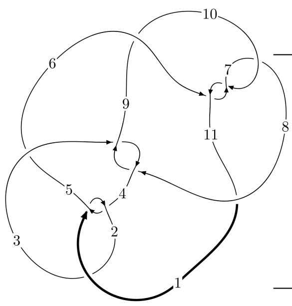
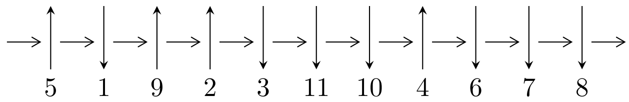
$11a_{10}$ $(K11a_{10})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -3u^{58} - 8u^{57} + \cdots + 2b + 1,\ u^{58} + 6u^{57} + \cdots + 2a - 4,\ u^{59} + 3u^{58} + \cdots - 3u - 1\rangle$$
$$I_2^u = \langle -au + b,\ u^2a + a^2 - au + 2u^2 + 2a - u + 3,\ u^3 - u^2 + 2u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 65 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.

$$I^u_1 = \langle -3u^{58} - 8u^{57} + \cdots + 2b + 1,\ u^{58} + 6u^{57} + \cdots + 2a - 4,\ u^{59} + 3u^{58} + \cdots - 3u - 1 \rangle$$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -\frac{1}{2}u^{58} - 3u^{57} + \cdots + 2u + 2 \\ \frac{3}{2}u^{58} + 4u^{57} + \cdots - \frac{5}{2}u - \frac{1}{2} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{1}{2}u^{58} - u^{57} + \cdots + 6u + 1 \\ -\frac{1}{2}u^{58} - u^{57} + \cdots + \frac{3}{2}u + \frac{1}{2} \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^5 - 2u^3 - u \\ -u^7 - 3u^5 - 2u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 3u^{58} + 5u^{57} + \cdots - \frac{7}{2}u - \frac{1}{2} \\ \frac{7}{2}u^{58} + 10u^{57} + \cdots - \frac{13}{2}u - \frac{5}{2} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{7}{2}u^{58} + 6u^{57} + \cdots - 4u - 1 \\ \frac{9}{2}u^{58} + 13u^{57} + \cdots - \frac{19}{2}u - \frac{7}{2} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{7}{2}u^{58} + 6u^{57} + \cdots - 4u - 1 \\ \frac{9}{2}u^{58} + 13u^{57} + \cdots - \frac{19}{2}u - \frac{7}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3u^{58} + \frac{13}{2}u^{57} + \cdots - 5u - \frac{1}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{59} + 4u^{58} + \cdots - 4u - 1$
c_2	$u^{59} + 30u^{58} + \cdots - 4u - 1$
c_3, c_8	$u^{59} + u^{58} + \cdots + 32u + 64$
c_5	$u^{59} - 4u^{58} + \cdots - 22u - 137$
c_6, c_7, c_{10}	$u^{59} - 3u^{58} + \cdots - 3u + 1$
c_9, c_{11}	$u^{59} + 3u^{58} + \cdots - 67u + 73$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{59} + 30y^{58} + \cdots - 4y - 1$
c_2	$y^{59} + 2y^{58} + \cdots + 24y - 1$
c_3, c_8	$y^{59} + 35y^{58} + \cdots - 35840y - 4096$
c_5	$y^{59} - 26y^{58} + \cdots - 288860y - 18769$
c_6, c_7, c_{10}	$y^{59} + 49y^{58} + \cdots - 9y - 1$
c_9, c_{11}	$y^{59} - 43y^{58} + \cdots - 79169y - 5329$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.856020 + 0.073484I$ $a = -1.65134 - 0.50020I$ $b = -0.984871 + 0.337502I$	$-10.46570 + 1.43686I$	$-11.55835 - 0.61012I$
$u = -0.856020 - 0.073484I$ $a = -1.65134 + 0.50020I$ $b = -0.984871 - 0.337502I$	$-10.46570 - 1.43686I$	$-11.55835 + 0.61012I$
$u = -0.847080 + 0.128915I$ $a = -2.75122 - 0.10346I$ $b = -1.61866 + 0.64547I$	$-8.54972 + 10.26440I$	$-9.15841 - 6.91772I$
$u = -0.847080 - 0.128915I$ $a = -2.75122 + 0.10346I$ $b = -1.61866 - 0.64547I$	$-8.54972 - 10.26440I$	$-9.15841 + 6.91772I$
