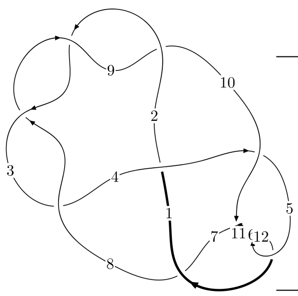
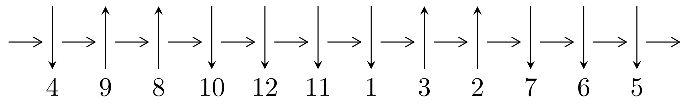
$12a_{1161}$ ($K12a_{1161}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{32} - u^{31} + \cdots + 3u^2 + 1 \rangle$$
$$I_2^u = \langle u^5 + 3u^3 + u - 1 \rangle$$

* 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. $I_1^u = \langle u^{32} - u^{31} + \cdots + 3u^2 + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^6 + 3u^4 + 2u^2 + 1 \\ u^6 + 2u^4 - u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^6 + 3u^4 + 2u^2 + 1 \\ -u^8 - 4u^6 - 4u^4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{11} + 6u^9 + 12u^7 + 10u^5 + 5u^3 \\ -u^{13} - 7u^{11} - 17u^9 - 16u^7 - 4u^5 + u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{25} - 14u^{23} + \cdots + 5u^5 + u \\ u^{27} + 15u^{25} + \cdots + u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{24} + 13u^{22} + \cdots - u^2 - u \\ -u^{31} - 18u^{29} + \cdots - 2u^2 - u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{20} - 11u^{18} + \cdots + 3u^2 + 1 \\ -u^{20} - 10u^{18} - 38u^{16} - 66u^{14} - 47u^{12} - 4u^{10} + 6u^8 + 2u^6 - 5u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{30} + 4u^{29} - 76u^{28} + 68u^{27} - 632u^{26} + 500u^{25} - 3012u^{24} + 2072u^{23} - 9052u^{22} + 5284u^{21} - 17812u^{20} + 8508u^{19} - 23164u^{18} + 8580u^{17} - 19788u^{16} + 5292u^{15} - 10868u^{14} + 1960u^{13} - 3384u^{12} + 344u^{11} - 36u^{10} - 80u^9 + 376u^8 - 44u^7 + 156u^6 - 96u^5 + 36u^4 - 12u^3 - 28u^2 + 4u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 9u^{31} + \cdots - 110u + 33$
c_2, c_3, c_8 c_9	$u^{32} + u^{31} + \cdots + 3u^2 + 1$
c_4, c_7	$u^{32} - 4u^{31} + \cdots - 108u + 36$
c_5, c_6, c_{10} c_{11}, c_{12}	$u^{32} + u^{31} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} - 7y^{31} + \cdots - 3982y + 1089$
c_2, c_3, c_8 c_9	$y^{32} + 37y^{31} + \cdots + 6y + 1$
c_4, c_7	$y^{32} - 20y^{31} + \cdots + 19080y + 1296$
c_5, c_6, c_{10} c_{11}, c_{12}	$y^{32} + 41y^{31} + \cdots + 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.300810 + 0.836112I$	$6.82102 - 1.42764I$	$-4.51155 - 0.98064I$
$u = 0.300810 - 0.836112I$	$6.82102 + 1.42764I$	$-4.51155 + 0.98064I$
$u = 0.489031 + 0.734239I$	$8.08609 + 8.05482I$	$-2.31310 - 6.73676I$
$u = 0.489031 - 0.734239I$	$8.08609 - 8.05482I$	$-2.31310 + 6.73676I$
$u = -0.454853 + 0.736272I$	$-0.91691 - 6.31171I$	$-4.12363 + 8.39972I$
$u = -0.454853 - 0.736272I$	$-0.91691 + 6.31171I$	$-4.12363 - 8.39972I$
$u = 0.408575 + 0.750241I$	$-3.78730 + 3.13913I$	$-10.07435 - 5.21729I$
$u = 0.408575 - 0.750241I$	$-3.78730 - 3.13913I$	$-10.07435 + 5.21729I$
$u = -0.508887 + 0.453816I$	$12.96460 - 1.76928I$	$2.67390 + 3.90594I$
