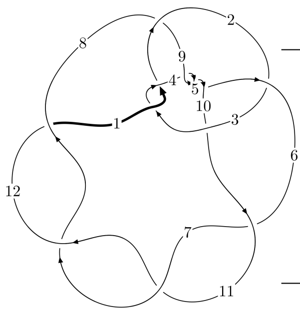
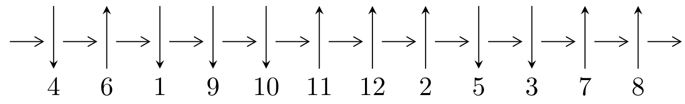
$12a_{1011}$ $(K12a_{1011})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -7.77473 \times 10^{61} u^{59} - 1.16877 \times 10^{62} u^{58} + \cdots + 1.10219 \times 10^{62} b + 6.06781 \times 10^{61},$$
$$- 4.84379 \times 10^{62} u^{59} - 8.34198 \times 10^{62} u^{58} + \cdots + 1.10219 \times 10^{62} a - 4.12695 \times 10^{62},\ u^{60} + 3u^{59} + \cdots - 3u^2$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 60 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. $I^u_1 = \langle -7.77\times10^{61}u^{59} - 1.17\times10^{62}u^{58} + \cdots + 1.10\times10^{62}b + 6.07\times10^{61},\ -4.84\times10^{62}u^{59} - 8.34\times10^{62}u^{58} + \cdots + 1.10\times10^{62}a - 4.13\times10^{62},\ u^{60} + 3u^{59} + \cdots - 3u^2 + 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 4.39469u^{59} + 7.56854u^{58} + \cdots + 8.66548u + 3.74431 \\ 0.705389u^{59} + 1.06041u^{58} + \cdots - 0.422370u - 0.550522 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 5.10008u^{59} + 8.62895u^{58} + \cdots + 8.24311u + 3.19379 \\ 0.705389u^{59} + 1.06041u^{58} + \cdots - 0.422370u - 0.550522 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 4.47039u^{59} + 7.66384u^{58} + \cdots + 8.64302u + 3.82572 \\ 0.718475u^{59} + 1.08549u^{58} + \cdots - 0.368583u - 0.582231 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 20.7074u^{59} + 33.8191u^{58} + \cdots - 16.5794u + 18.9472 \\ 5.56972u^{59} + 9.32309u^{58} + \cdots - 1.10592u + 3.61027 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -23.4227u^{59} - 42.3566u^{58} + \cdots + 10.6283u - 7.72848 \\ -4.67738u^{59} - 6.39518u^{58} + \cdots + 4.40795u - 3.75191 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -10.1429u^{59} - 9.17229u^{58} + \cdots + 11.5219u - 14.4523 \\ -0.651171u^{59} - 1.19686u^{58} + \cdots - 0.432522u - 0.670575 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -12.9717u^{59} - 14.7561u^{58} + \cdots + 10.0296u - 7.51652 \\ -0.657819u^{59} - 0.638710u^{58} + \cdots + 0.0831336u - 0.551955 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -22.6173u^{59} - 27.6772u^{58} + \cdots + 28.8485u - 22.3361$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{60} - u^{59} + \cdots - 66u + 1$
c_2	$u^{60} - 5u^{59} + \cdots + 4u + 1$
c_4, c_5, c_9	$u^{60} - 3u^{59} + \cdots - 3u^2 + 1$
c_6, c_7, c_{11} c_{12}	$u^{60} + u^{59} + \cdots - 3u^2 + 1$
c_8	$u^{60} + 47u^{59} + \cdots + 11412u + 5859$
