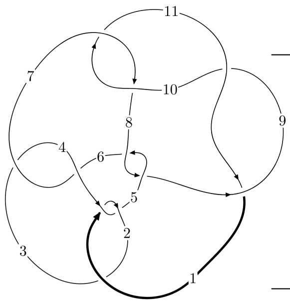
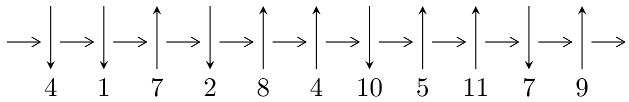
$11n_{32}$ ($K11n_{32}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 19332758361u^{37} + 38734840795u^{36} + \cdots + 2377130057774b - 28141164923, \\ & -1588415703u^{37} - 117670058213u^{36} + \cdots + 237713005774a + 597215892201, \\ & u^{38} + 2u^{37} + \cdots - 3u + 1\rangle \\ I_2^u = \langle & b,\ -u^3 - 2u^2 + a - 2u,\ u^4 + u^3 + u^2 + 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 42 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.
$\boldsymbol{I_1^u = \langle 1.93\times 10^{10}u^{37}+3.87\times 10^{10}u^{36}+\cdots+2.38\times 10^{11}b-2.81\times 10^{10},\ -1.59\times 10^{9}u^{37}-1.18\times 10^{11}u^{36}+\cdots+2.38\times 10^{11}a+5.97\times 10^{11},\ u^{38}+2u^{37}+\cdots-3u+1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.00668207u^{37}+0.495009u^{36}+\cdots+2.86415u-2.51234\\-0.0813281u^{37}-0.162948u^{36}+\cdots+1.48580u+0.118383\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.0880102u^{37}+0.657957u^{36}+\cdots+1.37835u-2.63072\\-0.0813281u^{37}-0.162948u^{36}+\cdots+1.48580u+0.118383\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.398557u^{37}+0.370367u^{36}+\cdots+1.42515u-1.31533\\0.825719u^{37}+1.65248u^{36}+\cdots-2.59421u+0.826766\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.397978u^{37}-0.632706u^{36}+\cdots+2.34056u-1.71535\\1.43070u^{37}+2.85936u^{36}+\cdots-5.59937u+1.82868\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^3\\u^3+u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^5-u\\u^5+u^3+u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.196219u^{37}+0.547563u^{36}+\cdots+2.31038u-3.08666\\0.243984u^{37}+0.488844u^{36}+\cdots+0.542588u+0.644851\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.196219u^{37}+0.547563u^{36}+\cdots+2.31038u-3.08666\\0.243984u^{37}+0.488844u^{36}+\cdots+0.542588u+0.644851\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{159159118679}{118856502887}u^{37} - \frac{28323238958}{118856502887}u^{36} + \cdots + \frac{412587165626}{118856502887}u - \frac{634600057867}{118856502887}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{38} - 5u^{37} + \cdots + u + 1$
c_2	$u^{38} + 15u^{37} + \cdots - 81u + 1$
c_3, c_6	$u^{38} + 5u^{37} + \cdots + 104u + 16$
c_5, c_8	$u^{38} + 2u^{37} + \cdots + u + 1$
c_7, c_{10}	$u^{38} - 2u^{37} + \cdots + 3u + 1$
c_9, c_{11}	$u^{38} - 14u^{37} + \cdots - 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{38} - 15y^{37} + \cdots + 81y + 1$
c_2	$y^{38} + 21y^{37} + \cdots - 2859y + 1$
c_3, c_6	$y^{38} - 27y^{37} + \cdots - 320y + 256$
c_5, c_8	$y^{38} + 10y^{37} + \cdots + 7y + 1$
c_7, c_{10}	$y^{38} + 14y^{37} + \cdots + 7y + 1$
c_9, c_{11}	$y^{38} + 22y^{37} + \cdots + 179y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.832670 + 0.614929I$ $a = -0.103257 - 0.153512I$ $b = -1.139290 - 0.198092I$	$0.789901 + 0.872417I$	$0.203682 - 1.029460I$
$u = 0.832670 - 0.614929I$ $a = -0.103257 + 0.153512I$ $b = -1.139290 + 0.198092I$	$0.789901 - 0.872417I$	$0.203682 + 1.029460I$
$u = 0.524709 + 0.798298I$ $a = 1.72507 + 2.99817I$ $b = -0.278602 + 0.363866I$	$-1.79987 - 1.63683I$	$0.6342 + 22.3814I$
