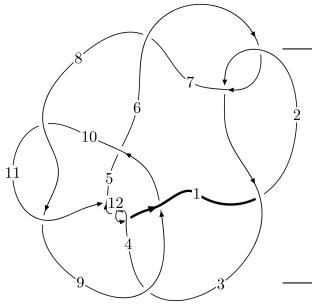
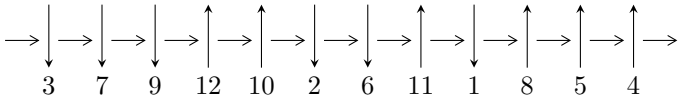
$12a_{0606}$ $(K12a_{0606})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -6.74463 \times 10^{127} u^{83} + 1.59218 \times 10^{128} u^{82} + \cdots + 3.44840 \times 10^{128} b - 2.29894 \times 10^{128}, \\ & - 3.01103 \times 10^{128} u^{83} + 9.56492 \times 10^{128} u^{82} + \cdots + 3.44840 \times 10^{128} a + 2.95385 \times 10^{128}, \\ & u^{84} - 3u^{83} + \cdots - 2u + 1 \rangle \end{aligned}$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 84 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. $\boldsymbol{I_1^u = \langle -6.74 \times 10^{127} u^{83} + 1.59 \times 10^{128} u^{82} + \cdots + 3.45 \times 10^{128} b - 2.30 \times 10^{128},\ -3.01 \times 10^{128} u^{83} + 9.56 \times 10^{128} u^{82} + \cdots + 3.45 \times 10^{128} a + 2.95 \times 10^{128},\ u^{84} - 3u^{83} + \cdots - 2u + 1 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.873168u^{83} - 2.77373u^{82} + \cdots - 12.8263u - 0.856587 \\ 0.195587u^{83} - 0.461715u^{82} + \cdots + 0.0665166u + 0.666670 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -3.59196u^{83} + 30.5345u^{82} + \cdots - 21.0237u + 15.6011 \\ 1.26933u^{83} - 3.73690u^{82} + \cdots + 3.06667u - 1.23274 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.677581u^{83} - 2.31201u^{82} + \cdots - 12.8928u - 1.52326 \\ 0.195587u^{83} - 0.461715u^{82} + \cdots + 0.0665166u + 0.666670 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.681360u^{83} - 2.29472u^{82} + \cdots - 12.9913u - 0.464526 \\ 0.284715u^{83} - 0.696196u^{82} + \cdots + 0.0869901u + 0.486513 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 4.98831u^{83} - 35.4998u^{82} + \cdots + 29.5605u - 5.16163 \\ -0.534425u^{83} + 1.36777u^{82} + \cdots + 1.91603u - 0.186017 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -20.3353u^{83} + 57.5455u^{82} + \cdots - 13.6819u - 4.17574 \\ 0.951845u^{83} - 1.18145u^{82} + \cdots - 1.05176u - 0.348775 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -19.4294u^{83} + 55.1803u^{82} + \cdots - 13.4541u + 2.38119 \\ 0.336489u^{83} + 0.297026u^{82} + \cdots - 1.10082u + 0.813010 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3.96005u^{83} + 5.91536u^{82} + \cdots + 26.5735u - 14.4137$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{84} + 23u^{83} + \cdots + 6u + 1$
c_2, c_6	$u^{84} - u^{83} + \cdots - 3u^2 + 1$
c_3	$u^{84} - 65u^{83} + \cdots + 2u + 1$
c_4, c_{11}, c_{12}	$u^{84} + 3u^{83} + \cdots + 2u + 1$
c_5	$u^{84} + 63u^{83} + \cdots + 57180u - 86897$
c_8, c_{10}	$u^{84} + u^{83} + \cdots - 34u + 1$
