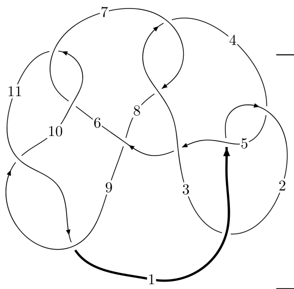
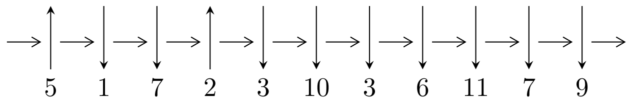
$11n_2$ ($K11n_2$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I_1^u = \langle -2u^{33} - 5u^{32} + \cdots + 2b - u,\ -2u^{33} - 4u^{32} + \cdots + a + 1,\ u^{34} + 3u^{33} + \cdots + 3u^2 - 1 \rangle$
$I_2^u = \langle -u^2b + b^2 + bu - u + 1,\ a,\ u^3 - u^2 + 1 \rangle$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 40 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. $\boldsymbol{I^u_1 =}$
$\boldsymbol{\langle -2u^{33}-5u^{32}+\cdots+2b-u,\ -2u^{33}-4u^{32}+\cdots+a+1,\ u^{34}+3u^{33}+\cdots+3u^2-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 2u^{33} + 4u^{32} + \cdots + 2u - 1 \\ u^{33} + \frac{5}{2}u^{32} + \cdots - 2u^2 + \frac{1}{2}u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^4 + u^2 - 1 \\ -\frac{1}{2}u^{32} - u^{31} + \cdots + 3u^2 + \frac{3}{2}u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4 - u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{2}u^{33} + u^{32} + \cdots + 2u + \frac{1}{2} \\ \frac{1}{2}u^{33} + 4u^{32} + \cdots + 4u - 2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -2u^{33} - 4u^{32} + \cdots - 2u + 1 \\ -2u^{33} - \frac{11}{2}u^{32} + \cdots - \frac{5}{2}u + 2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ u^8 - 2u^6 + 2u^4 - 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ u^8 - 2u^6 + 2u^4 - 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{17}{2}u^{33} + 19u^{32} + \cdots + 10u - \frac{25}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{34} + 4u^{33} + \cdots + 7u + 1$
c_2	$u^{34} + 20u^{33} + \cdots - 31u + 1$
c_3, c_7	$u^{34} + u^{33} + \cdots - 160u - 64$
c_5	$u^{34} - 4u^{33} + \cdots + 19u + 2$
c_6, c_{10}	$u^{34} + 3u^{33} + \cdots + 3u^2 - 1$
c_8	$u^{34} - 3u^{33} + \cdots + 4u - 1$
c_9, c_{11}	$u^{34} + 13u^{33} + \cdots + 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{34} + 20y^{33} + \cdots - 31y + 1$
c_2	$y^{34} - 8y^{33} + \cdots - 1215y + 1$
c_3, c_7	$y^{34} - 35y^{33} + \cdots - 29696y + 4096$
c_5	$y^{34} - 36y^{33} + \cdots - 209y + 4$
c_6, c_{10}	$y^{34} - 13y^{33} + \cdots - 6y + 1$
c_8	$y^{34} - 41y^{33} + \cdots - 6y + 1$
c_9, c_{11}	$y^{34} + 19y^{33} + \cdots + 122y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.992042 + 0.199548I$ $a = -0.462101 - 0.975157I$ $b = 0.138300 - 0.172846I$	$-3.59663 + 0.10881I$	$-14.08590 - 0.63240I$
$u = -0.992042 - 0.199548I$ $a = -0.462101 + 0.975157I$ $b = 0.138300 + 0.172846I$	$-3.59663 - 0.10881I$	$-14.08590 + 0.63240I$
$u = -0.794834 + 0.581726I$ $a = 0.594117 + 0.707965I$ $b = 0.427182 - 0.203209I$	$1.44216 - 0.29929I$	$-6.95462 + 0.76731I$
$u = -0.794834 - 0.581726I$ $a = 0.594117 - 0.707965I$ $b = 0.427182 + 0.203209I$	$1.44216 + 0.29929I$	$-6.95462 - 0.76731I$
$u = -0.524940 + 0.808295I$ $a = 0.56013 + 1.37764I$ $b = -0.888548 + 0.835142I$	$-2.09915 - 1.64840I$	$-5.13395 + 0.24192I$
$u = -0.524940 - 0.808295I$ $a = 0.56013 - 1.37764I$ $b = -0.888548 - 0.835142I$	$-2.09915 + 1.64840I$	$-5.13395 - 0.24192I$
$u = 0.840078 + 0.614168I$ $a = -0.613136 - 0.577949I$ $b = -1.41546 + 0.81235I$	$1.86820 - 2.41838I$	$-3.21586 + 3.79872I$
$u = 0.840078 - 0.614168I$ $a = -0.613136 + 0.577949I$ $b = -1.41546 - 0.81235I$	$1.86820 + 2.41838I$	$-3.21586 - 3.79872I$