$u = 0.524709 - 0.798298I$ $a = 1.72507 - 2.99817I$ $b = -0.278602 - 0.363866I$	$-1.79987 + 1.63683I$	$0.6342 - 22.3814I$
$u = -0.878464 + 0.565928I$ $a = -0.118175 - 0.080326I$ $b = 1.32611 - 0.72615I$	$-0.48850 - 8.10053I$	$-2.17285 + 4.60397I$
$u = -0.878464 - 0.565928I$ $a = -0.118175 + 0.080326I$ $b = 1.32611 + 0.72615I$	$-0.48850 + 8.10053I$	$-2.17285 - 4.60397I$
$u = -0.628453 + 0.715455I$ $a = -1.32808 + 0.68300I$ $b = 0.55366 + 1.35876I$	$-3.24288 - 0.91080I$	$-5.85440 + 2.87226I$
$u = -0.628453 - 0.715455I$ $a = -1.32808 - 0.68300I$ $b = 0.55366 - 1.35876I$	$-3.24288 + 0.91080I$	$-5.85440 - 2.87226I$
$u = -0.638347 + 0.845542I$ $a = -1.27115 + 1.10932I$ $b = 1.52004 - 0.19492I$	$-4.60338 + 2.49292I$	$-7.66096 - 3.58742I$
$u = -0.638347 - 0.845542I$ $a = -1.27115 - 1.10932I$ $b = 1.52004 + 0.19492I$	$-4.60338 - 2.49292I$	$-7.66096 + 3.58742I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.842903 + 0.381952I$ $a = -0.152164 - 0.103068I$ $b = 1.156070 - 0.287792I$	$0.57801 - 4.07433I$	$-1.00107 + 5.21688I$
$u = 0.842903 - 0.381952I$ $a = -0.152164 + 0.103068I$ $b = 1.156070 + 0.287792I$	$0.57801 + 4.07433I$	$-1.00107 - 5.21688I$
$u = 0.563322 + 0.919944I$ $a = -0.76392 - 1.40999I$ $b = -0.162866 - 0.630461I$	$-1.35379 - 2.75023I$	$-1.67570 - 2.67847I$
$u = 0.563322 - 0.919944I$ $a = -0.76392 + 1.40999I$ $b = -0.162866 + 0.630461I$	$-1.35379 + 2.75023I$	$-1.67570 + 2.67847I$
$u = 0.361485 + 0.817539I$ $a = -0.685289 - 0.170023I$ $b = 0.230395 + 0.298664I$	$0.31225 - 1.54508I$	$2.23777 + 4.87383I$
$u = 0.361485 - 0.817539I$ $a = -0.685289 + 0.170023I$ $b = 0.230395 - 0.298664I$	$0.31225 + 1.54508I$	$2.23777 - 4.87383I$
$u = -0.628379 + 0.944326I$ $a = 1.065350 + 0.455542I$ $b = 0.26079 - 1.59013I$	$-2.54932 + 5.85938I$	$-3.38157 - 9.01726I$
$u = -0.628379 - 0.944326I$ $a = 1.065350 - 0.455542I$ $b = 0.26079 + 1.59013I$	$-2.54932 - 5.85938I$	$-3.38157 + 9.01726I$
$u = -0.060400 + 1.136280I$ $a = 2.28811 - 0.57277I$ $b = -1.53818 + 0.08244I$	$7.11789 - 0.13853I$	$5.96603 - 0.12241I$
$u = -0.060400 - 1.136280I$ $a = 2.28811 + 0.57277I$ $b = -1.53818 - 0.08244I$	$7.11789 + 0.13853I$	$5.96603 + 0.12241I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.724985+0.458617I$ $a=-0.059958-0.272456I$ $b=-1.32367+0.54173I$	$1.89024-2.00477I$	$0.55164+1.57531I$
$u=-0.724985-0.458617I$ $a=-0.059958+0.272456I$ $b=-1.32367-0.54173I$	$1.89024+2.00477I$	$0.55164-1.57531I$
$u=\ \ 0.068191+1.190830I$ $a=-2.23931+0.30504I$ $b=\ \ 1.45402-0.43836I$	$6.16601-6.56194I$	$4.09697+5.13849I$
$u=\ \ 0.068191-1.190830I$ $a=-2.23931-0.30504I$ $b=\ \ 1.45402+0.43836I$	$6.16601+6.56194I$	$4.09697-5.13849I$
$u=\ \ 0.019048+0.780202I$ $a=-0.406821-0.905002I$ $b=-0.275945+0.814062I$	$0.77944-1.52604I$	$4.36193+4.60900I$
$u=\ \ 0.019048-0.780202I$ $a=-0.406821+0.905002I$ $b=-0.275945-0.814062I$	$0.77944+1.52604I$	$4.36193-4.60900I$
$u=-0.619321+1.057560I$ $a=\ \ 1.77643-1.22273I$ $b=-1.62072-0.63223I$	$3.58657+7.12992I$	$2.46388-6.33493I$
$u=-0.619321-1.057560I$ $a=\ \ 1.77643+1.22273I$ $b=-1.62072+0.63223I$	$3.58657-7.12992I$	$2.46388+6.33493I$
$u=\ \ 0.593324+1.105700I$ $a=-0.99629-1.25159I$ $b=\ \ 1.233010+0.050062I$	$2.77951-1.18659I$	$2.30827-0.46017I$
