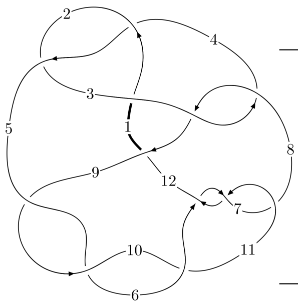
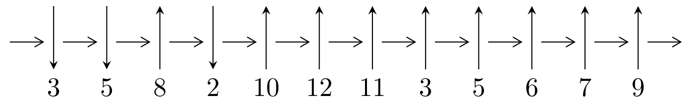
$12n_{0236}$ ($K12n_{0236}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 8.50640 \times 10^{25} u^{28} + 6.57905 \times 10^{25} u^{27} + \cdots + 6.76246 \times 10^{26} b - 3.79834 \times 10^{26}, \\
& - 8.61578 \times 10^{25} u^{28} - 2.59629 \times 10^{26} u^{27} + \cdots + 2.02874 \times 10^{27} a + 4.68843 \times 10^{27}, \\
& u^{29} + 2u^{28} + \cdots - 27u - 9 \rangle \\
I_2^u = \langle & b,\ -u^5 + u^4 + 3u^3 - 2u^2 + a - 2u - 1,\ u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1 \rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 35 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. $I_1^u = \langle 8.51 \times 10^{25} u^{28} + 6.58 \times 10^{25} u^{27} + \cdots + 6.76 \times 10^{26} b - 3.80 \times 10^{26},\ -8.62 \times 10^{25} u^{28} - 2.60 \times 10^{26} u^{27} + \cdots + 2.03 \times 10^{27} a + 4.69 \times 10^{27},\ u^{29} + 2u^{28} + \cdots - 27u - 9 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0424687u^{28} + 0.127975u^{27} + \cdots - 7.48008u - 2.31101 \\ -0.125788u^{28} - 0.0972878u^{27} + \cdots + 0.810929u + 0.561681 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0424687u^{28} + 0.127975u^{27} + \cdots - 7.48008u - 2.31101 \\ -0.0837082u^{28} - 0.0256521u^{27} + \cdots - 0.733318u + 0.174337 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.207275u^{28} - 0.191732u^{27} + \cdots + 2.88280u + 0.255414 \\ -0.0856550u^{28} - 0.101573u^{27} + \cdots + 1.21045u + 0.659706 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.325774u^{28} + 0.353500u^{27} + \cdots - 11.9004u - 3.50868 \\ -0.439150u^{28} - 0.368748u^{27} + \cdots + 6.32577u + 3.34213 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0733007u^{28} + 0.0609464u^{27} + \cdots + 2.08714u - 0.768665 \\ -0.222818u^{28} - 0.235496u^{27} + \cdots + 5.34101u + 1.86548 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0307540u^{28} + 0.0680917u^{27} + \cdots + 1.08829u - 0.755172 \\ 0.00877248u^{28} + 0.0384206u^{27} + \cdots + 0.630413u - 0.299831 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.121620u^{28} - 0.0901590u^{27} + \cdots + 1.67234u - 0.404292 \\ -0.0856550u^{28} - 0.101573u^{27} + \cdots + 1.21045u + 0.659706 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1190074287949308329833364079}{2254154124110567016319133333} u^{28} - \frac{1297895912681954557400025046}{2254154124110567016319133333} u^{27} + \cdots + \frac{7277513301493536765918568604}{2254154124110567016319133333} u + \frac{1889963069349290974137649138}{2254154124110567016319133333}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} + 39u^{28} + \cdots + 90u + 1$
c_2, c_4	$u^{29} - 7u^{28} + \cdots - 14u + 1$
c_3, c_8	$u^{29} + u^{28} + \cdots - 64u + 64$
c_5, c_9, c_{10}	$u^{29} + 2u^{28} + \cdots - 27u - 9$