c_9	$u^{84} + 7u^{83} + \cdots + 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{84} + 77y^{83} + \cdots - 6y + 1$
c_2, c_6	$y^{84} - 23y^{83} + \cdots - 6y + 1$
c_3	$y^{84} - 1667y^{83} + \cdots + 622y + 1$
c_4, c_{11}, c_{12}	$y^{84} + 81y^{83} + \cdots - 6y + 1$
c_5	$y^{84} - 1711y^{83} + \cdots - 279584806794y + 7551088609$
c_8, c_{10}	$y^{84} - 55y^{83} + \cdots + 754y + 1$
c_9	$y^{84} - 3y^{83} + \cdots + 226y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.841085+0.491787I$ $a=\ \ 0.458081+0.952887I$ $b=-1.36898+0.43042I$	$8.55629-6.70046I$	0
$u=-0.841085-0.491787I$ $a=\ \ 0.458081-0.952887I$ $b=-1.36898-0.43042I$	$8.55629+6.70046I$	0
$u=\ \ 0.395039+0.889142I$ $a=\ \ 0.299173-0.145406I$ $b=-0.578416+0.157326I$	$-1.33288-2.11542I$	0
$u=\ \ 0.395039-0.889142I$ $a=\ \ 0.299173+0.145406I$ $b=-0.578416-0.157326I$	$-1.33288+2.11542I$	0
$u=\ \ 0.830958+0.488150I$ $a=\ \ 0.499768-0.996423I$ $b=-1.36888-0.48638I$	$7.7472+13.0248I$	0
$u=\ \ 0.830958-0.488150I$ $a=\ \ 0.499768+0.996423I$ $b=-1.36888+0.48638I$	$7.7472-13.0248I$	0
$u=\ \ 0.857305+0.428649I$ $a=\ \ 0.649452-0.755906I$ $b=-1.126900-0.419335I$	$0.10242+7.46364I$	0
$u=\ \ 0.857305-0.428649I$ $a=\ \ 0.649452+0.755906I$ $b=-1.126900+0.419335I$	$0.10242-7.46364I$	0
$u=\ \ 0.808233+0.660887I$ $a=-0.087128-0.445454I$ $b=-1.260470+0.320226I$	$7.27039-7.59198I$	0
$u=\ \ 0.808233-0.660887I$ $a=-0.087128+0.445454I$ $b=-1.260470-0.320226I$	$7.27039+7.59198I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.951611+0.456794I$ $a=\ \ 0.460493+0.572983I$ $b=-1.131900+0.209269I$	$3.49418-3.27329I$	0
$u=-0.951611-0.456794I$ $a=\ \ 0.460493-0.572983I$ $b=-1.131900-0.209269I$	$3.49418+3.27329I$	0
$u=-0.836469+0.662101I$ $a=-0.033924+0.476709I$ $b=-1.262520-0.240610I$	$8.09488+1.17071I$	0
$u=-0.836469-0.662101I$ $a=-0.033924-0.476709I$ $b=-1.262520+0.240610I$	$8.09488-1.17071I$	0
$u=\ \ 0.925944$ $a=\ \ 0.813290$ $b=-0.772047$	-1.56515	0
$u=\ \ 0.007440+1.230010I$ $a=\ \ 1.56019+0.08942I$ $b=\ \ 1.83888+0.03682I$	$4.48868+3.01865I$	0
$u=\ \ 0.007440-1.230010I$ $a=\ \ 1.56019-0.08942I$ $b=\ \ 1.83888-0.03682I$	$4.48868-3.01865I$	0
$u=\ \ 0.511792+1.130900I$ $a=\ \ 0.244866-0.380174I$ $b=-0.757105-0.005600I$	$-1.34459-2.08242I$	0
$u=\ \ 0.511792-1.130900I$ $a=\ \ 0.244866+0.380174I$ $b=-0.757105+0.005600I$	$-1.34459+2.08242I$	0
$u=\ \ 0.036951+1.305380I$ $a=\ \ 0.565454+0.681799I$ $b=\ \ 1.43082+0.21052I$	$-1.38495+1.38895I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.036951 - 1.305380I$ $a = 0.565454 - 0.681799I$ $b = 1.43082 - 0.21052I$	$-1.38495 - 1.38895I$	0
