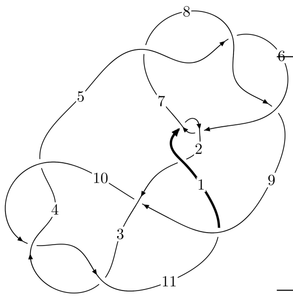
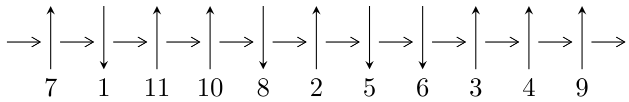
$11a_{222}$ ($K11a_{222}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -3.72396 \times 10^{40} u^{52} - 2.67316 \times 10^{41} u^{51} + \cdots + 2.67330 \times 10^{41} b + 1.99338 \times 10^{42},$$
$$4.74949 \times 10^{40} u^{52} + 1.41444 \times 10^{41} u^{51} + \cdots + 1.06932 \times 10^{42} a - 1.40219 \times 10^{42},\ u^{53} + u^{52} + \cdots - 12u - 8$$

$$I_1^v = \langle a,\ b - 1,\ v^3 + v^2 - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 56 representations.

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[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.

$\boldsymbol{I_1^u = \langle -3.72\times10^{40}u^{52} - 2.67\times10^{41}u^{51} + \cdots + 2.67\times10^{41}b + 1.99\times10^{42},\ 4.75\times10^{40}u^{52} + 1.41\times10^{41}u^{51} + \cdots + 1.07\times10^{42}a - 1.40\times10^{42},\ u^{53} + u^{52} + \cdots - 12u - 8\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.0444159u^{52} - 0.132274u^{51} + \cdots + 1.64666u + 1.31129 \\ 0.139302u^{52} + 0.999947u^{51} + \cdots - 7.49767u - 7.45663 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.343615u^{52} + 0.405811u^{51} + \cdots - 0.582641u - 2.59994 \\ 0.279844u^{52} + 1.23840u^{51} + \cdots - 9.65395u - 10.2736 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0948858u^{52} + 0.867673u^{51} + \cdots - 5.85102u - 6.14534 \\ 0.139302u^{52} + 0.999947u^{51} + \cdots - 7.49767u - 7.45663 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.0948858u^{52} + 0.867673u^{51} + \cdots - 5.85102u - 6.14534 \\ 0.275865u^{52} - 0.199028u^{51} + \cdots - 2.53486u + 1.27433 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.49188u^{52} - 0.252221u^{51} + \cdots + 12.9241u + 1.42483 \\ -0.260130u^{52} - 0.116987u^{51} + \cdots + 1.92031u - 1.17979 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.424578u^{52} + 0.931561u^{51} + \cdots - 9.23571u - 8.47524 \\ 0.273370u^{52} + 0.479526u^{51} + \cdots - 2.54983u - 4.25728 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.424578u^{52} + 0.931561u^{51} + \cdots - 9.23571u - 8.47524 \\ 0.273370u^{52} + 0.479526u^{51} + \cdots - 2.54983u - 4.25728 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.353691u^{52} - 0.908611u^{51} + \cdots + 0.108906u + 7.17724$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{53} + u^{52} + \cdots - 12u - 8$
c_2	$u^{53} + 21u^{52} + \cdots - 112u - 64$
c_3, c_4, c_{10}	$u^{53} + 2u^{52} + \cdots - 3u - 1$
c_5, c_7, c_8	$u^{53} - 4u^{52} + \cdots + 6u - 1$
c_9	$u^{53} - 2u^{52} + \cdots - 3u - 1$
c_{11}	$u^{53} + 12u^{52} + \cdots - 1235u - 131$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{53} + 21y^{52} + \cdots - 112y - 64$
