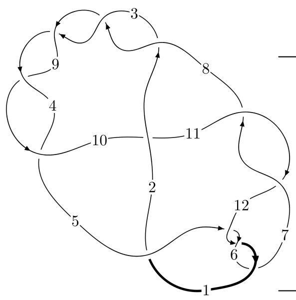
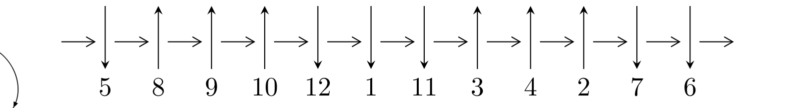
$12a_{1276}$ ($K12a_{1276}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$1{,}7 \underset{c_6}{\rightarrow} 6 \underset{c_{12}}{\rightarrow} 12 \underset{c_5}{\rightarrow} 5 \underset{c_1}{\rightarrow} 2 \underset{c_{11}}{\rightarrow} 11 \underset{c_7}{\rightarrow} 8 \underset{c_2}{\rightarrow} 3 \underset{c_{10}}{\rightarrow} 10 \underset{c_4}{\rightarrow} 4 \underset{c_9}{\rightarrow} 9 \gg c_3, c_8$$

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

$$I_1^u = \langle u^{36} - 14u^{34} + \cdots - 2u + 1 \rangle$$
$$I_2^u = \langle u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 37 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. $I_1^u = \langle u^{36} - 14u^{34} + \cdots - 2u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^3 + 2u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{19} - 8u^{17} + 26u^{15} - 40u^{13} + 19u^{11} + 24u^9 - 30u^7 + 9u^3 \\ u^{19} - 7u^{17} + 20u^{15} - 27u^{13} + 11u^{11} + 13u^9 - 14u^7 + 3u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{15} - 6u^{13} + 14u^{11} - 14u^9 + 2u^7 + 6u^5 - 4u^3 + 2u \\ -u^{17} + 7u^{15} - 19u^{13} + 22u^{11} - 3u^9 - 14u^7 + 6u^5 + 2u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{28} - 11u^{26} + \cdots + u^2 + 1 \\ -u^{30} + 12u^{28} + \cdots + 8u^4 - u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{32} + 13u^{30} + \cdots + 2u^2 + 1 \\ -u^{32} + 12u^{30} + \cdots - 8u^6 - 10u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{35} - 56u^{33} + 4u^{32} + 352u^{31} - 52u^{30} - 1276u^{29} + 300u^{28} + 2804u^{27} - 980u^{26} - 3340u^{25} + 1872u^{24} + 400u^{23} - 1720u^{22} + 5108u^{21} - 588u^{20} - 6980u^{19} + 3336u^{18} + 1544u^{17} - 2900u^{16} + 4732u^{15} - 552u^{14} - 4032u^{13} + 2344u^{12} - 448u^{11} - 840u^{10} + 1592u^9 - 544u^8 - 184u^7 + 268u^6 - 216u^5 + 48u^4 - 24u^3 + 12u^2 + 20u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7, c_{11}	$u^{36} + 3u^{35} + \cdots - 30u - 7$
c_2, c_3, c_4 c_8, c_9	$u^{36} - 24u^{34} + \cdots + 3u^2 + 1$
c_5, c_6, c_{12}	$u^{36} - 14u^{34} + \cdots + 2u + 1$
c_{10}	$u^{36} - 6u^{35} + \cdots + 272u - 304$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{11}	$y^{36} + 39y^{35} + \cdots - 326y + 49$
c_2, c_3, c_4 c_8, c_9	$y^{36} - 48y^{35} + \cdots + 6y + 1$
c_5, c_6, c_{12}	$y^{36} - 28y^{35} + \cdots + 6y + 1$
c_{10}	$y^{36} - 24y^{35} + \cdots + 92000y + 92416$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.050369 + 0.890388I$	$-18.9058 - 5.9322I$	$9.90521 + 2.84532I$
$u = 0.050369 - 0.890388I$	$-18.9058 + 5.9322I$	$9.90521 - 2.84532I$
$u = -0.038390 + 0.874277I$	$10.50350 + 4.44528I$	$9.29426 - 3.93187I$
$u = -0.038390 - 0.874277I$	$10.50350 - 4.44528I$	$9.29426 + 3.93187I$
