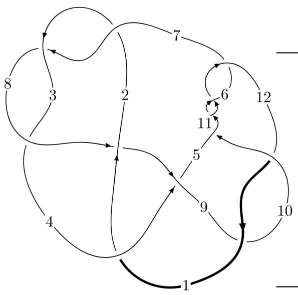
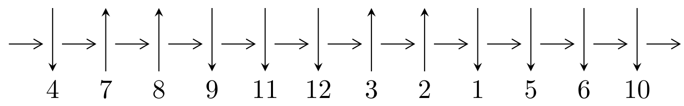
$12a_{1023}$ $(K12a_{1023})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{63} - u^{62} + \cdots + 4u^3 - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 63 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. $I^u_1 = \langle u^{63} - u^{62} + \cdots + 4u^3 - 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^3+2u\\-u^3+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^{10}+5u^8-8u^6+3u^4+u^2+1\\-u^{10}+4u^8-5u^6+2u^4-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^6-3u^4+2u^2+1\\-u^8+4u^6-4u^4\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^{17}-8u^{15}+25u^{13}-36u^{11}+19u^9+4u^7-2u^5-4u^3+u\\-u^{19}+9u^{17}-32u^{15}+55u^{13}-43u^{11}+9u^9+4u^5-u^3+u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u^{39}-18u^{37}+\cdots-6u^5-6u^3\\u^{39}-17u^{37}+\cdots+3u^5+u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u^{28}-13u^{26}+\cdots+u^2+1\\-u^{30}+14u^{28}+\cdots-4u^4-u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u^{57}-26u^{55}+\cdots+2u^3+u\\-u^{59}+27u^{57}+\cdots-u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{61} - 112u^{59} + \cdots + 4u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{63} - 13u^{62} + \cdots + 5048u - 367$
c_2, c_3, c_7	$u^{63} + u^{62} + \cdots + 4u^3 + 1$
c_4	$u^{63} - u^{62} + \cdots - 16u + 1$
c_5, c_6, c_{10} c_{11}	$u^{63} + u^{62} + \cdots - 2u^4 + 1$
c_8	$u^{63} - 3u^{62} + \cdots - 14u + 1$
c_9, c_{12}	$u^{63} - 11u^{62} + \cdots + 1032u - 113$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} + 23y^{62} + \cdots + 185728y - 134689$
c_2, c_3, c_7	$y^{63} - 57y^{62} + \cdots + 12y^2 - 1$
c_4	$y^{63} - y^{62} + \cdots - 64y - 1$
c_5, c_6, c_{10} c_{11}	$y^{63} - 69y^{62} + \cdots + 4y^2 - 1$
c_8	$y^{63} - 5y^{62} + \cdots + 96y - 1$
c_9, c_{12}	$y^{63} + 39y^{62} + \cdots - 28816y - 12769$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.05857$	-0.871869	-9.57900
$u = -1.124880 + 0.212975I$	$-4.94868 - 6.91271I$	0
$u = -1.124880 - 0.212975I$	$-4.94868 + 6.91271I$	0
$u = 1.148860 + 0.182186I$	$2.18519 + 4.53135I$	0
$u = 1.148860 - 0.182186I$	$2.18519 - 4.53135I$	0
$u = -0.830553 + 0.042703I$	$-8.69415 + 0.00048I$	$-9.30642 + 0.15839I$
$u = -0.830553 - 0.042703I$	$-8.69415 - 0.00048I$	$-9.30642 - 0.15839I$
$u = -1.190630 + 0.128855I$	$2.84482 - 1.03901I$	0
$u = -1.190630 - 0.128855I$	$2.84482 + 1.03901I$	0
$u = -0.307202 + 0.707160I$	$-5.43312 - 10.27260I$	$-7.72829 + 7.96510I$
$u = -0.307202 - 0.707160I$	$-5.43312 + 10.27260I$	$-7.72829 - 7.96510I$
$u = 0.311428 + 0.693681I$	$1.68556 + 7.55058I$	$-4.18504 - 9.18442I$
$u = 0.311428 - 0.693681I$	$1.68556 - 7.55058I$	$-4.18504 + 9.18442I$
$u = -0.317156 + 0.675863I$	$2.25968 - 3.54520I$	$-2.30097 + 2.95262I$
$u = -0.317156 - 0.675863I$	$2.25968 + 3.54520I$	$-2.30097 - 2.95262I$
$u = -0.615511 + 0.402928I$	$-4.21282 + 6.36699I$	$-5.11968 - 2.58502I$
$u = -0.615511 - 0.402928I$	$-4.21282 - 6.36699I$	$-5.11968 + 2.58502I$
$u = 0.336084 + 0.649282I$	$-3.64458 + 1.06314I$	$-5.63466 - 3.13287I$
$u = 0.336084 - 0.649282I$	$-3.64458 - 1.06314I$	$-5.63466 + 3.13287I$
$u = -0.218313 + 0.688956I$	$-10.70060 - 3.40629I$	$-12.54413 + 4.55404I$
