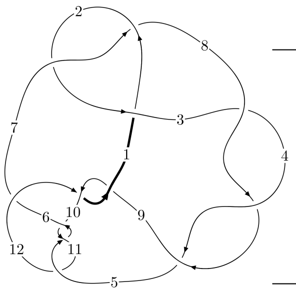
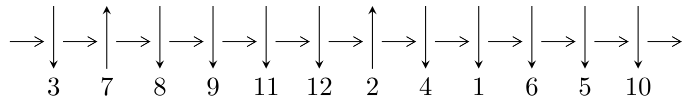
$12a_{0520}$ $(K12a_{0520})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{66} - u^{65} + \cdots + u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 66 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. $I_1^u = \langle u^{66} - u^{65} + \cdots + u - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^9 + 2u^7 + u^5 - 2u^3 - u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{14} - 3u^{12} - 4u^{10} - u^8 + 1 \\ -u^{16} - 4u^{14} - 8u^{12} - 8u^{10} - 4u^8 + 2u^6 + 4u^4 + 2u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{25} + 6u^{23} + \cdots + 2u^3 + u \\ u^{27} + 7u^{25} + \cdots + 3u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{50} - 13u^{48} + \cdots - u^2 + 1 \\ -u^{52} - 14u^{50} + \cdots - 18u^6 - 5u^4 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{45} + 12u^{43} + \cdots + 4u^3 + u \\ -u^{45} - 13u^{43} + \cdots + u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{64} - 4u^{63} + \cdots - 4u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{66} + 37u^{65} + \cdots - 3u + 1$
c_2, c_7	$u^{66} + u^{65} + \cdots - u - 1$
c_3, c_4, c_8	$u^{66} - u^{65} + \cdots - u - 1$
c_5, c_{10}, c_{11}	$u^{66} - u^{65} + \cdots - u - 1$
c_6	$u^{66} + u^{65} + \cdots - 743u - 317$
c_9, c_{12}	$u^{66} - 11u^{65} + \cdots - 2747u + 187$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{66} - 15y^{65} + \cdots - 47y + 1$
c_2, c_7	$y^{66} + 37y^{65} + \cdots - 3y + 1$
c_3, c_4, c_8	$y^{66} - 67y^{65} + \cdots - 99y + 1$
c_5, c_{10}, c_{11}	$y^{66} + 61y^{65} + \cdots - 3y + 1$
c_6	$y^{66} + 17y^{65} + \cdots + 1831157y + 100489$
c_9, c_{12}	$y^{66} + 45y^{65} + \cdots - 101539y + 34969$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.083821 + 1.004040I$	$-1.38136 - 1.50722I$	$-13.6391 + 3.9055I$
$u = \quad 0.083821 - 1.004040I$	$-1.38136 + 1.50722I$	$-13.6391 - 3.9055I$
$u = \quad 0.510793 + 0.913895I$	$7.93842 + 0.05224I$	$-2.32745 - 2.85719I$
$u = \quad 0.510793 - 0.913895I$	$7.93842 - 0.05224I$	$-2.32745 + 2.85719I$
$u = -0.488111 + 0.930566I$	$1.77759 - 2.77554I$	$-5.98797 + 2.90769I$
$u = -0.488111 - 0.930566I$	$1.77759 + 2.77554I$	$-5.98797 - 2.90769I$
$u = -0.244653 + 1.025230I$	$-0.013940 - 0.329657I$	$-12.44759 + 0.I$
$u = -0.244653 - 1.025230I$	$-0.013940 + 0.329657I$	$-12.44759 + 0.I$
$u = -0.061449 + 1.057390I$	$4.20453 + 4.47748I$	$-9.15575 - 3.23057I$
$u = -0.061449 - 1.057390I$	$4.20453 - 4.47748I$	$-9.15575 + 3.23057I$
$u = \quad 0.335683 + 1.010860I$	$-3.14750 + 2.83532I$	$-16.6157 - 6.0807I$
$u = \quad 0.335683 - 1.010860I$	$-3.14750 - 2.83532I$	$-16.6157 + 6.0807I$
$u = \quad 0.498424 + 0.958106I$	$1.39631 + 6.68158I$	$-8.00000 - 9.54655I$
$u = \quad 0.498424 - 0.958106I$	$1.39631 - 6.68158I$	$-8.00000 + 9.54655I$
$u = -0.515583 + 0.963149I$	$7.31403 - 9.92245I$	$-8.00000 + 8.98858I$
$u = -0.515583 - 0.963149I$	$7.31403 + 9.92245I$	$-8.00000 - 8.98858I$
$u = -0.404764 + 1.024030I$	$1.07785 - 5.52425I$	$0. + 8.14607I$
$u = -0.404764 - 1.024030I$	$1.07785 + 5.52425I$	$0. - 8.14607I$
$u = -0.233677 + 0.852210I$	$-0.623068 - 1.187120I$	$-7.72350 + 5.05624I$
$u = -0.233677 - 0.852210I$	$-0.623068 + 1.187120I$	$-7.72350 - 5.05624I$
$u = \quad 0.851377 + 0.083934I$	$2.85684 - 9.44870I$	$-4.98605 + 5.54911I$
$u = \quad 0.851377 - 0.083934I$	$2.85684 + 9.44870I$	$-4.98605 - 5.54911I$