$u = -0.829204 + 0.107730I$ $a = 2.27299 - 0.15394I$ $b = 1.31540 - 0.76071I$	$-5.74133 + 5.06975I$	$-6.65758 - 3.49400I$
$u = -0.829204 - 0.107730I$ $a = 2.27299 + 0.15394I$ $b = 1.31540 + 0.76071I$	$-5.74133 - 5.06975I$	$-6.65758 + 3.49400I$
$u = 0.131822 + 1.175380I$ $a = -0.041304 + 1.180220I$ $b = 0.142720 + 0.203347I$	$1.39618 - 2.09190I$	0
$u = 0.131822 - 1.175380I$ $a = -0.041304 - 1.180220I$ $b = 0.142720 - 0.203347I$	$1.39618 + 2.09190I$	0
$u = -0.410091 + 1.123290I$ $a = -0.975892 - 0.863707I$ $b = -1.57994 - 0.54447I$	$-5.50561 - 5.74082I$	0
$u = -0.410091 - 1.123290I$ $a = -0.975892 + 0.863707I$ $b = -1.57994 + 0.54447I$	$-5.50561 + 5.74082I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.796588 + 0.044117I$ $a = 2.81269 + 0.63796I$ $b = 1.175990 + 0.375378I$	$-4.83655 - 3.88458I$	$-8.90529 + 3.78678I$
$u = 0.796588 - 0.044117I$ $a = 2.81269 - 0.63796I$ $b = 1.175990 - 0.375378I$	$-4.83655 + 3.88458I$	$-8.90529 - 3.78678I$
$u = -0.379560 + 1.151180I$ $a = 0.596247 + 0.686778I$ $b = 1.32673 + 0.59766I$	$-2.55192 - 0.70368I$	0
$u = -0.379560 - 1.151180I$ $a = 0.596247 - 0.686778I$ $b = 1.32673 - 0.59766I$	$-2.55192 + 0.70368I$	0
$u = -0.754668 + 0.026465I$ $a = 0.58720 - 1.61512I$ $b = 0.31567 - 1.50166I$	$-2.49974 + 2.68394I$	$-8.69632 - 3.80104I$
$u = -0.754668 - 0.026465I$ $a = 0.58720 + 1.61512I$ $b = 0.31567 + 1.50166I$	$-2.49974 - 2.68394I$	$-8.69632 + 3.80104I$
$u = -0.409182 + 1.194340I$ $a = -0.691302 - 0.078308I$ $b = -1.089200 - 0.246358I$	$-7.01962 + 3.10038I$	0
$u = -0.409182 - 1.194340I$ $a = -0.691302 + 0.078308I$ $b = -1.089200 + 0.246358I$	$-7.01962 - 3.10038I$	0
$u = 0.486405 + 0.550204I$ $a = -1.088040 + 0.443756I$ $b = -1.261210 - 0.450390I$	$-3.53532 - 5.79141I$	$-7.16103 + 7.27058I$
$u = 0.486405 - 0.550204I$ $a = -1.088040 - 0.443756I$ $b = -1.261210 + 0.450390I$	$-3.53532 + 5.79141I$	$-7.16103 - 7.27058I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.730409$ $a = -1.99609$ $b = -0.729874$	-1.92594	-4.78130
$u = 0.342721 + 1.230370I$ $a = 1.28582 - 1.39129I$ $b = 1.069880 - 0.258043I$	$-1.186550 - 0.224277I$	0
$u = 0.342721 - 1.230370I$ $a = 1.28582 + 1.39129I$ $b = 1.069880 + 0.258043I$	$-1.186550 + 0.224277I$	0
$u = 0.573054 + 0.406970I$ $a = -0.64175 + 1.45528I$ $b = -1.081700 + 0.295661I$	$-3.99025 + 1.99015I$	$-8.92828 - 0.31986I$
$u = 0.573054 - 0.406970I$ $a = -0.64175 - 1.45528I$ $b = -1.081700 - 0.295661I$	$-3.99025 - 1.99015I$	$-8.92828 + 0.31986I$
$u = -0.042991 + 1.296740I$ $a = 0.612344 + 1.253280I$ $b = 0.970255 - 0.994207I$	$4.23548 + 3.29913I$	0
$u = -0.042991 - 1.296740I$ $a = 0.612344 - 1.253280I$ $b = 0.970255 + 0.994207I$	$4.23548 - 3.29913I$	0
$u = -0.312666 + 1.260280I$ $a = -0.947892 + 0.316493I$ $b = 0.51778 + 1.49782I$	$1.31708 + 1.15944I$	0
$u = -0.312666 - 1.260280I$ $a = -0.947892 - 0.316493I$ $b = 0.51778 - 1.49782I$	$1.31708 - 1.15944I$	0
