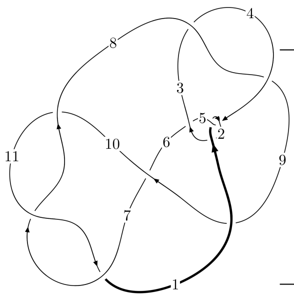
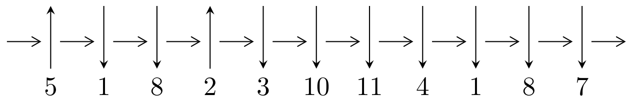
$11n_{16}$ ($K11n_{16}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2u^{23} + 7u^{22} + \cdots + 2b - 5u,\ -3u^{23} - 11u^{22} + \cdots + 2a + 8,\ u^{24} + 3u^{23} + \cdots - 5u - 1\rangle$$
$$I_2^u = \langle -u^2a + b,\ u^2a + a^2 + u^2 + a - u + 2,\ u^3 - u^2 + 2u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 30 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. $I_1^u = \langle 2u^{23}+7u^{22}+\cdots+2b-5u,\ -3u^{23}-11u^{22}+\cdots+2a+8,\ u^{24}+3u^{23}+\cdots-5u-1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}\frac{3}{2}u^{23}+\frac{11}{2}u^{22}+\cdots-\frac{33}{2}u-4\\-u^{23}-\frac{7}{2}u^{22}+\cdots+\frac{21}{2}u^2+\frac{5}{2}u\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}\frac{3}{2}u^{23}+\frac{9}{2}u^{22}+\cdots-\frac{25}{2}u-3\\-\frac{1}{2}u^{22}-u^{21}+\cdots-\frac{5}{2}u-1\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-u\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}2u^{23}+6u^{22}+\cdots-\frac{27}{2}u-\frac{7}{2}\\-\frac{3}{2}u^{23}-4u^{22}+\cdots-\frac{1}{2}u-\frac{1}{2}\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}-u^4-u^2+1\\-u^6-2u^4-u^2\end{pmatrix}$$

$$a_5 = \begin{pmatrix}\frac{1}{2}u^{23}+\frac{3}{2}u^{22}+\cdots-\frac{15}{2}u+1\\-\frac{1}{2}u^{22}-u^{21}+\cdots+\frac{7}{2}u^2-\frac{1}{2}u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}u^5+2u^3+u\\-u^5-u^3+u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}u^5+2u^3+u\\-u^5-u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -2u^{23}-\frac{9}{2}u^{22}-\frac{45}{2}u^{21}-40u^{20}-105u^{19}-\frac{307}{2}u^{18}-\frac{527}{2}u^{17}-325u^{16}-\frac{757}{2}u^{15}-\frac{803}{2}u^{14}-\frac{589}{2}u^{13}-\frac{531}{2}u^{12}-90u^{11}-\frac{75}{2}u^{10}+3u^9+\frac{129}{2}u^8-35u^7+\frac{15}{2}u^6-\frac{89}{2}u^5-57u^4-11u^3-\frac{67}{2}u^2-\frac{3}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{24} + 4u^{23} + \cdots + 8u + 1$
c_2	$u^{24} + 16u^{23} + \cdots - 16u + 1$
c_3, c_8	$u^{24} - u^{23} + \cdots - 96u - 64$
c_5	$u^{24} - 4u^{23} + \cdots + 2u + 1$
c_6	$u^{24} + 3u^{23} + \cdots + u - 1$
c_7, c_{10}, c_{11}	$u^{24} - 3u^{23} + \cdots + 5u - 1$
c_9	$u^{24} - 13u^{23} + \cdots - 995u + 563$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{24} + 16y^{23} + \cdots - 16y + 1$
c_2	$y^{24} - 12y^{23} + \cdots - 612y + 1$
c_3, c_8	$y^{24} - 35y^{23} + \cdots - 13312y + 4096$
c_5	$y^{24} - 40y^{23} + \cdots - 16y + 1$
c_6	$y^{24} - 33y^{23} + \cdots - 11y + 1$
c_7, c_{10}, c_{11}	$y^{24} + 19y^{23} + \cdots - 11y + 1$
