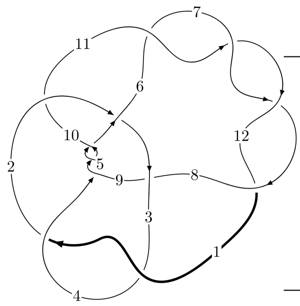
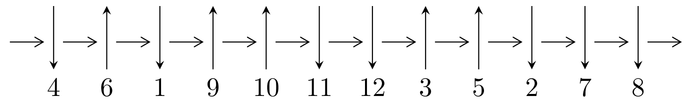
$12a_{1013}$ ($K12a_{1013}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -6.11706 \times 10^{59} u^{58} + 1.07231 \times 10^{60} u^{57} + \cdots + 4.86975 \times 10^{59} b + 9.72469 \times 10^{59}, \\ & -2.05091 \times 10^{60} u^{58} + 3.51655 \times 10^{60} u^{57} + \cdots + 4.86975 \times 10^{59} a + 1.34143 \times 10^{60},\ u^{59} - 3u^{58} + \cdots + 3u^2 \end{aligned}$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 59 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. $\boldsymbol{I_1^u = \langle -6.12\times 10^{59}u^{58} + 1.07\times 10^{60}u^{57} + \cdots + 4.87\times 10^{59}b + 9.72\times 10^{59},\ -2.05\times 10^{60}u^{58} + 3.52\times 10^{60}u^{57} + \cdots + 4.87\times 10^{59}a + 1.34\times 10^{60},\ u^{59} - 3u^{58} + \cdots + 3u^2 + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 4.21152u^{58} - 7.22122u^{57} + \cdots - 12.4594u - 2.75461 \\ 1.25613u^{58} - 2.20198u^{57} + \cdots - 0.819175u - 1.99696 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -9.15963u^{58} + 16.8081u^{57} + \cdots + 1.60609u + 10.4724 \\ -6.32014u^{58} + 10.8093u^{57} + \cdots + 5.10432u + 4.56009 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 5.46765u^{58} - 9.42320u^{57} + \cdots - 13.2786u - 4.75157 \\ 1.25613u^{58} - 2.20198u^{57} + \cdots - 0.819175u - 1.99696 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 4.39790u^{58} - 7.52436u^{57} + \cdots - 12.3770u - 2.98622 \\ 1.32770u^{58} - 2.27810u^{57} + \cdots - 0.861136u - 2.06309 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 12.1066u^{58} - 24.6727u^{57} + \cdots - 15.8303u - 1.97288 \\ 4.64955u^{58} - 6.59987u^{57} + \cdots - 1.46326u - 3.70154 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 10.5375u^{58} - 10.9059u^{57} + \cdots - 11.6889u - 15.2433 \\ 0.324061u^{58} - 0.967105u^{57} + \cdots - 0.188037u - 0.274138 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 8.66021u^{58} - 9.05645u^{57} + \cdots - 8.23792u - 4.80111 \\ 0.825077u^{58} - 1.28802u^{57} + \cdots - 0.769376u - 1.21854 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -26.5735u^{58} + 37.2947u^{57} + \cdots + 9.09129u + 20.6511$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{59} - u^{58} + \cdots - 46u + 1$
c_2	$u^{59} - 5u^{58} + \cdots + 4u + 1$
c_4, c_5, c_9	$u^{59} + 3u^{58} + \cdots - 3u^2 - 1$
c_6, c_7, c_{11} c_{12}	$u^{59} - u^{58} + \cdots + 3u^2 + 1$
c_8	$u^{59} - 49u^{58} + \cdots + 67362u - 16529$
