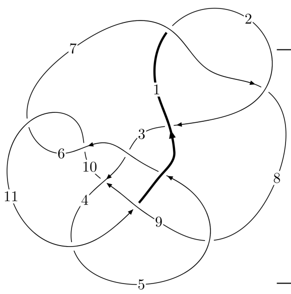
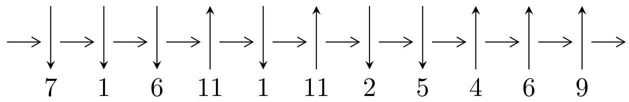
$11n_{145}$ ($K11n_{145}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^{11} + u^{10} + 2u^9 + u^8 + 4u^7 + 2u^6 + 3u^5 - u^4 + u^3 + 2u^2 + b + 2u + 1, \\
& 3u^{11} + 5u^{10} + 6u^9 + 3u^8 + 12u^7 + 11u^6 + 6u^5 - 6u^4 + 5u^3 + 8u^2 + a + 8u + 2, \\
& u^{12} + 2u^{11} + 3u^{10} + 2u^9 + 5u^8 + 5u^7 + 5u^6 - u^5 + 2u^4 + 2u^3 + 5u^2 + 2u + 1\rangle \\
I_2^u = \langle & u^6 - 2u^5 + 2u^4 + b - u + 1,\ -2u^7 + 6u^6 - 9u^5 + 5u^4 - 2u^3 + 4u^2 + a - 7u + 2, \\
& u^8 - 3u^7 + 5u^6 - 4u^5 + 3u^4 - 3u^3 + 4u^2 - 2u + 1\rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 20 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.

$$I^u_1 = \langle u^{11}+u^{10}+\cdots+b+1,\ 3u^{11}+5u^{10}+\cdots+a+2,\ u^{12}+2u^{11}+\cdots+2u+1\rangle$$

(i) Arc colorings

$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$

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

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

$$a_7 = \begin{pmatrix}-3u^{11}-5u^{10}+\cdots-8u-2\\-u^{11}-u^{10}-2u^9-u^8-4u^7-2u^6-3u^5+u^4-u^3-2u^2-2u-1\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-2u^{11}-3u^{10}+\cdots-2u-1\\-u^{11}-u^9-3u^7+u^6-u^5+u^4-u^3-2u^2\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-2u^{11}-2u^{10}-3u^9-8u^7-3u^6-3u^5+6u^4-7u^3-3u^2-2u\\u^{11}+u^{10}+2u^9+u^8+4u^7+2u^6+3u^5-u^4+u^3+2u^2+2u+1\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-2u^{11}-4u^{10}+\cdots-6u-1\\-u^{11}-u^{10}-2u^9-u^8-4u^7-2u^6-3u^5+u^4-u^3-2u^2-2u-1\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-u^{11}-3u^{10}-4u^9-2u^8-5u^7-8u^6-6u^5+4u^4-u^3-5u^2-6u-2\\-2u^{10}-2u^9-2u^8-u^7-7u^6-3u^5+2u^3-4u^2-3u-2\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-u^{11}-u^{10}-2u^9-4u^7-u^6-3u^5+4u^4-3u^3-u^2-3u\\-2u^{10}-2u^9-2u^8-u^7-7u^6-3u^5+2u^3-4u^2-3u-2\end{pmatrix}$$