c_9	$y^{24} - 53y^{23} + \cdots + 17132945y + 316969$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.977245+0.071776I$ $a=\ \ 0.150461+0.477664I$ $b=-1.86833+0.85025I$	$-13.8937+5.6522I$	$-11.88129-3.05170I$
$u=-0.977245-0.071776I$ $a=\ \ 0.150461-0.477664I$ $b=-1.86833-0.85025I$	$-13.8937-5.6522I$	$-11.88129+3.05170I$
$u=-0.944342$ $a=-0.374599$ $b=\ \ 1.57977$	-9.62200	-9.45700
$u=-0.132356+1.101640I$ $a=\ \ 0.224192-1.262680I$ $b=-1.38202+0.85732I$	$2.09684+3.39237I$	$-6.49952-2.22048I$
$u=-0.132356-1.101640I$ $a=\ \ 0.224192+1.262680I$ $b=-1.38202-0.85732I$	$2.09684-3.39237I$	$-6.49952+2.22048I$
$u=\ \ 0.369901+1.056050I$ $a=\ \ 0.19239-1.75435I$ $b=\ \ 0.509437+0.688724I$	$-1.33599-3.11324I$	$-9.44737+3.66544I$
$u=\ \ 0.369901-1.056050I$ $a=\ \ 0.19239+1.75435I$ $b=\ \ 0.509437-0.688724I$	$-1.33599+3.11324I$	$-9.44737-3.66544I$
$u=\ \ 0.023030+1.170740I$ $a=\ \ 0.00332+1.52505I$ $b=\ \ 0.53462-1.45060I$	$3.34786-1.42933I$	$-3.02808+3.24576I$
$u=\ \ 0.023030-1.170740I$ $a=\ \ 0.00332-1.52505I$ $b=\ \ 0.53462+1.45060I$	$3.34786+1.42933I$	$-3.02808-3.24576I$
$u=\ \ 0.736962+0.245534I$ $a=\ \ 0.482708+0.172356I$ $b=\ \ 1.141730-0.517295I$	$-3.71809-1.00013I$	$-12.92204+1.61108I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.736962 - 0.245534I$ $a = 0.482708 - 0.172356I$ $b = 1.141730 + 0.517295I$	$-3.71809 + 1.00013I$	$-12.92204 - 1.61108I$
$u = 0.149866 + 1.301080I$ $a = 0.468754 + 1.001100I$ $b = -0.632329 - 1.109160I$	$3.26690 - 2.11293I$	$-4.50894 + 4.47286I$
$u = 0.149866 - 1.301080I$ $a = 0.468754 - 1.001100I$ $b = -0.632329 + 1.109160I$	$3.26690 + 2.11293I$	$-4.50894 - 4.47286I$
$u = -0.521270 + 1.255460I$ $a = 1.48874 - 0.97432I$ $b = -1.105310 - 0.534231I$	$-10.25040 - 0.34153I$	$-9.34191 - 0.16934I$
$u = -0.521270 - 1.255460I$ $a = 1.48874 + 0.97432I$ $b = -1.105310 + 0.534231I$	$-10.25040 + 0.34153I$	$-9.34191 + 0.16934I$
$u = -0.461477 + 1.300210I$ $a = -0.98110 + 1.48411I$ $b = 1.37119 - 0.77637I$	$-5.57948 + 5.01306I$	$-6.18016 - 2.85769I$
$u = -0.461477 - 1.300210I$ $a = -0.98110 - 1.48411I$ $b = 1.37119 + 0.77637I$	$-5.57948 - 5.01306I$	$-6.18016 + 2.85769I$
$u = 0.24692 + 1.39353I$ $a = -1.57305 + 0.00181I$ $b = 2.02058 - 0.67462I$	$1.55911 - 4.48321I$	$-9.00126 + 3.05253I$
$u = 0.24692 - 1.39353I$ $a = -1.57305 - 0.00181I$ $b = 2.02058 + 0.67462I$	$1.55911 + 4.48321I$	$-9.00126 - 3.05253I$
$u = -0.45937 + 1.35651I$ $a = 1.05212 - 2.06998I$ $b = -2.35956 + 1.45257I$	$-9.4212 + 10.7764I$	$-8.42021 - 5.67335I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.45937 - 1.35651I$ $a = 1.05212 + 2.06998I$ $b = -2.35956 - 1.45257I$	$-9.4212 - 10.7764I$	$-8.42021 + 5.67335I$