$u = -0.560590 + 0.879313I$ $a = -0.41210 - 1.50617I$ $b = 1.46754 - 1.00369I$	$-5.42766 - 6.75489I$	$-7.92215 + 3.41714I$
$u = -0.560590 - 0.879313I$ $a = -0.41210 + 1.50617I$ $b = 1.46754 + 1.00369I$	$-5.42766 + 6.75489I$	$-7.92215 - 3.41714I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.412943 + 0.845694I$ $a = -0.76752 - 1.52606I$ $b = 0.44847 - 1.45277I$	$-6.32362 + 2.72594I$	$-8.84636 - 2.76466I$
$u = -0.412943 - 0.845694I$ $a = -0.76752 + 1.52606I$ $b = 0.44847 + 1.45277I$	$-6.32362 - 2.72594I$	$-8.84636 + 2.76466I$
$u = -0.893031 + 0.587012I$ $a = -0.693593 - 0.583293I$ $b = -0.956249 - 0.192787I$	$1.13021 + 4.95087I$	$-8.36503 - 5.99635I$
$u = -0.893031 - 0.587012I$ $a = -0.693593 + 0.583293I$ $b = -0.956249 + 0.192787I$	$1.13021 - 4.95087I$	$-8.36503 + 5.99635I$
$u = 0.985371 + 0.556607I$ $a = 0.620847 + 0.887273I$ $b = 1.96665 - 0.76219I$	$-1.53468 - 5.70085I$	$-9.72834 + 6.45202I$
$u = 0.985371 - 0.556607I$ $a = 0.620847 - 0.887273I$ $b = 1.96665 + 0.76219I$	$-1.53468 + 5.70085I$	$-9.72834 - 6.45202I$
$u = 0.834354 + 0.777211I$ $a = -0.618925 + 0.083135I$ $b = -0.304799 + 1.255790I$	$2.63328 - 1.69138I$	$-7.83080 + 4.78233I$
$u = 0.834354 - 0.777211I$ $a = -0.618925 - 0.083135I$ $b = -0.304799 - 1.255790I$	$2.63328 + 1.69138I$	$-7.83080 - 4.78233I$
$u = 1.15996$ $a = 1.41319$ $b = 1.11298$	-8.01260	-11.0100
$u = 0.691950 + 0.428071I$ $a = 0.759172 + 0.721685I$ $b = 1.51068 - 1.17159I$	$-0.45796 + 1.44409I$	$-6.46359 + 0.67387I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.691950 - 0.428071I$ $a = 0.759172 - 0.721685I$ $b = 1.51068 + 1.17159I$	$-0.45796 - 1.44409I$	$-6.46359 - 0.67387I$
$u = 1.197460 + 0.057621I$ $a = -1.51287 - 0.16435I$ $b = -0.911142 + 0.347693I$	$-12.04690 - 5.13421I$	$-13.68860 + 3.30024I$
$u = 1.197460 - 0.057621I$ $a = -1.51287 + 0.16435I$ $b = -0.911142 - 0.347693I$	$-12.04690 + 5.13421I$	$-13.68860 - 3.30024I$
$u = 0.921897 + 0.768739I$ $a = 0.213500 - 0.587608I$ $b = -1.053180 - 0.826825I$	$2.37182 - 4.13713I$	$-9.61954 + 1.32790I$
$u = 0.921897 - 0.768739I$ $a = 0.213500 + 0.587608I$ $b = -1.053180 + 0.826825I$	$2.37182 + 4.13713I$	$-9.61954 - 1.32790I$
$u = -1.072580 + 0.660990I$ $a = -1.205520 - 0.383155I$ $b = -1.20314 - 2.13287I$	$-3.72457 + 7.16368I$	$-7.25453 - 4.71165I$
$u = -1.072580 - 0.660990I$ $a = -1.205520 + 0.383155I$ $b = -1.20314 + 2.13287I$	$-3.72457 - 7.16368I$	$-7.25453 + 4.71165I$
$u = -1.110150 + 0.615554I$ $a = 1.267740 + 0.575502I$ $b = 0.56941 + 2.11006I$	$-8.42620 + 2.66430I$	$-11.45013 - 1.91985I$
$u = -1.110150 - 0.615554I$ $a = 1.267740 - 0.575502I$ $b = 0.56941 - 2.11006I$	$-8.42620 - 2.66430I$	$-11.45013 + 1.91985I$
$u = -1.089780 + 0.695595I$ $a = 1.309000 + 0.281439I$ $b = 1.38267 + 2.54914I$	$-7.0419 + 12.5932I$	$-9.63219 - 7.64177I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.089780 - 0.695595I$ $a = 1.309000 - 0.281439I$ $b = 1.38267 - 2.54914I$	$-7.0419 - 12.5932I$	$-9.63219 + 7.64177I$
$u = -0.643512$ $a = 0.650445$ $b = 0.109056$	-0.881314	-11.5070
$u = 0.221560 + 0.275264I$ $a = 0.92943 + 1.46869I$ $b = 0.710592 - 0.584374I$	$-0.37760 + 1.65869I$	$-3.04964 - 3.10072I$
$u = 0.221560 - 0.275264I$ $a = 0.92943 - 1.46869I$ $b = 0.710592 + 0.584374I$	$-0.37760 - 1.65869I$	$-3.04964 + 3.10072I$