$$a_8 = \begin{pmatrix}u^{11}+2u^{10}+2u^9+2u^8+3u^7+6u^6+u^5-u^3+6u^2+u+2\\u^{11}+u^{10}+2u^9+u^8+3u^7+3u^6+2u^5-u^4+4u^2+2u+1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^{11}-u^{10}-u^9-u^8-3u^7-2u^6-u^3-2u^2-u\\u^{11}+2u^{10}+u^9+2u^8+3u^7+5u^6-u^5+u^4+4u^2+2u+1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^{11}-u^{10}-u^9-u^8-3u^7-2u^6-u^3-2u^2-u\\u^{11}+2u^{10}+u^9+2u^8+3u^7+5u^6-u^5+u^4+4u^2+2u+1\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -3u^{11}-7u^{10}-8u^9-7u^8-14u^7-21u^6-8u^5-u^3-16u^2-4u-9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{12} - 11u^{11} + \cdots - 48u + 16$
c_2	$u^{12} + 9u^{11} + \cdots + 896u + 256$
c_3	$u^{12} - 4u^{11} + \cdots - 4u + 1$
c_4	$u^{12} - u^{11} + \cdots + 4u + 10$
c_5, c_8	$u^{12} + 2u^{11} + \cdots - 16u^2 + 1$
c_6, c_9, c_{10}	$u^{12} - 10u^{10} + \cdots - u + 1$
c_{11}	$u^{12} + 2u^{11} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{12} - 9y^{11} + \cdots - 896y + 256$
c_2	$y^{12} + 59y^{11} + \cdots + 253952y + 65536$
c_3	$y^{12} - 30y^{11} + \cdots - 16y + 1$
c_4	$y^{12} - 25y^{11} + \cdots - 896y + 100$
c_5, c_8	$y^{12} + 26y^{11} + \cdots - 32y + 1$
c_6, c_9, c_{10}	$y^{12} - 20y^{11} + \cdots + 3y + 1$
c_{11}	$y^{12} + 2y^{11} + \cdots + 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.800801 + 0.482482I$ $a = 0.183380 + 0.498565I$ $b = 0.698671 + 0.235425I$	$1.43652 + 0.62326I$	$4.44877 + 0.65496I$
$u = 0.800801 - 0.482482I$ $a = 0.183380 - 0.498565I$ $b = 0.698671 - 0.235425I$	$1.43652 - 0.62326I$	$4.44877 - 0.65496I$
$u = -0.372107 + 0.751953I$ $a = -0.81363 + 1.82447I$ $b = 0.243009 + 0.355918I$	$-9.07675 - 1.52290I$	$-4.89097 + 7.64925I$
$u = -0.372107 - 0.751953I$ $a = -0.81363 - 1.82447I$ $b = 0.243009 - 0.355918I$	$-9.07675 + 1.52290I$	$-4.89097 - 7.64925I$
$u = 0.690074 + 1.109750I$ $a = -0.458254 - 0.957045I$ $b = -0.715998 - 0.535824I$	$-0.63619 + 5.03255I$	$-5.39872 - 6.82429I$
$u = 0.690074 - 1.109750I$ $a = -0.458254 + 0.957045I$ $b = -0.715998 + 0.535824I$	$-0.63619 - 5.03255I$	$-5.39872 + 6.82429I$
$u = -0.981759 + 0.915783I$ $a = 1.31213 - 0.66172I$ $b = 2.49508 + 1.02200I$	$11.48080 + 2.02735I$	$-0.446845 + 0.080322I$
$u = -0.981759 - 0.915783I$ $a = 1.31213 + 0.66172I$ $b = 2.49508 - 1.02200I$	$11.48080 - 2.02735I$	$-0.446845 - 0.080322I$
$u = -0.924436 + 1.006840I$ $a = -0.21708 + 2.14841I$ $b = -2.45017 + 1.30392I$	$11.1731 - 9.0121I$	$-0.90831 + 4.12550I$
$u = -0.924436 - 1.006840I$ $a = -0.21708 - 2.14841I$ $b = -2.45017 - 1.30392I$	$11.1731 + 9.0121I$	$-0.90831 - 4.12550I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.212573 + 0.487267I$ $a = 0.49344 - 1.36791I$ $b = -0.270602 - 0.384607I$	$-1.218070 - 0.691278I$	$-5.30392 + 1.72582I$
$u = -0.212573 - 0.487267I$ $a = 0.49344 + 1.36791I$ $b = -0.270602 + 0.384607I$	$-1.218070 + 0.691278I$	$-5.30392 - 1.72582I$

II.

