38134 + 2.83643I$	0
$u = \quad 0.495189 - 1.047400I$	$-3.38134 - 2.83643I$	0
$u = -0.423498 + 1.091700I$	$-9.08228 - 3.64788I$	0
$u = -0.423498 - 1.091700I$	$-9.08228 + 3.64788I$	0
$u = -0.475657 + 1.085560I$	$-0.31884 - 6.30832I$	0
$u = -0.475657 - 1.085560I$	$-0.31884 + 6.30832I$	0
$u = \quad 0.563996 + 1.045740I$	$-3.20812 + 2.76694I$	0
$u = \quad 0.563996 - 1.045740I$	$-3.20812 - 2.76694I$	0
$u = \quad 0.470135 + 1.098680I$	$-4.87213 + 10.11490I$	0
$u = \quad 0.470135 - 1.098680I$	$-4.87213 - 10.11490I$	0
$u = -0.620596 + 1.036150I$	$2.94040 + 2.41061I$	0
$u = -0.620596 - 1.036150I$	$2.94040 - 2.41061I$	0
$u = \quad 0.620020 + 1.042550I$	$7.34120 + 1.85374I$	0
$u = \quad 0.620020 - 1.042550I$	$7.34120 - 1.85374I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.592434+1.063710I$	$1.94954-4.75248I$	0
$u=-0.592434-1.063710I$	$1.94954+4.75248I$	0
$u=-0.618735+1.050250I$	$3.97605-6.16137I$	0
$u=-0.618735-1.050250I$	$3.97605+6.16137I$	0
$u=\quad 0.595132+1.081620I$	$1.62331+7.94105I$	0
$u=\quad 0.595132-1.081620I$	$1.62331-7.94105I$	0
$u=-0.587329+1.094110I$	$-4.15024-9.46471I$	0
$u=-0.587329-1.094110I$	$-4.15024+9.46471I$	0
$u=\quad 0.609197+1.092830I$	$3.23683+7.22327I$	0
$u=\quad 0.609197-1.092830I$	$3.23683-7.22327I$	0
$u=-0.608118+1.098090I$	$6.38214-11.53260I$	0
$u=-0.608118-1.098090I$	$6.38214+11.53260I$	0
$u=\quad 0.606813+1.101570I$	$1.8176+15.7804I$	0
$u=\quad 0.606813-1.101570I$	$1.8176-15.7804I$	0
$u=\quad 0.567507+0.269437I$	$-1.29725+1.34677I$	$-7.56967-0.28082I$
$u=\quad 0.567507-0.269437I$	$-1.29725-1.34677I$	$-7.56967+0.28082I$
$u=\quad 0.609013+0.145464I$	$-2.26753-6.00853I$	$-9.43299+5.77985I$
$u=\quad 0.609013-0.145464I$	$-2.26753+6.00853I$	$-9.43299-5.77985I$
$u=-0.581311+0.180322I$	$2.13139+2.21650I$	$-4.07689-3.88447I$
$u=-0.581311-0.180322I$	$2.13139-2.21650I$	$-4.07689+3.88447I$
$u=-0.572870$	-6.20998	-14.2450
$u=\quad 0.421035$	-0.786796	-12.6530

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{82} + 37u^{81} + \cdots - 3u + 1$
c_2, c_7	$u^{82} + u^{81} + \cdots - 3u - 1$
c_3	$u^{82} - u^{81} + \cdots + 13u - 2$
c_4, c_5, c_{10}	$u^{82} - u^{81} + \cdots - 3u - 1$
c_6	$u^{82} + u^{81} + \cdots - 1107u - 521$
c_8, c_{12}	$u^{82} + 5u^{81} + \cdots - 208u - 16$
c_9, c_{11}	$u^{82} + 3u^{81} + \cdots + 503u + 88$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{82} + 17y^{81} + \cdots - 31y + 1$
c_2, c_7	$y^{82} + 37y^{81} + \cdots - 3y + 1$
c_3	$y^{82} - 3y^{81} + \cdots - 281y + 4$
c_4, c_5, c_{10}	$y^{82} - 67y^{81} + \cdots - 3y + 1$
c_6	$y^{82} + 17y^{81} + \cdots + 5469401y + 271441$
c_8, c_{12}	$y^{82} + 65y^{81} + \cdots - 5920y + 256$
c_9, c_{11}	$y^{82} + 57y^{81} + \cdots - 88625y + 7744$