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

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$

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

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

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

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

$$a_2 = \begin{pmatrix} u^2b \\ bu + 2b \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^2b - 6bu - u^2 + 6u - 11$

(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_7	u^6
c_4	$(u^2-u+1)^3$
c_6	$(u^3+u^2-1)^2$
c_8, c_{11}	$(u^3+u^2+2u+1)^2$
c_9	$(u^3-u^2+2u-1)^2$
c_{10}	$(u^3-u^2+1)^2$

(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_7	y^6
c_6, c_{10}	$(y^3-y^2+2y-1)^2$
c_8, c_9, 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
$u = 0.877439 + 0.744862I$ $a = 0$ $b = -0.818128 - 0.292480I$	$3.02413 - 4.85801I$	$-2.74410 + 7.22587I$
$u = 0.877439 + 0.744862I$ $a = 0$ $b = 0.155769 + 0.854759I$	$3.02413 - 0.79824I$	$-4.03424 - 1.64667I$
$u = 0.877439 - 0.744862I$ $a = 0$ $b = -0.818128 + 0.292480I$	$3.02413 + 4.85801I$	$-2.74410 - 7.22587I$
$u = 0.877439 - 0.744862I$ $a = 0$ $b = 0.155769 - 0.854759I$	$3.02413 + 0.79824I$	$-4.03424 + 1.64667I$
$u = -0.754878$ $a = 0$ $b = 0.662359 + 1.147240I$	$-1.11345 - 2.02988I$	$-12.72167 + 5.84990I$
$u = -0.754878$ $a = 0$ $b = 0.662359 - 1.147240I$	$-1.11345 + 2.02988I$	$-12.72167 - 5.84990I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^3)(u^{34}+4u^{33}+\cdots+7u+1)$
c_2	$((u^2+u+1)^3)(u^{34}+20u^{33}+\cdots-31u+1)$
c_3, c_7	$u^6(u^{34}+u^{33}+\cdots-160u-64)$
c_4	$((u^2-u+1)^3)(u^{34}+4u^{33}+\cdots+7u+1)$
c_5	$((u^2+u+1)^3)(u^{34}-4u^{33}+\cdots+19u+2)$
c_6	$((u^3+u^2-1)^2)(u^{34}+3u^{33}+\cdots+3u^2-1)$
c_8	$((u^3+u^2+2u+1)^2)(u^{34}-3u^{33}+\cdots+4u-1)$
c_9	$((u^3-u^2+2u-1)^2)(u^{34}+13u^{33}+\cdots+6u+1)$
c_{10}	$((u^3-u^2+1)^2)(u^{34}+3u^{33}+\cdots+3u^2-1)$
c_{11}	$((u^3+u^2+2u+1)^2)(u^{34}+13u^{33}+\cdots+6u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^3)(y^{34}+20y^{33}+\cdots-31y+1)$
c_2	$((y^2+y+1)^3)(y^{34}-8y^{33}+\cdots-1215y+1)$
c_3, c_7	$y^6(y^{34}-35y^{33}+\cdots-29696y+4096)$
c_5	$((y^2+y+1)^3)(y^{34}-36y^{33}+\cdots-209y+4)$
c_6, c_{10}	$((y^3-y^2+2y-1)^2)(y^{34}-13y^{33}+\cdots-6y+1)$
c_8	$((y^3+3y^2+2y-1)^2)(y^{34}-41y^{33}+\cdots-6y+1)$
c_9, c_{11}	$((y^3+3y^2+2y-1)^2)(y^{34}+19y^{33}+\cdots+122y+1)$