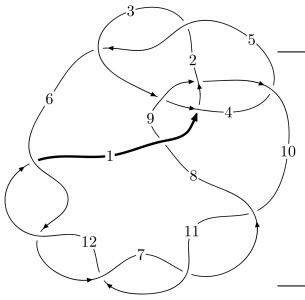
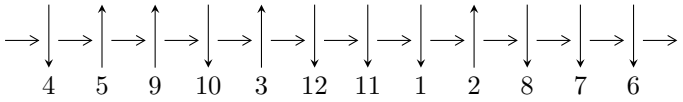
$12a_{0854}$ $(K12a_{0854})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4.18772 \times 10^{18} u^{65} + 6.44102 \times 10^{20} u^{64} + \cdots + 7.93709 \times 10^{20} b - 6.29281 \times 10^{16},$$
$$- 2.93073 \times 10^{19} u^{65} + 4.50916 \times 10^{21} u^{64} + \cdots + 5.55596 \times 10^{21} a - 5.64900 \times 10^{21},\ u^{66} + u^{65} + \cdots + 3u +$$

* 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.

$\boldsymbol{I_1^u = \langle -4.19\times10^{18}u^{65}+6.44\times10^{20}u^{64}+\cdots+7.94\times10^{20}b-6.29\times10^{16},\ -2.93\times10^{19}u^{65}+4.51\times10^{21}u^{64}+\cdots+5.56\times10^{21}a-5.65\times10^{21},\ u^{66}+u^{65}+\cdots+3u+1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.00527494u^{65}-0.811590u^{64}+\cdots+3.23371u+1.01675\\0.00527615u^{65}-0.811510u^{64}+\cdots-3.18309u+0.0000792836\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.00442903u^{65}-0.736691u^{64}+\cdots+2.32738u+1.74996\\-0.00442982u^{65}-0.736731u^{64}+\cdots-3.25012u-0.0000393662\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.00273721u^{65}-0.833252u^{64}+\cdots+1.44957u-0.716626\\-0.00273716u^{65}-0.833212u^{64}+\cdots-0.116545u+0.0000404686\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}u\\u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-u^6-3u^4+1\\u^8+4u^6+4u^4+2u^2\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}u^3+2u\\u^3+u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-0.000766897u^{65}-0.0917424u^{64}+\cdots+2.32749u+1.75000\\-0.000767003u^{65}-0.0917456u^{64}+\cdots-3.25001u-3.08525\times10^{-6}\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1766792604871946253941 6}{5555960082374174168269}u^{65}-\frac{188875800865056282690 0}{793708583196310595467}u^{64}+\cdots+\frac{306392947816792138325 08}{555596008237417416826 9}u+\frac{254481491317661583818 70}{555596008237417416826 9}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{66} - 11u^{65} + \cdots - u + 1$
c_2, c_5	$u^{66} + u^{65} + \cdots + 11u + 1$
c_3	$u^{66} - u^{65} + \cdots + 116u - 8$
c_4	$u^{66} + u^{65} + \cdots - 39u + 19$
c_6, c_7, c_{10} c_{11}, c_{12}	$u^{66} - u^{65} + \cdots - 3u + 1$
c_8	$u^{66} - u^{65} + \cdots - 1149u + 1069$
c_9	$u^{66} + 3u^{65} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{66} - 3y^{65} + \cdots - 11y + 1$
c_2, c_5	$y^{66} - 43y^{65} + \cdots - 11y + 1$
c_3	$y^{66} + 53y^{65} + \cdots - 18384y + 64$
c_4	$y^{66} + 69y^{65} + \cdots + 17213y + 361$
c_6, c_7, c_{10} c_{11}, c_{12}	$y^{66} + 85y^{65} + \cdots - 3y + 1$
c_8	$y^{66} - 3y^{65} + \cdots + 10590597y + 1142761$