$u = 0.488142 + 0.482785I$ $a = 0.031188 + 0.410920I$ $b = -0.148976 + 0.767569I$	$-2.79385 + 3.17067I$	$-6.19468 - 7.29951I$
$u = 0.488142 - 0.482785I$ $a = 0.031188 - 0.410920I$ $b = -0.148976 - 0.767569I$	$-2.79385 - 3.17067I$	$-6.19468 + 7.29951I$
$u = 0.142621 + 1.317630I$ $a = 1.00564 + 1.87617I$ $b = 1.38650 + 0.96883I$	$2.97262 + 1.36691I$	0
$u = 0.142621 - 1.317630I$ $a = 1.00564 - 1.87617I$ $b = 1.38650 - 0.96883I$	$2.97262 - 1.36691I$	0
$u = 0.544314 + 0.397133I$ $a = -0.143255 + 0.627268I$ $b = 0.132496 + 1.098020I$	$3.07508 + 7.54785I$	$1.67086 - 9.24892I$
$u = 0.544314 - 0.397133I$ $a = -0.143255 - 0.627268I$ $b = 0.132496 - 1.098020I$	$3.07508 - 7.54785I$	$1.67086 + 9.24892I$
$u = -0.149362 + 1.325160I$ $a = 0.94788 - 1.95347I$ $b = 1.32824 - 1.03783I$	$2.73190 - 7.38832I$	0
$u = -0.149362 - 1.325160I$ $a = 0.94788 + 1.95347I$ $b = 1.32824 + 1.03783I$	$2.73190 + 7.38832I$	0
$u = 0.083022 + 1.342940I$ $a = 0.56214 + 1.54984I$ $b = 1.170010 + 0.494704I$	$-2.00569 + 1.65992I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.083022 - 1.342940I$ $a = 0.56214 - 1.54984I$ $b = 1.170010 - 0.494704I$	$-2.00569 - 1.65992I$	0
$u = -0.530735 + 0.378249I$ $a = -0.112600 - 0.681713I$ $b = 0.237830 - 1.043500I$	$3.56923 - 1.66317I$	$2.96826 + 4.34619I$
$u = -0.530735 - 0.378249I$ $a = -0.112600 + 0.681713I$ $b = 0.237830 + 1.043500I$	$3.56923 + 1.66317I$	$2.96826 - 4.34619I$
$u = -0.124292 + 1.367670I$ $a = 0.62258 - 1.80283I$ $b = 0.932347 - 0.818895I$	$-3.57253 - 4.34184I$	0
$u = -0.124292 - 1.367670I$ $a = 0.62258 + 1.80283I$ $b = 0.932347 + 0.818895I$	$-3.57253 + 4.34184I$	0
$u = -0.058832 + 1.393540I$ $a = 0.66333 - 2.39711I$ $b = 0.870044 - 0.206745I$	$-4.73549 - 0.52192I$	0
$u = -0.058832 - 1.393540I$ $a = 0.66333 + 2.39711I$ $b = 0.870044 + 0.206745I$	$-4.73549 + 0.52192I$	0
$u = -0.007361 + 1.411650I$ $a = -5.3069 - 21.3383I$ $b = 0.997042 - 0.002480I$	$-0.27149 + 2.82297I$	0
$u = -0.007361 - 1.411650I$ $a = -5.3069 + 21.3383I$ $b = 0.997042 + 0.002480I$	$-0.27149 - 2.82297I$	0
$u = -0.02514 + 1.42770I$ $a = 0.943312 - 0.184770I$ $b = 0.0166012 - 0.0228494I$	$-1.89129 - 2.85052I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.02514-1.42770I$ $a=\ 0.943312+0.184770I$ $b=\ 0.0166012+0.0228494I$	$-1.89129+2.85052I$	0
$u=\ 0.450025+0.338178I$ $a=\ 1.89922+0.06419I$ $b=\ 0.156737-0.547212I$	$3.05606-4.29554I$	$1.23916+0.97121I$
$u=\ 0.450025-0.338178I$ $a=\ 1.89922-0.06419I$ $b=\ 0.156737+0.547212I$	$3.05606+4.29554I$	$1.23916-0.97121I$
$u=-0.532578+0.127338I$ $a=-0.482244-0.702775I$ $b=\ 1.45794-0.58858I$	$7.22969-4.94035I$	$8.76064+6.43722I$
