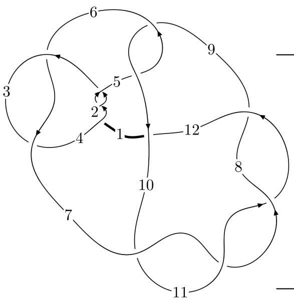
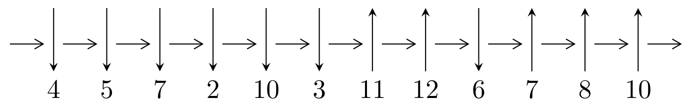
$12n_{0675}$ ($K12n_{0675}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 53226740u^{26} - 42852864u^{25} + \cdots + 647758649b + 11501166,$$
$$64856230u^{26} - 108182252u^{25} + \cdots + 129517298a - 547630611,\ u^{27} - 4u^{26} + \cdots + 4u + 1\rangle$$
$$I_2^u = \langle b + u,\ a + u + 2,\ u^2 + u - 1\rangle$$
$$I_3^u = \langle b + u,\ a - 1,\ u^2 + u - 1\rangle$$
$$I_4^u = \langle b + 1,\ a,\ u - 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 32 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. $I_1^u = \langle 5.32\times10^{7}u^{26} - 4.29\times10^{7}u^{25} + \cdots + 6.48\times10^{7}b + 1.15\times10^{7},\ 6.49\times10^{7}u^{26} - 1.08\times10^{8}u^{25} + \cdots + 1.30\times10^{8}a - 5.48\times10^{8},\ u^{27} - 4u^{26} + \cdots + 4u + 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^4-3u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.500753u^{26}+0.835273u^{25}+\cdots-23.9653u+4.22824\\-0.821925u^{26}+0.661732u^{25}+\cdots-3.64955u-0.177600\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.500753u^{26}+0.835273u^{25}+\cdots-23.9653u+4.22824\\0.858098u^{26}-3.24135u^{25}+\cdots-8.82126u-1.34534\end{pmatrix}$$
$$a_6 = \begin{pmatrix}2.71316u^{26}-6.18461u^{25}+\cdots+6.88730u-3.99351\\-2.21391u^{26}+5.01988u^{25}+\cdots+8.14742u+1.22175\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.499247u^{26}-1.16473u^{25}+\cdots+15.0347u-2.77176\\-2.21391u^{26}+5.01988u^{25}+\cdots+8.14742u+1.22175\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.499247u^{26}+1.16473u^{25}+\cdots-15.0347u+2.77176\\-1.71408u^{26}+2.71888u^{25}+\cdots-0.116110u+0.211149\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^3+2u\\u^5-3u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{1678565237}{129517298}u^{26} - \frac{2789533850}{64758649}u^{25} + \cdots - \frac{5239074250}{64758649}u - \frac{3637568297}{129517298}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$u^{27} - 4u^{26} + \cdots - 8u + 1$
c_3, c_6	$u^{27} + 3u^{26} + \cdots - 5u^2 + 2$
c_5, c_9	$u^{27} + 2u^{26} + \cdots + 64u + 16$
c_7, c_8, c_{10} c_{11}	$u^{27} - 4u^{26} + \cdots + 4u + 1$
c_{12}	$u^{27} + 18u^{26} + \cdots + 3596u - 79$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{27} - 18y^{26} + \cdots + 32y - 1$
c_3, c_6	$y^{27} + 3y^{26} + \cdots + 20y - 4$
c_5, c_9	$y^{27} + 24y^{26} + \cdots + 5760y - 256$
c_7, c_8, c_{10} c_{11}	$y^{27} - 38y^{26} + \cdots + 124y - 1$
c_{12}	$y^{27} - 98y^{26} + \cdots + 19523924y - 6241$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.121780 + 0.081011I$ $a = 0.927106 - 0.741069I$ $b = -0.180646 - 0.935031I$	$3.25561 - 1.59407I$	$1.48399 + 1.30043I$
$u = -1.121780 - 0.081011I$ $a = 0.927106 + 0.741069I$ $b = -0.180646 + 0.935031I$	$3.25561 + 1.59407I$	$1.48399 - 1.30043I$