c_{10}	$u^{59} + 53u^{58} + \cdots + 256u + 19$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{59} - 41y^{58} + \cdots + 1910y - 1$
c_2	$y^{59} + 3y^{58} + \cdots + 270y - 1$
c_4, c_5, c_9	$y^{59} - 57y^{58} + \cdots - 6y - 1$
c_6, c_7, c_{11} c_{12}	$y^{59} - 73y^{58} + \cdots - 6y - 1$
c_8	$y^{59} - 2169y^{58} + \cdots + 18247485862y - 273207841$
c_{10}	$y^{59} - 2137y^{58} + \cdots + 12906y - 361$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.475350 + 0.860447I$ $a = 0.496568 + 0.839468I$ $b = 1.272020 - 0.381627I$	$-5.19566 + 7.84726I$	0
$u = 0.475350 - 0.860447I$ $a = 0.496568 - 0.839468I$ $b = 1.272020 + 0.381627I$	$-5.19566 - 7.84726I$	0
$u = -0.496786 + 0.831191I$ $a = 0.452243 - 1.016940I$ $b = 1.41446 + 0.46980I$	$-14.4117 - 10.5302I$	0
$u = -0.496786 - 0.831191I$ $a = 0.452243 + 1.016940I$ $b = 1.41446 - 0.46980I$	$-14.4117 + 10.5302I$	0
$u = -0.642055 + 0.817094I$ $a = -0.098059 - 0.497244I$ $b = 1.325190 - 0.298324I$	$-14.0087 + 5.0802I$	0
$u = -0.642055 - 0.817094I$ $a = -0.098059 + 0.497244I$ $b = 1.325190 + 0.298324I$	$-14.0087 - 5.0802I$	0
$u = -0.439918 + 0.966336I$ $a = 0.481104 - 0.534588I$ $b = 1.100680 + 0.202044I$	$-1.85929 - 3.33269I$	0
$u = -0.439918 - 0.966336I$ $a = 0.481104 + 0.534588I$ $b = 1.100680 - 0.202044I$	$-1.85929 + 3.33269I$	0
$u = 1.13498$ $a = 0.740239$ $b = 0.378809$	-4.07948	0
$u = 0.727904 + 0.915102I$ $a = 0.087669 + 0.413864I$ $b = 1.132370 + 0.126938I$	$-4.55152 - 2.10422I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.727904 - 0.915102I$ $a = 0.087669 - 0.413864I$ $b = 1.132370 - 0.126938I$	$-4.55152 + 2.10422I$	0
$u = 1.21857$ $a = 1.69323$ $b = -1.89392$	-10.6108	0
$u = -1.26436$ $a = 1.11134$ $b = -1.65979$	-1.59640	0
$u = -1.316980 + 0.152107I$ $a = 1.03120 + 1.96585I$ $b = -1.40555 - 1.05122I$	$-8.95609 - 4.55404I$	0
$u = -1.316980 - 0.152107I$ $a = 1.03120 - 1.96585I$ $b = -1.40555 + 1.05122I$	$-8.95609 + 4.55404I$	0
$u = -0.381236 + 0.552080I$ $a = -0.167585 + 0.667792I$ $b = -0.208595 - 1.152770I$	$-9.30665 - 4.95113I$	$-6.99238 + 6.51896I$
$u = -0.381236 - 0.552080I$ $a = -0.167585 - 0.667792I$ $b = -0.208595 + 1.152770I$	$-9.30665 + 4.95113I$	$-6.99238 - 6.51896I$
$u = 1.334770 + 0.126781I$ $a = 0.82384 - 1.77989I$ $b = -1.22573 + 0.84622I$	$-0.05622 + 3.78887I$	0
$u = 1.334770 - 0.126781I$ $a = 0.82384 + 1.77989I$ $b = -1.22573 - 0.84622I$	$-0.05622 - 3.78887I$	0