$u = -0.508887 - 0.453816I$	$12.96460 + 1.76928I$	$2.67390 - 3.90594I$
$u = 0.431538 + 0.445802I$	$3.53431 + 1.54706I$	$2.87219 - 5.01991I$
$u = 0.431538 - 0.445802I$	$3.53431 - 1.54706I$	$2.87219 + 5.01991I$
$u = 0.598654 + 0.128367I$	$9.86359 - 4.36101I$	$1.36134 + 2.03096I$
$u = 0.598654 - 0.128367I$	$9.86359 + 4.36101I$	$1.36134 - 2.03096I$
$u = -0.554088 + 0.092280I$	$0.95148 + 2.86543I$	$0.05561 - 3.87784I$
$u = -0.554088 - 0.092280I$	$0.95148 - 2.86543I$	$0.05561 + 3.87784I$
$u = -0.09682 + 1.49663I$	$6.60174 - 3.81122I$	$0. + 2.89590I$
$u = -0.09682 - 1.49663I$	$6.60174 + 3.81122I$	$0. - 2.89590I$
$u = -0.188661 + 0.441864I$	$-0.184695 - 0.792115I$	$-5.07140 + 8.68136I$
$u = -0.188661 - 0.441864I$	$-0.184695 + 0.792115I$	$-5.07140 - 8.68136I$
$u = 0.06894 + 1.52078I$	$-2.97865 + 3.12510I$	$-4.00000 - 3.93405I$
$u = 0.06894 - 1.52078I$	$-2.97865 - 3.12510I$	$-4.00000 + 3.93405I$
$u = -0.02317 + 1.55273I$	$-7.06597 - 1.36583I$	$0. + 4.57803I$
$u = -0.02317 - 1.55273I$	$-7.06597 + 1.36583I$	$0. - 4.57803I$
$u = -0.13063 + 1.61792I$	$-8.94709 - 8.50994I$	0
$u = -0.13063 - 1.61792I$	$-8.94709 + 8.50994I$	0
$u = 0.14214 + 1.61709I$	$0.08629 + 10.42610I$	0
$u = 0.14214 - 1.61709I$	$0.08629 - 10.42610I$	0
$u = 0.11670 + 1.62115I$	$-11.89960 + 5.11913I$	0
$u = 0.11670 - 1.62115I$	$-11.89960 - 5.11913I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.09928 + 1.62252I$	$-9.83905 - 1.68285I$	0
$u = -0.09928 - 1.62252I$	$-9.83905 + 1.68285I$	0

II. $I_2^u = \langle u^5 + 3u^3 + u - 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - 6y^4 + 23y^3 - 34y^2 + 33y - 9$
c_2, c_3, c_5 c_6, c_8, c_9 c_{10}, c_{11}, c_{12}	$y^5 + 6y^4 + 11y^3 + 6y^2 + y - 1$
c_4, c_7	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.343105 + 0.770791I$	-1.64493	-6.00000
$u = -0.343105 - 0.770791I$	-1.64493	-6.00000
$u = \quad 0.525261$	-1.64493	-6.00000
$u = \quad 0.08047 + 1.63341I$	-1.64493	-6.00000
$u = \quad 0.08047 - 1.63341I$	-1.64493	-6.00000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^5-2u^4-u^3+4u^2+3u-3)(u^{32}-9u^{31}+\cdots-110u+33)$
c_2, c_3, c_8 c_9	$(u^5+3u^3+u+1)(u^{32}+u^{31}+\cdots+3u^2+1)$
c_4, c_7	$((u+1)^5)(u^{32}-4u^{31}+\cdots-108u+36)$
c_5, c_6, c_{10} c_{11}, c_{12}	$(u^5+3u^3+u+1)(u^{32}+u^{31}+\cdots+2u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^5 - 6y^4 + 23y^3 - 34y^2 + 33y - 9)(y^{32} - 7y^{31} + \cdots - 3982y + 1089)$
c_2, c_3, c_8 c_9	$(y^5 + 6y^4 + 11y^3 + 6y^2 + y - 1)(y^{32} + 37y^{31} + \cdots + 6y + 1)$
c_4, c_7	$((y-1)^5)(y^{32} - 20y^{31} + \cdots + 19080y + 1296)$
c_5, c_6, c_{10} c_{11}, c_{12}	$(y^5 + 6y^4 + 11y^3 + 6y^2 + y - 1)(y^{32} + 41y^{31} + \cdots + 6y + 1)$