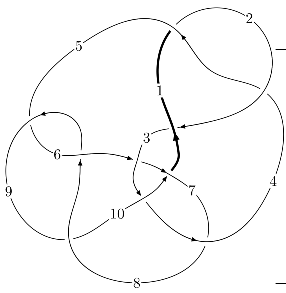
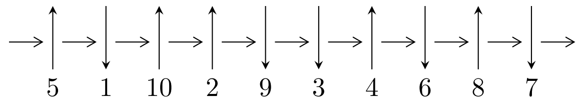
10_{88} $(K10a_{11})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4.78927 \times 10^{31} u^{49} + 8.64865 \times 10^{31} u^{48} + \cdots + 2.44356 \times 10^{32} b + 3.07584 \times 10^{32},$$
$$- 1.85309 \times 10^{32} u^{49} + 2.34614 \times 10^{31} u^{48} + \cdots + 2.44356 \times 10^{32} a - 4.39857 \times 10^{31},\ u^{50} - u^{49} + \cdots - 5u +$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 50 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.

$\boldsymbol{I_1^u = \langle -4.79\times10^{31}u^{49}+8.65\times10^{31}u^{48}+\cdots+2.44\times10^{32}b+3.08\times10^{32},\ -1.85\times10^{32}u^{49}+2.35\times10^{31}u^{48}+\cdots+2.44\times10^{32}a-4.40\times10^{31},\ u^{50}-u^{49}+\cdots-5u+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.758359u^{49} - 0.0960131u^{48} + \cdots + 4.45061u + 0.180007\\ 0.195996u^{49} - 0.353937u^{48} + \cdots + 6.62447u - 1.25875\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.562363u^{49} + 0.257923u^{48} + \cdots - 2.17386u + 1.43876\\ 0.195996u^{49} - 0.353937u^{48} + \cdots + 6.62447u - 1.25875\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.884162u^{49} + 0.510722u^{48} + \cdots + 10.7623u - 1.94330\\ 0.177826u^{49} - 0.322317u^{48} + \cdots + 6.18097u - 2.09684\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^3\\u^5+u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1.04226u^{49} + 0.469203u^{48} + \cdots + 10.2187u - 1.83350\\ 0.203367u^{49} - 0.392648u^{48} + \cdots + 6.44615u - 2.34009\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.870023u^{49} + 1.11164u^{48} + \cdots - 2.30734u + 2.02319\\ 0.169826u^{49} - 0.715422u^{48} + \cdots + 2.88924u + 0.199819\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.37628u^{49} - 0.986125u^{48} + \cdots - 35.4700u + 13.0744$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{50} + u^{49} + \cdots + 5u + 1$
c_2	$u^{50} + 21u^{49} + \cdots + 5u + 1$
c_3	$u^{50} + 5u^{49} + \cdots + u + 1$
c_5, c_8	$u^{50} - u^{49} + \cdots - 5u + 1$
c_6	$u^{50} + u^{49} + \cdots - 17u + 1$
c_7	$u^{50} - u^{49} + \cdots + 17u + 1$
c_9	$u^{50} - 21u^{49} + \cdots - 5u + 1$
c_{10}	$u^{50} - 5u^{49} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8	$y^{50} + 21y^{49} + \cdots + 5y + 1$
c_2, c_9	$y^{50} + 17y^{49} + \cdots - 71y + 1$
c_3, c_{10}	$y^{50} + 5y^{49} + \cdots + 5y + 1$
c_6, c_7	$y^{50} + 49y^{49} + \cdots - 11y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.436223+0.912127I$ $a=-0.05994+2.46842I$ $b=\ \ 0.513623-0.775619I$	$0.465700+0.257544I$	$-10.73692+5.77650I$
$u=-0.436223-0.912127I$ $a=-0.05994-2.46842I$ $b=\ \ 0.513623+0.775619I$	$0.465700-0.257544I$	$-10.73692-5.77650I$
$u=-0.948189+0.263019I$ $a=\ \ 0.47046+1.33916I$ $b=-0.390240+0.977451I$	$-3.46714-1.26448I$	$-10.24310+1.49533I$
$u=-0.948189-0.263019I$ $a=\ \ 0.47046-1.33916I$ $b=-0.390240-0.977451I$	$-3.46714+1.26448I$	$-10.24310-1.49533I$
$u=\ \ 0.751604+0.620367I$ $a=\ \ 0.76094+2.10184I$ $b=-0.101263+1.224450I$	$-5.61738+1.76997I$	$-6.58185-1.55968I$