c_{10}	$u^{60} - 51u^{59} + \cdots + 30u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{60} - 39y^{59} + \cdots - 3658y + 1$
c_2	$y^{60} - 3y^{59} + \cdots - 290y + 1$
c_4, c_5, c_9	$y^{60} - 63y^{59} + \cdots - 6y + 1$
c_6, c_7, c_{11} c_{12}	$y^{60} - 71y^{59} + \cdots - 6y + 1$
c_8	$y^{60} - 1879y^{59} + \cdots + 397673874y + 34327881$
c_{10}	$y^{60} - 1963y^{59} + \cdots - 206y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.662817 + 0.762698I$ $a = -0.245728 + 1.250330I$ $b = 1.193830 - 0.447828I$	$-0.73206 + 8.12056I$	0
$u = -0.662817 - 0.762698I$ $a = -0.245728 - 1.250330I$ $b = 1.193830 + 0.447828I$	$-0.73206 - 8.12056I$	0
$u = -0.323840 + 0.957327I$ $a = -0.572957 - 0.024249I$ $b = 0.961555 + 0.221982I$	$0.23239 - 2.63217I$	0
$u = -0.323840 - 0.957327I$ $a = -0.572957 + 0.024249I$ $b = 0.961555 - 0.221982I$	$0.23239 + 2.63217I$	0
$u = 0.624560 + 0.748947I$ $a = -0.28039 - 1.52487I$ $b = 1.269310 + 0.591379I$	$7.64094 - 11.03190I$	0
$u = 0.624560 - 0.748947I$ $a = -0.28039 + 1.52487I$ $b = 1.269310 - 0.591379I$	$7.64094 + 11.03190I$	0
$u = 0.425213 + 0.838580I$ $a = -0.930124 + 0.154932I$ $b = 1.112760 - 0.474637I$	$8.24888 + 5.81523I$	0
$u = 0.425213 - 0.838580I$ $a = -0.930124 - 0.154932I$ $b = 1.112760 + 0.474637I$	$8.24888 - 5.81523I$	0
$u = 0.758315 + 0.809811I$ $a = -0.166292 - 0.849057I$ $b = 1.073790 + 0.249690I$	$-2.79981 - 3.45771I$	0
$u = 0.758315 - 0.809811I$ $a = -0.166292 + 0.849057I$ $b = 1.073790 - 0.249690I$	$-2.79981 + 3.45771I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.442644 + 0.577967I$ $a = -0.37374 + 1.43406I$ $b = 0.205523 - 1.112540I$	$11.00280 - 5.06190I$	$5.82530 + 5.53323I$
$u = 0.442644 - 0.577967I$ $a = -0.37374 - 1.43406I$ $b = 0.205523 + 1.112540I$	$11.00280 + 5.06190I$	$5.82530 - 5.53323I$
$u = 0.533556 + 0.494030I$ $a = 1.36268 - 1.13267I$ $b = 0.302652 + 0.710487I$	$10.70280 + 1.31241I$	$5.99165 + 2.38877I$
$u = 0.533556 - 0.494030I$ $a = 1.36268 + 1.13267I$ $b = 0.302652 - 0.710487I$	$10.70280 - 1.31241I$	$5.99165 - 2.38877I$
$u = -0.634510 + 0.307234I$ $a = 1.041510 + 0.447956I$ $b = 0.306128 - 0.284056I$	$1.84584 - 0.16634I$	$5.58998 - 1.16164I$
$u = -0.634510 - 0.307234I$ $a = 1.041510 - 0.447956I$ $b = 0.306128 + 0.284056I$	$1.84584 + 0.16634I$	$5.58998 + 1.16164I$
$u = -0.388734 + 0.547219I$ $a = -0.102961 - 1.234950I$ $b = 0.108665 + 0.851721I$	$2.57666 + 3.48003I$	$5.40845 - 7.70107I$
$u = -0.388734 - 0.547219I$ $a = -0.102961 + 1.234950I$ $b = 0.108665 - 0.851721I$	$2.57666 - 3.48003I$	$5.40845 + 7.70107I$
$u = -0.534688 + 0.300236I$ $a = 0.71450 - 1.75929I$ $b = -1.106720 + 0.780537I$	$5.77449 + 3.36958I$	$-0.25480 - 6.43595I$