$u=\ \ 0.593324-1.105700I$ $a=-0.99629+1.25159I$ $b=\ \ 1.233010-0.050062I$	$2.77951+1.18659I$	$2.30827+0.46017I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.876704 + 0.917775I$ $a = 0.013016 + 0.303072I$ $b = 0.533786 + 0.030166I$	$-8.01967 + 3.23855I$	$7.49106 - 4.17157I$
$u = -0.876704 - 0.917775I$ $a = 0.013016 - 0.303072I$ $b = 0.533786 - 0.030166I$	$-8.01967 - 3.23855I$	$7.49106 + 4.17157I$
$u = 0.701663 + 1.057650I$ $a = 0.93271 + 1.41473I$ $b = -1.259830 + 0.356568I$	$2.13442 - 6.62776I$	$1.31703 + 5.48212I$
$u = 0.701663 - 1.057650I$ $a = 0.93271 - 1.41473I$ $b = -1.259830 - 0.356568I$	$2.13442 + 6.62776I$	$1.31703 - 5.48212I$
$u = -0.696643 + 1.086410I$ $a = -1.70797 + 1.24411I$ $b = 1.43940 + 0.79817I$	$1.10073 + 13.93900I$	$-0.18114 - 8.68220I$
$u = -0.696643 - 1.086410I$ $a = -1.70797 - 1.24411I$ $b = 1.43940 - 0.79817I$	$1.10073 - 13.93900I$	$-0.18114 + 8.68220I$
$u = 0.244381 + 0.216056I$ $a = -2.96831 + 1.33736I$ $b = 0.391833 + 0.533554I$	$-1.88768 - 0.79705I$	$-5.20475 - 0.93842I$
$u = 0.244381 - 0.216056I$ $a = -2.96831 - 1.33736I$ $b = 0.391833 - 0.533554I$	$-1.88768 + 0.79705I$	$-5.20475 + 0.93842I$

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^3 + 2u^2 + 2u \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^3 + 2u^2 + 2u \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^2 + 1 \\ -u^3 - u^2 - 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 - 1 \\ u^3 + u^2 + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^3 + u^2 + 2u - 1 \\ u^3 + u^2 + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^3 + u^2 + 2u - 1 \\ u^3 + u^2 + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^3 + 3u^2 + 8u$

(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
$u = 0.351808 + 0.720342I$ $a = -0.59074 + 2.34806I$ $b = 0$	$-1.43393 - 1.41510I$	$3.14142 + 7.60220I$
$u = 0.351808 - 0.720342I$ $a = -0.59074 - 2.34806I$ $b = 0$	$-1.43393 + 1.41510I$	$3.14142 - 7.60220I$
$u = -0.851808 + 0.911292I$ $a = -0.409261 - 0.055548I$ $b = 0$	$-8.43568 + 3.16396I$	$-11.64142 - 1.04769I$
$u = -0.851808 - 0.911292I$ $a = -0.409261 + 0.055548I$ $b = 0$	$-8.43568 - 3.16396I$	$-11.64142 + 1.04769I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{38}-5u^{37}+\cdots+u+1)$
c_2	$((u+1)^4)(u^{38}+15u^{37}+\cdots-81u+1)$
c_3, c_6	$u^4(u^{38}+5u^{37}+\cdots+104u+16)$
c_4	$((u+1)^4)(u^{38}-5u^{37}+\cdots+u+1)$
c_5	$(u^4+u^3+3u^2+2u+1)(u^{38}+2u^{37}+\cdots+u+1)$
c_7	$(u^4+u^3+u^2+1)(u^{38}-2u^{37}+\cdots+3u+1)$
c_8	$(u^4-u^3+3u^2-2u+1)(u^{38}+2u^{37}+\cdots+u+1)$
c_9	$(u^4+u^3+3u^2+2u+1)(u^{38}-14u^{37}+\cdots-7u+1)$
c_{10}	$(u^4-u^3+u^2+1)(u^{38}-2u^{37}+\cdots+3u+1)$
c_{11}	$(u^4-u^3+3u^2-2u+1)(u^{38}-14u^{37}+\cdots-7u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^4)(y^{38} - 15y^{37} + \cdots + 81y + 1)$
c_2	$((y-1)^4)(y^{38} + 21y^{37} + \cdots - 2859y + 1)$
c_3, c_6	$y^4(y^{38} - 27y^{37} + \cdots - 320y + 256)$
c_5, c_8	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{38} + 10y^{37} + \cdots + 7y + 1)$
c_7, c_{10}	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{38} + 14y^{37} + \cdots + 7y + 1)$
c_9, c_{11}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{38} + 22y^{37} + \cdots + 179y + 1)$