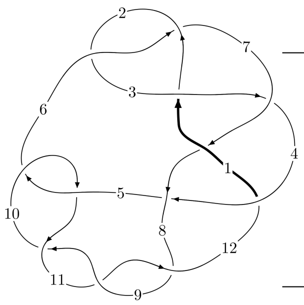
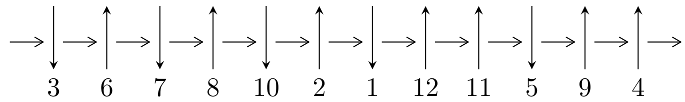
$12a_{0204}$ $(K12a_{0204})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{86} + u^{85} + \cdots + 3u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 86 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. $I_1^u = \langle u^{86} + u^{85} + \cdots + 3u + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^{10} + 2u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{21} + 4u^{19} + 9u^{17} + 12u^{15} + 12u^{13} + 10u^{11} + 9u^9 + 6u^7 + 3u^5 + u \\ u^{23} + 5u^{21} + \cdots + 2u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{11} + 3u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{32} + 7u^{30} + \cdots + 2u^{12} + 1 \\ -u^{32} - 8u^{30} + \cdots - 12u^8 - 4u^6 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{53} - 12u^{51} + \cdots - 3u^5 - u \\ u^{53} + 13u^{51} + \cdots + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{74} + 17u^{72} + \cdots + u^2 + 1 \\ -u^{74} - 18u^{72} + \cdots - 2u^4 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{85} + 4u^{84} + \cdots + 24u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{86} + 41u^{85} + \cdots + 3u + 1$
c_2, c_6	$u^{86} - u^{85} + \cdots - 3u + 1$
c_3	$u^{86} + u^{85} + \cdots + 471u + 65$
c_4	$u^{86} - u^{85} + \cdots - 149u + 137$
c_5, c_{10}	$u^{86} - u^{85} + \cdots + u + 1$
c_7	$u^{86} - 5u^{85} + \cdots - 623u + 111$
c_8, c_9, c_{11}	$u^{86} - 21u^{85} + \cdots - 3u + 1$
c_{12}	$u^{86} + 9u^{85} + \cdots + 6433u + 797$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{86}+9y^{85}+\cdots+19y+1$
c_2, c_6	$y^{86}+41y^{85}+\cdots+3y+1$
c_3	$y^{86}-23y^{85}+\cdots+399819y+4225$
c_4	$y^{86}+9y^{85}+\cdots+312079y+18769$
c_5, c_{10}	$y^{86}+21y^{85}+\cdots+3y+1$
c_7	$y^{86}+13y^{85}+\cdots+865727y+12321$
c_8, c_9, c_{11}	$y^{86}+89y^{85}+\cdots+11y+1$
c_{12}	$y^{86}+29y^{85}+\cdots+40057159y+635209$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.552073 + 0.903867I$	$-4.89234 - 1.96034I$	0
$u = -0.552073 - 0.903867I$	$-4.89234 + 1.96034I$	0
$u = -0.022062 + 0.940386I$	$-5.66854 - 3.02612I$	$-3.62148 + 2.70851I$
$u = -0.022062 - 0.940386I$	$-5.66854 + 3.02612I$	$-3.62148 - 2.70851I$
$u = \quad 0.561963 + 0.912758I$	$-4.52045 - 4.21833I$	0
$u = \quad 0.561963 - 0.912758I$	$-4.52045 + 4.21833I$	0
$u = \quad 0.642242 + 0.650491I$	$-3.74752 + 8.94433I$	$2.00000 - 7.87615I$
$u = \quad 0.642242 - 0.650491I$	$-3.74752 - 8.94433I$	$2.00000 + 7.87615I$
$u = -0.257669 + 1.056490I$	$-0.670480 - 0.639201I$	0
$u = -0.257669 - 1.056490I$	$-0.670480 + 0.639201I$	0
$u = -0.633408 + 0.654906I$	$-4.15827 - 2.71284I$	$1.31273 + 3.00115I$
$u = -0.633408 - 0.654906I$	$-4.15827 + 2.71284I$	$1.31273 - 3.00115I$