$u=-0.532578-0.127338I$ $a=-0.482244+0.702775I$ $b=\ 1.45794+0.58858I$	$7.22969+4.94035I$	$8.76064-6.43722I$
$u=\ 0.530525+0.109986I$ $a=-0.527197+0.634287I$ $b=\ 1.50206+0.51079I$	$7.37206-1.04586I$	$9.31067-0.66517I$
$u=\ 0.530525-0.109986I$ $a=-0.527197-0.634287I$ $b=\ 1.50206-0.51079I$	$7.37206+1.04586I$	$9.31067+0.66517I$
$u=-0.18758+1.44911I$ $a=-0.32881-1.77671I$ $b=-0.020646-1.346400I$	$-2.33863-4.29175I$	0
$u=-0.18758-1.44911I$ $a=-0.32881+1.77671I$ $b=-0.020646+1.346400I$	$-2.33863+4.29175I$	0
$u=\ 0.537541$ $a=\ 1.24481$ $b=-0.258009$	-1.72341	-5.57880

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.407510+0.345674I$ $a=\ \ 1.99195-0.30079I$ $b=\ \ 0.300889+0.482319I$	$3.44624-1.42162I$	$2.41052+4.86035I$
$u=-0.407510-0.345674I$ $a=\ \ 1.99195+0.30079I$ $b=\ \ 0.300889-0.482319I$	$3.44624+1.42162I$	$2.41052-4.86035I$
$u=\ \ 0.19354+1.45472I$ $a=-0.43885+1.77233I$ $b=-0.106526+1.390560I$	$-2.91247+10.25220I$	0
$u=\ \ 0.19354-1.45472I$ $a=-0.43885-1.77233I$ $b=-0.106526-1.390560I$	$-2.91247-10.25220I$	0
$u=-0.349251+0.398009I$ $a=\ \ 0.463559-0.576542I$ $b=\ \ 0.121636-0.363687I$	$0.097200-1.073830I$	$1.41884+6.13630I$
$u=-0.349251-0.398009I$ $a=\ \ 0.463559+0.576542I$ $b=\ \ 0.121636+0.363687I$	$0.097200+1.073830I$	$1.41884-6.13630I$
$u=-0.14497+1.47396I$ $a=-0.115149-1.228520I$ $b=-0.119724-0.853117I$	$-6.10460-2.97941I$	0
$u=-0.14497-1.47396I$ $a=-0.115149+1.228520I$ $b=-0.119724+0.853117I$	$-6.10460+2.97941I$	0
$u=\ \ 0.17702+1.48022I$ $a=-0.45899+1.37729I$ $b=-0.290897+1.109090I$	$-9.16614+5.65167I$	0
$u=\ \ 0.17702-1.48022I$ $a=-0.45899-1.37729I$ $b=-0.290897-1.109090I$	$-9.16614-5.65167I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.33509 + 1.46619I$ $a = 0.026808 - 1.216630I$ $b = -1.038500 - 0.483600I$	$-6.87683 + 4.53261I$	0
$u = 0.33509 - 1.46619I$ $a = 0.026808 + 1.216630I$ $b = -1.038500 + 0.483600I$	$-6.87683 - 4.53261I$	0
$u = -0.447686 + 0.188181I$ $a = -0.464571 - 1.212230I$ $b = 1.015710 - 0.483092I$	$1.32341 - 2.30363I$	$3.96226 + 8.75508I$
$u = -0.447686 - 0.188181I$ $a = -0.464571 + 1.212230I$ $b = 1.015710 + 0.483092I$	$1.32341 + 2.30363I$	$3.96226 - 8.75508I$
$u = 0.14699 + 1.51880I$ $a = -0.378486 + 0.859627I$ $b = -0.451586 + 0.719967I$	$-8.70614 - 0.03593I$	0
$u = 0.14699 - 1.51880I$ $a = -0.378486 - 0.859627I$ $b = -0.451586 - 0.719967I$	$-8.70614 + 0.03593I$	0
$u = 0.30952 + 1.50098I$ $a = -0.21841 - 1.53013I$ $b = -1.236060 - 0.607000I$	$-6.13770 + 11.67340I$	0
$u = 0.30952 - 1.50098I$ $a = -0.21841 + 1.53013I$ $b = -1.236060 + 0.607000I$	$-6.13770 - 11.67340I$	0
