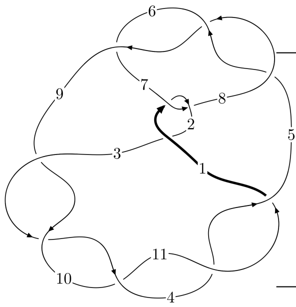
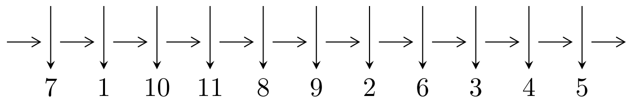
$11a_{240}$ ($K11a_{240}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{31} + u^{30} + \cdots + b - u,\ -u^{31} + u^{30} + \cdots + a + 1,\ u^{32} - 2u^{31} + \cdots - 4u + 1 \rangle$$
$$I_2^u = \langle b + u,\ a + u + 1,\ u^2 + u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 34 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.

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$$\boldsymbol{I_1^u = \langle -u^{31}+u^{30}+\cdots+b-u,\ -u^{31}+u^{30}+\cdots+a+1,\ u^{32}-2u^{31}+\cdots-4u+1\rangle}$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^7 + 4u^5 - 4u^3 + 2u \\ -u^9 + 5u^7 - 7u^5 + 2u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{31} - u^{30} + \cdots + 3u - 1 \\ u^{31} - u^{30} + \cdots - u^2 + u \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 2u^{31} - u^{30} + \cdots + 5u - 2 \\ 3u^{31} - 2u^{30} + \cdots + 4u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{30} - u^{29} + \cdots - u + 1 \\ u^{31} - 20u^{29} + \cdots + 3u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{30} - u^{29} + \cdots - u + 1 \\ u^{31} - 20u^{29} + \cdots + 3u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{31} - 5u^{30} - 77u^{29} + 93u^{28} + 654u^{27} - 766u^{26} - 3221u^{25} + 3695u^{24} + 10154u^{23} - 11648u^{22} - 21262u^{21} + 25364u^{20} + 29394u^{19} - 39216u^{18} - 24813u^{17} + 43171u^{16} + 8234u^{15} - 32696u^{14} + 6950u^{13} + 15056u^{12} - 10454u^{11} - 2100u^{10} + 5696u^9 - 1812u^8 - 1168u^7 + 978u^6 - 182u^5 - 72u^4 + 86u^3 - 38u^2 + 13u - 19$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{32} + u^{31} + \cdots - 12u - 4$
c_2	$u^{32} + 15u^{31} + \cdots + 152u + 16$
c_3, c_4, c_9 c_{10}, c_{11}	$u^{32} + 2u^{31} + \cdots + 4u + 1$
c_5, c_6, c_8	$u^{32} - 3u^{31} + \cdots - 5u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{32} - 15y^{31} + \cdots - 152y + 16$
c_2	$y^{32} + y^{31} + \cdots - 2848y + 256$
c_3, c_4, c_9 c_{10}, c_{11}	$y^{32} - 42y^{31} + \cdots - 4y + 1$
c_5, c_6, c_8	$y^{32} - 29y^{31} + \cdots - 7y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.932935 + 0.300495I$ $a = 0.221529 - 0.245031I$ $b = -0.566090 - 0.639414I$	$-2.01989 + 4.86523I$	$-15.1954 - 6.8122I$
$u = -0.932935 - 0.300495I$ $a = 0.221529 + 0.245031I$ $b = -0.566090 + 0.639414I$	$-2.01989 - 4.86523I$	$-15.1954 + 6.8122I$
$u = 0.946587 + 0.231196I$ $a = 0.96950 - 1.13998I$ $b = -1.46374 + 0.52554I$	$-4.86072 - 2.90543I$	$-17.9793 + 3.5680I$
$u = 0.946587 - 0.231196I$ $a = 0.96950 + 1.13998I$ $b = -1.46374 - 0.52554I$	$-4.86072 + 2.90543I$	$-17.9793 - 3.5680I$
$u = -0.994935 + 0.377573I$ $a = -0.478871 - 1.164710I$ $b = 1.158740 + 0.411567I$	$-7.38074 + 8.76774I$	$-18.7396 - 7.0546I$
$u = -0.994935 - 0.377573I$ $a = -0.478871 + 1.164710I$ $b = 1.158740 - 0.411567I$	$-7.38074 - 8.76774I$	$-18.7396 + 7.0546I$
$u = -0.910087 + 0.140122I$ $a = 0.945898 + 0.573430I$ $b = 0.426810 + 0.536403I$	$-3.85845 + 0.52237I$	$-20.0729 - 1.6653I$
$u = -0.910087 - 0.140122I$ $a = 0.945898 - 0.573430I$ $b = 0.426810 - 0.536403I$	$-3.85845 - 0.52237I$	$-20.0729 + 1.6653I$
$u = -1.21444$ $a = -0.504163$ $b = 1.45498$	-11.2682	-22.0990
$u = 0.588921 + 0.485955I$ $a = -1.26657 + 1.04213I$ $b = -0.886632 + 0.309455I$	$-4.95979 + 1.69559I$	$-17.9188 + 0.0178I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.588921 - 0.485955I$ $a = -1.26657 - 1.04213I$ $b = -0.886632 - 0.309455I$	$-4.95979 - 1.69559I$	$-17.9188 - 0.0178I$
$u = 0.718238 + 0.225952I$ $a = -0.459114 - 0.005471I$ $b = 0.496105 - 0.264918I$	$-0.558920 - 0.474938I$	$-11.62959 + 1.27773I$
$u = 0.718238 - 0.225952I$ $a = -0.459114 + 0.005471I$ $b = 0.496105 + 0.264918I$	$-0.558920 + 0.474938I$	$-11.62959 - 1.27773I$
$u = 0.187060 + 0.621355I$ $a = -0.85945 + 1.47486I$ $b = -1.011920 + 0.169007I$	$-3.74023 - 5.38912I$	$-14.5723 + 5.7053I$
$u = 0.187060 - 0.621355I$ $a = -0.85945 - 1.47486I$ $b = -1.011920 - 0.169007I$	$-3.74023 + 5.38912I$	$-14.5723 - 5.7053I$
$u = 0.109732 + 0.502858I$ $a = -0.133670 - 0.948522I$ $b = 0.000513 + 0.345169I$	$1.17199 - 2.12258I$	$-8.07273 + 5.17972I$
$u = 0.109732 - 0.502858I$ $a = -0.133670 + 0.948522I$ $b = 0.000513 - 0.345169I$	$1.17199 + 2.12258I$	$-8.07273 - 5.17972I$
$u = -1.53142$ $a = 0.299106$ $b = 1.47350$	-11.6098	-22.5450
$u = -0.130280 + 0.363295I$ $a = 1.12950 + 2.35629I$ $b = 0.957149 + 0.120157I$	$-1.55433 + 0.80952I$	$-9.54426 - 1.40879I$
$u = -0.130280 - 0.363295I$ $a = 1.12950 - 2.35629I$ $b = 0.957149 - 0.120157I$	$-1.55433 - 0.80952I$	$-9.54426 + 1.40879I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.65686+0.03953I$ $a=\ 1.168620+0.485339I$ $b=\ 1.98443+0.52843I$	$-8.99808+1.32195I$	0
$u=-1.65686-0.03953I$ $a=\ 1.168620-0.485339I$ $b=\ 1.98443-0.52843I$	$-8.99808-1.32195I$	0
$u=\ 0.322365$ $a=-0.569030$ $b=\ 0.332706$	-0.607216	-16.6590
$u=\ 1.69979+0.04032I$ $a=-0.740305-0.450279I$ $b=-1.60526-0.31431I$	$-13.16730-1.26120I$	0
$u=\ 1.69979-0.04032I$ $a=-0.740305+0.450279I$ $b=-1.60526+0.31431I$	$-13.16730+1.26120I$	0
$u=\ 1.70039+0.07638I$ $a=-1.024980+0.658959I$ $b=-1.73315+0.64681I$	$-11.32620-6.33717I$	0
$u=\ 1.70039-0.07638I$ $a=-1.024980-0.658959I$ $b=-1.73315-0.64681I$	$-11.32620+6.33717I$	0
$u=-1.70563+0.05938I$ $a=-3.73701-1.61459I$ $b=-6.32266-2.62594I$	$-14.2827+4.0537I$	0
$u=-1.70563-0.05938I$ $a=-3.73701+1.61459I$ $b=-6.32266+2.62594I$	$-14.2827-4.0537I$	0
$u=\ 1.71578+0.10104I$ $a=\ 2.85853-1.60940I$ $b=\ 4.90243-2.63065I$	$-16.9357-10.6981I$	0

