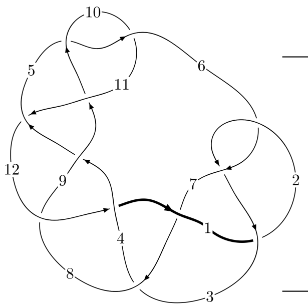
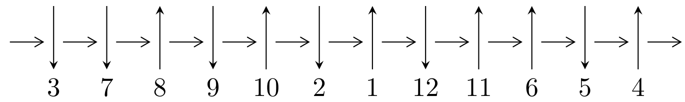
$12a_{0499}$ ($K12a_{0499}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{116} + u^{115} + \cdots + 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 116 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. $I_1^u = \langle u^{116} + u^{115} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^7 + 2u^5 - 2u^3 \\ u^9 - u^7 + u^5 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{20} - 5u^{18} + 13u^{16} - 20u^{14} + 20u^{12} - 13u^{10} + 7u^8 - 4u^6 + 3u^4 - u^2 + 1 \\ -u^{22} + 4u^{20} - 9u^{18} + 12u^{16} - 12u^{14} + 10u^{12} - 9u^{10} + 6u^8 - 3u^6 - u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{12} - 3u^{10} + 5u^8 - 4u^6 + 2u^4 - u^2 + 1 \\ -u^{12} + 2u^{10} - 2u^8 + u^4 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{33} + 8u^{31} + \cdots - 4u^5 - u \\ u^{33} - 7u^{31} + \cdots + 2u^{13} + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{88} - 21u^{86} + \cdots - 2u^2 + 1 \\ -u^{88} + 20u^{86} + \cdots - 5u^8 - 2u^4 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{54} + 13u^{52} + \cdots - 2u^2 + 1 \\ u^{56} - 12u^{54} + \cdots + 5u^8 + 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{114} + 108u^{112} + \cdots + 4u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{116} + 55u^{115} + \cdots + 2u + 1$
c_2, c_6	$u^{116} - u^{115} + \cdots - 2u + 1$
c_3	$u^{116} + u^{115} + \cdots - 4460u + 481$
c_4	$u^{116} - u^{115} + \cdots + 4460u + 481$
c_5, c_{10}	$u^{116} + u^{115} + \cdots + 2u + 1$
c_7	$u^{116} - 3u^{115} + \cdots - 3102u + 1491$
c_8	$u^{116} - 13u^{115} + \cdots - 28714u + 1493$
c_9	$u^{116} - 55u^{115} + \cdots - 2u + 1$
c_{11}	$u^{116} + 3u^{115} + \cdots + 3102u + 1491$
c_{12}	$u^{116} + 13u^{115} + \cdots + 28714u + 1493$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_9	$y^{116} + 13y^{115} + \cdots + 10y + 1$
c_2, c_5, c_6 c_{10}	$y^{116} - 55y^{115} + \cdots - 2y + 1$
c_3, c_4	$y^{116} - 23y^{115} + \cdots - 20059950y + 231361$
c_7, c_{11}	$y^{116} + 29y^{115} + \cdots + 95901630y + 2223081$
c_8, c_{12}	$y^{116} + 25y^{115} + \cdots + 93441422y + 2229049$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.980916 + 0.187806I$	$-0.46811 - 4.80626I$	0
$u = -0.980916 - 0.187806I$	$-0.46811 + 4.80626I$	0
$u = 1.038040 + 0.264208I$	$1.92758 + 0.70552I$	0
$u = 1.038040 - 0.264208I$	$1.92758 - 0.70552I$	0
$u = 0.946091 + 0.512909I$	$0.924676 + 0.744595I$	0