$u = -0.32984 + 1.50339I$ $a = -0.261761 + 1.310870I$ $b = -1.214960 + 0.477499I$	$-2.77472 - 7.81025I$	0
$u = -0.32984 - 1.50339I$ $a = -0.261761 - 1.310870I$ $b = -1.214960 - 0.477499I$	$-2.77472 + 7.81025I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.30146 + 1.51855I$ $a = -0.46246 - 1.67394I$ $b = -1.40190 - 0.63658I$	$1.2539 + 17.1533I$	0
$u = 0.30146 - 1.51855I$ $a = -0.46246 + 1.67394I$ $b = -1.40190 + 0.63658I$	$1.2539 - 17.1533I$	0
$u = -0.30534 + 1.51982I$ $a = -0.48315 + 1.60769I$ $b = -1.39950 + 0.59507I$	$2.05270 - 10.87810I$	0
$u = -0.30534 - 1.51982I$ $a = -0.48315 - 1.60769I$ $b = -1.39950 - 0.59507I$	$2.05270 + 10.87810I$	0
$u = -0.021197 + 0.442171I$ $a = 5.00384 - 0.18590I$ $b = 1.224420 + 0.035696I$	$5.40831 + 2.92977I$	$-7.93391 - 1.35741I$
$u = -0.021197 - 0.442171I$ $a = 5.00384 + 0.18590I$ $b = 1.224420 - 0.035696I$	$5.40831 - 2.92977I$	$-7.93391 + 1.35741I$
$u = 0.402662 + 0.040328I$ $a = -1.74577 + 0.54116I$ $b = 1.210520 + 0.088141I$	$2.31902 + 0.04888I$	$6.20623 + 2.48259I$
$u = 0.402662 - 0.040328I$ $a = -1.74577 - 0.54116I$ $b = 1.210520 - 0.088141I$	$2.31902 - 0.04888I$	$6.20623 - 2.48259I$
$u = -0.47819 + 1.52925I$ $a = -0.173130 + 0.644015I$ $b = -1.044910 + 0.145798I$	$0.51053 - 3.91054I$	0
$u = -0.47819 - 1.52925I$ $a = -0.173130 - 0.644015I$ $b = -1.044910 - 0.145798I$	$0.51053 + 3.91054I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.185686+0.290768I$		
$a=\ \ 3.73194-3.36818I$	$0.484592+0.422993I$	$3.2353+15.0846I$
$b=\ \ 0.942958+0.095108I$		
$u=-0.185686-0.290768I$		
$a=\ \ 3.73194+3.36818I$	$0.484592-0.422993I$	$3.2353-15.0846I$
$b=\ \ 0.942958-0.095108I$		
$u=\ \ 0.13032+1.77960I$		
$a=-0.437102-0.021346I$	$-0.92312-3.47741I$	0
$b=-0.929304+0.091594I$		
$u=\ \ 0.13032-1.77960I$		
$a=-0.437102+0.021346I$	$-0.92312+3.47741I$	0
$b=-0.929304-0.091594I$		

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{84} + 23u^{83} + \cdots + 6u + 1$
c_2, c_6	$u^{84} - u^{83} + \cdots - 3u^2 + 1$
c_3	$u^{84} - 65u^{83} + \cdots + 2u + 1$
c_4, c_{11}, c_{12}	$u^{84} + 3u^{83} + \cdots + 2u + 1$
c_5	$u^{84} + 63u^{83} + \cdots + 57180u - 86897$
c_8, c_{10}	$u^{84} + u^{83} + \cdots - 34u + 1$
c_9	$u^{84} + 7u^{83} + \cdots + 8u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{84} + 77y^{83} + \cdots - 6y + 1$
c_2, c_6	$y^{84} - 23y^{83} + \cdots - 6y + 1$
c_3	$y^{84} - 1667y^{83} + \cdots + 622y + 1$
c_4, c_{11}, c_{12}	$y^{84} + 81y^{83} + \cdots - 6y + 1$
c_5	$y^{84} - 1711y^{83} + \cdots - 279584806794y + 7551088609$
c_8, c_{10}	$y^{84} - 55y^{83} + \cdots + 754y + 1$
c_9	$y^{84} - 3y^{83} + \cdots + 226y + 1$