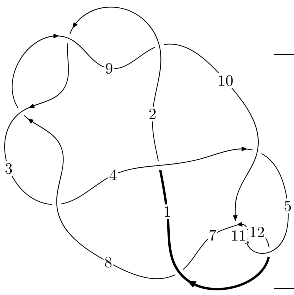
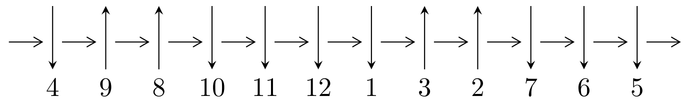
$12a_{1159}$ ($K12a_{1159}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{56} + u^{55} + \cdots + 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 56 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. $I^u_1 = \langle u^{56} + u^{55} + \cdots + 2u - 1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{10} - 5u^8 + 8u^6 - 3u^4 - 3u^2 + 1 \\ -u^{10} + 4u^8 - 5u^6 + 3u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^{12} + 5u^{10} - 9u^8 + 6u^6 - u^2 + 1 \\ -u^{14} + 6u^{12} - 13u^{10} + 10u^8 + 2u^6 - 4u^4 - u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{29} - 12u^{27} + \cdots + 6u^3 - 3u \\ u^{31} - 13u^{29} + \cdots - 24u^7 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{34} - 15u^{32} + \cdots + 3u^2 + 1 \\ -u^{34} + 14u^{32} + \cdots + 8u^4 - u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{53} - 22u^{51} + \cdots - 14u^3 + u \\ u^{55} - 23u^{53} + \cdots + 6u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{54} + 92u^{52} + \cdots + 24u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{56} - 17u^{55} + \cdots - 14056u + 1697$
c_2, c_3, c_8 c_9	$u^{56} + u^{55} + \cdots - 2u - 1$
c_4, c_7	$u^{56} + u^{55} + \cdots - 104u - 61$
c_5, c_6, c_{11}	$u^{56} - u^{55} + \cdots - 2u - 1$
c_{10}, c_{12}	$u^{56} + 3u^{55} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} - 23y^{55} + \cdots - 40096324y + 2879809$
c_2, c_3, c_8 c_9	$y^{56} + 65y^{55} + \cdots + 4y + 1$
c_4, c_7	$y^{56} - 43y^{55} + \cdots - 18624y + 3721$
c_5, c_6, c_{11}	$y^{56} - 47y^{55} + \cdots + 4y + 1$
c_{10}, c_{12}	$y^{56} + 29y^{55} + \cdots + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.007390 + 0.299100I$	$-11.32590 + 5.07175I$	$-10.41136 - 2.14928I$
$u = 1.007390 - 0.299100I$	$-11.32590 - 5.07175I$	$-10.41136 + 2.14928I$
$u = -1.037430 + 0.256406I$	$-3.34884 - 2.95517I$	$-8.35409 + 4.14686I$
$u = -1.037430 - 0.256406I$	$-3.34884 + 2.95517I$	$-8.35409 - 4.14686I$
$u = 1.121000 + 0.214806I$	$-1.62413 - 0.33326I$	0
$u = 1.121000 - 0.214806I$	$-1.62413 + 0.33326I$	0
$u = 0.755198 + 0.276814I$	$-11.72800 - 4.92772I$	$-11.51035 + 4.25849I$
$u = 0.755198 - 0.276814I$	$-11.72800 + 4.92772I$	$-11.51035 - 4.25849I$
$u = 0.174335 + 0.780042I$	$-8.76893 - 9.11894I$	$-7.30154 + 6.10227I$
$u = 0.174335 - 0.780042I$	$-8.76893 + 9.11894I$	$-7.30154 - 6.10227I$
$u = -0.163772 + 0.768213I$	$-0.71389 + 6.86037I$	$-5.12714 - 7.81567I$
$u = -0.163772 - 0.768213I$	$-0.71389 - 6.86037I$	$-5.12714 + 7.81567I$
$u = -0.056015 + 0.774634I$	$-2.40652 + 3.39994I$	$-2.99197 - 3.55207I$
$u = -0.056015 - 0.774634I$	$-2.40652 - 3.39994I$	$-2.99197 + 3.55207I$
$u = 0.150274 + 0.747044I$	$1.16768 - 3.31828I$	$-1.06642 + 3.30903I$
$u = 0.150274 - 0.747044I$	$1.16768 + 3.31828I$	$-1.06642 - 3.30903I$
$u = 0.019950 + 0.754347I$	$4.06747 - 1.63438I$	$1.40261 + 4.57782I$
