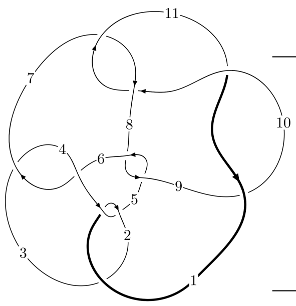
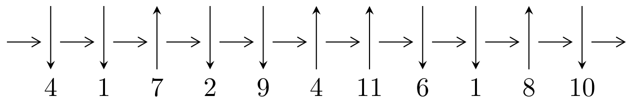
$11n_{33}$ ($K11n_{33}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -37402427u^{28} + 81134437u^{27} + \cdots + 95729774b + 19128061,$$
$$18654994u^{28} - 22307356u^{27} + \cdots + 47864887a + 114512378,\ u^{29} - 2u^{28} + \cdots + 3u - 1\rangle$$
$$I_2^u = \langle -u^2 + b + u - 1,\ -u^3 + 2u^2 + a - 2u,\ u^4 - u^3 + u^2 + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 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.

$\boldsymbol{I_1^u = \langle -3.74\times 10^{7}u^{28} + 8.11\times 10^{7}u^{27} + \cdots + 9.57\times 10^{7}b + 1.91\times 10^{7},\ 1.87\times 10^{7}u^{28} - 2.23\times 10^{7}u^{27} + \cdots + 4.79\times 10^{7}a + 1.15\times 10^{8},\ u^{29} - 2u^{28} + \cdots + 3u - 1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.389743u^{28} + 0.466048u^{27} + \cdots - 0.0720082u - 2.39241 \\ 0.390708u^{28} - 0.847536u^{27} + \cdots + 1.96725u - 0.199813 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.301913u^{28} + 0.291851u^{27} + \cdots - 1.48869u - 2.50603 \\ 0.301774u^{28} - 0.697679u^{27} + \cdots + 2.05069u - 0.198352 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.387941u^{28} + 0.329624u^{27} + \cdots - 1.28229u - 0.468247 \\ -0.00769895u^{28} + 0.202551u^{27} + \cdots - 0.868360u + 0.400024 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.613206u^{28} + 0.567015u^{27} + \cdots - 1.46731u - 2.44550 \\ 0.410088u^{28} - 0.627420u^{27} + \cdots + 2.11495u - 0.000268506 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.380897u^{28} + 0.633142u^{27} + \cdots + 3.45405u - 0.121313 \\ 0.0116806u^{28} - 0.577333u^{27} + \cdots + 0.279345u - 0.400432 \end{pmatrix}$$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{65937967}{47864887}u^{28} - \frac{91712198}{47864887}u^{27} + \cdots + \frac{129153968}{47864887}u - \frac{217380957}{47864887}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{29} - 5u^{28} + \cdots + 11u + 1$
c_2	$u^{29} + 33u^{28} + \cdots + 5u + 1$
c_3, c_6	$u^{29} + 5u^{28} + \cdots - 72u + 16$
c_5, c_8	$u^{29} - 2u^{28} + \cdots + u - 1$
c_7, c_{10}	$u^{29} + 2u^{28} + \cdots + 3u + 1$
c_9, c_{11}	$u^{29} + 12u^{28} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{29} - 33y^{28} + \cdots + 5y - 1$
c_2	$y^{29} - 69y^{28} + \cdots - 1359y - 1$
c_3, c_6	$y^{29} + 27y^{28} + \cdots - 2240y - 256$
c_5, c_8	$y^{29} + 30y^{27} + \cdots - y - 1$
c_7, c_{10}	$y^{29} + 12y^{28} + \cdots - y - 1$
c_9, c_{11}	$y^{29} + 12y^{28} + \cdots + 35y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.430937 + 0.875588I$ $a = 2.46856 + 2.58292I$ $b = 0.13985 - 3.12093I$	$-1.94857 - 1.79081I$	$9.7159 + 22.2862I$
$u = -0.430937 - 0.875588I$ $a = 2.46856 - 2.58292I$ $b = 0.13985 + 3.12093I$	$-1.94857 + 1.79081I$	$9.7159 - 22.2862I$
$u = 0.251301 + 0.941534I$ $a = -1.04299 + 2.34476I$ $b = 0.283465 - 0.998451I$	$-3.57724 - 0.66247I$	$-10.09352 + 1.94504I$