$u = -0.534688 - 0.300236I$ $a = 0.71450 + 1.75929I$ $b = -1.106720 - 0.780537I$	$5.77449 - 3.36958I$	$-0.25480 + 6.43595I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.393360 + 0.104061I$ $a = 0.442020 + 0.476538I$ $b = -0.039469 - 0.361226I$	$-3.67380 - 0.55006I$	0
$u = 1.393360 - 0.104061I$ $a = 0.442020 - 0.476538I$ $b = -0.039469 + 0.361226I$	$-3.67380 + 0.55006I$	0
$u = 1.40808$ $a = 30.7026$ $b = -1.00235$	2.29829	0
$u = 0.590101$ $a = 0.794250$ $b = -1.54497$	4.22265	-2.84470
$u = -1.43641$ $a = 1.11782$ $b = 0.0164917$	3.96509	0
$u = -1.44502$ $a = -4.23868$ $b = -1.06556$	-5.74141	0
$u = -1.45489 + 0.12717I$ $a = -0.006934 - 0.704892I$ $b = -0.259620 + 0.860546I$	$-5.64401 + 3.03216I$	0
$u = -1.45489 - 0.12717I$ $a = -0.006934 + 0.704892I$ $b = -0.259620 - 0.860546I$	$-5.64401 - 3.03216I$	0
$u = 0.478326 + 0.237534I$ $a = 0.52704 + 1.65194I$ $b = -1.083170 - 0.489709I$	$-1.59831 - 2.29626I$	$-3.55521 + 9.11938I$
$u = 0.478326 - 0.237534I$ $a = 0.52704 - 1.65194I$ $b = -1.083170 + 0.489709I$	$-1.59831 + 2.29626I$	$-3.55521 - 9.11938I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.259388 + 0.444396I$ $a = 0.505889 + 0.793558I$ $b = -0.034493 - 0.340622I$	$0.027752 - 1.012700I$	$0.66910 + 6.22370I$
$u = 0.259388 - 0.444396I$ $a = 0.505889 - 0.793558I$ $b = -0.034493 + 0.340622I$	$0.027752 + 1.012700I$	$0.66910 - 6.22370I$
$u = 1.47743 + 0.15557I$ $a = -0.206202 + 0.601749I$ $b = -0.063839 - 1.211260I$	$-3.53480 - 5.95076I$	0
$u = 1.47743 - 0.15557I$ $a = -0.206202 - 0.601749I$ $b = -0.063839 + 1.211260I$	$-3.53480 + 5.95076I$	0
$u = -1.49269 + 0.17073I$ $a = -0.332630 - 0.562691I$ $b = 0.09351 + 1.43171I$	$4.66007 + 7.72555I$	0
$u = -1.49269 - 0.17073I$ $a = -0.332630 + 0.562691I$ $b = 0.09351 - 1.43171I$	$4.66007 - 7.72555I$	0
$u = 1.50347 + 0.02704I$ $a = -0.667227 + 0.507062I$ $b = -1.51372 - 0.34479I$	$-8.86338 - 0.56778I$	0
$u = 1.50347 - 0.02704I$ $a = -0.667227 - 0.507062I$ $b = -1.51372 + 0.34479I$	$-8.86338 + 0.56778I$	0
$u = -1.50768 + 0.05542I$ $a = -0.395766 - 0.775044I$ $b = -1.39878 + 0.72856I$	$-8.19989 + 3.27836I$	0
$u = -1.50768 - 0.05542I$ $a = -0.395766 + 0.775044I$ $b = -1.39878 - 0.72856I$	$-8.19989 - 3.27836I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.42531 + 0.50921I$ $a = 0.093353 + 0.311150I$ $b = 0.942971 + 0.154173I$	$2.40478 - 1.15829I$	0
$u = -1.42531 - 0.50921I$ $a = 0.093353 - 0.311150I$ $b = 0.942971 - 0.154173I$	$2.40478 + 1.15829I$	0
$u = 1.52042 + 0.07500I$ $a = -0.249231 + 0.817995I$ $b = -1.37975 - 1.09877I$	$-1.05380 - 4.66299I$	0