$u = 0.407640 + 0.491215I$ $a = 0.007046 - 0.614145I$ $b = -0.124106 + 0.847511I$	$-0.95048 + 3.54930I$	$-4.43989 - 9.05516I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.407640 - 0.491215I$ $a = 0.007046 + 0.614145I$ $b = -0.124106 - 0.847511I$	$-0.95048 - 3.54930I$	$-4.43989 + 9.05516I$
$u = 1.364330 + 0.022066I$ $a = -1.08977 - 1.29712I$ $b = -1.114170 + 0.098313I$	$2.05873 + 0.05448I$	0
$u = 1.364330 - 0.022066I$ $a = -1.08977 + 1.29712I$ $b = -1.114170 - 0.098313I$	$2.05873 - 0.05448I$	0
$u = -1.365210 + 0.084494I$ $a = 0.52896 + 1.73722I$ $b = -1.000010 - 0.478965I$	$2.93987 - 2.06641I$	0
$u = -1.365210 - 0.084494I$ $a = 0.52896 - 1.73722I$ $b = -1.000010 + 0.478965I$	$2.93987 + 2.06641I$	0
$u = 1.38545$ $a = 1.11296$ $b = 0.0228314$	-3.92767	0
$u = -0.488282 + 0.360464I$ $a = 0.329573 + 0.368478I$ $b = 0.087132 - 0.424414I$	$0.926561 - 0.875889I$	$4.21577 + 2.97992I$
$u = -0.488282 - 0.360464I$ $a = 0.329573 - 0.368478I$ $b = 0.087132 + 0.424414I$	$0.926561 + 0.875889I$	$4.21577 - 2.97992I$
$u = -1.42001$ $a = 32.7779$ $b = -1.00219$	-5.59723	0
$u = -0.367886 + 0.436129I$ $a = 2.08179 + 0.08994I$ $b = -0.257332 + 0.613928I$	$-9.13968 + 1.69764I$	$-6.18348 + 2.07569I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.367886 - 0.436129I$ $a = 2.08179 - 0.08994I$ $b = -0.257332 - 0.613928I$	$-9.13968 - 1.69764I$	$-6.18348 - 2.07569I$
$u = 0.117896 + 0.543965I$ $a = -0.454546 - 0.643164I$ $b = -1.53639 + 0.58516I$	$-13.38520 + 2.05056I$	$-13.15743 - 3.37772I$
$u = 0.117896 - 0.543965I$ $a = -0.454546 + 0.643164I$ $b = -1.53639 - 0.58516I$	$-13.38520 - 2.05056I$	$-13.15743 + 3.37772I$
$u = 1.44862 + 0.19565I$ $a = -0.40513 - 1.85474I$ $b = 0.04576 + 1.43936I$	$-3.39872 + 7.68478I$	0
$u = 1.44862 - 0.19565I$ $a = -0.40513 + 1.85474I$ $b = 0.04576 - 1.43936I$	$-3.39872 - 7.68478I$	0
$u = -1.46045 + 0.17666I$ $a = -0.31469 + 1.57531I$ $b = 0.099782 - 1.188640I$	$5.11240 - 6.01691I$	0
$u = -1.46045 - 0.17666I$ $a = -0.31469 - 1.57531I$ $b = 0.099782 + 1.188640I$	$5.11240 + 6.01691I$	0
$u = 1.48347 + 0.15220I$ $a = -0.239639 - 1.190530I$ $b = 0.220135 + 0.883885I$	$7.36971 + 2.90930I$	0
$u = 1.48347 - 0.15220I$ $a = -0.239639 + 1.190530I$ $b = 0.220135 - 0.883885I$	$7.36971 - 2.90930I$	0
$u = -0.120295 + 0.487779I$ $a = -0.692408 + 0.804530I$ $b = -1.316860 - 0.433488I$	$-4.56753 - 1.60582I$	$-13.6627 + 4.6604I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.120295-0.487779I$ $a=-0.692408-0.804530I$ $b=-1.316860+0.433488I$	$-4.56753+1.60582I$	$-13.6627-4.6604I$
$u=-1.51362+0.08542I$ $a=\ \ 0.043229+0.571042I$ $b=\ \ 0.282289-0.378928I$	$4.55593-0.22771I$	0
