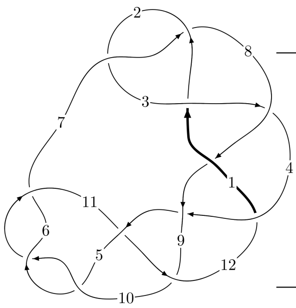
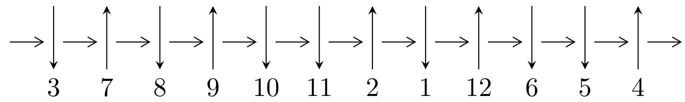
$12a_{0501}$ ($K12a_{0501}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{99} + u^{98} + \cdots + 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 99 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. $I_1^u = \langle u^{99} + u^{98} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^{10} + 2u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{21} + 4u^{19} + 9u^{17} + 12u^{15} + 12u^{13} + 10u^{11} + 9u^9 + 6u^7 + 3u^5 + u \\ u^{23} + 5u^{21} + \cdots + 2u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{11} + 3u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{32} + 7u^{30} + \cdots + 2u^{12} + 1 \\ -u^{32} - 8u^{30} + \cdots - 12u^8 - 4u^6 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{55} + 12u^{53} + \cdots + 5u^7 + 2u^3 \\ u^{57} + 13u^{55} + \cdots + 2u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{87} - 20u^{85} + \cdots - 5u^7 - 2u^3 \\ u^{87} + 21u^{85} + \cdots + 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{97} - 4u^{96} + \cdots - 12u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{99} + 47u^{98} + \cdots - 2u - 1$
c_2, c_7	$u^{99} + u^{98} + \cdots + 2u + 1$
c_3	$u^{99} - u^{98} + \cdots - 2396u + 457$
c_4	$u^{99} + u^{98} + \cdots - 1366u + 521$
c_5, c_6, c_{10}	$u^{99} - u^{98} + \cdots + 2u + 1$
c_8	$u^{99} + 5u^{98} + \cdots + 1102u + 57$
c_9	$u^{99} + 21u^{98} + \cdots + 218716u + 11327$
c_{11}	$u^{99} + 3u^{98} + \cdots - 14u - 3$
c_{12}	$u^{99} + 11u^{98} + \cdots + 14402u + 701$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{99} + 11y^{98} + \cdots + 2y - 1$
c_2, c_7	$y^{99} + 47y^{98} + \cdots - 2y - 1$
c_3	$y^{99} - 25y^{98} + \cdots + 8147378y - 208849$
c_4	$y^{99} - 17y^{98} + \cdots + 17086450y - 271441$
c_5, c_6, c_{10}	$y^{99} - 89y^{98} + \cdots - 2y - 1$
c_8	$y^{99} + 19y^{98} + \cdots + 191938y - 3249$
c_9	$y^{99} + 31y^{98} + \cdots - 2952423990y - 128300929$
c_{11}	$y^{99} - 5y^{98} + \cdots - 218y - 9$
c_{12}	$y^{99} + 23y^{98} + \cdots - 14304490y - 491401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.469814 + 0.889386I$	$-5.15974 - 3.45007I$	0
$u = -0.469814 - 0.889386I$	$-5.15974 + 3.45007I$	0
$u = -0.148767 + 0.934892I$	$-5.20598 - 3.73864I$	0
$u = -0.148767 - 0.934892I$	$-5.20598 + 3.73864I$	0
$u = 0.242603 + 1.031670I$	$-0.575080 + 0.871667I$	0
$u = 0.242603 - 1.031670I$	$-0.575080 - 0.871667I$	0
$u = 0.650159 + 0.633663I$	$-2.28389 + 9.47082I$	$0. - 7.96667I$
$u = 0.650159 - 0.633663I$	$-2.28389 - 9.47082I$	$0. + 7.96667I$
$u = 0.567446 + 0.934324I$	$-3.16890 - 4.70879I$	0
$u = 0.567446 - 0.934324I$	$-3.16890 + 4.70879I$	0
$u = -0.561044 + 0.947080I$	$2.13253 + 1.20620I$	0
$u = -0.561044 - 0.947080I$	$2.13253 - 1.20620I$	0
$u = -0.645418 + 0.621535I$	$3.08946 - 5.93342I$	$2.82989 + 7.73749I$
$u = -0.645418 - 0.621535I$	$3.08946 + 5.93342I$	$2.82989 - 7.73749I$
$u = -0.226159 + 1.083640I$	$-3.58165 + 2.19221I$	0
$u = -0.226159 - 1.083640I$	$-3.58165 - 2.19221I$	0