Solutions to I_1^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$1.71578 - 0.10104I$		
$a =$	$2.85853 + 1.60940I$	$-16.9357 + 10.6981I$	0
$b =$	$4.90243 + 2.63065I$		
$u =$	1.75198		
$a =$	3.58689	17.6150	0
$b =$	6.06538		

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -15$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = -1.61803$ $b = -0.618034$	-2.63189	-15.0000
$u = -1.61803$ $a = 0.618034$ $b = 1.61803$	-10.5276	-15.0000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^2(u^{32} + u^{31} + \cdots - 12u - 4)$
c_2	$u^2(u^{32} + 15u^{31} + \cdots + 152u + 16)$
c_3, c_4	$(u^2 - u - 1)(u^{32} + 2u^{31} + \cdots + 4u + 1)$
c_5, c_6	$((u-1)^2)(u^{32} - 3u^{31} + \cdots - 5u - 1)$
c_8	$((u+1)^2)(u^{32} - 3u^{31} + \cdots - 5u - 1)$
c_9, c_{10}, c_{11}	$(u^2 + u - 1)(u^{32} + 2u^{31} + \cdots + 4u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^2(y^{32} - 15y^{31} + \cdots - 152y + 16)$
c_2	$y^2(y^{32} + y^{31} + \cdots - 2848y + 256)$
c_3, c_4, c_9 c_{10}, c_{11}	$(y^2 - 3y + 1)(y^{32} - 42y^{31} + \cdots - 4y + 1)$
c_5, c_6, c_8	$((y-1)^2)(y^{32} - 29y^{31} + \cdots - 7y + 1)$