$u = 0.019950 - 0.754347I$	$4.06747 + 1.63438I$	$1.40261 - 4.57782I$
$u = -0.728627 + 0.195550I$	$-3.63602 + 3.02560I$	$-10.17603 - 5.79656I$
$u = -0.728627 - 0.195550I$	$-3.63602 - 3.02560I$	$-10.17603 + 5.79656I$
$u = -1.205440 + 0.317841I$	$-5.92121 + 0.55972I$	0
$u = -1.205440 - 0.317841I$	$-5.92121 - 0.55972I$	0
$u = 0.210116 + 0.707797I$	$-9.83896 + 1.27867I$	$-8.53672 + 1.04653I$
$u = 0.210116 - 0.707797I$	$-9.83896 - 1.27867I$	$-8.53672 - 1.04653I$
$u = -1.254520 + 0.166796I$	$-4.29080 + 2.46551I$	0
$u = -1.254520 - 0.166796I$	$-4.29080 - 2.46551I$	0
$u = -0.174059 + 0.708931I$	$-1.55154 + 0.37866I$	$-6.90408 + 0.22967I$
$u = -0.174059 - 0.708931I$	$-1.55154 - 0.37866I$	$-6.90408 - 0.22967I$
$u = 1.247700 + 0.308289I$	$0.28331 - 2.20403I$	0
$u = 1.247700 - 0.308289I$	$0.28331 + 2.20403I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.276230 + 0.317717I$	$0.03967 + 5.50640I$	0
$u = -1.276230 - 0.317717I$	$0.03967 - 5.50640I$	0
$u = 1.323630 + 0.151327I$	$-12.15060 - 3.21011I$	0
$u = 1.323630 - 0.151327I$	$-12.15060 + 3.21011I$	0
$u = 0.662825$	-1.52718	-5.96610
$u = 1.297740 + 0.332753I$	$-6.63103 - 7.39587I$	0
$u = 1.297740 - 0.332753I$	$-6.63103 + 7.39587I$	0
$u = -1.354420 + 0.316273I$	$-3.57922 + 7.17640I$	0
$u = -1.354420 - 0.316273I$	$-3.57922 - 7.17640I$	0
$u = 1.359410 + 0.299615I$	$-6.38721 - 4.05791I$	0
$u = 1.359410 - 0.299615I$	$-6.38721 + 4.05791I$	0
$u = 1.362120 + 0.324699I$	$-5.53028 - 10.81760I$	0
$u = 1.362120 - 0.324699I$	$-5.53028 + 10.81760I$	0
$u = -1.40068$	-7.76419	0
$u = -1.372010 + 0.293076I$	$-14.8334 + 2.3638I$	0
$u = -1.372010 - 0.293076I$	$-14.8334 - 2.3638I$	0
$u = -1.368570 + 0.329070I$	$-13.6427 + 13.1311I$	0
$u = -1.368570 - 0.329070I$	$-13.6427 - 13.1311I$	0
$u = 1.411120 + 0.016554I$	$-10.10810 - 3.41472I$	0
$u = 1.411120 - 0.016554I$	$-10.10810 + 3.41472I$	0
$u = -1.42291 + 0.02306I$	$-18.4140 + 5.4847I$	0
$u = -1.42291 - 0.02306I$	$-18.4140 - 5.4847I$	0
$u = -0.343458 + 0.381016I$	$-7.13429 + 1.35752I$	$-8.42167 - 4.66731I$
$u = -0.343458 - 0.381016I$	$-7.13429 - 1.35752I$	$-8.42167 + 4.66731I$
$u = 0.186399 + 0.279972I$	$-0.195308 - 0.800076I$	$-5.29681 + 8.55548I$
$u = 0.186399 - 0.279972I$	$-0.195308 + 0.800076I$	$-5.29681 - 8.55548I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{56} - 17u^{55} + \cdots - 14056u + 1697$
c_2, c_3, c_8 c_9	$u^{56} + u^{55} + \cdots - 2u - 1$
c_4, c_7	$u^{56} + u^{55} + \cdots - 104u - 61$
c_5, c_6, c_{11}	$u^{56} - u^{55} + \cdots - 2u - 1$
c_{10}, c_{12}	$u^{56} + 3u^{55} + \cdots + 4u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} - 23y^{55} + \cdots - 40096324y + 2879809$
c_2, c_3, c_8 c_9	$y^{56} + 65y^{55} + \cdots + 4y + 1$
c_4, c_7	$y^{56} - 43y^{55} + \cdots - 18624y + 3721$
c_5, c_6, c_{11}	$y^{56} - 47y^{55} + \cdots + 4y + 1$
c_{10}, c_{12}	$y^{56} + 29y^{55} + \cdots + 4y + 1$