$u = 0.946091 - 0.512909I$	$0.924676 - 0.744595I$	0
$u = -1.060920 + 0.213508I$	$-1.38450 + 2.53956I$	0
$u = -1.060920 - 0.213508I$	$-1.38450 - 2.53956I$	0
$u = -0.814804 + 0.409673I$	$-0.25942 - 4.77611I$	0
$u = -0.814804 - 0.409673I$	$-0.25942 + 4.77611I$	0
$u = -0.628886 + 0.653348I$	$-3.77819 - 10.54700I$	0
$u = -0.628886 - 0.653348I$	$-3.77819 + 10.54700I$	0
$u = 0.942453 + 0.559925I$	$-0.504439 - 0.872368I$	0
$u = 0.942453 - 0.559925I$	$-0.504439 + 0.872368I$	0
$u = -0.940053 + 0.570126I$	$-2.86201 + 5.76865I$	0
$u = -0.940053 - 0.570126I$	$-2.86201 - 5.76865I$	0
$u = 0.625796 + 0.644391I$	$-1.43505 + 5.59418I$	0
$u = 0.625796 - 0.644391I$	$-1.43505 - 5.59418I$	0
$u = -0.608287 + 0.651469I$	$-5.84997 - 2.81500I$	0
$u = -0.608287 - 0.651469I$	$-5.84997 + 2.81500I$	0
$u = -0.960180 + 0.566648I$	$-4.81422 - 1.94454I$	0
$u = -0.960180 - 0.566648I$	$-4.81422 + 1.94454I$	0
$u = 0.625750 + 0.608379I$	$3.73398I$	$0. - 6.64937I$
$u = 0.625750 - 0.608379I$	$- 3.73398I$	$0. + 6.64937I$
$u = 0.555810 + 0.660598I$	$-6.69334 + 2.65982I$	$-9.45564 - 3.84348I$
$u = 0.555810 - 0.660598I$	$-6.69334 - 2.65982I$	$-9.45564 + 3.84348I$
$u = 1.118040 + 0.226753I$	$- 2.33040I$	0
$u = 1.118040 - 0.226753I$	$2.33040I$	0
$u = -1.026760 + 0.500607I$	$0.25942 - 4.77611I$	0
$u = -1.026760 - 0.500607I$	$0.25942 + 4.77611I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.527461 + 0.669939I$	$-5.43231 - 5.03460I$	$-7.42120 + 3.61295I$
$u = 0.527461 - 0.669939I$	$-5.43231 + 5.03460I$	$-7.42120 - 3.61295I$
$u = 1.000610 + 0.570056I$	$-5.38292 + 2.13233I$	0
$u = 1.000610 - 0.570056I$	$-5.38292 - 2.13233I$	0
$u = -1.125530 + 0.251630I$	$5.84997 + 2.81500I$	0
$u = -1.125530 - 0.251630I$	$5.84997 - 2.81500I$	0
$u = -1.129690 + 0.233561I$	$4.55451 + 4.96937I$	0
$u = -1.129690 - 0.233561I$	$4.55451 - 4.96937I$	0
$u = 1.123830 + 0.264580I$	$4.81422 + 1.94454I$	0
$u = 1.123830 - 0.264580I$	$4.81422 - 1.94454I$	0
$u = -0.629046 + 0.562950I$	$-0.924676 + 0.744595I$	$-1.70283 + 0.47785I$
$u = -0.629046 - 0.562950I$	$-0.924676 - 0.744595I$	$-1.70283 - 0.47785I$
$u = 1.133100 + 0.228599I$	$2.27795 - 9.98895I$	0
$u = 1.133100 - 0.228599I$	$2.27795 + 9.98895I$	0
$u = -1.015750 + 0.562708I$	$-1.48579 - 5.23203I$	0
$u = -1.015750 - 0.562708I$	$-1.48579 + 5.23203I$	0
$u = -0.337603 + 0.767769I$	$-2.32174 + 12.72840I$	$-3.20740 - 8.63317I$
$u = -0.337603 - 0.767769I$	$-2.32174 - 12.72840I$	$-3.20740 + 8.63317I$