$$\boldsymbol{I^u_2 = \langle u^6-2u^5+2u^4+b-u+1,\ -2u^7+6u^6+\cdots+a+2,\ u^8-3u^7+\cdots-2u+1\rangle}$$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 2u^7-6u^6+9u^5-5u^4+2u^3-4u^2+7u-2 \\ -u^6+2u^5-2u^4+u-1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -4u^7+11u^6-16u^5+9u^4-5u^3+8u^2-12u+4 \\ -u^7+3u^6-5u^5+4u^4-2u^3+u^2-3u+2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -4u^7+10u^6-14u^5+6u^4-4u^3+7u^2-11u+1 \\ u^6-2u^5+2u^4-u+1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 2u^7-5u^6+7u^5-3u^4+2u^3-4u^2+6u-1 \\ -u^6+2u^5-2u^4+u-1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 2u^7-6u^6+9u^5-6u^4+3u^3-5u^2+7u-3 \\ u^7-3u^6+5u^5-4u^4+2u^3-2u^2+3u-2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^7-3u^6+4u^5-2u^4+u^3-3u^2+4u-1 \\ u^7-3u^6+5u^5-4u^4+2u^3-2u^2+3u-2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -3u^7+9u^6-14u^5+9u^4-5u^3+7u^2-11u+3 \\ -u^7+4u^6-7u^5+6u^4-3u^3+4u^2-5u+3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^7+2u^6-2u^5-u^4+u^3-u-1 \\ -u^7+3u^6-5u^5+4u^4-3u^3+3u^2-3u+1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^7+2u^6-2u^5-u^4+u^3-u-1 \\ -u^7+3u^6-5u^5+4u^4-3u^3+3u^2-3u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^7+5u^5-11u^4+2u^3-4u^2+7u-9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 + u^7 - 4u^6 - 2u^5 + 7u^4 + u^3 - 5u^2 + 2$
c_2	$u^8 + 9u^7 + 34u^6 + 72u^5 + 97u^4 + 87u^3 + 53u^2 + 20u + 4$
c_3	$u^8 - 9u^7 + 31u^6 - 51u^5 + 42u^4 - 20u^3 + 9u^2 - 2u + 1$
c_4	$u^8 + u^6 + 2u^5 + 3u^4 + 3u^3 - u^2 + 2$
c_5, c_8	$u^8 - u^7 - u^6 - u^5 + 2u^4 + 2u^3 + 3u^2 + 2u + 1$
c_6, c_9	$u^8 - u^7 + 2u^6 - u^5 - u^4 + 3u^3 - u^2 - u + 1$
c_7	$u^8 - u^7 - 4u^6 + 2u^5 + 7u^4 - u^3 - 5u^2 + 2$
c_{10}	$u^8 + u^7 + 2u^6 + u^5 - u^4 - 3u^3 - u^2 + u + 1$
c_{11}	$u^8 - 3u^7 + 5u^6 - 4u^5 + 3u^4 - 3u^3 + 4u^2 - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^8 - 9y^7 + 34y^6 - 72y^5 + 97y^4 - 87y^3 + 53y^2 - 20y + 4$
c_2	$y^8 - 13y^7 + 54y^6 - 48y^5 + 133y^4 + 105y^3 + 105y^2 + 24y + 16$
c_3	$y^8 - 19y^7 + 127y^6 - 339y^5 + 248y^4 + 214y^3 + 85y^2 + 14y + 1$
c_4	$y^8 + 2y^7 + 7y^6 - y^4 - 11y^3 + 13y^2 - 4y + 4$
c_5, c_8	$y^8 - 3y^7 + 3y^6 + 5y^5 + 8y^4 + 10y^3 + 5y^2 + 2y + 1$
c_6, c_9, c_{10}	$y^8 + 3y^7 - y^5 + 3y^4 - 5y^3 + 5y^2 - 3y + 1$
c_{11}	$y^8 + y^7 + 7y^6 + 4y^5 + 15y^4 + 9y^3 + 10y^2 + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.601219 + 0.700245I$ $a = -1.25463 - 1.13763I$ $b = 0.04009 - 1.51942I$	$-5.61184 - 2.16662I$	$-1.31720 + 3.92427I$