$u = \quad 0.852586 + 0.022594I$	$-3.20905 - 3.31217I$	$-8.79110 + 3.45488I$
$u = \quad 0.852586 - 0.022594I$	$-3.20905 + 3.31217I$	$-8.79110 - 3.45488I$
$u = \quad 0.410067 + 0.744637I$	$4.35656 + 1.82130I$	$-1.37205 - 4.42499I$
$u = \quad 0.410067 - 0.744637I$	$4.35656 - 1.82130I$	$-1.37205 + 4.42499I$
$u = -0.849857$	-6.87858	-13.9160
$u = -0.845627 + 0.073889I$	$-2.90459 + 5.98857I$	$-9.04687 - 5.67956I$
$u = -0.845627 - 0.073889I$	$-2.90459 - 5.98857I$	$-9.04687 + 5.67956I$
$u = \quad 0.827138 + 0.064864I$	$-2.07867 - 2.02369I$	$-7.11684 - 0.30058I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.827138 - 0.064864I$	$-2.07867 + 2.02369I$	$-7.11684 + 0.30058I$
$u = -0.807037 + 0.087568I$	$4.26879 - 0.24717I$	$-3.39910 + 0.07734I$
$u = -0.807037 - 0.087568I$	$4.26879 + 0.24717I$	$-3.39910 - 0.07734I$
$u = 0.551203 + 0.548693I$	$8.95890 + 4.23168I$	$0.05530 - 3.66862I$
$u = 0.551203 - 0.548693I$	$8.95890 - 4.23168I$	$0.05530 + 3.66862I$
$u = -0.577788 + 0.471903I$	$8.68670 + 5.56921I$	$-0.54288 - 3.39779I$
$u = -0.577788 - 0.471903I$	$8.68670 - 5.56921I$	$-0.54288 + 3.39779I$
$u = -0.519271 + 0.522136I$	$2.91441 - 1.35335I$	$-3.12429 + 3.82186I$
$u = -0.519271 - 0.522136I$	$2.91441 + 1.35335I$	$-3.12429 - 3.82186I$
$u = -0.414950 + 1.212190I$	$0.41454 - 4.45821I$	0
$u = -0.414950 - 1.212190I$	$0.41454 + 4.45821I$	0
$u = 0.542248 + 0.471260I$	$2.74694 - 2.46929I$	$-3.89041 + 3.84904I$
$u = 0.542248 - 0.471260I$	$2.74694 + 2.46929I$	$-3.89041 - 3.84904I$
$u = 0.427149 + 1.228820I$	$-5.94379 + 2.35769I$	0
$u = 0.427149 - 1.228820I$	$-5.94379 - 2.35769I$	0
$u = -0.491901 + 1.207950I$	$0.95958 - 4.49375I$	0
$u = -0.491901 - 1.207950I$	$0.95958 + 4.49375I$	0
$u = -0.420560 + 1.239830I$	$-6.87549 + 1.57708I$	0
$u = -0.420560 - 1.239830I$	$-6.87549 - 1.57708I$	0
$u = 0.413959 + 1.243570I$	$-1.17541 - 5.05428I$	0
$u = 0.413959 - 1.243570I$	$-1.17541 + 5.05428I$	0
$u = 0.488156 + 1.219310I$	$-5.50486 + 6.78902I$	0
$u = 0.488156 - 1.219310I$	$-5.50486 - 6.78902I$	0
$u = 0.450005 + 1.240990I$	$-7.01271 + 1.29972I$	0
$u = 0.450005 - 1.240990I$	$-7.01271 - 1.29972I$	0
$u = -0.494953 + 1.224760I$	$-6.33970 - 10.83790I$	0
$u = -0.494953 - 1.224760I$	$-6.33970 + 10.83790I$	0
$u = -0.461598 + 1.237740I$	$-10.59200 - 4.67210I$	0
$u = -0.461598 - 1.237740I$	$-10.59200 + 4.67210I$	0
$u = 0.500220 + 1.225040I$	$-0.5543 + 14.3411I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.500220 - 1.225040I$	$-0.5543 - 14.3411I$	0
$u = \quad 0.472689 + 1.236350I$	$-6.84904 + 8.05701I$	0
$u = \quad 0.472689 - 1.236350I$	$-6.84904 - 8.05701I$	0
$u = -0.495413 + 0.227551I$	$3.21756 + 1.88641I$	$-4.06409 - 3.74590I$
$u = -0.495413 - 0.227551I$	$3.21756 - 1.88641I$	$-4.06409 + 3.74590I$
$u = \quad 0.373493$	-0.759282	-12.9670

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{66}+37u^{65}+\cdots-3u+1$
c_2, c_7	$u^{66}+u^{65}+\cdots-u-1$
c_3, c_4, c_8	$u^{66}-u^{65}+\cdots-u-1$
c_5, c_{10}, c_{11}	$u^{66}-u^{65}+\cdots-u-1$
c_6	$u^{66}+u^{65}+\cdots-743u-317$
c_9, c_{12}	$u^{66}-11u^{65}+\cdots-2747u+187$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{66} - 15y^{65} + \cdots - 47y + 1$
c_2, c_7	$y^{66} + 37y^{65} + \cdots - 3y + 1$
c_3, c_4, c_8	$y^{66} - 67y^{65} + \cdots - 99y + 1$
c_5, c_{10}, c_{11}	$y^{66} + 61y^{65} + \cdots - 3y + 1$
c_6	$y^{66} + 17y^{65} + \cdots + 1831157y + 100489$
c_9, c_{12}	$y^{66} + 45y^{65} + \cdots - 101539y + 34969$