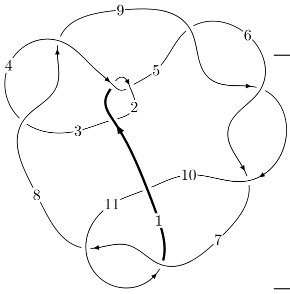
$11n_{57}$ ($K11n_{57}$)



A knot diagram[1]

Linearized knot diagam

$\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow$

4 1 8 2 9 10 11 4 6 1 7

Solving Sequence

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

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

$I_1^u = \langle u^5 - u^4 + 2u^3 - u^2 + b + u,\ u^5 - u^4 + 3u^3 - 2u^2 + a + 2u - 1,\ u^8 - 2u^7 + 5u^6 - 6u^5 + 7u^4 - 6u^3 + 2u^2 -$
$I_2^u = \langle b - 1,\ u^3 + u^2 + a + u,\ u^5 + u^4 + 2u^3 + u^2 + u + 1\rangle$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 13 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. $I_1^u =$
$\langle u^5-u^4+2u^3-u^2+b+u,\ u^5-u^4+3u^3-2u^2+a+2u-1,\ u^8-2u^7+\cdots-u-1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^5+u^4-3u^3+2u^2-2u+1 \\ -u^5+u^4-2u^3+u^2-u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^6+u^5-2u^4+2u^3+2 \\ u^6+3u^4-u^3+2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^5+u^4+u^3+2u^2+2 \\ u^6+3u^4-u^3+2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 3u^5+u^4+6u^3+u^2+3u+2 \\ -u^7+4u^6-3u^5+9u^4-2u^3+4u^2+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^5+2u^3+u \\ u^5+u^3+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u^7+2u^6-6u^5+4u^4-6u^3+2u^2-u \\ -2u^7+3u^6-6u^5+5u^4-6u^3+2u^2-u-1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u^7+2u^6-6u^5+4u^4-6u^3+2u^2-u \\ -2u^7+3u^6-6u^5+5u^4-6u^3+2u^2-u-1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^7-9u^6+18u^5-21u^4+18u^3-14u^2-7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^8 - 6u^7 + 7u^6 + 9u^5 + 6u^4 - 40u^3 - 13u^2 + 5u - 1$
c_2	$u^8 + 22u^7 + 169u^6 + 503u^5 + 632u^4 + 1860u^3 + 557u^2 - u + 1$
c_3, c_8	$u^8 - 7u^7 - 4u^6 + 119u^5 - 212u^4 - 16u^3 + 120u^2 + 64u + 32$
c_5, c_6, c_9	$u^8 + 2u^7 - 7u^6 - 12u^5 + 7u^4 + 2u^3 - 2u^2 - 3u - 1$
c_7, c_{11}	$u^8 - 2u^7 + 5u^6 - 6u^5 + 7u^4 - 6u^3 + 2u^2 - u - 1$
c_{10}	$u^8 + 6u^7 + 15u^6 + 14u^5 - 9u^4 - 30u^3 - 22u^2 - 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^8 - 22y^7 + 169y^6 - 503y^5 + 632y^4 - 1860y^3 + 557y^2 + y + 1$
c_2	$y^8 - 146y^7 + \cdots + 1113y + 1$
c_3, c_8	$y^8 - 57y^7 + \cdots + 3584y + 1024$
c_5, c_6, c_9	$y^8 - 18y^7 + 111y^6 - 254y^5 + 135y^4 - 90y^3 + 2y^2 - 5y + 1$
c_7, c_{11}	$y^8 + 6y^7 + 15y^6 + 14y^5 - 9y^4 - 30y^3 - 22y^2 - 5y + 1$
c_{10}	$y^8 - 6y^7 + 39y^6 - 150y^5 + 323y^4 - 334y^3 + 166y^2 - 69y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.09831$ $a = -2.90176$ $b = -2.68486$	16.8590	-9.91680
$u = 0.271970 + 0.836396I$ $a = 0.514998 - 0.132997I$ $b = -0.138100 - 0.151060I$	$-0.50482 + 1.32248I$	$-5.16164 - 4.61817I$
$u = 0.271970 - 0.836396I$ $a = 0.514998 + 0.132997I$ $b = -0.138100 + 0.151060I$	$-0.50482 - 1.32248I$	$-5.16164 + 4.61817I$
$u = -0.198501 + 1.220550I$ $a = -0.186478 + 1.015590I$ $b = 0.944682 + 1.046670I$	$-4.38598 - 2.12062I$	$-13.41968 + 2.09452I$
$u = -0.198501 - 1.220550I$ $a = -0.186478 - 1.015590I$ $b = 0.944682 - 1.046670I$	$-4.38598 + 2.12062I$	$-13.41968 - 2.09452I$
$u = 0.55241 + 1.37610I$ $a = -0.92476 + 1.87326I$ $b = -2.75351 + 0.38295I$	$12.57270 + 5.86054I$	$-12.50168 - 2.57970I$
$u = 0.55241 - 1.37610I$ $a = -0.92476 - 1.87326I$ $b = -2.75351 - 0.38295I$	$12.57270 - 5.86054I$	$-12.50168 + 2.57970I$
$u = -0.350076$ $a = 2.09424$ $b = 0.578712$	-0.969109	-9.91720