$u = -0.529452 + 0.649722I$	$-2.91594 + 0.49250I$	$-4.26845 + 0.I$
$u = -0.529452 - 0.649722I$	$-2.91594 - 0.49250I$	$-4.26845 + 0.I$
$u = 1.105330 + 0.361373I$	$1.38450 + 2.53956I$	0
$u = 1.105330 - 0.361373I$	$1.38450 - 2.53956I$	0
$u = -0.346326 + 0.757864I$	$-4.55451 + 4.96937I$	$-6.51117 - 3.10487I$
$u = -0.346326 - 0.757864I$	$-4.55451 - 4.96937I$	$-6.51117 + 3.10487I$
$u = 0.335567 + 0.762518I$	$- 7.70624I$	$0. + 4.97280I$
$u = 0.335567 - 0.762518I$	$7.70624I$	$0. - 4.97280I$
$u = 1.018400 + 0.573095I$	$-3.98793 + 9.86085I$	0
$u = 1.018400 - 0.573095I$	$-3.98793 - 9.86085I$	0
$u = 1.125490 + 0.318238I$	$5.38292 - 2.13233I$	0
$u = 1.125490 - 0.318238I$	$5.38292 + 2.13233I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.123770+0.330636I$	$6.69334-2.65982I$	0
$u=-1.123770-0.330636I$	$6.69334+2.65982I$	0
$u=\quad 0.377708+0.733138I$	$-5.83527-4.81659I$	$-8.08076+4.42676I$
$u=\quad 0.377708-0.733138I$	$-5.83527+4.81659I$	$-8.08076-4.42676I$
$u=-1.125560+0.351844I$	$5.83527-4.81659I$	0
$u=-1.125560-0.351844I$	$5.83527+4.81659I$	0
$u=\quad 0.399874+0.716677I$	$-4.83551+2.87101I$	$-6.77334-2.97281I$
$u=\quad 0.399874-0.716677I$	$-4.83551-2.87101I$	$-6.77334+2.97281I$
$u=\quad 1.129480+0.358841I$	$3.70499+9.78092I$	0
$u=\quad 1.129480-0.358841I$	$3.70499-9.78092I$	0
$u=\quad 0.323517+0.747692I$	$1.43505-5.59418I$	$1.64640+5.68591I$
$u=\quad 0.323517-0.747692I$	$1.43505+5.59418I$	$1.64640-5.68591I$
$u=-0.379511+0.708479I$	$-2.23541+1.50273I$	$-3.25161-1.05729I$
$u=-0.379511-0.708479I$	$-2.23541-1.50273I$	$-3.25161+1.05729I$
$u=-1.089270+0.503562I$	$0.46811-4.80626I$	0
$u=-1.089270-0.503562I$	$0.46811+4.80626I$	0
$u=-0.313605+0.734979I$	$0.504439+0.872368I$	$0.174078+0.321368I$
$u=-0.313605-0.734979I$	$0.504439-0.872368I$	$0.174078-0.321368I$
$u=\quad 0.773108+0.149912I$	$1.52280+0.57753I$	$5.07994-0.95902I$
$u=\quad 0.773108-0.149912I$	$1.52280-0.57753I$	$5.07994+0.95902I$
$u=-1.120070+0.492819I$	$2.80572+2.04914I$	0
$u=-1.120070-0.492819I$	$2.80572-2.04914I$	0
$u=\quad 1.118000+0.500533I$	$4.83551+2.87101I$	0
$u=\quad 1.118000-0.500533I$	$4.83551-2.87101I$	0
$u=\quad 1.091560+0.568564I$	$-2.80572+2.04914I$	0
$u=\quad 1.091560-0.568564I$	$-2.80572-2.04914I$	0
$u=-1.098380+0.561847I$	$-0.13230-6.37734I$	0
$u=-1.098380-0.561847I$	$-0.13230+6.37734I$	0
$u=\quad 1.120950+0.517112I$	$5.43231+5.03460I$	0
$u=\quad 1.120950-0.517112I$	$5.43231-5.03460I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.123940 + 0.524552I$	$3.98793 - 9.86085I$	0