c_2	$y^{53} + 17y^{52} + \cdots + 167168y - 4096$
c_3, c_4, c_{10}	$y^{53} + 48y^{52} + \cdots + y - 1$
c_5, c_7, c_8	$y^{53} - 46y^{52} + \cdots + 38y - 1$
c_9	$y^{53} + 54y^{51} + \cdots + y - 1$
c_{11}	$y^{53} + 12y^{52} + \cdots - 263187y - 17161$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.098959 + 0.985230I$ $a = -0.216031 - 0.691134I$ $b = 0.741431 + 0.530945I$	$-6.86405 - 3.34890I$	$-5.53237 + 3.71045I$
$u = 0.098959 - 0.985230I$ $a = -0.216031 + 0.691134I$ $b = 0.741431 - 0.530945I$	$-6.86405 + 3.34890I$	$-5.53237 - 3.71045I$
$u = 0.484801 + 0.904145I$ $a = -0.86642 - 2.04538I$ $b = -1.271870 + 0.230719I$	$-0.82302 + 2.29845I$	$2.07591 - 2.82759I$
$u = 0.484801 - 0.904145I$ $a = -0.86642 + 2.04538I$ $b = -1.271870 - 0.230719I$	$-0.82302 - 2.29845I$	$2.07591 + 2.82759I$
$u = 0.665810 + 0.798402I$ $a = 0.568425 + 1.140550I$ $b = 0.077045 - 0.713159I$	$0.59121 + 2.50996I$	$4.33610 - 3.95071I$
$u = 0.665810 - 0.798402I$ $a = 0.568425 - 1.140550I$ $b = 0.077045 + 0.713159I$	$0.59121 - 2.50996I$	$4.33610 + 3.95071I$
$u = -0.704489 + 0.647178I$ $a = 0.750323 - 1.123850I$ $b = -0.034455 + 0.645365I$	$2.99577 + 0.83630I$	$8.46469 - 1.37155I$
$u = -0.704489 - 0.647178I$ $a = 0.750323 + 1.123850I$ $b = -0.034455 - 0.645365I$	$2.99577 - 0.83630I$	$8.46469 + 1.37155I$
$u = -0.701831 + 0.644298I$ $a = -0.707620 + 0.370746I$ $b = 1.161210 - 0.306433I$	$-2.68045 + 1.19639I$	$0.561902 - 0.388264I$
$u = -0.701831 - 0.644298I$ $a = -0.707620 - 0.370746I$ $b = 1.161210 + 0.306433I$	$-2.68045 - 1.19639I$	$0.561902 + 0.388264I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.438735 + 0.954883I$ $a = -0.519557 + 0.602280I$ $b = 0.993065 - 0.486660I$	$-5.75404 - 4.81132I$	$-3.33331 + 4.06462I$
$u = -0.438735 - 0.954883I$ $a = -0.519557 - 0.602280I$ $b = 0.993065 + 0.486660I$	$-5.75404 + 4.81132I$	$-3.33331 - 4.06462I$
$u = 0.456523 + 0.829696I$ $a = -0.527363 - 0.500478I$ $b = 1.006360 + 0.404023I$	$-0.53651 + 1.57348I$	$1.80074 - 4.58385I$
$u = 0.456523 - 0.829696I$ $a = -0.527363 + 0.500478I$ $b = 1.006360 - 0.404023I$	$-0.53651 - 1.57348I$	$1.80074 + 4.58385I$
$u = 0.576999 + 0.889147I$ $a = 0.435650 + 1.098150I$ $b = 0.180982 - 0.721453I$	$0.38779 + 2.33704I$	$2.43384 - 2.57524I$
$u = 0.576999 - 0.889147I$ $a = 0.435650 - 1.098150I$ $b = 0.180982 + 0.721453I$	$0.38779 - 2.33704I$	$2.43384 + 2.57524I$
$u = 0.753024 + 0.562381I$ $a = 0.86895 + 1.15997I$ $b = -0.115897 - 0.626414I$	$-1.92655 - 4.26986I$	$3.38600 + 2.83654I$
$u = 0.753024 - 0.562381I$ $a = 0.86895 - 1.15997I$ $b = -0.115897 + 0.626414I$	$-1.92655 + 4.26986I$	$3.38600 - 2.83654I$
$u = 1.030490 + 0.261952I$ $a = -0.910866 - 0.146722I$ $b = 1.337480 + 0.124077I$	$-8.23681 + 0.97965I$	$-4.65901 - 0.74482I$
