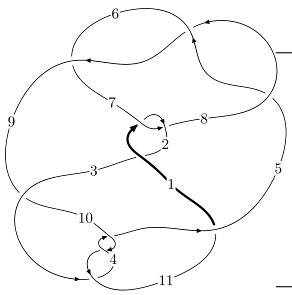
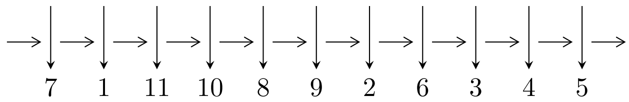
$11a_{241}$ ($K11a_{241}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{49} + 2u^{48} + \cdots + b - 1,\ -u^{49} - 2u^{48} + \cdots + a + u,\ u^{50} + 2u^{49} + \cdots + 2u - 1\rangle$$
$$I_2^u = \langle b - u - 1,\ u^2 + a + u + 2,\ u^3 + u^2 + 2u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 53 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.

$$\boldsymbol{I_1^u = \langle u^{49}+2u^{48}+\cdots+b-1,\ -u^{49}-2u^{48}+\cdots+a+u,\ u^{50}+2u^{49}+\cdots+2u-1\rangle}$$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^{49}+2u^{48}+\cdots+9u^2-u\\-u^{49}-2u^{48}+\cdots-u+1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u^{49}+2u^{48}+\cdots+5u^2+u\\-u^{48}-2u^{47}+\cdots-2u+1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^3-2u\\-u^5-u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^2+1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u^{10}-5u^8-8u^6-3u^4+3u^2+1\\-u^{12}-4u^{10}-4u^8+2u^6+3u^4-2u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u^{49}+2u^{48}+\cdots+5u-1\\u^{49}+18u^{47}+\cdots-2u+1\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^5+2u^3+u\\-u^5-u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^5+2u^3+u\\-u^5-u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= u^{49}+2u^{48}+\cdots-5u-13$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{50} + u^{49} + \cdots + 20u + 8$
c_2	$u^{50} + 21u^{49} + \cdots + 592u + 64$
c_3, c_4, c_{10}	$u^{50} - 2u^{49} + \cdots - 2u - 1$
c_5, c_6, c_8	$u^{50} - 4u^{49} + \cdots - 3u - 1$
c_9, c_{11}	$u^{50} + 2u^{49} + \cdots - 92u - 17$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{50} - 21y^{49} + \cdots - 592y + 64$
c_2	$y^{50} + 11y^{49} + \cdots - 19712y + 4096$
c_3, c_4, c_{10}	$y^{50} + 42y^{49} + \cdots - 2y + 1$
c_5, c_6, c_8	$y^{50} - 44y^{49} + \cdots - 3y + 1$
c_9, c_{11}	$y^{50} - 30y^{49} + \cdots + 70y + 289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.367759 + 1.080260I$ $a = 1.274030 - 0.076271I$ $b = -2.79298 - 1.22823I$	$-4.88671 - 5.18577I$	$-14.7099 + 2.7132I$
$u = -0.367759 - 1.080260I$ $a = 1.274030 + 0.076271I$ $b = -2.79298 + 1.22823I$	$-4.88671 + 5.18577I$	$-14.7099 - 2.7132I$
$u = -0.292411 + 1.122110I$ $a = 0.063602 + 0.178201I$ $b = 0.357273 + 0.494914I$	$0.61352 - 1.42597I$	$-11.17419 + 2.49743I$
$u = -0.292411 - 1.122110I$ $a = 0.063602 - 0.178201I$ $b = 0.357273 - 0.494914I$	$0.61352 + 1.42597I$	$-11.17419 - 2.49743I$
$u = -0.835547$ $a = 3.17253$ $b = 0.721481$	-12.3381	-20.6750
$u = -0.815626 + 0.148361I$ $a = 2.61545 + 1.17715I$ $b = 0.549537 + 0.451977I$	$-7.73338 + 9.49487I$	$-17.3734 - 6.5886I$
$u = -0.815626 - 0.148361I$ $a = 2.61545 - 1.17715I$ $b = 0.549537 - 0.451977I$	$-7.73338 - 9.49487I$	$-17.3734 + 6.5886I$
$u = 0.304563 + 1.171450I$ $a = -2.12969 - 0.09359I$ $b = 4.12999 - 1.54851I$	$-2.05727 - 0.60926I$	$-13.40155 + 0.I$