c_9	$y^{66} - 11y^{65} + \cdots - 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.320550+0.945885I$ $a=-1.063260-0.335944I$ $b=-0.685686+0.247428I$	$0.80470+7.26585I$	0
$u=-0.320550-0.945885I$ $a=-1.063260+0.335944I$ $b=-0.685686-0.247428I$	$0.80470-7.26585I$	0
$u=-0.259011+0.962168I$ $a=-2.13062+1.40357I$ $b=-1.20371+0.85170I$	$5.56803+4.96269I$	0
$u=-0.259011-0.962168I$ $a=-2.13062-1.40357I$ $b=-1.20371-0.85170I$	$5.56803-4.96269I$	0
$u=-0.191816+0.964958I$ $a=-1.81489+1.32945I$ $b=-0.589613+0.207069I$	$6.29804+1.24184I$	0
$u=-0.191816-0.964958I$ $a=-1.81489-1.32945I$ $b=-0.589613-0.207069I$	$6.29804-1.24184I$	0
$u=0.238535+0.917340I$ $a=-3.28193-3.26906I$ $b=-2.96619-1.22505I$	$3.70547-2.54918I$	0
$u=0.238535-0.917340I$ $a=-3.28193+3.26906I$ $b=-2.96619+1.22505I$	$3.70547+2.54918I$	0
$u=-0.365061+0.991459I$ $a=2.00582-1.50902I$ $b=1.44867-0.39349I$	$4.89146+13.26630I$	0
$u=-0.365061-0.991459I$ $a=2.00582+1.50902I$ $b=1.44867+0.39349I$	$4.89146-13.26630I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.303217 + 0.885615I$ $a = 0.315243 - 0.014355I$ $b = 0.100769 - 0.435003I$	$1.36354 - 2.78002I$	0
$u = 0.303217 - 0.885615I$ $a = 0.315243 + 0.014355I$ $b = 0.100769 + 0.435003I$	$1.36354 + 2.78002I$	0
$u = -0.063187 + 0.925648I$ $a = 0.363461 + 0.619325I$ $b = 0.744300 - 0.157815I$	$3.48184 - 1.42801I$	0
$u = -0.063187 - 0.925648I$ $a = 0.363461 - 0.619325I$ $b = 0.744300 + 0.157815I$	$3.48184 + 1.42801I$	0
$u = 0.363535 + 1.037990I$ $a = 1.60954 + 0.96579I$ $b = 1.224800 - 0.068819I$	$3.57327 - 5.06511I$	0
$u = 0.363535 - 1.037990I$ $a = 1.60954 - 0.96579I$ $b = 1.224800 + 0.068819I$	$3.57327 + 5.06511I$	0
$u = 0.167951 + 0.857359I$ $a = 0.465621 + 1.190710I$ $b = 1.40004 + 0.77822I$	$2.98373 - 1.62353I$	$4.86404 + 6.61880I$
$u = 0.167951 - 0.857359I$ $a = 0.465621 - 1.190710I$ $b = 1.40004 - 0.77822I$	$2.98373 + 1.62353I$	$4.86404 - 6.61880I$
$u = 0.457424 + 0.731064I$ $a = 0.725928 + 0.706575I$ $b = -0.201103 - 0.033272I$	$1.12406 - 3.70601I$	$0. + 11.51127I$
$u = 0.457424 - 0.731064I$ $a = 0.725928 - 0.706575I$ $b = -0.201103 + 0.033272I$	$1.12406 + 3.70601I$	$0. - 11.51127I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.061425+1.191140I$ $a=\ \ 1.84871-0.38837I$ $b=\ \ 1.41998+0.05717I$	$8.29302-4.76690I$	0
$u=-0.061425-1.191140I$ $a=\ \ 1.84871+0.38837I$ $b=\ \ 1.41998-0.05717I$	$8.29302+4.76690I$	0
$u=-0.458535+0.561466I$ $a=\ \ 0.255118-0.554018I$ $b=-0.941274+0.566973I$	$2.41285-6.45141I$	$-0.54002+2.68736I$
$u=-0.458535-0.561466I$ $a=\ \ 0.255118+0.554018I$ $b=-0.941274-0.566973I$	$2.41285+6.45141I$	$-0.54002-2.68736I$