c_6, c_7, c_{11}	$u^{29} - 2u^{28} + \cdots + u - 1$
c_{12}	$u^{29} + 30u^{27} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} - 91y^{28} + \cdots + 8066y - 1$
c_2, c_4	$y^{29} - 39y^{28} + \cdots + 90y - 1$
c_3, c_8	$y^{29} + 39y^{28} + \cdots + 49152y - 4096$
c_5, c_9, c_{10}	$y^{29} - 24y^{28} + \cdots - 207y - 81$
c_6, c_7, c_{11}	$y^{29} + 24y^{28} + \cdots + y - 1$
c_{12}	$y^{29} + 60y^{28} + \cdots + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.147151 + 0.983351I$ $a = -0.313005 - 1.172620I$ $b = 0.619200 - 0.948695I$	$-6.51177 + 1.38864I$	$-2.12482 - 1.22156I$
$u = 0.147151 - 0.983351I$ $a = -0.313005 + 1.172620I$ $b = 0.619200 + 0.948695I$	$-6.51177 - 1.38864I$	$-2.12482 + 1.22156I$
$u = -1.084770 + 0.203815I$ $a = -0.596441 + 0.550146I$ $b = 0.210937 + 1.119990I$	$-1.04955 - 1.39392I$	$4.85868 + 0.24433I$
$u = -1.084770 - 0.203815I$ $a = -0.596441 - 0.550146I$ $b = 0.210937 - 1.119990I$	$-1.04955 + 1.39392I$	$4.85868 - 0.24433I$
$u = -1.11805$ $a = -1.24644$ $b = 1.14578$	0.572830	8.71570
$u = -0.295538 + 0.824939I$ $a = 0.62455 + 1.90486I$ $b = -0.10295 + 1.91234I$	$-11.35050 - 1.97232I$	$3.18700 + 3.24359I$
$u = -0.295538 - 0.824939I$ $a = 0.62455 - 1.90486I$ $b = -0.10295 - 1.91234I$	$-11.35050 + 1.97232I$	$3.18700 - 3.24359I$
$u = -1.176090 + 0.299893I$ $a = 1.298590 + 0.500513I$ $b = -0.42404 + 1.73842I$	$-8.81715 - 1.90353I$	$3.17087 - 0.16545I$
$u = -1.176090 - 0.299893I$ $a = 1.298590 - 0.500513I$ $b = -0.42404 - 1.73842I$	$-8.81715 + 1.90353I$	$3.17087 + 0.16545I$
$u = 1.168350 + 0.466626I$ $a = 1.087240 - 0.320633I$ $b = -1.202010 - 0.277739I$	$-3.42349 + 3.73175I$	$3.28322 - 3.90780I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.168350 - 0.466626I$ $a = 1.087240 + 0.320633I$ $b = -1.202010 + 0.277739I$	$-3.42349 - 3.73175I$	$3.28322 + 3.90780I$
$u = 1.252040 + 0.171380I$ $a = 0.450233 - 0.673649I$ $b = -0.062273 - 1.251450I$	$2.49236 + 2.60548I$	$8.31800 - 3.45920I$
$u = 1.252040 - 0.171380I$ $a = 0.450233 + 0.673649I$ $b = -0.062273 + 1.251450I$	$2.49236 - 2.60548I$	$8.31800 + 3.45920I$
$u = -0.340740 + 0.609315I$ $a = 0.408720 - 0.064944I$ $b = -0.462808 + 0.305767I$	$-3.04827 - 1.57293I$	$6.03185 + 4.01355I$
$u = -0.340740 - 0.609315I$ $a = 0.408720 + 0.064944I$ $b = -0.462808 - 0.305767I$	$-3.04827 + 1.57293I$	$6.03185 - 4.01355I$
$u = -1.37004 + 0.47996I$ $a = -0.322999 - 0.704095I$ $b = -0.051255 - 1.357350I$	$-1.79428 - 6.65679I$	$3.36940 + 5.84463I$
$u = -1.37004 - 0.47996I$ $a = -0.322999 + 0.704095I$ $b = -0.051255 + 1.357350I$	$-1.79428 + 6.65679I$	$3.36940 - 5.84463I$
$u = 0.66485 + 1.32634I$ $a = -0.493095 + 1.138380I$ $b = 0.22459 + 2.08826I$	$-17.4796 + 4.1704I$	$-1.26801 - 2.81155I$
$u = 0.66485 - 1.32634I$ $a = -0.493095 - 1.138380I$ $b = 0.22459 - 2.08826I$	$-17.4796 - 4.1704I$	$-1.26801 + 2.81155I$