$u=\ \ 0.751604-0.620367I$ $a=\ \ 0.76094-2.10184I$ $b=-0.101263-1.224450I$	$-5.61738-1.76997I$	$-6.58185+1.55968I$
$u=\ \ 0.926795+0.461408I$ $a=\ \ 0.06013-1.60838I$ $b=-0.629982-1.117780I$	$-2.06994+9.79621I$	$-2.50765-6.28548I$
$u=\ \ 0.926795-0.461408I$ $a=\ \ 0.06013+1.60838I$ $b=-0.629982+1.117780I$	$-2.06994-9.79621I$	$-2.50765+6.28548I$
$u=\ \ 0.315698+0.896805I$ $a=\ \ 0.094858-0.349071I$ $b=\ \ 0.802649+0.956850I$	$2.17019+1.69704I$	$6.69422-3.84304I$
$u=\ \ 0.315698-0.896805I$ $a=\ \ 0.094858+0.349071I$ $b=\ \ 0.802649-0.956850I$	$2.17019-1.69704I$	$6.69422+3.84304I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.390240 + 0.977451I$ $a = 0.218149 - 0.845172I$ $b = 0.948189 + 0.263019I$	$3.46714 - 1.26448I$	$10.24310 + 1.49533I$
$u = 0.390240 - 0.977451I$ $a = 0.218149 + 0.845172I$ $b = 0.948189 - 0.263019I$	$3.46714 + 1.26448I$	$10.24310 - 1.49533I$
$u = -0.520399 + 0.919399I$ $a = -3.68586 + 2.69325I$ $b = 0.520399 + 0.919399I$	$4.46279I$	$0. + 17.3614I$
$u = -0.520399 - 0.919399I$ $a = -3.68586 - 2.69325I$ $b = 0.520399 - 0.919399I$	$-4.46279I$	$0. - 17.3614I$
$u = 0.836943 + 0.423224I$ $a = -0.232872 + 0.578642I$ $b = -0.836943 + 0.423224I$	$4.34036I$	$0. - 2.49570I$
$u = 0.836943 - 0.423224I$ $a = -0.232872 - 0.578642I$ $b = -0.836943 - 0.423224I$	$-4.34036I$	$0. + 2.49570I$
$u = -0.513623 + 0.775619I$ $a = 0.12952 - 3.57817I$ $b = 0.436223 - 0.912127I$	$-0.465700 - 0.257544I$	$10.73692 - 5.77650I$
$u = -0.513623 - 0.775619I$ $a = 0.12952 + 3.57817I$ $b = 0.436223 + 0.912127I$	$-0.465700 + 0.257544I$	$10.73692 + 5.77650I$
$u = -0.428462 + 0.986061I$ $a = 0.384178 - 0.243345I$ $b = 0.151838 + 0.411336I$	$0.42985 + 2.78493I$	$-1.80718 - 4.91633I$
$u = -0.428462 - 0.986061I$ $a = 0.384178 + 0.243345I$ $b = 0.151838 - 0.411336I$	$0.42985 - 2.78493I$	$-1.80718 + 4.91633I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.454209 + 0.992717I$ $a = -0.797222 - 0.884708I$ $b = 0.963579 - 0.664758I$	$3.06399 - 4.68595I$	$8.49449 + 8.00357I$
$u = 0.454209 - 0.992717I$ $a = -0.797222 + 0.884708I$ $b = 0.963579 + 0.664758I$	$3.06399 + 4.68595I$	$8.49449 - 8.00357I$
$u = 0.534615 + 0.993631I$ $a = -1.49902 - 1.80771I$ $b = 0.669156 - 1.208830I$	$0.67245 - 7.17988I$	$2.47305 + 11.09561I$
$u = 0.534615 - 0.993631I$ $a = -1.49902 + 1.80771I$ $b = 0.669156 + 1.208830I$	$0.67245 + 7.17988I$	$2.47305 - 11.09561I$
$u = -0.634283 + 0.564662I$ $a = 0.415195 + 0.219909I$ $b = -0.371567 + 0.059094I$	$-1.12648 + 1.44226I$	$-2.47190 - 3.48786I$
$u = -0.634283 - 0.564662I$ $a = 0.415195 - 0.219909I$ $b = -0.371567 - 0.059094I$	$-1.12648 - 1.44226I$	$-2.47190 + 3.48786I$
$u = -0.963579 + 0.664758I$ $a = 0.48756 - 1.58137I$ $b = -0.454209 - 0.992717I$	$-3.06399 + 4.68595I$	$-8.49449 - 8.00357I$
$u = -0.963579 - 0.664758I$ $a = 0.48756 + 1.58137I$ $b = -0.454209 + 0.992717I$	$-3.06399 - 4.68595I$	$-8.49449 + 8.00357I$
$u = 0.646221 + 1.007930I$ $a = -0.91233 - 1.58912I$ $b = -0.016221 - 1.300020I$	$-4.44668 - 7.08217I$	$-4.03427 + 7.44469I$