$u = 1.52042 - 0.07500I$ $a = -0.249231 - 0.817995I$ $b = -1.37975 + 1.09877I$	$-1.05380 + 4.66299I$	0
$u = -1.52983$ $a = -0.336902$ $b = -1.95863$	-2.82018	0
$u = -0.436498 + 0.086603I$ $a = -0.399175 - 1.008990I$ $b = -1.189670 + 0.142954I$	$-2.36701 + 0.14297I$	$-6.07641 + 3.65912I$
$u = -0.436498 - 0.086603I$ $a = -0.399175 + 1.008990I$ $b = -1.189670 - 0.142954I$	$-2.36701 - 0.14297I$	$-6.07641 - 3.65912I$
$u = -0.158972 + 0.403171I$ $a = 4.83010 - 0.90232I$ $b = -1.027510 - 0.307952I$	$6.91858 - 0.97657I$	$7.47505 - 6.61019I$
$u = -0.158972 - 0.403171I$ $a = 4.83010 + 0.90232I$ $b = -1.027510 + 0.307952I$	$6.91858 + 0.97657I$	$7.47505 + 6.61019I$
$u = -1.57145 + 0.25178I$ $a = 0.575689 + 1.150720I$ $b = 1.41270 - 0.64234I$	$0.4156 + 14.7437I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.57145 - 0.25178I$ $a = 0.575689 - 1.150720I$ $b = 1.41270 + 0.64234I$	$0.4156 - 14.7437I$	0
$u = 1.58219 + 0.25441I$ $a = 0.517989 - 1.039430I$ $b = 1.38366 + 0.52744I$	$-8.1120 - 11.9056I$	0
$u = 1.58219 - 0.25441I$ $a = 0.517989 + 1.039430I$ $b = 1.38366 - 0.52744I$	$-8.1120 + 11.9056I$	0
$u = -1.59853 + 0.26019I$ $a = 0.456687 + 0.894494I$ $b = 1.332230 - 0.391330I$	$-10.46850 + 7.42938I$	0
$u = -1.59853 - 0.26019I$ $a = 0.456687 - 0.894494I$ $b = 1.332230 + 0.391330I$	$-10.46850 - 7.42938I$	0
$u = 1.63860 + 0.26637I$ $a = 0.439098 - 0.662224I$ $b = 1.195760 + 0.242342I$	$-7.27899 - 2.94729I$	0
$u = 1.63860 - 0.26637I$ $a = 0.439098 + 0.662224I$ $b = 1.195760 - 0.242342I$	$-7.27899 + 2.94729I$	0
$u = 0.152092 + 0.297135I$ $a = 5.08934 + 3.12341I$ $b = -0.962464 + 0.100967I$	$-0.648981 + 0.439546I$	$0.5531 + 16.3580I$
$u = 0.152092 - 0.297135I$ $a = 5.08934 - 3.12341I$ $b = -0.962464 - 0.100967I$	$-0.648981 - 0.439546I$	$0.5531 - 16.3580I$
$u = -1.78480$ $a = 0.627868$ $b = 0.883346$	3.12322	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{60} - u^{59} + \cdots - 66u + 1$
c_2	$u^{60} - 5u^{59} + \cdots + 4u + 1$
c_4, c_5, c_9	$u^{60} - 3u^{59} + \cdots - 3u^2 + 1$
c_6, c_7, c_{11} c_{12}	$u^{60} + u^{59} + \cdots - 3u^2 + 1$
c_8	$u^{60} + 47u^{59} + \cdots + 11412u + 5859$
c_{10}	$u^{60} - 51u^{59} + \cdots + 30u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{60} - 39y^{59} + \cdots - 3658y + 1$
c_2	$y^{60} - 3y^{59} + \cdots - 290y + 1$
c_4, c_5, c_9	$y^{60} - 63y^{59} + \cdots - 6y + 1$
c_6, c_7, c_{11} c_{12}	$y^{60} - 71y^{59} + \cdots - 6y + 1$
c_8	$y^{60} - 1879y^{59} + \cdots + 397673874y + 34327881$
c_{10}	$y^{60} - 1963y^{59} + \cdots - 206y + 1$