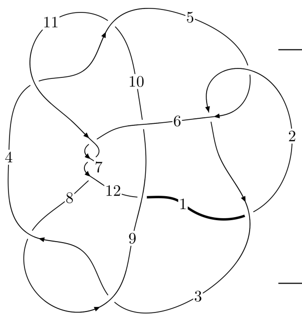
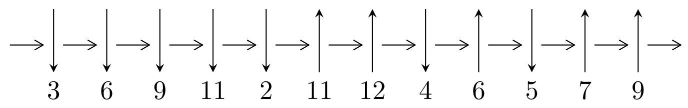
$12n_{0488}$ ($K12n_{0488}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$2,6 \xrightarrow[c_2]{} 3,11 \xrightarrow[c_6]{} 7 \xrightarrow[c_1]{} 1 \xrightarrow[c_5]{} 5 \xrightarrow[c_4]{} 4 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_9]{} 9 \xrightarrow[c_{12}]{} 12 \xrightarrow[c_7]{} 8 \twoheadrightarrow c_3, c_8, c_{11}$$

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

$$I_1^u = \langle u^8 - 2u^7 + 3u^6 - 3u^5 + 4u^4 - 3u^3 + 2u^2 + b - u,\ u^6 - 2u^5 + 2u^4 - u^3 + 2u^2 + a - 2u,$$
$$u^9 - 3u^8 + 5u^7 - 5u^6 + 6u^5 - 7u^4 + 6u^3 - 2u^2 + u - 1\rangle$$
$$I_2^u = \langle u^6 + 2u^5 + u^4 - 2u^3 - 2u^2 + b,\ u^6 + 2u^5 + 2u^4 - u^3 - 2u^2 + a - 2u,\ u^7 + 2u^6 + 2u^5 - u^4 - u^3 - u^2 - 1\rangle$$

* 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.

$$I_1^u = \langle u^8-2u^7+\cdots+b-u,\ u^6-2u^5+2u^4-u^3+2u^2+a-2u,\ u^9-3u^8+\cdots+u-1\rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix}-u^2+1\\-u^4\end{pmatrix}$$

$$a_5 = \begin{pmatrix}u\\u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}u^8-2u^7+2u^6-2u^5+3u^4-3u^3+u^2+1\\u^8-3u^7+3u^6-3u^5+4u^4-5u^3+2u^2+1\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}u^7-2u^6+3u^5-3u^4+4u^3-3u^2+2u-1\\u^7-2u^6+2u^5-u^4+2u^3-2u^2\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}u^7-u^6+u^5-u^4+2u^3-2u^2+u\\u^8-u^7+u^6-u^5+u^4-u^2\end{pmatrix}$$

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5u^8+12u^7-17u^6+12u^5-20u^4+20u^3-13u^2-6u-3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9 - u^8 + 7u^7 - 5u^6 + 16u^5 - 7u^4 + 10u^3 + 6u^2 - 3u + 1$
c_2, c_5	$u^9 + 3u^8 + 5u^7 + 5u^6 + 6u^5 + 7u^4 + 6u^3 + 2u^2 + u + 1$
c_3, c_4, c_8 c_{10}	$u^9 - 2u^7 + 4u^6 + 17u^5 + 9u^4 + 9u^3 + 2u^2 + 2u + 1$
c_6, c_7, c_{11}	$u^9 + 8u^8 + 27u^7 + 46u^6 + 33u^5 - 10u^4 - 27u^3 - u^2 + 14u + 4$
c_9, c_{12}	$u^9 - 4u^8 + 8u^7 - 3u^6 - 2u^4 + 24u^3 - 23u^2 + 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^9+13y^8+71y^7+205y^6+332y^5+291y^4+98y^3-82y^2-3y-1$
c_2, c_5	$y^9+y^8+7y^7+5y^6+16y^5+7y^4+10y^3-6y^2-3y-1$
c_3, c_4, c_8 c_{10}	$y^9-4y^8+38y^7-66y^6+185y^5+201y^4+105y^3+14y^2-1$
c_6, c_7, c_{11}	$y^9-10y^8+\cdots+204y-16$
c_9, c_{12}	$y^9+40y^7+23y^6+206y^5+10y^4+490y^3-93y^2+127y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.543663 + 0.958634I$ $a = -0.62928 - 1.29649I$ $b = -1.044710 - 0.790946I$	$8.80377 + 2.34106I$	$3.55048 - 3.71378I$
$u = -0.543663 - 0.958634I$ $a = -0.62928 + 1.29649I$ $b = -1.044710 + 0.790946I$	$8.80377 - 2.34106I$	$3.55048 + 3.71378I$
$u = 0.780042$ $a = 0.429639$ $b = -0.0889832$	-1.02700	-12.4430
$u = 1.022250 + 0.813773I$ $a = 1.249250 - 0.023619I$ $b = 0.74446 + 1.23201I$	$-2.68542 + 1.09922I$	$0.831621 - 0.481760I$
$u = 1.022250 - 0.813773I$ $a = 1.249250 + 0.023619I$ $b = 0.74446 - 1.23201I$	$-2.68542 - 1.09922I$	$0.831621 + 0.481760I$
$u = 0.877200 + 1.062120I$ $a = 0.148693 - 1.372070I$ $b = 1.77486 - 1.66508I$	$-1.87595 - 8.01095I$	$1.68345 + 4.08979I$
$u = 0.877200 - 1.062120I$ $a = 0.148693 + 1.372070I$ $b = 1.77486 + 1.66508I$	$-1.87595 + 8.01095I$	$1.68345 - 4.08979I$
$u = -0.245807 + 0.515171I$ $a = 0.016526 + 1.227710I$ $b = 0.569881 + 0.456696I$	$1.20590 + 0.78253I$	$4.15601 - 2.65874I$
$u = -0.245807 - 0.515171I$ $a = 0.016526 - 1.227710I$ $b = 0.569881 - 0.456696I$	$1.20590 - 0.78253I$	$4.15601 + 2.65874I$