$u = -1.123940 - 0.524552I$	$3.98793 + 9.86085I$	0
$u = \quad 1.103770 + 0.570351I$	$-3.70499 + 9.78092I$	0
$u = \quad 1.103770 - 0.570351I$	$-3.70499 - 9.78092I$	0
$u = -1.123670 + 0.555323I$	$2.86201 - 5.76865I$	0
$u = -1.123670 - 0.555323I$	$2.86201 + 5.76865I$	0
$u = \quad 1.124810 + 0.561210I$	$3.77819 + 10.54700I$	0
$u = \quad 1.124810 - 0.561210I$	$3.77819 - 10.54700I$	0
$u = -1.121090 + 0.570554I$	$-2.27795 - 9.98895I$	0
$u = -1.121090 - 0.570554I$	$-2.27795 + 9.98895I$	0
$u = \quad 1.125750 + 0.568932I$	$2.32174 + 12.72840I$	0
$u = \quad 1.125750 - 0.568932I$	$2.32174 - 12.72840I$	0
$u = -1.126700 + 0.571118I$	$- 17.7724I$	0
$u = -1.126700 - 0.571118I$	$17.7724I$	0
$u = -0.242875 + 0.687753I$	$1.48579 + 5.23203I$	$1.33742 - 5.64057I$
$u = -0.242875 - 0.687753I$	$1.48579 - 5.23203I$	$1.33742 + 5.64057I$
$u = \quad 0.224332 + 0.667829I$	$2.91594 - 0.49250I$	$4.26845 - 0.19979I$
$u = \quad 0.224332 - 0.667829I$	$2.91594 + 0.49250I$	$4.26845 + 0.19979I$
$u = -0.412080 + 0.554449I$	$-1.52280 + 0.57753I$	$-5.07994 - 0.95902I$
$u = -0.412080 - 0.554449I$	$-1.52280 - 0.57753I$	$-5.07994 + 0.95902I$
$u = -0.147126 + 0.653714I$	$0.13230 - 6.37734I$	$-0.27591 + 5.27854I$
$u = -0.147126 - 0.653714I$	$0.13230 + 6.37734I$	$-0.27591 - 5.27854I$
$u = \quad 0.170503 + 0.646191I$	$2.23541 + 1.50273I$	$3.25161 - 1.05729I$
$u = \quad 0.170503 - 0.646191I$	$2.23541 - 1.50273I$	$3.25161 + 1.05729I$
$u = -0.123289 + 0.568855I$	$-1.92758 + 0.70552I$	$-3.67143 - 0.70779I$
$u = -0.123289 - 0.568855I$	$-1.92758 - 0.70552I$	$-3.67143 + 0.70779I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{116} + 55u^{115} + \cdots + 2u + 1$
c_2, c_6	$u^{116} - u^{115} + \cdots - 2u + 1$
c_3	$u^{116} + u^{115} + \cdots - 4460u + 481$
c_4	$u^{116} - u^{115} + \cdots + 4460u + 481$
c_5, c_{10}	$u^{116} + u^{115} + \cdots + 2u + 1$
c_7	$u^{116} - 3u^{115} + \cdots - 3102u + 1491$
c_8	$u^{116} - 13u^{115} + \cdots - 28714u + 1493$
c_9	$u^{116} - 55u^{115} + \cdots - 2u + 1$
c_{11}	$u^{116} + 3u^{115} + \cdots + 3102u + 1491$
c_{12}	$u^{116} + 13u^{115} + \cdots + 28714u + 1493$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_9	$y^{116} + 13y^{115} + \cdots + 10y + 1$
c_2, c_5, c_6 c_{10}	$y^{116} - 55y^{115} + \cdots - 2y + 1$
c_3, c_4	$y^{116} - 23y^{115} + \cdots - 20059950y + 231361$
c_7, c_{11}	$y^{116} + 29y^{115} + \cdots + 95901630y + 2223081$
c_8, c_{12}	$y^{116} + 25y^{115} + \cdots + 93441422y + 2229049$