$u = 0.450904$ $a = 0.305459$ $b = -0.393799$	-0.785516	-12.5270
$u = -0.228245 + 0.158994I$ $a = 0.02603 - 2.87156I$ $b = -0.322979 - 0.586238I$	$-0.34648 - 1.75564I$	$-2.27719 + 2.42480I$
$u = -0.228245 - 0.158994I$ $a = 0.02603 + 2.87156I$ $b = -0.322979 + 0.586238I$	$-0.34648 + 1.75564I$	$-2.27719 - 2.42480I$

II. $\boldsymbol{I^u_2 = \langle -u^2a + b,\ u^2a + a^2 + u^2 + a - u + 2,\ u^3 - u^2 + 2u - 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ u^2a \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} a \\ u^2a \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -au + 2a \\ u^2a + au - a \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^2a + 3au - 5u^2 - 4a + 5u - 16$

(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_9	$(u^3+u^2-1)^2$
c_7	$(u^3-u^2+2u-1)^2$
c_{10}, c_{11}	$(u^3+u^2+2u+1)^2$

(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_9	$(y^3 - y^2 + 2y - 1)^2$
c_7, c_{10}, c_{11}	$(y^3 + 3y^2 + 2y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = 0.818128 + 0.292480I$ $b = -1.52448 - 0.02619I$	$3.02413 - 0.79824I$	$-6.43615 - 0.68567I$
$u = 0.215080 + 1.307140I$ $a = -0.155769 - 0.854759I$ $b = 0.73956 + 1.33333I$	$3.02413 - 4.85801I$	$-2.88198 + 6.08229I$
$u = 0.215080 - 1.307140I$ $a = 0.818128 - 0.292480I$ $b = -1.52448 + 0.02619I$	$3.02413 + 0.79824I$	$-6.43615 + 0.68567I$
$u = 0.215080 - 1.307140I$ $a = -0.155769 + 0.854759I$ $b = 0.73956 - 1.33333I$	$3.02413 + 4.85801I$	$-2.88198 - 6.08229I$
$u = 0.569840$ $a = -0.662359 + 1.147240I$ $b = -0.215080 + 0.372529I$	$-1.11345 + 2.02988I$	$-12.18187 - 4.49037I$
$u = 0.569840$ $a = -0.662359 - 1.147240I$ $b = -0.215080 - 0.372529I$	$-1.11345 - 2.02988I$	$-12.18187 + 4.49037I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^3)(u^{24}+4u^{23}+\cdots+8u+1)$
c_2	$((u^2+u+1)^3)(u^{24}+16u^{23}+\cdots-16u+1)$
c_3, c_8	$u^6(u^{24}-u^{23}+\cdots-96u-64)$
c_4	$((u^2-u+1)^3)(u^{24}+4u^{23}+\cdots+8u+1)$
c_5	$((u^2+u+1)^3)(u^{24}-4u^{23}+\cdots+2u+1)$
c_6	$((u^3+u^2-1)^2)(u^{24}+3u^{23}+\cdots+u-1)$
c_7	$((u^3-u^2+2u-1)^2)(u^{24}-3u^{23}+\cdots+5u-1)$
c_9	$((u^3+u^2-1)^2)(u^{24}-13u^{23}+\cdots-995u+563)$
c_{10}, c_{11}	$((u^3+u^2+2u+1)^2)(u^{24}-3u^{23}+\cdots+5u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^3)(y^{24}+16y^{23}+\cdots-16y+1)$
c_2	$((y^2+y+1)^3)(y^{24}-12y^{23}+\cdots-612y+1)$
c_3, c_8	$y^6(y^{24}-35y^{23}+\cdots-13312y+4096)$
c_5	$((y^2+y+1)^3)(y^{24}-40y^{23}+\cdots-16y+1)$
c_6	$((y^3-y^2+2y-1)^2)(y^{24}-33y^{23}+\cdots-11y+1)$
c_7, c_{10}, c_{11}	$((y^3+3y^2+2y-1)^2)(y^{24}+19y^{23}+\cdots-11y+1)$
c_9	$((y^3-y^2+2y-1)^2)(y^{24}-53y^{23}+\cdots+1.71329\times 10^7y+316969)$