$u = 0.646221 - 1.007930I$ $a = -0.91233 + 1.58912I$ $b = -0.016221 + 1.300020I$	$-4.44668 + 7.08217I$	$-4.03427 - 7.44469I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.101263 + 1.224450I$ $a = 0.961820 + 0.164264I$ $b = -0.751604 + 0.620367I$	$5.61738 + 1.76997I$	$6.58185 - 1.55968I$
$u = 0.101263 - 1.224450I$ $a = 0.961820 - 0.164264I$ $b = -0.751604 - 0.620367I$	$5.61738 - 1.76997I$	$6.58185 + 1.55968I$
$u = -0.802649 + 0.956850I$ $a = -0.154615 + 1.120140I$ $b = -0.315698 + 0.896805I$	$-2.17019 + 1.69704I$	$-6.69422 + 0.I$
$u = -0.802649 - 0.956850I$ $a = -0.154615 - 1.120140I$ $b = -0.315698 - 0.896805I$	$-2.17019 - 1.69704I$	$-6.69422 + 0.I$
$u = -0.518931 + 1.139540I$ $a = 0.281111 - 0.250166I$ $b = -0.441150 + 0.556001I$	$0.60255 + 2.94954I$	$0. - 5.37680I$
$u = -0.518931 - 1.139540I$ $a = 0.281111 + 0.250166I$ $b = -0.441150 - 0.556001I$	$0.60255 - 2.94954I$	$0. + 5.37680I$
$u = 0.629982 + 1.117780I$ $a = -0.238857 + 0.640097I$ $b = -0.926795 - 0.461408I$	$2.06994 - 9.79621I$	0
$u = 0.629982 - 1.117780I$ $a = -0.238857 - 0.640097I$ $b = -0.926795 + 0.461408I$	$2.06994 + 9.79621I$	0
$u = 0.441150 + 0.556001I$ $a = 0.89388 + 1.68739I$ $b = 0.518931 + 1.139540I$	$-0.60255 + 2.94954I$	$-1.13612 - 5.37680I$
$u = 0.441150 - 0.556001I$ $a = 0.89388 - 1.68739I$ $b = 0.518931 - 1.139540I$	$-0.60255 - 2.94954I$	$-1.13612 + 5.37680I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.016221+1.300020I$ $a = 0.841104-0.210805I$ $b = -0.646221-1.007930I$	$4.44668+7.08217I$	$0.-7.44469I$
$u = 0.016221-1.300020I$ $a = 0.841104+0.210805I$ $b = -0.646221+1.007930I$	$4.44668-7.08217I$	$0.+7.44469I$
$u = 0.670825+1.138630I$ $a = 1.49989+1.65059I$ $b = -0.670825+1.138630I$	$-15.6466I$	0
$u = 0.670825-1.138630I$ $a = 1.49989-1.65059I$ $b = -0.670825-1.138630I$	$15.6466I$	0
$u = -0.669156+1.208830I$ $a = 1.36920-1.22455I$ $b = -0.534615-0.993631I$	$-0.67245+7.17988I$	0
$u = -0.669156-1.208830I$ $a = 1.36920+1.22455I$ $b = -0.534615+0.993631I$	$-0.67245-7.17988I$	0
$u = -0.151838+0.411336I$ $a = 1.52157+0.76573I$ $b = 0.428462+0.986061I$	$-0.42985+2.78493I$	$1.80718-4.91633I$
$u = -0.151838-0.411336I$ $a = 1.52157-0.76573I$ $b = 0.428462-0.986061I$	$-0.42985-2.78493I$	$1.80718+4.91633I$
$u = 0.371567+0.059094I$ $a = 1.69115+0.65214I$ $b = 0.634283+0.564662I$	$1.12648+1.44226I$	$2.47190-3.48786I$
$u = 0.371567-0.059094I$ $a = 1.69115-0.65214I$ $b = 0.634283-0.564662I$	$1.12648-1.44226I$	$2.47190+3.48786I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{50} + u^{49} + \cdots + 5u + 1$
c_2	$u^{50} + 21u^{49} + \cdots + 5u + 1$
c_3	$u^{50} + 5u^{49} + \cdots + u + 1$
c_5, c_8	$u^{50} - u^{49} + \cdots - 5u + 1$
c_6	$u^{50} + u^{49} + \cdots - 17u + 1$
c_7	$u^{50} - u^{49} + \cdots + 17u + 1$
c_9	$u^{50} - 21u^{49} + \cdots - 5u + 1$
c_{10}	$u^{50} - 5u^{49} + \cdots - u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8	$y^{50} + 21y^{49} + \cdots + 5y + 1$
c_2, c_9	$y^{50} + 17y^{49} + \cdots - 71y + 1$
c_3, c_{10}	$y^{50} + 5y^{49} + \cdots + 5y + 1$
c_6, c_7	$y^{50} + 49y^{49} + \cdots - 11y + 1$