$u = 1.030490 - 0.261952I$ $a = -0.910866 + 0.146722I$ $b = 1.337480 - 0.124077I$	$-8.23681 - 0.97965I$	$-4.65901 + 0.74482I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.388639+0.850959I$ $a=-1.37535+2.10142I$ $b=-1.248240-0.181646I$	$-5.29869+1.45751I$	$-3.56392+1.11425I$
$u=-0.388639-0.850959I$ $a=-1.37535-2.10142I$ $b=-1.248240+0.181646I$	$-5.29869-1.45751I$	$-3.56392-1.11425I$
$u=-0.412964+1.005730I$ $a=0.231844-1.026890I$ $b=0.346311+0.718386I$	$-5.68668-1.06282I$	$-2.80690+2.95348I$
$u=-0.412964-1.005730I$ $a=0.231844+1.026890I$ $b=0.346311-0.718386I$	$-5.68668+1.06282I$	$-2.80690-2.95348I$
$u=0.961697+0.529123I$ $a=-0.870380-0.301578I$ $b=1.299930+0.254117I$	$-1.18376-4.09953I$	$2.32118+4.98239I$
$u=0.961697-0.529123I$ $a=-0.870380+0.301578I$ $b=1.299930-0.254117I$	$-1.18376+4.09953I$	$2.32118-4.98239I$
$u=-0.815444+0.371656I$ $a=-0.786076+0.206543I$ $b=1.231550-0.172173I$	$-2.47497+0.74735I$	$-0.90212+1.24909I$
$u=-0.815444-0.371656I$ $a=-0.786076-0.206543I$ $b=1.231550+0.172173I$	$-2.47497-0.74735I$	$-0.90212-1.24909I$
$u=-0.580487+0.976562I$ $a=-0.46963+1.90355I$ $b=-1.306780-0.280326I$	$-3.72441-6.08956I$	$-1.10463+6.46640I$
$u=-0.580487-0.976562I$ $a=-0.46963-1.90355I$ $b=-1.306780+0.280326I$	$-3.72441+6.08956I$	$-1.10463-6.46640I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.041700+0.533025I$ $a=-0.917846+0.303340I$ $b=\ \ 1.340090-0.256972I$	$-6.53406+7.50813I$	$-2.48060-5.10060I$
$u=-1.041700-0.533025I$ $a=-0.917846-0.303340I$ $b=\ \ 1.340090+0.256972I$	$-6.53406-7.50813I$	$-2.48060+5.10060I$
$u=-0.633586+0.994698I$ $a=\ \ 0.371306-1.203140I$ $b=\ \ 0.199005+0.815326I$	$1.93858-5.99540I$	$5.14118+7.31361I$
$u=-0.633586-0.994698I$ $a=\ \ 0.371306+1.203140I$ $b=\ \ 0.199005-0.815326I$	$1.93858+5.99540I$	$5.14118-7.31361I$
$u=-0.053370+0.778256I$ $a=-0.099463+0.457828I$ $b=\ \ 0.673274-0.340918I$	$-1.43718+1.12513I$	$-2.70988-5.24060I$
$u=-0.053370-0.778256I$ $a=-0.099463-0.457828I$ $b=\ \ 0.673274+0.340918I$	$-1.43718-1.12513I$	$-2.70988+5.24060I$
$u=\ \ 0.634803+1.049780I$ $a=\ \ 0.326864+1.231490I$ $b=\ \ 0.224599-0.849112I$	$-3.39969+9.56118I$	$0.-7.56251I$
$u=\ \ 0.634803-1.049780I$ $a=\ \ 0.326864-1.231490I$ $b=\ \ 0.224599+0.849112I$	$-3.39969-9.56118I$	$0.+7.56251I$
$u=-0.061506+1.244360I$ $a=-0.819931+0.179681I$ $b=-1.44045-0.02930I$	$-8.22882-1.96670I$	$-4.21460+3.59094I$
$u=-0.061506-1.244360I$ $a=-0.819931-0.179681I$ $b=-1.44045+0.02930I$	$-8.22882+1.96670I$	$-4.21460-3.59094I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.630774+1.106670I$ $a=-0.22899+1.62310I$ $b=-1.372550-0.306311I$	$-4.53517-6.09494I$	0
$u=-0.630774-1.106670I$ $a=-0.22899-1.62310I$ $b=-1.372550+0.306311I$	$-4.53517+6.09494I$	0