$u = 0.304563 - 1.171450I$ $a = -2.12969 + 0.09359I$ $b = 4.12999 + 1.54851I$	$-2.05727 + 0.60926I$	$-13.40155 + 0.I$
$u = -0.777098 + 0.128997I$ $a = -0.922897 + 0.254550I$ $b = -0.222769 - 0.477721I$	$-2.36749 + 5.37835I$	$-14.0557 - 6.0904I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.777098-0.128997I$ $a=-0.922897-0.254550I$ $b=-0.222769+0.477721I$	$-2.36749-5.37835I$	$-14.0557+6.0904I$
$u=0.772297+0.099116I$ $a=-3.28933+1.31312I$ $b=-0.788912+0.473334I$	$-5.29863-3.31697I$	$-16.7691+3.0814I$
$u=0.772297-0.099116I$ $a=-3.28933-1.31312I$ $b=-0.788912-0.473334I$	$-5.29863+3.31697I$	$-16.7691-3.0814I$
$u=-0.748495+0.067917I$ $a=-1.225140-0.393644I$ $b=0.168459+0.395472I$	$-4.29681+0.76442I$	$-18.3162-1.2723I$
$u=-0.748495-0.067917I$ $a=-1.225140+0.393644I$ $b=0.168459-0.395472I$	$-4.29681-0.76442I$	$-18.3162+1.2723I$
$u=-0.300001+1.216560I$ $a=-0.732766-0.843732I$ $b=1.18393+1.18605I$	$-0.78921+3.02934I$	0
$u=-0.300001-1.216560I$ $a=-0.732766+0.843732I$ $b=1.18393-1.18605I$	$-0.78921-3.02934I$	0
$u=0.396406+0.624218I$ $a=1.10662-1.27223I$ $b=-0.984367+0.603627I$	$-3.70738-5.14926I$	$-14.3632+6.3732I$
$u=0.396406-0.624218I$ $a=1.10662+1.27223I$ $b=-0.984367-0.603627I$	$-3.70738+5.14926I$	$-14.3632-6.3732I$
$u=0.214240+1.257320I$ $a=0.498732+0.074085I$ $b=-1.029970+0.417924I$	$2.72213-2.30998I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.214240 - 1.257320I$ $a = 0.498732 - 0.074085I$ $b = -1.029970 - 0.417924I$	$2.72213 + 2.30998I$	0
$u = 0.625043 + 0.306332I$ $a = 1.44268 - 0.83843I$ $b = -0.575863 + 0.474119I$	$-4.77278 + 1.48125I$	$-17.3142 - 0.2721I$
$u = 0.625043 - 0.306332I$ $a = 1.44268 + 0.83843I$ $b = -0.575863 - 0.474119I$	$-4.77278 - 1.48125I$	$-17.3142 + 0.2721I$
$u = -0.380094 + 1.257640I$ $a = 1.75256 + 1.12877I$ $b = -2.93137 - 3.26120I$	$-8.44132 + 4.36522I$	0
$u = -0.380094 - 1.257640I$ $a = 1.75256 - 1.12877I$ $b = -2.93137 + 3.26120I$	$-8.44132 - 4.36522I$	0
$u = 0.666165 + 0.120010I$ $a = 0.966211 + 0.119156I$ $b = 0.304071 - 0.280867I$	$-0.711738 - 0.697273I$	$-10.71279 + 1.15101I$
$u = 0.666165 - 0.120010I$ $a = 0.966211 - 0.119156I$ $b = 0.304071 + 0.280867I$	$-0.711738 + 0.697273I$	$-10.71279 - 1.15101I$
$u = -0.019632 + 1.351750I$ $a = 0.23638 - 1.46435I$ $b = 0.66874 + 2.33992I$	$3.75475 + 1.24423I$	0
$u = -0.019632 - 1.351750I$ $a = 0.23638 + 1.46435I$ $b = 0.66874 - 2.33992I$	$3.75475 - 1.24423I$	0
$u = -0.317517 + 1.315330I$ $a = 0.122364 - 0.368282I$ $b = 0.462053 + 0.996285I$	$0.04307 + 4.61787I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.317517 - 1.315330I$ $a = 0.122364 + 0.368282I$ $b = 0.462053 - 0.996285I$	$0.04307 - 4.61787I$	0
$u = 0.287032 + 1.337150I$ $a = 1.037980 - 0.647453I$ $b = -1.40488 + 1.30184I$	$3.88325 - 4.20193I$	0
$u = 0.287032 - 1.337150I$ $a = 1.037980 + 0.647453I$ $b = -1.40488 - 1.30184I$	$3.88325 + 4.20193I$	0
$u = 0.331579 + 1.330070I$ $a = -1.69831 + 2.26896I$ $b = 2.16421 - 5.01806I$	$-0.80897 - 7.30656I$	0