$u = 0.251301 - 0.941534I$ $a = -1.04299 - 2.34476I$ $b = 0.283465 + 0.998451I$	$-3.57724 + 0.66247I$	$-10.09352 - 1.94504I$
$u = 0.932586 + 0.472277I$ $a = -0.0835356 + 0.0913296I$ $b = 0.58205 - 1.50292I$	$-6.37168 - 6.75282I$	$-3.69355 + 3.15214I$
$u = 0.932586 - 0.472277I$ $a = -0.0835356 - 0.0913296I$ $b = 0.58205 + 1.50292I$	$-6.37168 + 6.75282I$	$-3.69355 - 3.15214I$
$u = -0.953647 + 0.505885I$ $a = -0.0879207 + 0.0911589I$ $b = 0.085199 - 1.281550I$	$-6.12495 - 1.71894I$	$-4.74605 + 1.89417I$
$u = -0.953647 - 0.505885I$ $a = -0.0879207 - 0.0911589I$ $b = 0.085199 + 1.281550I$	$-6.12495 + 1.71894I$	$-4.74605 - 1.89417I$
$u = -0.547094 + 0.958808I$ $a = -1.29758 - 1.42753I$ $b = -0.64604 + 1.52374I$	$-0.84435 - 2.90824I$	$-4.00553 + 0.79959I$
$u = -0.547094 - 0.958808I$ $a = -1.29758 + 1.42753I$ $b = -0.64604 - 1.52374I$	$-0.84435 + 2.90824I$	$-4.00553 - 0.79959I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.429919 + 1.019430I$ $a = 1.079660 + 0.824021I$ $b = 0.147997 - 0.384192I$	$-4.75773 + 3.16768I$	$-10.84320 - 4.60951I$
$u = 0.429919 - 1.019430I$ $a = 1.079660 - 0.824021I$ $b = 0.147997 + 0.384192I$	$-4.75773 - 3.16768I$	$-10.84320 + 4.60951I$
$u = -0.493784 + 0.719618I$ $a = -0.524927 + 0.358431I$ $b = 0.543180 + 0.690761I$	$0.00011 - 1.41557I$	$-1.83013 + 4.50450I$
$u = -0.493784 - 0.719618I$ $a = -0.524927 - 0.358431I$ $b = 0.543180 - 0.690761I$	$0.00011 + 1.41557I$	$-1.83013 - 4.50450I$
$u = 0.559884 + 1.035720I$ $a = 1.24254 - 1.84489I$ $b = 0.620348 + 1.095660I$	$-1.53843 + 6.72020I$	$-5.08320 - 8.59362I$
$u = 0.559884 - 1.035720I$ $a = 1.24254 + 1.84489I$ $b = 0.620348 - 1.095660I$	$-1.53843 - 6.72020I$	$-5.08320 + 8.59362I$
$u = 0.819034 + 0.903920I$ $a = 0.003538 - 0.368412I$ $b = -0.0535027 + 0.0855444I$	$5.64977 + 3.06577I$	$7.92754 - 1.40495I$
$u = 0.819034 - 0.903920I$ $a = 0.003538 + 0.368412I$ $b = -0.0535027 - 0.0855444I$	$5.64977 - 3.06577I$	$7.92754 + 1.40495I$
$u = 0.591123 + 0.479483I$ $a = -0.544559 - 0.113805I$ $b = -0.539946 + 0.901812I$	$0.05591 - 2.10154I$	$-1.15823 + 3.97516I$
$u = 0.591123 - 0.479483I$ $a = -0.544559 + 0.113805I$ $b = -0.539946 - 0.901812I$	$0.05591 + 2.10154I$	$-1.15823 - 3.97516I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.011422 + 1.270990I$ $a = 0.43345 - 2.08872I$ $b = -0.25247 + 1.62101I$	$-12.90150 - 4.17591I$	$-8.75836 + 2.29339I$
$u = 0.011422 - 1.270990I$ $a = 0.43345 + 2.08872I$ $b = -0.25247 - 1.62101I$	$-12.90150 + 4.17591I$	$-8.75836 - 2.29339I$
$u = 0.672968 + 1.141060I$ $a = -1.17654 + 1.68782I$ $b = -0.69150 - 1.64363I$	$-8.4308 + 12.6362I$	$-5.52931 - 7.07301I$
$u = 0.672968 - 1.141060I$ $a = -1.17654 - 1.68782I$ $b = -0.69150 + 1.64363I$	$-8.4308 - 12.6362I$	$-5.52931 + 7.07301I$
$u = -0.692012 + 1.147210I$ $a = 1.31632 + 0.88452I$ $b = 0.117471 - 1.304600I$	$-8.11998 - 4.31757I$	$-6.45074 + 2.65761I$
$u = -0.692012 - 1.147210I$ $a = 1.31632 - 0.88452I$ $b = 0.117471 + 1.304600I$	$-8.11998 + 4.31757I$	$-6.45074 - 2.65761I$