$u=\ \ 0.564987+1.202570I$ $a=-0.252964-1.360110I$ $b=-1.42026+0.27304I$	$-11.29940+4.62469I$	0
$u=\ \ 0.564987-1.202570I$ $a=-0.252964+1.360110I$ $b=-1.42026-0.27304I$	$-11.29940-4.62469I$	0
$u=\ \ 0.698514+1.133990I$ $a=-0.07006-1.62273I$ $b=-1.38677+0.34044I$	$-3.08458+10.16490I$	0
$u=\ \ 0.698514-1.133990I$ $a=-0.07006+1.62273I$ $b=-1.38677-0.34044I$	$-3.08458-10.16490I$	0
$u=\ \ 0.109910+1.333410I$ $a=-0.563705-0.274434I$ $b=-1.48292+0.05239I$	$-14.2996+4.8556I$	0
$u=\ \ 0.109910-1.333410I$ $a=-0.563705+0.274434I$ $b=-1.48292-0.05239I$	$-14.2996-4.8556I$	0
$u=-0.723673+1.167980I$ $a=\ \ 0.00012+1.57826I$ $b=-1.40426-0.35282I$	$-8.5679-13.8903I$	0
$u=-0.723673-1.167980I$ $a=\ \ 0.00012-1.57826I$ $b=-1.40426+0.35282I$	$-8.5679+13.8903I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.546347 + 0.172932I$ $a = 1.47434 - 0.57598I$ $b = -0.248192 + 0.218926I$	$-3.39404 - 2.40292I$	$4.22803 + 2.59091I$
$u = -0.546347 - 0.172932I$ $a = 1.47434 + 0.57598I$ $b = -0.248192 - 0.218926I$	$-3.39404 + 2.40292I$	$4.22803 - 2.59091I$
$u = 0.394055$ $a = 1.34884$ $b = -0.159324$	0.852216	12.0640

II. $I_1^v = \langle a,\ b-1,\ v^3+v^2-1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} v^2 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} v^2+v-1 \\ v^2-1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} v \\ v \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} v \\ v \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -v^2+3v+1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.877439 + 0.744862I$ $a =$ 0 $b =$ 1.00000	$-4.66906 - 2.82812I$	$-1.84740 + 3.54173I$
$v = -0.877439 - 0.744862I$ $a =$ 0 $b =$ 1.00000	$-4.66906 + 2.82812I$	$-1.84740 - 3.54173I$
$v =$ 0.754878 $a =$ 0 $b =$ 1.00000	-0.531480	2.69480

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^3(u^{53} + u^{52} + \cdots - 12u - 8)$
c_2	$u^3(u^{53} + 21u^{52} + \cdots - 112u - 64)$
c_3, c_4	$(u^3 - u^2 + 2u - 1)(u^{53} + 2u^{52} + \cdots - 3u - 1)$
c_5	$((u-1)^3)(u^{53} - 4u^{52} + \cdots + 6u - 1)$
c_7, c_8	$((u+1)^3)(u^{53} - 4u^{52} + \cdots + 6u - 1)$
c_9	$(u^3 - u^2 + 1)(u^{53} - 2u^{52} + \cdots - 3u - 1)$
c_{10}	$(u^3 + u^2 + 2u + 1)(u^{53} + 2u^{52} + \cdots - 3u - 1)$
c_{11}	$(u^3 + u^2 - 1)(u^{53} + 12u^{52} + \cdots - 1235u - 131)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^3(y^{53} + 21y^{52} + \cdots - 112y - 64)$
c_2	$y^3(y^{53} + 17y^{52} + \cdots + 167168y - 4096)$
c_3, c_4, c_{10}	$(y^3 + 3y^2 + 2y - 1)(y^{53} + 48y^{52} + \cdots + y - 1)$
c_5, c_7, c_8	$((y-1)^3)(y^{53} - 46y^{52} + \cdots + 38y - 1)$
c_9	$(y^3 - y^2 + 2y - 1)(y^{53} + 54y^{51} + \cdots + y - 1)$
c_{11}	$(y^3 - y^2 + 2y - 1)(y^{53} + 12y^{52} + \cdots - 263187y - 17161)$