II. $\boldsymbol{I_2^u = \langle u^6 + 2u^5 + u^4 - 2u^3 - 2u^2 + b,\ u^6 + 2u^5 + 2u^4 - u^3 - 2u^2 + a - 2u,\ u^7 + 2u^6 + 2u^5 - u^4 - u^3 - u^2 - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^6 + 5u^5 + 3u^4 - 5u^3 - u^2 - u + 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^7 + 12y^6 + 42y^5 + 31y^4 - 21y^3 - 23y^2 - 2y - 1$
c_2, c_5	$y^7 + 6y^5 - y^4 + 3y^3 - 3y^2 - 2y - 1$
c_3, c_4, c_8 c_{10}	$y^7 + 7y^6 + 22y^5 + 41y^4 + 50y^3 + 38y^2 + 13y - 1$
c_6, c_7, c_{11}	$y^7 - 10y^6 + 39y^5 - 72y^4 + 59y^3 - 14y^2 + y - 1$
c_9, c_{12}	$y^7 - 9y^6 + 40y^5 - 104y^4 + 162y^3 - 144y^2 + 64y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.679131+0.739231I$ $a=-0.090421+0.468757I$ $b=\ \ 1.067080-0.219644I$	$4.71019+2.40933I$	$0.29860-3.62563I$
$u=-0.679131-0.739231I$ $a=-0.090421-0.468757I$ $b=\ \ 1.067080+0.219644I$	$4.71019-2.40933I$	$0.29860+3.62563I$
$u=\ \ 0.939920$ $a=\ \ 0.759448$ $b=\ \ 0.490461$	-0.502424	5.10270
$u=\ \ 0.273857+0.616814I$ $a=-0.63288+2.30893I$ $b=-1.49346+0.77301I$	$9.14166-1.05666I$	$5.26558-1.27318I$
$u=\ \ 0.273857-0.616814I$ $a=-0.63288-2.30893I$ $b=-1.49346-0.77301I$	$9.14166+1.05666I$	$5.26558+1.27318I$
$u=-1.06469+1.08838I$ $a=-0.656418-0.759679I$ $b=-1.318850-0.288008I$	$11.07340+3.97449I$	$4.88445-3.30547I$
$u=-1.06469-1.08838I$ $a=-0.656418+0.759679I$ $b=-1.318850+0.288008I$	$11.07340-3.97449I$	$4.88445+3.30547I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^7+6u^5-u^4+3u^3-3u^2-2u-1)$ $\cdot\,(u^9-u^8+7u^7-5u^6+16u^5-7u^4+10u^3+6u^2-3u+1)$
c_2	$(u^7+2u^6+2u^5-u^4-u^3-u^2-1)$ $\cdot\,(u^9+3u^8+5u^7+5u^6+6u^5+7u^4+6u^3+2u^2+u+1)$
c_3, c_{10}	$(u^7+u^6+4u^5+3u^4+6u^3+2u^2+3u-1)$ $\cdot\,(u^9-2u^7+4u^6+17u^5+9u^4+9u^3+2u^2+2u+1)$
c_4, c_8	$(u^7-u^6+4u^5-3u^4+6u^3-2u^2+3u+1)$ $\cdot\,(u^9-2u^7+4u^6+17u^5+9u^4+9u^3+2u^2+2u+1)$
c_5	$(u^7-2u^6+2u^5+u^4-u^3+u^2+1)$ $\cdot\,(u^9+3u^8+5u^7+5u^6+6u^5+7u^4+6u^3+2u^2+u+1)$
c_6, c_7	$(u^7-5u^5+7u^3-u+1)$ $\cdot\,(u^9+8u^8+27u^7+46u^6+33u^5-10u^4-27u^3-u^2+14u+4)$
c_9, c_{12}	$(u^7+3u^6-8u^4-4u^3+8u^2+4u-3)$ $\cdot\,(u^9-4u^8+8u^7-3u^6-2u^4+24u^3-23u^2+9u+1)$
c_{11}	$(u^7-5u^5+7u^3-u-1)$ $\cdot\,(u^9+8u^8+27u^7+46u^6+33u^5-10u^4-27u^3-u^2+14u+4)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^7+12y^6+42y^5+31y^4-21y^3-23y^2-2y-1)$ $\cdot(y^9+13y^8+71y^7+205y^6+332y^5+291y^4+98y^3-82y^2-3y-1)$
c_2, c_5	$(y^7+6y^5-y^4+3y^3-3y^2-2y-1)$ $\cdot(y^9+y^8+7y^7+5y^6+16y^5+7y^4+10y^3-6y^2-3y-1)$
c_3, c_4, c_8 c_{10}	$(y^7+7y^6+22y^5+41y^4+50y^3+38y^2+13y-1)$ $\cdot(y^9-4y^8+38y^7-66y^6+185y^5+201y^4+105y^3+14y^2-1)$
c_6, c_7, c_{11}	$(y^7-10y^6+39y^5-72y^4+59y^3-14y^2+y-1)$ $\cdot(y^9-10y^8+\cdots+204y-16)$
c_9, c_{12}	$(y^7-9y^6+40y^5-104y^4+162y^3-144y^2+64y-9)$ $\cdot(y^9+40y^7+23y^6+206y^5+10y^4+490y^3-93y^2+127y-1)$