$u = -0.332179 + 0.485836I$ $a = -0.663603 + 0.306233I$ $b = -0.103350 + 0.657057I$	$0.002667 - 1.254980I$	$-0.07638 + 5.17093I$
$u = -0.332179 - 0.485836I$ $a = -0.663603 - 0.306233I$ $b = -0.103350 - 0.657057I$	$0.002667 + 1.254980I$	$-0.07638 - 5.17093I$
$u = 0.362835$ $a = -3.24481$ $b = 0.534503$	-2.52742	-3.75050

II. $\boldsymbol{I_2^u = \langle -u^2 + b + u - 1,\ -u^3 + 2u^2 + a - 2u,\ u^4 - u^3 + u^2 + 1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^3 - 2u^2 + 2u \\ u^2 - u + 1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} u^3 - 2u^2 + 2u \\ u^2 - u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -2u^2 + 2u \\ u^3 + u^2 + 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^2 + 1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + 1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^3 - 5u^2 - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^4$
c_2, c_4	$(u+1)^4$
c_3, c_6	u^4
c_5, c_9	$u^4 - u^3 + 3u^2 - 2u + 1$
c_7	$u^4 - u^3 + u^2 + 1$
c_8, c_{11}	$u^4 + u^3 + 3u^2 + 2u + 1$
c_{10}	$u^4 + u^3 + u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^4$
c_3, c_6	y^4
c_5, c_8, c_9 c_{11}	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_7, c_{10}	$y^4 + y^3 + 3y^2 + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.351808 + 0.720342I$ $a = 0.59074 + 2.34806I$ $b = 0.95668 - 1.22719I$	$-1.85594 - 1.41510I$	$-0.51206 + 2.21528I$
$u = -0.351808 - 0.720342I$ $a = 0.59074 - 2.34806I$ $b = 0.95668 + 1.22719I$	$-1.85594 + 1.41510I$	$-0.51206 - 2.21528I$
$u = 0.851808 + 0.911292I$ $a = 0.409261 - 0.055548I$ $b = 0.043315 + 0.641200I$	$5.14581 + 3.16396I$	$-7.98794 - 4.08190I$
$u = 0.851808 - 0.911292I$ $a = 0.409261 + 0.055548I$ $b = 0.043315 - 0.641200I$	$5.14581 - 3.16396I$	$-7.98794 + 4.08190I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{29} - 5u^{28} + \cdots + 11u + 1)$
c_2	$((u+1)^4)(u^{29} + 33u^{28} + \cdots + 5u + 1)$
c_3, c_6	$u^4(u^{29} + 5u^{28} + \cdots - 72u + 16)$
c_4	$((u+1)^4)(u^{29} - 5u^{28} + \cdots + 11u + 1)$
c_5	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{29} - 2u^{28} + \cdots + u - 1)$
c_7	$(u^4 - u^3 + u^2 + 1)(u^{29} + 2u^{28} + \cdots + 3u + 1)$
c_8	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{29} - 2u^{28} + \cdots + u - 1)$
c_9	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{29} + 12u^{28} + \cdots - u - 1)$
c_{10}	$(u^4 + u^3 + u^2 + 1)(u^{29} + 2u^{28} + \cdots + 3u + 1)$
c_{11}	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{29} + 12u^{28} + \cdots - u - 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^4)(y^{29} - 33y^{28} + \cdots + 5y - 1)$
c_2	$((y-1)^4)(y^{29} - 69y^{28} + \cdots - 1359y - 1)$
c_3, c_6	$y^4(y^{29} + 27y^{28} + \cdots - 2240y - 256)$
c_5, c_8	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{29} + 30y^{27} + \cdots - y - 1)$
c_7, c_{10}	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{29} + 12y^{28} + \cdots - y - 1)$
c_9, c_{11}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{29} + 12y^{28} + \cdots + 35y - 1)$