$u = 0.308900 + 1.284590I$ $a = -1.32494 + 0.68919I$ $b = -0.810078 - 0.293298I$	$2.08956 - 3.75051I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.308900 - 1.284590I$ $a = -1.32494 - 0.68919I$ $b = -0.810078 + 0.293298I$	$2.08956 + 3.75051I$	0
$u = 0.007860 + 1.322200I$ $a = -0.505680 - 1.017660I$ $b = -0.342454 + 1.026550I$	$5.58829 - 1.44801I$	0
$u = 0.007860 - 1.322200I$ $a = -0.505680 + 1.017660I$ $b = -0.342454 - 1.026550I$	$5.58829 + 1.44801I$	0
$u = -0.324436 + 1.292440I$ $a = 1.260280 + 0.208066I$ $b = 0.14207 - 1.55287I$	$1.62049 + 6.58252I$	0
$u = -0.324436 - 1.292440I$ $a = 1.260280 - 0.208066I$ $b = 0.14207 + 1.55287I$	$1.62049 - 6.58252I$	0
$u = 0.349284 + 1.299200I$ $a = 1.86046 - 0.79136I$ $b = 1.262440 + 0.472314I$	$-0.64183 - 8.01411I$	0
$u = 0.349284 - 1.299200I$ $a = 1.86046 + 0.79136I$ $b = 1.262440 - 0.472314I$	$-0.64183 + 8.01411I$	0
$u = 0.247609 + 1.341690I$ $a = -0.878663 - 0.254927I$ $b = -0.010321 - 0.575786I$	$3.12629 - 3.79302I$	0
$u = 0.247609 - 1.341690I$ $a = -0.878663 + 0.254927I$ $b = -0.010321 + 0.575786I$	$3.12629 + 3.79302I$	0
$u = 0.616427 + 0.135220I$ $a = -0.772422 - 1.104090I$ $b = -0.025567 - 0.410528I$	$-1.53739 - 0.64054I$	$-8.33837 + 0.19638I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.616427 - 0.135220I$ $a = -0.772422 + 1.104090I$ $b = -0.025567 + 0.410528I$	$-1.53739 + 0.64054I$	$-8.33837 - 0.19638I$
$u = -0.385237 + 1.320760I$ $a = -0.84823 - 1.32751I$ $b = -0.882451 + 0.394924I$	$-6.10402 + 5.89251I$	0
$u = -0.385237 - 1.320760I$ $a = -0.84823 + 1.32751I$ $b = -0.882451 - 0.394924I$	$-6.10402 - 5.89251I$	0
$u = 0.090653 + 1.377440I$ $a = -0.326353 - 0.822204I$ $b = 0.672970 + 0.735433I$	$4.93456 - 3.07605I$	0
$u = 0.090653 - 1.377440I$ $a = -0.326353 + 0.822204I$ $b = 0.672970 - 0.735433I$	$4.93456 + 3.07605I$	0
$u = -0.363885 + 1.340010I$ $a = 1.36573 + 1.29503I$ $b = 1.28712 - 0.87319I$	$-1.19374 + 9.36497I$	0
$u = -0.363885 - 1.340010I$ $a = 1.36573 - 1.29503I$ $b = 1.28712 + 0.87319I$	$-1.19374 - 9.36497I$	0
$u = 0.406682 + 0.444506I$ $a = 0.364648 - 0.579230I$ $b = 0.813057 + 0.301724I$	$-0.77600 - 1.53921I$	$-3.61158 + 4.49048I$
$u = 0.406682 - 0.444506I$ $a = 0.364648 + 0.579230I$ $b = 0.813057 - 0.301724I$	$-0.77600 + 1.53921I$	$-3.61158 - 4.49048I$
$u = -0.371273 + 1.354390I$ $a = -1.46770 - 1.56354I$ $b = -1.62445 + 0.72234I$	$-3.8828 + 14.6473I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.371273-1.354390I$ $a=-1.46770+1.56354I$ $b=-1.62445-0.72234I$	$-3.8828-14.6473I$	0
$u=\ \ 0.190850+1.391990I$ $a=\ \ 0.542814+0.866023I$ $b=-0.845987+0.391644I$	$1.68472-0.64264I$	0
$u=\ \ 0.190850-1.391990I$ $a=\ \ 0.542814-0.866023I$ $b=-0.845987-0.391644I$	$1.68472+0.64264I$	0
$u=\ \ 0.10837+1.41748I$ $a=\ \ 0.253825+0.832571I$ $b=-1.231490-0.673169I$	$2.74503-7.63920I$	0
$u=\ \ 0.10837-1.41748I$ $a=\ \ 0.253825-0.832571I$ $b=-1.231490+0.673169I$	$2.74503+7.63920I$	0
$u=-0.007745+0.362586I$ $a=-1.362500+0.139689I$ $b=\ \ 0.062326+0.756000I$	$0.56495-1.37410I$	$1.41861+4.46189I$