$u = 1.47549 + 0.19394I$ $a = -0.329047 + 0.005572I$ $b = 0.613243 + 0.013272I$	$2.92568 + 4.50321I$	$11.83396 - 2.97399I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.47549 - 0.19394I$ $a = -0.329047 - 0.005572I$ $b = 0.613243 - 0.013272I$	$2.92568 - 4.50321I$	$11.83396 + 2.97399I$
$u = -1.49199$ $a = 0.327755$ $b = -0.609977$	6.88521	15.7090
$u = 1.46992 + 0.39831I$ $a = -1.034790 + 0.448894I$ $b = 0.52841 + 1.78278I$	$-5.70280 + 6.55116I$	$6.17722 - 3.52056I$
$u = 1.46992 - 0.39831I$ $a = -1.034790 - 0.448894I$ $b = 0.52841 - 1.78278I$	$-5.70280 - 6.55116I$	$6.17722 + 3.52056I$
$u = 0.395993$ $a = -0.267236$ $b = 0.323479$	0.588961	16.9080
$u = -0.143752 + 0.301891I$ $a = -0.41284 - 2.66870I$ $b = -0.228813 - 0.666491I$	$-1.59820 - 0.73663I$	$-0.70316 + 3.71220I$
$u = -0.143752 - 0.301891I$ $a = -0.41284 + 2.66870I$ $b = -0.228813 + 0.666491I$	$-1.59820 + 0.73663I$	$-0.70316 - 3.71220I$
$u = -1.65985 + 0.54064I$ $a = 0.892504 + 0.457194I$ $b = -0.59188 + 1.84141I$	$-10.3510 - 11.0238I$	$2.19949 + 5.56380I$
$u = -1.65985 - 0.54064I$ $a = 0.892504 - 0.457194I$ $b = -0.59188 - 1.84141I$	$-10.3510 + 11.0238I$	$2.19949 - 5.56380I$

II.

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^6$
c_3, c_8	y^6
c_5, c_9, c_{10} c_{12}	$y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1$
c_6, c_7, c_{11}	$y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.493180 + 0.575288I$ $a = -0.858925 - 1.001920I$ $b = 0$	$-4.60518 - 1.97241I$	$0.92955 + 2.53106I$
$u = -0.493180 - 0.575288I$ $a = -0.858925 + 1.001920I$ $b = 0$	$-4.60518 + 1.97241I$	$0.92955 - 2.53106I$
$u = 0.483672$ $a = 2.06752$ $b = 0$	-0.906083	4.90820
$u = 1.52087 + 0.16310I$ $a = 0.650045 - 0.069710I$ $b = 0$	$2.05064 + 4.59213I$	$1.87701 - 3.61028I$
$u = 1.52087 - 0.16310I$ $a = 0.650045 + 0.069710I$ $b = 0$	$2.05064 - 4.59213I$	$1.87701 + 3.61028I$
$u = -1.53904$ $a = -0.649754$ $b = 0$	6.01515	5.47870

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{29}+39u^{28}+\cdots+90u+1)$
c_2	$((u-1)^6)(u^{29}-7u^{28}+\cdots-14u+1)$
c_3, c_8	$u^6(u^{29}+u^{28}+\cdots-64u+64)$
c_4	$((u+1)^6)(u^{29}-7u^{28}+\cdots-14u+1)$
c_5	$(u^6+u^5-3u^4-2u^3+2u^2-u-1)(u^{29}+2u^{28}+\cdots-27u-9)$
c_6, c_7	$(u^6-u^5+3u^4-2u^3+2u^2-u-1)(u^{29}-2u^{28}+\cdots+u-1)$
c_9, c_{10}	$(u^6-u^5-3u^4+2u^3+2u^2+u-1)(u^{29}+2u^{28}+\cdots-27u-9)$
c_{11}	$(u^6+u^5+3u^4+2u^3+2u^2+u-1)(u^{29}-2u^{28}+\cdots+u-1)$
c_{12}	$(u^6-u^5-3u^4+2u^3+2u^2+u-1)(u^{29}+30u^{27}+\cdots+u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^{29}-91y^{28}+\cdots+8066y-1)$
c_2, c_4	$((y-1)^6)(y^{29}-39y^{28}+\cdots+90y-1)$
c_3, c_8	$y^6(y^{29}+39y^{28}+\cdots+49152y-4096)$
c_5, c_9, c_{10}	$(y^6-7y^5+\cdots-5y+1)(y^{29}-24y^{28}+\cdots-207y-81)$
c_6, c_7, c_{11}	$(y^6+5y^5+\cdots-5y+1)(y^{29}+24y^{28}+\cdots+y-1)$
c_{12}	$(y^6-7y^5+\cdots-5y+1)(y^{29}+60y^{28}+\cdots+y-1)$