$u = 0.542662 + 0.972451I$	$0.53423 + 2.32067I$	0
$u = 0.542662 - 0.972451I$	$0.53423 - 2.32067I$	0
$u = -0.406038 + 1.044390I$	$-4.93260 - 3.36503I$	0
$u = -0.406038 - 1.044390I$	$-4.93260 + 3.36503I$	0
$u = -0.591230 + 0.646260I$	$-4.43604 - 0.89349I$	$-4.62087 + 3.00648I$
$u = -0.591230 - 0.646260I$	$-4.43604 + 0.89349I$	$-4.62087 - 3.00648I$
$u = 0.624098 + 0.600705I$	$1.62616 + 2.28184I$	$0. - 2.63017I$
$u = 0.624098 - 0.600705I$	$1.62616 - 2.28184I$	$0. + 2.63017I$
$u = 0.559694 + 0.987397I$	$0.64836 + 2.17091I$	0
$u = 0.559694 - 0.987397I$	$0.64836 - 2.17091I$	0
$u = 0.646091 + 0.572926I$	$1.86865 + 2.54840I$	$1.88929 - 4.22472I$
$u = 0.646091 - 0.572926I$	$1.86865 - 2.54840I$	$1.88929 + 4.22472I$
$u = -0.244895 + 1.115700I$	$-4.07787 + 1.55190I$	0
$u = -0.244895 - 1.115700I$	$-4.07787 - 1.55190I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.232455 + 1.127000I$	$-2.86423 - 5.33511I$	0
$u = 0.232455 - 1.127000I$	$-2.86423 + 5.33511I$	0
$u = -0.653529 + 0.536527I$	$4.41016 + 0.73901I$	$5.92100 - 1.06674I$
$u = -0.653529 - 0.536527I$	$4.41016 - 0.73901I$	$5.92100 + 1.06674I$
$u = 0.668382 + 0.516240I$	$-0.40853 - 4.10398I$	$0.48519 + 2.62326I$
$u = 0.668382 - 0.516240I$	$-0.40853 + 4.10398I$	$0.48519 - 2.62326I$
$u = -0.231557 + 1.135340I$	$-8.36784 + 8.86222I$	0
$u = -0.231557 - 1.135340I$	$-8.36784 - 8.86222I$	0
$u = -0.564773 + 1.011980I$	$3.01104 - 5.49491I$	0
$u = -0.564773 - 1.011980I$	$3.01104 + 5.49491I$	0
$u = 0.259545 + 1.131170I$	$-10.36610 + 0.21333I$	0
$u = 0.259545 - 1.131170I$	$-10.36610 - 0.21333I$	0
$u = -0.333189 + 1.112900I$	$-4.98807 - 1.63643I$	0
$u = -0.333189 - 1.112900I$	$-4.98807 + 1.63643I$	0
$u = -0.768061 + 0.334118I$	$-3.77803 + 11.62790I$	$-3.49560 - 7.24187I$
$u = -0.768061 - 0.334118I$	$-3.77803 - 11.62790I$	$-3.49560 + 7.24187I$
$u = 0.761147 + 0.337791I$	$1.68726 - 8.05078I$	$1.00959 + 7.12608I$
$u = 0.761147 - 0.337791I$	$1.68726 + 8.05078I$	$1.00959 - 7.12608I$
$u = 0.570821 + 1.024070I$	$-1.90077 + 8.91802I$	0
$u = 0.570821 - 1.024070I$	$-1.90077 - 8.91802I$	0
$u = 0.353113 + 1.121300I$	$-4.15696 + 5.26132I$	0
$u = 0.353113 - 1.121300I$	$-4.15696 - 5.26132I$	0
$u = 0.323859 + 1.131150I$	$-11.06550 - 0.52973I$	0
$u = 0.323859 - 1.131150I$	$-11.06550 + 0.52973I$	0
$u = -0.736585 + 0.362308I$	$0.85605 + 4.62614I$	$0.34575 - 4.53704I$
$u = -0.736585 - 0.362308I$	$0.85605 - 4.62614I$	$0.34575 + 4.53704I$
$u = -0.745397 + 0.336513I$	$0.35085 + 4.23448I$	$-1.71767 - 1.98109I$
$u = -0.745397 - 0.336513I$	$0.35085 - 4.23448I$	$-1.71767 + 1.98109I$
$u = -0.705352 + 0.406363I$	$-0.90793 - 1.98651I$	$-0.17740 + 1.94504I$
$u = -0.705352 - 0.406363I$	$-0.90793 + 1.98651I$	$-0.17740 - 1.94504I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.355088 + 1.132520I$	$-9.73220 - 8.58110I$	0
$u = -0.355088 - 1.132520I$	$-9.73220 + 8.58110I$	0
$u = 0.715758 + 0.381198I$	$3.68933 - 1.31194I$	$5.02327 - 0.03733I$
$u = 0.715758 - 0.381198I$	$3.68933 + 1.31194I$	$5.02327 + 0.03733I$
$u = 0.746606 + 0.312147I$	$-5.98648 - 2.63880I$	$-6.16930 + 2.15328I$