$u=-0.007745-0.362586I$ $a=-1.362500-0.139689I$ $b=\ \ 0.062326-0.756000I$	$0.56495+1.37410I$	$1.41861-4.46189I$
$u=-0.228387+0.196319I$ $a=\ \ 2.95823-0.48432I$ $b=\ \ 0.678923-0.739397I$	$-0.26736+2.47932I$	$1.42598-4.73162I$
$u=-0.228387-0.196319I$ $a=\ \ 2.95823+0.48432I$ $b=\ \ 0.678923+0.739397I$	$-0.26736-2.47932I$	$1.42598+4.73162I$

II. $I_2^u = \langle -au + b,\ u^2a + a^2 - au + 2u^2 + 2a - u + 3,\ u^3 - u^2 + 2u - 1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ au \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^2 + a - u + 3 \\ au + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^2 - u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^2 - u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} au + a \\ au \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} a \\ au \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a \\ au \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^2a - 4au - 3u^2 + a + 3u - 8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5	$(u^2 + u + 1)^3$
c_3, c_8	u^6
c_4	$(u^2 - u + 1)^3$
c_6, c_7	$(u^3 - u^2 + 2u - 1)^2$
c_9, c_{11}	$(u^3 - u^2 + 1)^2$
c_{10}	$(u^3 + u^2 + 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2 + y + 1)^3$
c_3, c_8	y^6
c_6, c_7, c_{10}	$(y^3 + 3y^2 + 2y - 1)^2$
c_9, c_{11}	$(y^3 - y^2 + 2y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -0.706350 + 0.266290I$ $b = -0.500000 - 0.866025I$	$3.02413 - 4.85801I$	$-2.09851 + 6.80481I$
$u = 0.215080 + 1.307140I$ $a = 0.583789 + 0.478572I$ $b = -0.500000 + 0.866025I$	$3.02413 - 0.79824I$	$1.45566 - 0.28364I$
$u = 0.215080 - 1.307140I$ $a = -0.706350 - 0.266290I$ $b = -0.500000 + 0.866025I$	$3.02413 + 4.85801I$	$-2.09851 - 6.80481I$
$u = 0.215080 - 1.307140I$ $a = 0.583789 - 0.478572I$ $b = -0.500000 - 0.866025I$	$3.02413 + 0.79824I$	$1.45566 + 0.28364I$
$u = 0.569840$ $a = -0.87744 + 1.51977I$ $b = -0.500000 + 0.866025I$	$-1.11345 + 2.02988I$	$-5.85715 - 2.43783I$
$u = 0.569840$ $a = -0.87744 - 1.51977I$ $b = -0.500000 - 0.866025I$	$-1.11345 - 2.02988I$	$-5.85715 + 2.43783I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^3)(u^{59}+4u^{58}+\cdots-4u-1)$
c_2	$((u^2+u+1)^3)(u^{59}+30u^{58}+\cdots-4u-1)$
c_3, c_8	$u^6(u^{59}+u^{58}+\cdots+32u+64)$
c_4	$((u^2-u+1)^3)(u^{59}+4u^{58}+\cdots-4u-1)$
c_5	$((u^2+u+1)^3)(u^{59}-4u^{58}+\cdots-22u-137)$
c_6, c_7	$((u^3-u^2+2u-1)^2)(u^{59}-3u^{58}+\cdots-3u+1)$
c_9, c_{11}	$((u^3-u^2+1)^2)(u^{59}+3u^{58}+\cdots-67u+73)$
c_{10}	$((u^3+u^2+2u+1)^2)(u^{59}-3u^{58}+\cdots-3u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^3)(y^{59}+30y^{58}+\cdots-4y-1)$
c_2	$((y^2+y+1)^3)(y^{59}+2y^{58}+\cdots+24y-1)$
c_3, c_8	$y^6(y^{59}+35y^{58}+\cdots-35840y-4096)$
c_5	$((y^2+y+1)^3)(y^{59}-26y^{58}+\cdots-288860y-18769)$
c_6, c_7, c_{10}	$((y^3+3y^2+2y-1)^2)(y^{59}+49y^{58}+\cdots-9y-1)$
c_9, c_{11}	$((y^3-y^2+2y-1)^2)(y^{59}-43y^{58}+\cdots-79169y-5329)$