$u = 0.676956 + 0.533355I$ $a = -0.448265 - 0.714880I$ $b = -0.426855 - 0.510105I$	$1.49150 + 0.51721I$	$4.06426 - 0.81218I$
$u = 0.676956 - 0.533355I$ $a = -0.448265 + 0.714880I$ $b = -0.426855 + 0.510105I$	$1.49150 - 0.51721I$	$4.06426 + 0.81218I$
$u = 0.791066 + 0.310151I$ $a = -0.264806 - 0.568080I$ $b = -0.454975 - 0.578171I$	$1.41628 + 0.49520I$	$5.40104 - 1.30639I$
$u = 0.791066 - 0.310151I$ $a = -0.264806 + 0.568080I$ $b = -0.454975 + 0.578171I$	$1.41628 - 0.49520I$	$5.40104 + 1.30639I$
$u = 0.228516 + 0.809567I$ $a = 0.877576 + 0.806986I$ $b = 0.241186 + 0.308813I$	$0.00983 + 4.15530I$	$-1.52548 - 6.50197I$
$u = 0.228516 - 0.809567I$ $a = 0.877576 - 0.806986I$ $b = 0.241186 - 0.308813I$	$0.00983 - 4.15530I$	$-1.52548 + 6.50197I$
$u = -1.100020 + 0.502260I$ $a = 0.243788 + 1.127340I$ $b = 0.07217 + 1.44072I$	$4.12391 - 8.58608I$	$0.18359 + 6.75545I$
$u = -1.100020 - 0.502260I$ $a = 0.243788 - 1.127340I$ $b = 0.07217 - 1.44072I$	$4.12391 + 8.58608I$	$0.18359 - 6.75545I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.240020 + 0.262480I$ $a = -0.444851 - 0.925878I$ $b = \ \ 0.124876 - 1.372680I$	$7.42745 - 3.21213I$	$3.92477 + 2.89567I$
$u = -1.240020 - 0.262480I$ $a = -0.444851 + 0.925878I$ $b = \ \ 0.124876 + 1.372680I$	$7.42745 + 3.21213I$	$3.92477 - 2.89567I$
$u = \ \ 0.687500$ $a = \ \ 0.446145$ $b = -3.22294$	-0.443313	-52.6840
$u = \ \ 1.42416$ $a = \ \ 0.788121$ $b = \ \ 1.37734$	-1.56955	-5.83560
$u = -0.505186$ $a = -3.09428$ $b = -0.715357$	-8.08146	-27.4200
$u = -1.62890$ $a = -0.330211$ $b = \ \ 2.82377$	7.71976	-34.5090
$u = \ \ 0.272815 + 0.206929I$ $a = -1.71928 - 0.05752I$ $b = \ \ 1.028070 + 0.618606I$	$-1.240020 + 0.678999I$	$-6.54613 + 1.58470I$
$u = \ \ 0.272815 - 0.206929I$ $a = -1.71928 + 0.05752I$ $b = \ \ 1.028070 - 0.618606I$	$-1.240020 - 0.678999I$	$-6.54613 - 1.58470I$
$u = \ \ 1.75657 + 0.14232I$ $a = -0.583385 + 0.775944I$ $b = -0.52277 + 2.72994I$	$14.1973 + 11.3192I$	0
$u = \ \ 1.75657 - 0.14232I$ $a = -0.583385 - 0.775944I$ $b = -0.52277 - 2.72994I$	$14.1973 - 11.3192I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.76109+0.08264I$ $a=-0.058331-0.610400I$ $b=\ \ 0.11130-2.01234I$	$11.07900-2.32684I$	0
$u=-1.76109-0.08264I$ $a=-0.058331+0.610400I$ $b=\ \ 0.11130+2.01234I$	$11.07900+2.32684I$	0
$u=\ \ 1.76627+0.02002I$ $a=-0.752423-0.715336I$ $b=-1.05997-2.28626I$	$13.78760+2.02303I$	0
$u=\ \ 1.76627-0.02002I$ $a=-0.752423+0.715336I$ $b=-1.05997+2.28626I$	$13.78760-2.02303I$	0
$u=\ \ 1.79047+0.06797I$ $a=\ \ 0.655019-0.749285I$ $b=\ \ 0.73536-2.51744I$	$18.4512+4.7028I$	0
$u=\ \ 1.79047-0.06797I$ $a=\ \ 0.655019+0.749285I$ $b=\ \ 0.73536+2.51744I$	$18.4512-4.7028I$	0
$u=-0.0970792$ $a=\ \ 6.32592$ $b=\ \ 0.401694$	-0.870483	-12.0480