$u = 0.746606 - 0.312147I$	$-5.98648 + 2.63880I$	$-6.16930 - 2.15328I$
$u = 0.500633 + 1.113340I$	$-3.16752 + 2.36428I$	0
$u = 0.500633 - 1.113340I$	$-3.16752 - 2.36428I$	0
$u = -0.564626 + 1.086520I$	$-2.90289 - 2.89174I$	0
$u = -0.564626 - 1.086520I$	$-2.90289 + 2.89174I$	0
$u = -0.496006 + 1.123710I$	$-8.78413 + 0.80483I$	0
$u = -0.496006 - 1.123710I$	$-8.78413 - 0.80483I$	0
$u = -0.517957 + 1.114130I$	$-3.73484 - 5.93656I$	0
$u = -0.517957 - 1.114130I$	$-3.73484 + 5.93656I$	0
$u = 0.564691 + 1.098850I$	$1.58780 + 6.21411I$	0
$u = 0.564691 - 1.098850I$	$1.58780 - 6.21411I$	0
$u = 0.520518 + 1.126860I$	$-9.73594 + 8.31531I$	0
$u = 0.520518 - 1.126860I$	$-9.73594 - 8.31531I$	0
$u = -0.567856 + 1.109820I$	$-1.33445 - 9.58664I$	0
$u = -0.567856 - 1.109820I$	$-1.33445 + 9.58664I$	0
$u = -0.564234 + 1.120740I$	$-1.94479 - 9.19767I$	0
$u = -0.564234 - 1.120740I$	$-1.94479 + 9.19767I$	0
$u = 0.557641 + 1.127410I$	$-8.36659 + 7.57130I$	0
$u = 0.557641 - 1.127410I$	$-8.36659 - 7.57130I$	0
$u = 0.569152 + 1.124680I$	$-0.62462 + 13.07100I$	0
$u = 0.569152 - 1.124680I$	$-0.62462 - 13.07100I$	0
$u = -0.570149 + 1.127840I$	$-6.1128 - 16.6680I$	0
$u = -0.570149 - 1.127840I$	$-6.1128 + 16.6680I$	0
$u = 0.690221 + 0.227322I$	$-7.18528 - 3.70755I$	$-7.70867 + 3.15852I$
$u = 0.690221 - 0.227322I$	$-7.18528 + 3.70755I$	$-7.70867 - 3.15852I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.237632 + 0.651195I$	$-0.227540 + 1.212660I$	$-2.71740 - 5.80081I$
$u = 0.237632 - 0.651195I$	$-0.227540 - 1.212660I$	$-2.71740 + 5.80081I$
$u = -0.645466 + 0.239263I$	$-1.29221 + 1.42569I$	$-4.26718 - 3.80181I$
$u = -0.645466 - 0.239263I$	$-1.29221 - 1.42569I$	$-4.26718 + 3.80181I$
$u = -0.663803 + 0.156320I$	$-6.10535 - 5.18308I$	$-6.43617 + 3.54727I$
$u = -0.663803 - 0.156320I$	$-6.10535 + 5.18308I$	$-6.43617 - 3.54727I$
$u = 0.630812 + 0.169069I$	$-0.60523 + 1.97398I$	$-2.11200 - 3.87352I$
$u = 0.630812 - 0.169069I$	$-0.60523 - 1.97398I$	$-2.11200 + 3.87352I$
$u = -0.517496$	-2.26066	-3.53670

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{99} + 47u^{98} + \cdots - 2u - 1$
c_2, c_7	$u^{99} + u^{98} + \cdots + 2u + 1$
c_3	$u^{99} - u^{98} + \cdots - 2396u + 457$
c_4	$u^{99} + u^{98} + \cdots - 1366u + 521$
c_5, c_6, c_{10}	$u^{99} - u^{98} + \cdots + 2u + 1$
c_8	$u^{99} + 5u^{98} + \cdots + 1102u + 57$
c_9	$u^{99} + 21u^{98} + \cdots + 218716u + 11327$
c_{11}	$u^{99} + 3u^{98} + \cdots - 14u - 3$
c_{12}	$u^{99} + 11u^{98} + \cdots + 14402u + 701$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{99} + 11y^{98} + \cdots + 2y - 1$
c_2, c_7	$y^{99} + 47y^{98} + \cdots - 2y - 1$
c_3	$y^{99} - 25y^{98} + \cdots + 8147378y - 208849$
c_4	$y^{99} - 17y^{98} + \cdots + 17086450y - 271441$
c_5, c_6, c_{10}	$y^{99} - 89y^{98} + \cdots - 2y - 1$
c_8	$y^{99} + 19y^{98} + \cdots + 191938y - 3249$
c_9	$y^{99} + 31y^{98} + \cdots - 2952423990y - 128300929$
c_{11}	$y^{99} - 5y^{98} + \cdots - 218y - 9$
c_{12}	$y^{99} + 23y^{98} + \cdots - 14304490y - 491401$