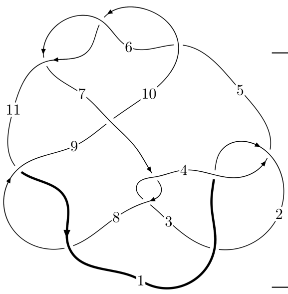
$11n_{70}$ ($K11n_{70}$)



A knot diagram[1]

Linearized knot diagam

$\to \downarrow \to \downarrow \to \uparrow \to \downarrow \to \downarrow \to \downarrow \to \uparrow \to \uparrow \to \downarrow \to \downarrow \to \uparrow \to$

4 1 8 2 10 11 4 1 7 6 9

Solving Sequence

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

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

$$I_1^u = \langle 34u^{10} - 4u^9 + 399u^8 - 28u^7 + 1229u^6 - 12u^5 + 313u^4 + 20u^3 - 168u^2 + 161b - 217u - 33,$$
$$- 122u^{10} - 33u^9 + \cdots + 161a + 412,\ u^{11} + 12u^9 + 38u^7 + 10u^5 - 11u^3 - 2u + 1\rangle$$
$$I_2^u = \langle b,\ u^4 - u^3 + 2u^2 + a - u + 1,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 16 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. $I^u_1 = \langle 34u^{10} - 4u^9 + \cdots + 161b - 33,\ -122u^{10} - 33u^9 + \cdots + 161a + 412,\ u^{11} + 12u^9 + 38u^7 + 10u^5 - 11u^3 - 2u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.757764u^{10} + 0.204969u^9 + \cdots - 2.13043u - 2.55901 \\ -0.211180u^{10} + 0.0248447u^9 + \cdots + 1.34783u + 0.204969 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.968944u^{10} + 0.180124u^9 + \cdots - 3.47826u - 2.76398 \\ -0.211180u^{10} + 0.0248447u^9 + \cdots + 1.34783u + 0.204969 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.968944u^{10} + 0.180124u^9 + \cdots - 3.47826u - 2.76398 \\ -0.366460u^{10} - 0.0745342u^9 + \cdots + 1.95652u + 0.385093 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.577640u^{10} - 0.0496894u^9 + \cdots + 2.30435u + 0.590062 \\ 0.478261u^{10} - 0.173913u^9 + \cdots - 0.434783u - 0.434783 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.385093u^{10} + 0.366460u^9 + \cdots - 1.86957u - 0.726708 \\ -0.0496894u^{10} - 0.111801u^9 + \cdots - 0.565217u + 0.577640 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.335404u^{10} + 0.254658u^9 + \cdots - 1.43478u - 1.14907 \\ -0.248447u^{10} - 0.559006u^9 + \cdots - 0.826087u + 0.888199 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^7 - u^6 + 7u^5 - 6u^4 + 7u^3 - u^2 + u \\ -u^9 + u^8 - 8u^7 + 7u^6 - 13u^5 + 7u^4 - 2u^3 + u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^7 - u^6 + 7u^5 - 6u^4 + 7u^3 - u^2 + u \\ -u^9 + u^8 - 8u^7 + 7u^6 - 13u^5 + 7u^4 - 2u^3 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{265}{161}u^{10} - \frac{88}{161}u^9 + \frac{449}{23}u^8 - \frac{157}{23}u^7 + \frac{9650}{161}u^6 - \frac{3162}{161}u^5 + \frac{1412}{161}u^4 + \frac{1728}{161}u^3 - \frac{436}{23}u^2 + \frac{215}{23}u - \frac{1048}{161}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{11} - 6u^{10} + \cdots + 2u - 1$
c_2	$u^{11} + 24u^{10} + \cdots - 2u + 1$
c_3, c_7	$u^{11} - u^{10} + \cdots - 64u - 32$
c_5, c_6, c_{10}	$u^{11} + 2u^{10} - 4u^9 - 8u^8 + 6u^7 + 8u^6 - 8u^5 + 9u^3 + 2u^2 - 1$
c_8, c_{11}	$u^{11} + 12u^9 + 38u^7 + 10u^5 - 11u^3 - 2u - 1$
c_9	$u^{11} - 6u^{10} + \cdots + 20u - 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{11} - 24y^{10} + \cdots - 2y - 1$
c_2	$y^{11} - 116y^{10} + \cdots + 306y - 1$
c_3, c_7	$y^{11} + 33y^{10} + \cdots + 3584y - 1024$
c_5, c_6, c_{10}	$y^{11} - 12y^{10} + \cdots + 4y - 1$
c_8, c_{11}	$y^{11} + 24y^{10} + \cdots + 4y - 1$
c_9	$y^{11} - 12y^{10} + \cdots + 540y - 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.038253 + 0.855092I$ $a = 0.943582 + 0.148881I$ $b = 0.736543 + 0.902004I$	$-5.67466 + 3.04693I$	$-7.70492 - 3.06297I$
$u = 0.038253 - 0.855092I$ $a = 0.943582 - 0.148881I$ $b = 0.736543 - 0.902004I$	$-5.67466 - 3.04693I$	$-7.70492 + 3.06297I$
$u = -0.723670$ $a = 2.50476$ $b = -2.03541$	-8.89454	-10.0850
$u = 0.652390$ $a = 0.388538$ $b = 0.487023$	-2.74892	-1.30150
$u = -0.167337 + 0.482250I$ $a = -0.485416 + 0.373126I$ $b = -0.326857 + 0.480234I$	$-0.105049 - 1.037840I$	$-1.85452 + 6.48223I$
$u = -0.167337 - 0.482250I$ $a = -0.485416 - 0.373126I$ $b = -0.326857 - 0.480234I$	$-0.105049 + 1.037840I$	$-1.85452 - 6.48223I$
$u = 0.330126$ $a = -3.63442$ $b = 0.726217$	-2.26362	-4.99860
$u = -0.00594 + 2.39914I$ $a = -0.131668 - 0.965580I$ $b = -0.73626 - 3.16232I$	$14.4281 + 6.7220I$	$-9.53086 - 2.63003I$
$u = -0.00594 - 2.39914I$ $a = -0.131668 + 0.965580I$ $b = -0.73626 + 3.16232I$	$14.4281 - 6.7220I$	$-9.53086 + 2.63003I$
$u = 0.00560 + 2.41642I$ $a = 0.044064 - 0.931881I$ $b = 0.23766 - 3.02607I$	$-18.1442 - 2.6778I$	$-6.71737 + 2.37407I$