$u=-0.290297+0.626646I$ $a=\ \ 1.205330-0.394635I$ $b=\ \ 0.339995-0.557211I$	$-1.00030-1.44920I$	$-4.20313+0.51290I$
$u=-0.290297-0.626646I$ $a=\ \ 1.205330+0.394635I$ $b=\ \ 0.339995+0.557211I$	$-1.00030+1.44920I$	$-4.20313-0.51290I$
$u=\ \ 0.583780+0.292413I$ $a=\ \ 0.586657+0.798318I$ $b=-0.733275-0.248558I$	$-0.52146-1.81812I$	$-11.1036+9.5392I$
$u=\ \ 0.583780-0.292413I$ $a=\ \ 0.586657-0.798318I$ $b=-0.733275+0.248558I$	$-0.52146+1.81812I$	$-11.1036-9.5392I$
$u=\ \ 0.651823$ $a=-0.176116$ $b=-0.723296$	-1.07816	-15.1890
$u=-0.600823+0.187862I$ $a=\ \ 0.18260-1.64994I$ $b=-0.988132+0.036198I$	$1.26055+9.99441I$	$-3.17960-8.12625I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.600823-0.187862I$ $a=\ \ 0.18260+1.64994I$ $b=-0.988132-0.036198I$	$1.26055-9.99441I$	$-3.17960+8.12625I$
$u=-0.533895+0.131590I$ $a=-0.533306+1.262460I$ $b=-0.136821+0.638790I$	$-2.49763+4.35833I$	$-7.38425-7.01489I$
$u=-0.533895-0.131590I$ $a=-0.533306-1.262460I$ $b=-0.136821-0.638790I$	$-2.49763-4.35833I$	$-7.38425+7.01489I$
$u=\ \ 0.513633$ $a=\ \ 0.361156$ $b=-0.284384$	-1.34771	-8.70160
$u=-0.431584+0.169963I$ $a=\ \ 0.27177+2.35884I$ $b=\ \ 0.813624+0.264792I$	$2.09817+2.58100I$	$-0.10269-8.35821I$
$u=-0.431584-0.169963I$ $a=\ \ 0.27177-2.35884I$ $b=\ \ 0.813624-0.264792I$	$2.09817-2.58100I$	$-0.10269+8.35821I$
$u=\ \ 0.258905+0.380359I$ $a=\ \ 0.834851+0.121731I$ $b=-0.074634-0.484044I$	$-0.402527-1.133020I$	$-5.71641+5.32128I$
$u=\ \ 0.258905-0.380359I$ $a=\ \ 0.834851-0.121731I$ $b=-0.074634+0.484044I$	$-0.402527+1.133020I$	$-5.71641-5.32128I$
$u=\ \ 0.410014+0.063112I$ $a=\ \ 0.31651-4.71230I$ $b=\ \ 0.659200+0.694375I$	$0.701377-0.322381I$	$4.5634-19.7316I$
$u=\ \ 0.410014-0.063112I$ $a=\ \ 0.31651+4.71230I$ $b=\ \ 0.659200-0.694375I$	$0.701377+0.322381I$	$4.5634+19.7316I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.04843 + 1.59433I$ $a = 1.042930 + 0.100093I$ $b = 1.64649 + 0.53314I$	$8.81067 - 5.43936I$	0
$u = 0.04843 - 1.59433I$ $a = 1.042930 - 0.100093I$ $b = 1.64649 - 0.53314I$	$8.81067 + 5.43936I$	0
$u = -0.261393 + 0.254743I$ $a = 0.680829 + 1.108350I$ $b = 1.102630 - 0.201893I$	$2.68024 - 0.40653I$	$3.06802 - 3.24326I$
$u = -0.261393 - 0.254743I$ $a = 0.680829 - 1.108350I$ $b = 1.102630 + 0.201893I$	$2.68024 + 0.40653I$	$3.06802 + 3.24326I$
$u = -0.02226 + 1.64012I$ $a = 0.931045 + 0.007675I$ $b = 2.06715 - 0.75388I$	$6.95676 - 0.72964I$	0
$u = -0.02226 - 1.64012I$ $a = 0.931045 - 0.007675I$ $b = 2.06715 + 0.75388I$	$6.95676 + 0.72964I$	0
$u = 0.04369 + 1.69093I$ $a = -0.088591 + 0.936388I$ $b = 0.56172 + 2.91859I$	$12.08540 - 2.44069I$	0
$u = 0.04369 - 1.69093I$ $a = -0.088591 - 0.936388I$ $b = 0.56172 - 2.91859I$	$12.08540 + 2.44069I$	0