$u=-1.51362-0.08542I$ $a=\ \ 0.043229-0.571042I$ $b=\ \ 0.282289+0.378928I$	$4.55593+0.22771I$	0
$u=\ \ 0.471023$ $a=\ \ 4.79719$ $b=-1.27746$	-11.4096	1.93000
$u=\ \ 1.49877+0.32931I$ $a=-0.218270+1.315670I$ $b=\ \ 1.192200-0.489021I$	$4.33779+7.88058I$	0
$u=\ \ 1.49877-0.32931I$ $a=-0.218270-1.315670I$ $b=\ \ 1.192200+0.489021I$	$4.33779-7.88058I$	0
$u=-1.48704+0.38777I$ $a=-0.131122-0.943356I$ $b=\ \ 1.072210+0.305514I$	$2.27021-3.30917I$	0
$u=-1.48704-0.38777I$ $a=-0.131122+0.943356I$ $b=\ \ 1.072210-0.305514I$	$2.27021+3.30917I$	0
$u=\ \ 0.261111+0.381583I$ $a=\ \ 1.47093-0.33575I$ $b=-0.143895-0.219363I$	$-1.184200-0.687771I$	$-5.69781+0.37912I$
$u=\ \ 0.261111-0.381583I$ $a=\ \ 1.47093+0.33575I$ $b=-0.143895+0.219363I$	$-1.184200+0.687771I$	$-5.69781-0.37912I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.51346 + 0.31095I$ $a = -0.38347 - 1.52566I$ $b = 1.32664 + 0.57039I$	$1.22146 - 12.09350I$	0
$u = -1.51346 - 0.31095I$ $a = -0.38347 + 1.52566I$ $b = 1.32664 - 0.57039I$	$1.22146 + 12.09350I$	0
$u = 1.52191 + 0.30160I$ $a = -0.52248 + 1.67114I$ $b = 1.43503 - 0.62232I$	$-7.8780 + 14.6651I$	0
$u = 1.52191 - 0.30160I$ $a = -0.52248 - 1.67114I$ $b = 1.43503 + 0.62232I$	$-7.8780 - 14.6651I$	0
$u = 0.131491 + 0.330288I$ $a = -1.50228 - 2.45162I$ $b = -1.005580 + 0.138537I$	$-1.78580 + 0.58489I$	$-5.41482 + 2.56044I$
$u = 0.131491 - 0.330288I$ $a = -1.50228 + 2.45162I$ $b = -1.005580 - 0.138537I$	$-1.78580 - 0.58489I$	$-5.41482 - 2.56044I$
$u = -0.340698$ $a = 6.50413$ $b = -1.09163$	-2.98842	17.3980
$u = 1.72747 + 0.35363I$ $a = -0.483202 + 0.301946I$ $b = 1.093980 + 0.049807I$	$-6.28102 - 0.67182I$	0
$u = 1.72747 - 0.35363I$ $a = -0.483202 - 0.301946I$ $b = 1.093980 - 0.049807I$	$-6.28102 + 0.67182I$	0

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{59} - u^{58} + \cdots - 46u + 1$
c_2	$u^{59} - 5u^{58} + \cdots + 4u + 1$
c_4, c_5, c_9	$u^{59} + 3u^{58} + \cdots - 3u^2 - 1$
c_6, c_7, c_{11} c_{12}	$u^{59} - u^{58} + \cdots + 3u^2 + 1$
c_8	$u^{59} - 49u^{58} + \cdots + 67362u - 16529$
c_{10}	$u^{59} + 53u^{58} + \cdots + 256u + 19$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{59} - 41y^{58} + \cdots + 1910y - 1$
c_2	$y^{59} + 3y^{58} + \cdots + 270y - 1$
c_4, c_5, c_9	$y^{59} - 57y^{58} + \cdots - 6y - 1$
c_6, c_7, c_{11} c_{12}	$y^{59} - 73y^{58} + \cdots - 6y - 1$
c_8	$y^{59} - 2169y^{58} + \cdots + 18247485862y - 273207841$
c_{10}	$y^{59} - 2137y^{58} + \cdots + 12906y - 361$