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.00560-2.41642I$		
$a=$	$0.044064+0.931881I$	$-18.1442+2.6778I$	$-6.71737-2.37407I$
$b=$	$0.23766+3.02607I$		

II. $\boldsymbol{I_2^u = \langle b,\ u^4 - u^3 + 2u^2 + a - u + 1,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^4 + u^3 - 2u^2 + u - 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^4 + u^3 - 2u^2 + u - 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^4 + u^3 - 2u^2 + u - 1 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 + u^3 - u^2 - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^4 + 4u^3 - 6u^2 + 3u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_7	y^5
c_5, c_6, c_{10}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_8, c_{11}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_9	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = 0.428550 + 1.039280I$ $b = 0$	$-1.97403 - 1.53058I$	$-5.05737 + 4.09764I$
$u = -0.339110 - 0.822375I$ $a = 0.428550 - 1.039280I$ $b = 0$	$-1.97403 + 1.53058I$	$-5.05737 - 4.09764I$
$u = 0.766826$ $a = -1.30408$ $b = 0$	-4.04602	-9.76980
$u = 0.455697 + 1.200150I$ $a = -0.276511 + 0.728237I$ $b = 0$	$-7.51750 + 4.40083I$	$-9.05774 - 4.18967I$
$u = 0.455697 - 1.200150I$ $a = -0.276511 - 0.728237I$ $b = 0$	$-7.51750 - 4.40083I$	$-9.05774 + 4.18967I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{11}-6u^{10}+\cdots+2u-1)$
c_2	$((u+1)^5)(u^{11}+24u^{10}+\cdots-2u+1)$
c_3, c_7	$u^5(u^{11}-u^{10}+\cdots-64u-32)$
c_4	$((u+1)^5)(u^{11}-6u^{10}+\cdots+2u-1)$
c_5, c_6	$(u^5+u^4-2u^3-u^2+u-1)$ $\cdot(u^{11}+2u^{10}-4u^9-8u^8+6u^7+8u^6-8u^5+9u^3+2u^2-1)$
c_8	$(u^5-u^4+2u^3-u^2+u-1)(u^{11}+12u^9+\cdots-2u-1)$
c_9	$(u^5+3u^4+4u^3+u^2-u-1)(u^{11}-6u^{10}+\cdots+20u-7)$
c_{10}	$(u^5-u^4-2u^3+u^2+u+1)$ $\cdot(u^{11}+2u^{10}-4u^9-8u^8+6u^7+8u^6-8u^5+9u^3+2u^2-1)$
c_{11}	$(u^5+u^4+2u^3+u^2+u+1)(u^{11}+12u^9+\cdots-2u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^5)(y^{11} - 24y^{10} + \cdots - 2y - 1)$
c_2	$((y-1)^5)(y^{11} - 116y^{10} + \cdots + 306y - 1)$
c_3, c_7	$y^5(y^{11} + 33y^{10} + \cdots + 3584y - 1024)$
c_5, c_6, c_{10}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{11} - 12y^{10} + \cdots + 4y - 1)$
c_8, c_{11}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{11} + 24y^{10} + \cdots + 4y - 1)$
c_9	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)(y^{11} - 12y^{10} + \cdots + 540y - 49)$