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^4 - u^3 - 2u - 12$

(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_8	u^5
c_5, c_6	$u^5 + u^4 - 2u^3 - u^2 + u - 1$
c_7	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_9	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_{10}	$u^5 - 3u^4 + 4u^3 - u^2 - u + 1$
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_8	y^5
c_5, c_6, c_9	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_7, c_{11}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_{10}	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = 0.871221 - 1.107660I$ $b = 1.00000$	$-1.97403 + 1.53058I$	$-12.02124 - 2.62456I$
$u = 0.339110 - 0.822375I$ $a = 0.871221 + 1.107660I$ $b = 1.00000$	$-1.97403 - 1.53058I$	$-12.02124 + 2.62456I$
$u = -0.766826$ $a = 0.629714$ $b = 1.00000$	-4.04602	-9.32390
$u = -0.455697 + 1.200150I$ $a = -0.186078 + 0.874646I$ $b = 1.00000$	$-7.51750 - 4.40083I$	$-12.31681 + 3.97407I$
$u = -0.455697 - 1.200150I$ $a = -0.186078 - 0.874646I$ $b = 1.00000$	$-7.51750 + 4.40083I$	$-12.31681 - 3.97407I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^5(u^8-6u^7+7u^6+9u^5+6u^4-40u^3-13u^2+5u-1)$
c_2	$(u+1)^5$ $\cdot(u^8+22u^7+169u^6+503u^5+632u^4+1860u^3+557u^2-u+1)$
c_3, c_8	$u^5(u^8-7u^7-4u^6+119u^5-212u^4-16u^3+120u^2+64u+32)$
c_4	$(u+1)^5(u^8-6u^7+7u^6+9u^5+6u^4-40u^3-13u^2+5u-1)$
c_5, c_6	$(u^5+u^4-2u^3-u^2+u-1)$ $\cdot(u^8+2u^7-7u^6-12u^5+7u^4+2u^3-2u^2-3u-1)$
c_7	$(u^5-u^4+2u^3-u^2+u-1)$ $\cdot(u^8-2u^7+5u^6-6u^5+7u^4-6u^3+2u^2-u-1)$
c_9	$(u^5-u^4-2u^3+u^2+u+1)$ $\cdot(u^8+2u^7-7u^6-12u^5+7u^4+2u^3-2u^2-3u-1)$
c_{10}	$(u^5-3u^4+4u^3-u^2-u+1)$ $\cdot(u^8+6u^7+15u^6+14u^5-9u^4-30u^3-22u^2-5u+1)$
c_{11}	$(u^5+u^4+2u^3+u^2+u+1)$ $\cdot(u^8-2u^7+5u^6-6u^5+7u^4-6u^3+2u^2-u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y-1)^5$ $\cdot (y^8 - 22y^7 + 169y^6 - 503y^5 + 632y^4 - 1860y^3 + 557y^2 + y + 1)$
c_2	$((y-1)^5)(y^8 - 146y^7 + \cdots + 1113y + 1)$
c_3, c_8	$y^5(y^8 - 57y^7 + \cdots + 3584y + 1024)$
c_5, c_6, c_9	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)$ $\cdot (y^8 - 18y^7 + 111y^6 - 254y^5 + 135y^4 - 90y^3 + 2y^2 - 5y + 1)$
c_7, c_{11}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)$ $\cdot (y^8 + 6y^7 + 15y^6 + 14y^5 - 9y^4 - 30y^3 - 22y^2 - 5y + 1)$
c_{10}	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)$ $\cdot (y^8 - 6y^7 + 39y^6 - 150y^5 + 323y^4 - 334y^3 + 166y^2 - 69y + 1)$