$u = 0.07604 + 1.68991I$ $a = 0.257142 + 0.020404I$ $b = 0.672101 - 0.399751I$	$10.45740 - 4.23214I$	0
$u = 0.07604 - 1.68991I$ $a = 0.257142 - 0.020404I$ $b = 0.672101 + 0.399751I$	$10.45740 + 4.23214I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.06014 + 1.69901I$ $a = -3.27791 - 2.08492I$ $b = -8.79298 - 5.45875I$	$12.99110 - 3.71015I$	0
$u = 0.06014 - 1.69901I$ $a = -3.27791 + 2.08492I$ $b = -8.79298 + 5.45875I$	$12.99110 + 3.71015I$	0
$u = -0.02854 + 1.70099I$ $a = -0.082212 + 0.726413I$ $b = 0.298235 + 1.131330I$	$12.84170 - 0.97443I$	0
$u = -0.02854 - 1.70099I$ $a = -0.082212 - 0.726413I$ $b = 0.298235 - 1.131330I$	$12.84170 + 0.97443I$	0
$u = -0.08226 + 1.70288I$ $a = -0.697707 - 0.726127I$ $b = -1.83993 - 1.06056I$	$10.15510 + 8.84894I$	0
$u = -0.08226 - 1.70288I$ $a = -0.697707 + 0.726127I$ $b = -1.83993 + 1.06056I$	$10.15510 - 8.84894I$	0
$u = -0.06632 + 1.70870I$ $a = -2.25962 + 0.63483I$ $b = -5.34135 + 2.11063I$	$15.0454 + 6.2521I$	0
$u = -0.06632 - 1.70870I$ $a = -2.25962 - 0.63483I$ $b = -5.34135 - 2.11063I$	$15.0454 - 6.2521I$	0
$u = -0.05073 + 1.70963I$ $a = -2.20674 + 0.93195I$ $b = -4.97480 + 1.99997I$	$15.8171 + 2.2173I$	0
$u = -0.05073 - 1.70963I$ $a = -2.20674 - 0.93195I$ $b = -4.97480 - 1.99997I$	$15.8171 - 2.2173I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.09749+1.71480I$ $a=\ 2.26743-0.89318I$ $b=\ 5.56296-2.43902I$	$14.4372+15.1298I$	0
$u=-0.09749-1.71480I$ $a=\ 2.26743+0.89318I$ $b=\ 5.56296+2.43902I$	$14.4372-15.1298I$	0
$u=\ 0.09880+1.72557I$ $a=\ 1.89713+0.66588I$ $b=\ 4.74145+1.60013I$	$13.3360-6.9684I$	0
$u=\ 0.09880-1.72557I$ $a=\ 1.89713-0.66588I$ $b=\ 4.74145-1.60013I$	$13.3360+6.9684I$	0
$u=-0.00801+1.75235I$ $a=\ 2.28061-0.30206I$ $b=\ 5.66923-0.58870I$	$18.8528-4.5341I$	0
$u=-0.00801-1.75235I$ $a=\ 2.28061+0.30206I$ $b=\ 5.66923+0.58870I$	$18.8528+4.5341I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{66} - 11u^{65} + \cdots - u + 1$
c_2, c_5	$u^{66} + u^{65} + \cdots + 11u + 1$
c_3	$u^{66} - u^{65} + \cdots + 116u - 8$
c_4	$u^{66} + u^{65} + \cdots - 39u + 19$
c_6, c_7, c_{10} c_{11}, c_{12}	$u^{66} - u^{65} + \cdots - 3u + 1$
c_8	$u^{66} - u^{65} + \cdots - 1149u + 1069$
c_9	$u^{66} + 3u^{65} + \cdots + u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{66} - 3y^{65} + \cdots - 11y + 1$
c_2, c_5	$y^{66} - 43y^{65} + \cdots - 11y + 1$
c_3	$y^{66} + 53y^{65} + \cdots - 18384y + 64$
c_4	$y^{66} + 69y^{65} + \cdots + 17213y + 361$
c_6, c_7, c_{10} c_{11}, c_{12}	$y^{66} + 85y^{65} + \cdots - 3y + 1$
c_8	$y^{66} - 3y^{65} + \cdots + 10590597y + 1142761$
c_9	$y^{66} - 11y^{65} + \cdots - 3y + 1$