$u = -0.601219 - 0.700245I$ $a = -1.25463 + 1.13763I$ $b = 0.04009 + 1.51942I$	$-5.61184 + 2.16662I$	$-1.31720 - 3.92427I$
$u = 0.975658 + 0.743632I$ $a = 0.205573 + 0.088262I$ $b = 0.804982 + 0.154967I$	$1.42321 + 1.81732I$	$3.74465 - 3.23500I$
$u = 0.975658 - 0.743632I$ $a = 0.205573 - 0.088262I$ $b = 0.804982 - 0.154967I$	$1.42321 - 1.81732I$	$3.74465 + 3.23500I$
$u = 0.235731 + 0.563343I$ $a = 0.73791 + 2.94527I$ $b = -0.641984 + 0.737766I$	$-9.14900 + 0.88713I$	$-6.29124 + 4.01225I$
$u = 0.235731 - 0.563343I$ $a = 0.73791 - 2.94527I$ $b = -0.641984 - 0.737766I$	$-9.14900 - 0.88713I$	$-6.29124 - 4.01225I$
$u = 0.88983 + 1.14020I$ $a = -0.188850 - 0.848475I$ $b = -0.703087 - 0.423228I$	$0.17815 + 5.07460I$	$4.36379 - 8.11889I$
$u = 0.88983 - 1.14020I$ $a = -0.188850 + 0.848475I$ $b = -0.703087 + 0.423228I$	$0.17815 - 5.07460I$	$4.36379 + 8.11889I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^8+u^7+\cdots-5u^2+2)(u^{12}-11u^{11}+\cdots-48u+16)$
c_2	$(u^8+9u^7+34u^6+72u^5+97u^4+87u^3+53u^2+20u+4)$ $\cdot(u^{12}+9u^{11}+\cdots+896u+256)$
c_3	$(u^8-9u^7+31u^6-51u^5+42u^4-20u^3+9u^2-2u+1)$ $\cdot(u^{12}-4u^{11}+\cdots-4u+1)$
c_4	$(u^8+u^6+2u^5+3u^4+3u^3-u^2+2)(u^{12}-u^{11}+\cdots+4u+10)$
c_5, c_8	$(u^8-u^7-u^6-u^5+2u^4+2u^3+3u^2+2u+1)$ $\cdot(u^{12}+2u^{11}+\cdots-16u^2+1)$
c_6, c_9	$(u^8-u^7+\cdots-u+1)(u^{12}-10u^{10}+\cdots-u+1)$
c_7	$(u^8-u^7+\cdots-5u^2+2)(u^{12}-11u^{11}+\cdots-48u+16)$
c_{10}	$(u^8+u^7+\cdots+u+1)(u^{12}-10u^{10}+\cdots-u+1)$
c_{11}	$(u^8-3u^7+5u^6-4u^5+3u^4-3u^3+4u^2-2u+1)$ $\cdot(u^{12}+2u^{11}+\cdots+2u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^8 - 9y^7 + 34y^6 - 72y^5 + 97y^4 - 87y^3 + 53y^2 - 20y + 4)$ $\cdot (y^{12} - 9y^{11} + \cdots - 896y + 256)$
c_2	$(y^8 - 13y^7 + 54y^6 - 48y^5 + 133y^4 + 105y^3 + 105y^2 + 24y + 16)$ $\cdot (y^{12} + 59y^{11} + \cdots + 253952y + 65536)$
c_3	$(y^8 - 19y^7 + 127y^6 - 339y^5 + 248y^4 + 214y^3 + 85y^2 + 14y + 1)$ $\cdot (y^{12} - 30y^{11} + \cdots - 16y + 1)$
c_4	$(y^8 + 2y^7 + 7y^6 - y^4 - 11y^3 + 13y^2 - 4y + 4)$ $\cdot (y^{12} - 25y^{11} + \cdots - 896y + 100)$
c_5, c_8	$(y^8 - 3y^7 + 3y^6 + 5y^5 + 8y^4 + 10y^3 + 5y^2 + 2y + 1)$ $\cdot (y^{12} + 26y^{11} + \cdots - 32y + 1)$
c_6, c_9, c_{10}	$(y^8 + 3y^7 + \cdots - 3y + 1)(y^{12} - 20y^{11} + \cdots + 3y + 1)$
c_{11}	$(y^8 + y^7 + 7y^6 + 4y^5 + 15y^4 + 9y^3 + 10y^2 + 4y + 1)$ $\cdot (y^{12} + 2y^{11} + \cdots + 6y + 1)$