$u = -0.218313 - 0.688956I$	$-10.70060 + 3.40629I$	$-12.54413 - 4.55404I$
$u = 0.577950 + 0.406867I$	$2.80271 - 3.72383I$	$-1.35159 + 3.56435I$
$u = 0.577950 - 0.406867I$	$2.80271 + 3.72383I$	$-1.35159 - 3.56435I$
$u = 0.229540 + 0.647261I$	$-2.84257 + 2.89752I$	$-11.56820 - 6.31602I$
$u = 0.229540 - 0.647261I$	$-2.84257 - 2.89752I$	$-11.56820 + 6.31602I$
$u = 0.495663 + 0.468066I$	$-2.93186 + 2.65024I$	$-3.65682 - 3.70204I$
$u = 0.495663 - 0.468066I$	$-2.93186 - 2.65024I$	$-3.65682 + 3.70204I$
$u = -0.533777 + 0.423287I$	$3.22952 - 0.19502I$	$0.24983 + 3.49872I$
$u = -0.533777 - 0.423287I$	$3.22952 + 0.19502I$	$0.24983 - 3.49872I$
$u = 1.303640 + 0.225472I$	$-3.76308 - 0.34360I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.303640 - 0.225472I$	$-3.76308 + 0.34360I$	0
$u = -0.083521 + 0.671063I$	$-8.05532 + 3.57894I$	$-11.69365 - 1.74226I$
$u = -0.083521 - 0.671063I$	$-8.05532 - 3.57894I$	$-11.69365 + 1.74226I$
$u = 1.32555$	-2.93780	0
$u = -1.350050 + 0.193271I$	$3.40243 - 1.30144I$	0
$u = -1.350050 - 0.193271I$	$3.40243 + 1.30144I$	0
$u = 0.070290 + 0.619087I$	$-1.00852 - 1.48110I$	$-8.78123 + 3.67726I$
$u = 0.070290 - 0.619087I$	$-1.00852 + 1.48110I$	$-8.78123 - 3.67726I$
$u = 1.389370 + 0.217872I$	$4.99399 + 3.97068I$	0
$u = 1.389370 - 0.217872I$	$4.99399 - 3.97068I$	0
$u = 1.382970 + 0.269752I$	$-5.61347 + 6.88488I$	0
$u = 1.382970 - 0.269752I$	$-5.61347 - 6.88488I$	0
$u = -1.389830 + 0.251114I$	$2.31904 - 6.16933I$	0
$u = -1.389830 - 0.251114I$	$2.31904 + 6.16933I$	0
$u = -0.214690 + 0.530628I$	$-0.156297 - 1.165440I$	$-2.55431 + 5.45798I$
$u = -0.214690 - 0.530628I$	$-0.156297 + 1.165440I$	$-2.55431 - 5.45798I$
$u = 1.44160 + 0.15031I$	$9.44187 + 2.25272I$	0
$u = 1.44160 - 0.15031I$	$9.44187 - 2.25272I$	0
$u = -1.44303 + 0.13785I$	$9.12730 + 1.82675I$	0
$u = -1.44303 - 0.13785I$	$9.12730 - 1.82675I$	0
$u = 1.42643 + 0.26226I$	$7.83985 + 6.97132I$	0
$u = 1.42643 - 0.26226I$	$7.83985 - 6.97132I$	0
$u = -1.42926 + 0.25015I$	$2.00484 - 4.35421I$	0
$u = -1.42926 - 0.25015I$	$2.00484 + 4.35421I$	0
$u = 1.44572 + 0.12636I$	$2.23352 - 4.59359I$	0
$u = 1.44572 - 0.12636I$	$2.23352 + 4.59359I$	0
$u = -1.42610 + 0.26976I$	$7.24522 - 11.06320I$	0
$u = -1.42610 - 0.26976I$	$7.24522 + 11.06320I$	0
$u = 1.42568 + 0.27581I$	$0.10974 + 13.85250I$	0
$u = 1.42568 - 0.27581I$	$0.10974 - 13.85250I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.44329 + 0.16543I$	$3.21696 - 4.93771I$	0
$u = -1.44329 - 0.16543I$	$3.21696 + 4.93771I$	0
$u = \quad 0.481012$	-1.12974	-8.20090

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{63} - 13u^{62} + \cdots + 5048u - 367$
c_2, c_3, c_7	$u^{63} + u^{62} + \cdots + 4u^3 + 1$
c_4	$u^{63} - u^{62} + \cdots - 16u + 1$
c_5, c_6, c_{10} c_{11}	$u^{63} + u^{62} + \cdots - 2u^4 + 1$
c_8	$u^{63} - 3u^{62} + \cdots - 14u + 1$
c_9, c_{12}	$u^{63} - 11u^{62} + \cdots + 1032u - 113$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} + 23y^{62} + \cdots + 185728y - 134689$
c_2, c_3, c_7	$y^{63} - 57y^{62} + \cdots + 12y^2 - 1$
c_4	$y^{63} - y^{62} + \cdots - 64y - 1$
c_5, c_6, c_{10} c_{11}	$y^{63} - 69y^{62} + \cdots + 4y^2 - 1$
c_8	$y^{63} - 5y^{62} + \cdots + 96y - 1$
c_9, c_{12}	$y^{63} + 39y^{62} + \cdots - 28816y - 12769$