$u = \quad 0.550086 + 0.961327I$	$2.46470 - 0.37994I$	0
$u = \quad 0.550086 - 0.961327I$	$2.46470 + 0.37994I$	0
$u = -0.517375 + 0.987111I$	$0.07166 - 2.62578I$	0
$u = -0.517375 - 0.987111I$	$0.07166 + 2.62578I$	0
$u = \quad 0.633756 + 0.606008I$	$3.50780 + 5.03732I$	$7.81344 - 8.08967I$
$u = \quad 0.633756 - 0.606008I$	$3.50780 - 5.03732I$	$7.81344 + 8.08967I$
$u = -0.238562 + 1.113670I$	$-2.23970 + 4.39842I$	0
$u = -0.238562 - 1.113670I$	$-2.23970 - 4.39842I$	0
$u = \quad 0.264448 + 1.111100I$	$-4.27295 - 0.76354I$	0
$u = \quad 0.264448 - 1.111100I$	$-4.27295 + 0.76354I$	0
$u = \quad 0.554348 + 1.004930I$	$3.01740 + 4.89814I$	0
$u = \quad 0.554348 - 1.004930I$	$3.01740 - 4.89814I$	0
$u = \quad 0.311549 + 1.107070I$	$-4.74848 + 0.89916I$	0
$u = \quad 0.311549 - 1.107070I$	$-4.74848 - 0.89916I$	0
$u = -0.347956 + 1.100820I$	$-3.34095 - 4.64653I$	0
$u = -0.347956 - 1.100820I$	$-3.34095 + 4.64653I$	0
$u = \quad 0.635644 + 0.546117I$	$4.36758 - 0.22453I$	$10.66536 + 0.55787I$
$u = \quad 0.635644 - 0.546117I$	$4.36758 + 0.22453I$	$10.66536 - 0.55787I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.770174 + 0.323215I$	$-5.37084 + 11.03650I$	$0.76608 - 7.01041I$
$u = -0.770174 - 0.323215I$	$-5.37084 - 11.03650I$	$0.76608 + 7.01041I$
$u = -0.588398 + 0.591566I$	$1.23725 - 1.78468I$	$1.82852 + 3.46758I$
$u = -0.588398 - 0.591566I$	$1.23725 + 1.78468I$	$1.82852 - 3.46758I$
$u = -0.239868 + 1.142870I$	$-9.93808 + 8.18745I$	0
$u = -0.239868 - 1.142870I$	$-9.93808 - 8.18745I$	0
$u = 0.245139 + 1.142850I$	$-10.34130 - 1.86383I$	0
$u = 0.245139 - 1.142850I$	$-10.34130 + 1.86383I$	0
$u = 0.767277 + 0.318425I$	$-5.80930 - 4.73542I$	$-0.13133 + 2.18376I$
$u = 0.767277 - 0.318425I$	$-5.80930 + 4.73542I$	$-0.13133 - 2.18376I$
$u = 0.676444 + 0.477199I$	$-1.06723 - 3.95000I$	$4.49030 + 3.18305I$
$u = 0.676444 - 0.477199I$	$-1.06723 + 3.95000I$	$4.49030 - 3.18305I$
$u = -0.748230 + 0.339955I$	$2.22223 + 7.05409I$	$5.75869 - 7.62186I$
$u = -0.748230 - 0.339955I$	$2.22223 - 7.05409I$	$5.75869 + 7.62186I$
$u = -0.680511 + 0.452157I$	$-1.17586 - 1.85794I$	$4.15708 + 2.29378I$
$u = -0.680511 - 0.452157I$	$-1.17586 + 1.85794I$	$4.15708 - 2.29378I$
$u = 0.567898 + 1.043900I$	$-2.72701 + 8.77066I$	0
$u = 0.567898 - 1.043900I$	$-2.72701 - 8.77066I$	0
$u = 0.339044 + 1.142000I$	$-11.40330 + 1.33625I$	0
$u = 0.339044 - 1.142000I$	$-11.40330 - 1.33625I$	0
$u = -0.344970 + 1.141800I$	$-11.12770 - 7.68084I$	0
$u = -0.344970 - 1.141800I$	$-11.12770 + 7.68084I$	0
$u = -0.562524 + 1.055970I$	$-2.94385 - 2.95008I$	0
$u = -0.562524 - 1.055970I$	$-2.94385 + 2.95008I$	0
$u = -0.713316 + 0.364912I$	$3.53763 + 1.70720I$	$9.34373 - 0.47522I$
$u = -0.713316 - 0.364912I$	$3.53763 - 1.70720I$	$9.34373 + 0.47522I$