$u = 0.015851 + 0.853937I$	$6.10418 - 1.70405I$	$5.05889 + 3.68915I$
$u = 0.015851 - 0.853937I$	$6.10418 + 1.70405I$	$5.05889 - 3.68915I$
$u = 0.777405 + 0.185259I$	$11.28280 + 0.04041I$	$5.42723 + 0.89925I$
$u = 0.777405 - 0.185259I$	$11.28280 - 0.04041I$	$5.42723 - 0.89925I$
$u = 1.252890 + 0.044961I$	$-2.90916 - 0.08413I$	$-0.68947 - 1.50895I$
$u = 1.252890 - 0.044961I$	$-2.90916 + 0.08413I$	$-0.68947 + 1.50895I$
$u = -1.281930 + 0.128297I$	$-4.37662 + 2.52856I$	$-5.94778 - 5.32405I$
$u = -1.281930 - 0.128297I$	$-4.37662 - 2.52856I$	$-5.94778 + 5.32405I$
$u = 1.233580 + 0.435957I$	$16.9206 + 1.1935I$	$6.78229 + 0.45952I$
$u = 1.233580 - 0.435957I$	$16.9206 - 1.1935I$	$6.78229 - 0.45952I$
$u = -1.241030 + 0.416731I$	$6.78682 + 0.17612I$	$6.07706 + 0.51655I$
$u = -1.241030 - 0.416731I$	$6.78682 - 0.17612I$	$6.07706 - 0.51655I$
$u = 1.300760 + 0.181559I$	$-1.26935 - 5.01630I$	$1.24352 + 7.13074I$
$u = 1.300760 - 0.181559I$	$-1.26935 + 5.01630I$	$1.24352 - 7.13074I$
$u = 1.260470 + 0.393875I$	$2.24673 - 2.77191I$	$1.60426 - 0.44575I$
$u = 1.260470 - 0.393875I$	$2.24673 + 2.77191I$	$1.60426 + 0.44575I$
$u = -1.34160$	5.39957	−0.485750
$u = -1.286130 + 0.392373I$	$2.05223 + 6.17629I$	$0.87692 - 6.64270I$
$u = -1.286130 - 0.392373I$	$2.05223 - 6.17629I$	$0.87692 + 6.64270I$
$u = -1.328350 + 0.209703I$	$7.96118 + 6.17101I$	$2.39842 - 5.27362I$
$u = -1.328350 - 0.209703I$	$7.96118 - 6.17101I$	$2.39842 + 5.27362I$
$u = 0.253274 + 0.597391I$	$12.89040 - 3.33854I$	$8.26297 + 4.57844I$
$u = 0.253274 - 0.597391I$	$12.89040 + 3.33854I$	$8.26297 - 4.57844I$
$u = 1.304210 + 0.403622I$	$6.31578 - 9.02541I$	$5.28025 + 6.79809I$
$u = 1.304210 - 0.403622I$	$6.31578 + 9.02541I$	$5.28025 - 6.79809I$
$u = -1.315470 + 0.411974I$	$16.3071 + 10.5958I$	$6.03260 - 5.51770I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.315470-0.411974I$	$16.3071-10.5958I$	$6.03260+5.51770I$
$u=-0.215467+0.524772I$	$3.39035+2.53006I$	$8.15428-6.42695I$
$u=-0.215467-0.524772I$	$3.39035-2.53006I$	$8.15428+6.42695I$
$u=-0.487225$	1.85818	3.26760
$u=\quad 0.172360+0.345725I$	$0.027257-0.790103I$	$0.84818+8.67184I$
$u=\quad 0.172360-0.345725I$	$0.027257+0.790103I$	$0.84818-8.67184I$

II. $I_2^u = \langle u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$	1.64493	6.00000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7, c_{11}	$u(u^{36} + 3u^{35} + \cdots - 30u - 7)$
c_2, c_3, c_4 c_8, c_9	$(u-1)(u^{36} - 24u^{34} + \cdots + 3u^2 + 1)$
c_5, c_6, c_{12}	$(u-1)(u^{36} - 14u^{34} + \cdots + 2u + 1)$
c_{10}	$(u+1)(u^{36} - 6u^{35} + \cdots + 272u - 304)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{11}	$y(y^{36} + 39y^{35} + \cdots - 326y + 49)$
c_2, c_3, c_4 c_8, c_9	$(y-1)(y^{36} - 48y^{35} + \cdots + 6y + 1)$
c_5, c_6, c_{12}	$(y-1)(y^{36} - 28y^{35} + \cdots + 6y + 1)$
c_{10}	$(y-1)(y^{36} - 24y^{35} + \cdots + 92000y + 92416)$