$u = 0.331579 - 1.330070I$ $a = -1.69831 - 2.26896I$ $b = 2.16421 + 5.01806I$	$-0.80897 + 7.30656I$	0
$u = 0.031726 + 1.385860I$ $a = 0.117801 + 1.234380I$ $b = -0.25515 - 1.61002I$	$7.10349 - 2.64910I$	0
$u = 0.031726 - 1.385860I$ $a = 0.117801 - 1.234380I$ $b = -0.25515 + 1.61002I$	$7.10349 + 2.64910I$	0
$u = -0.332926 + 1.345880I$ $a = -0.999826 - 0.769402I$ $b = 1.25204 + 1.35725I$	$2.27588 + 9.39250I$	0
$u = -0.332926 - 1.345880I$ $a = -0.999826 + 0.769402I$ $b = 1.25204 - 1.35725I$	$2.27588 - 9.39250I$	0
$u = 0.202172 + 0.562210I$ $a = -0.048043 + 0.695323I$ $b = 0.026647 + 0.413386I$	$1.12881 - 2.03777I$	$-7.78527 + 5.62795I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.202172 - 0.562210I$ $a = -0.048043 - 0.695323I$ $b = 0.026647 - 0.413386I$	$1.12881 + 2.03777I$	$-7.78527 - 5.62795I$
$u = 0.237505 + 1.383800I$ $a = -0.179690 - 0.698918I$ $b = -0.46220 + 1.34014I$	$0.55189 - 1.61966I$	0
$u = 0.237505 - 1.383800I$ $a = -0.179690 + 0.698918I$ $b = -0.46220 - 1.34014I$	$0.55189 + 1.61966I$	0
$u = -0.350812 + 1.359940I$ $a = 1.22082 + 2.12971I$ $b = -1.48792 - 4.49301I$	$-2.97930 + 13.70140I$	0
$u = -0.350812 - 1.359940I$ $a = 1.22082 - 2.12971I$ $b = -1.48792 + 4.49301I$	$-2.97930 - 13.70140I$	0
$u = 0.06826 + 1.41694I$ $a = -0.365259 - 1.175510I$ $b = -0.35719 + 1.98198I$	$2.73057 - 6.43368I$	0
$u = 0.06826 - 1.41694I$ $a = -0.365259 + 1.175510I$ $b = -0.35719 - 1.98198I$	$2.73057 + 6.43368I$	0
$u = -0.166424 + 0.369815I$ $a = -1.27663 - 2.18999I$ $b = 1.009330 + 0.248240I$	$-1.55529 + 0.78493I$	$-9.19094 - 1.36537I$
$u = -0.166424 - 0.369815I$ $a = -1.27663 + 2.18999I$ $b = 1.009330 - 0.248240I$	$-1.55529 - 0.78493I$	$-9.19094 + 1.36537I$
$u = 0.299163$ $a = 0.652170$ $b = 0.313109$	-0.616490	-16.5510

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^2 - 4u - 16$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = -0.122561 - 0.744862I$ $b = \ \ 0.78492 + 1.30714I$	$1.37919 + 2.82812I$	$-10.15260 - 3.54173I$
$u = -0.215080 - 1.307140I$ $a = -0.122561 + 0.744862I$ $b = \ \ 0.78492 - 1.30714I$	$1.37919 - 2.82812I$	$-10.15260 + 3.54173I$
$u = -0.569840$ $a = -1.75488$ $b = \ \ 0.430160$	-2.75839	-14.6950

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^3(u^{50} + u^{49} + \cdots + 20u + 8)$
c_2	$u^3(u^{50} + 21u^{49} + \cdots + 592u + 64)$
c_3, c_4	$(u^3 + u^2 + 2u + 1)(u^{50} - 2u^{49} + \cdots - 2u - 1)$
c_5, c_6	$((u-1)^3)(u^{50} - 4u^{49} + \cdots - 3u - 1)$
c_8	$((u+1)^3)(u^{50} - 4u^{49} + \cdots - 3u - 1)$
c_9, c_{11}	$(u^3 + u^2 - 1)(u^{50} + 2u^{49} + \cdots - 92u - 17)$
c_{10}	$(u^3 - u^2 + 2u - 1)(u^{50} - 2u^{49} + \cdots - 2u - 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^3(y^{50} - 21y^{49} + \cdots - 592y + 64)$
c_2	$y^3(y^{50} + 11y^{49} + \cdots - 19712y + 4096)$
c_3, c_4, c_{10}	$(y^3 + 3y^2 + 2y - 1)(y^{50} + 42y^{49} + \cdots - 2y + 1)$
c_5, c_6, c_8	$((y-1)^3)(y^{50} - 44y^{49} + \cdots - 3y + 1)$
c_9, c_{11}	$(y^3 - y^2 + 2y - 1)(y^{50} - 30y^{49} + \cdots + 70y + 289)$