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u-1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ -u+1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ -u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u-2 \\ -u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 2u+3 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2u+3 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u+3 \\ -u+1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 16$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_6, c_7 c_8, c_{10}, c_{11} c_{12}	$y^2 - 3y + 1$
c_5, c_9	y^2

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = -2.61803$ $b = -0.618034$	-7.89568	16.0000
$u = -1.61803$ $a = -0.381966$ $b = 1.61803$	7.89568	16.0000

III. $I_3^u = \langle b+u,\ a-1,\ u^2+u-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_6, c_7 c_8, c_{10}, c_{11} c_{12}	$y^2 - 3y + 1$
c_5, c_9	y^2

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 1.00000$ $b = -0.618034$	0	1.00000
$u = -1.61803$ $a = 1.00000$ $b = 1.61803$	0	1.00000

IV. $\boldsymbol{I_4^u = \langle b+1,\ a,\ u-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_9 c_{10}, c_{11}, c_{12}	$u - 1$
c_3, c_6	u
c_4, c_5, c_7 c_8	$u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_7, c_8 c_9, c_{10}, c_{11} c_{12}	$y - 1$
c_3, c_6	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0$ $b = -1.00000$	0	0

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)(u^2+u-1)^2(u^{27}-4u^{26}+\cdots-8u+1)$
c_3	$u(u^2+u-1)^2(u^{27}+3u^{26}+\cdots-5u^2+2)$
c_4	$(u+1)(u^2-u-1)^2(u^{27}-4u^{26}+\cdots-8u+1)$
c_5	$u^4(u+1)(u^{27}+2u^{26}+\cdots+64u+16)$
c_6	$u(u^2-u-1)^2(u^{27}+3u^{26}+\cdots-5u^2+2)$
c_7, c_8	$(u+1)(u^2-u-1)^2(u^{27}-4u^{26}+\cdots+4u+1)$
c_9	$u^4(u-1)(u^{27}+2u^{26}+\cdots+64u+16)$
c_{10}, c_{11}	$(u-1)(u^2+u-1)^2(u^{27}-4u^{26}+\cdots+4u+1)$
c_{12}	$(u-1)(u^2+u-1)^2(u^{27}+18u^{26}+\cdots+3596u-79)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)(y^2-3y+1)^2(y^{27}-18y^{26}+\cdots+32y-1)$
c_3, c_6	$y(y^2-3y+1)^2(y^{27}+3y^{26}+\cdots+20y-4)$
c_5, c_9	$y^4(y-1)(y^{27}+24y^{26}+\cdots+5760y-256)$
c_7, c_8, c_{10} c_{11}	$(y-1)(y^2-3y+1)^2(y^{27}-38y^{26}+\cdots+124y-1)$
c_{12}	$(y-1)(y^2-3y+1)^2(y^{27}-98y^{26}+\cdots+1.95239\times 10^7 y-6241)$