$u = 0.727927 + 0.324780I$	$0.00076 - 3.48701I$	$-0.10685 + 2.81460I$
$u = 0.727927 - 0.324780I$	$0.00076 + 3.48701I$	$-0.10685 - 2.81460I$
$u = -0.509299 + 1.093680I$	$-2.26558 - 2.69665I$	0
$u = -0.509299 - 1.093680I$	$-2.26558 + 2.69665I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.532946 + 1.112480I$	$-3.24505 + 6.62506I$	0
$u = 0.532946 - 1.112480I$	$-3.24505 - 6.62506I$	0
$u = -0.560287 + 1.103940I$	$1.37872 - 6.58460I$	0
$u = -0.560287 - 1.103940I$	$1.37872 + 6.58460I$	0
$u = -0.504237 + 1.132970I$	$-10.05170 - 0.22011I$	0
$u = -0.504237 - 1.132970I$	$-10.05170 + 0.22011I$	0
$u = 0.509014 + 1.133500I$	$-10.25420 + 6.56885I$	0
$u = 0.509014 - 1.133500I$	$-10.25420 - 6.56885I$	0
$u = 0.556014 + 1.119300I$	$-2.31255 + 8.37360I$	0
$u = 0.556014 - 1.119300I$	$-2.31255 - 8.37360I$	0
$u = -0.565704 + 1.120250I$	$-0.06439 - 12.03000I$	0
$u = -0.565704 - 1.120250I$	$-0.06439 + 12.03000I$	0
$u = 0.565065 + 1.132160I$	$-8.19937 + 9.74957I$	0
$u = 0.565065 - 1.132160I$	$-8.19937 - 9.74957I$	0
$u = -0.567396 + 1.131720I$	$-7.7482 - 16.0682I$	0
$u = -0.567396 - 1.131720I$	$-7.7482 + 16.0682I$	0
$u = 0.665867 + 0.284233I$	$-0.89403 - 1.98382I$	$-1.24074 + 3.64496I$
$u = 0.665867 - 0.284233I$	$-0.89403 + 1.98382I$	$-1.24074 - 3.64496I$
$u = 0.696778 + 0.188590I$	$-7.58004 - 2.02263I$	$-2.18699 + 2.22834I$
$u = 0.696778 - 0.188590I$	$-7.58004 + 2.02263I$	$-2.18699 - 2.22834I$
$u = -0.692184 + 0.175922I$	$-7.35283 - 4.28364I$	$-1.74327 + 2.87228I$
$u = -0.692184 - 0.175922I$	$-7.35283 + 4.28364I$	$-1.74327 - 2.87228I$
$u = -0.325865 + 0.553283I$	$0.082965 - 1.264650I$	$0.85289 + 5.85230I$
$u = -0.325865 - 0.553283I$	$0.082965 + 1.264650I$	$0.85289 - 5.85230I$
$u = -0.561379 + 0.192622I$	$0.06888 - 1.56934I$	$2.04853 + 4.27715I$
$u = -0.561379 - 0.192622I$	$0.06888 + 1.56934I$	$2.04853 - 4.27715I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{86} + 41u^{85} + \cdots + 3u + 1$
c_2, c_6	$u^{86} - u^{85} + \cdots - 3u + 1$
c_3	$u^{86} + u^{85} + \cdots + 471u + 65$
c_4	$u^{86} - u^{85} + \cdots - 149u + 137$
c_5, c_{10}	$u^{86} - u^{85} + \cdots + u + 1$
c_7	$u^{86} - 5u^{85} + \cdots - 623u + 111$
c_8, c_9, c_{11}	$u^{86} - 21u^{85} + \cdots - 3u + 1$
c_{12}	$u^{86} + 9u^{85} + \cdots + 6433u + 797$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{86} + 9y^{85} + \cdots + 19y + 1$
c_2, c_6	$y^{86} + 41y^{85} + \cdots + 3y + 1$
c_3	$y^{86} - 23y^{85} + \cdots + 399819y + 4225$
c_4	$y^{86} + 9y^{85} + \cdots + 312079y + 18769$
c_5, c_{10}	$y^{86} + 21y^{85} + \cdots + 3y + 1$
c_7	$y^{86} + 13y^{85} + \cdots + 865727y + 12321$
c_8, c_9, c_{11}	$y^{86} + 89y^{85} + \cdots + 11y + 1$
c_{12}	$y^{86} + 29y^{85} + \cdots + 40057159y + 635209$