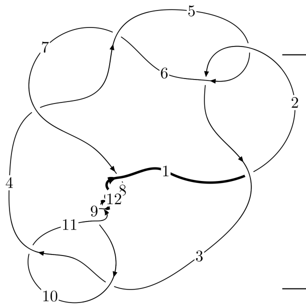
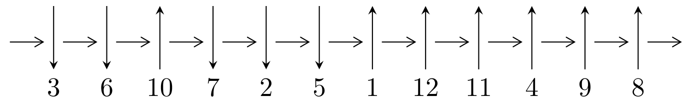
$12a_{0425}$ ($K12a_{0425}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{40} + u^{39} + \cdots + 2u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 40 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. $I_1^u = \langle u^{40} + u^{39} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ u^6 + u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^8 - u^6 + 3u^4 - 2u^2 + 1 \\ -u^8 - 2u^4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{12} - u^{10} + 5u^8 - 4u^6 + 6u^4 - 3u^2 + 1 \\ u^{14} - 2u^{12} + 5u^{10} - 8u^8 + 6u^6 - 6u^4 + u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{10} + u^8 - 4u^6 + 3u^4 - 3u^2 + 1 \\ u^{10} + 3u^6 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{21} + 2u^{19} + \cdots + 6u^3 - u \\ u^{21} - u^{19} + 7u^{17} - 6u^{15} + 16u^{13} - 11u^{11} + 13u^9 - 6u^7 + 3u^5 - u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{32} + 3u^{30} + \cdots - 2u^2 + 1 \\ u^{32} - 2u^{30} + \cdots - 6u^6 + 4u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -4u^{38} - 4u^{37} + 12u^{36} + 16u^{35} - 68u^{34} - 76u^{33} + 160u^{32} + 212u^{31} - 468u^{30} - 552u^{29} + 872u^{28} + 1132u^{27} - 1696u^{26} - 2028u^{25} + 2496u^{24} + 3124u^{23} - 3500u^{22} - 4108u^{21} + 4004u^{20} + 4760u^{19} - 4124u^{18} - 4644u^{17} + 3528u^{16} + 3972u^{15} - 2596u^{14} - 2808u^{13} + 1496u^{12} + 1668u^{11} - 696u^{10} - 764u^9 + 152u^8 + 252u^7 + 8u^6 - 20u^5 - 52u^4 - 8u^3 + 20u^2 + 16u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6	$u^{40} + 11u^{39} + \cdots + 4u + 1$
c_2, c_5	$u^{40} + u^{39} + \cdots - 2u + 1$
c_3, c_{10}	$u^{40} + u^{39} + \cdots + 2u + 1$
c_7, c_8, c_9 c_{11}, c_{12}	$u^{40} - 7u^{39} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6	$y^{40} + 37y^{39} + \cdots + 12y + 1$
c_2, c_5	$y^{40} - 11y^{39} + \cdots - 4y + 1$
c_3, c_{10}	$y^{40} - 7y^{39} + \cdots - 4y + 1$
c_7, c_8, c_9 c_{11}, c_{12}	$y^{40} + 53y^{39} + \cdots + 20y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.774023 + 0.626573I$	$-2.27514 - 2.35684I$	$1.32722 + 3.76894I$
$u = -0.774023 - 0.626573I$	$-2.27514 + 2.35684I$	$1.32722 - 3.76894I$
$u = 0.739124 + 0.708073I$	$-5.26679 - 0.18413I$	$-6.20607 + 0.92237I$
$u = 0.739124 - 0.708073I$	$-5.26679 + 0.18413I$	$-6.20607 - 0.92237I$
$u = 0.627832 + 0.730855I$	$0.73402 - 4.48374I$	$-0.96535 + 2.86050I$
$u = 0.627832 - 0.730855I$	$0.73402 + 4.48374I$	$-0.96535 - 2.86050I$
$u = -0.608675 + 0.698819I$	$1.19980 - 1.38740I$	$-0.07893 + 2.54985I$
$u = -0.608675 - 0.698819I$	$1.19980 + 1.38740I$	$-0.07893 - 2.54985I$
$u = 0.838818 + 0.669942I$	$-4.94096 + 5.29818I$	$-4.71903 - 7.91162I$
$u = 0.838818 - 0.669942I$	$-4.94096 - 5.29818I$	$-4.71903 + 7.91162I$
$u = -0.898655 + 0.598871I$	$2.12810 - 3.44087I$	$2.44727 + 3.96002I$
$u = -0.898655 - 0.598871I$	$2.12810 + 3.44087I$	$2.44727 - 3.96002I$
$u = -0.891111 + 0.219846I$	$6.32393 - 5.42631I$	$7.65967 + 7.06500I$
$u = -0.891111 - 0.219846I$	$6.32393 + 5.42631I$	$7.65967 - 7.06500I$
$u = 0.888297 + 0.191636I$	$6.47477 - 0.62864I$	$8.33631 - 1.45489I$
$u = 0.888297 - 0.191636I$	$6.47477 + 0.62864I$	$8.33631 + 1.45489I$
$u = 0.908694 + 0.617877I$	$1.65204 + 9.48216I$	$1.43346 - 8.89660I$
$u = 0.908694 - 0.617877I$	$1.65204 - 9.48216I$	$1.43346 + 8.89660I$
$u = -0.738242 + 0.308879I$	$0.00908 - 2.86239I$	$2.01297 + 9.95605I$
$u = -0.738242 - 0.308879I$	$0.00908 + 2.86239I$	$2.01297 - 9.95605I$
$u = 0.914966 + 0.925195I$	$-7.90110 + 0.93902I$	$0. - 2.11894I$
$u = 0.914966 - 0.925195I$	$-7.90110 - 0.93902I$	$0. + 2.11894I$
$u = 0.687807 + 0.092383I$	$1.071350 + 0.173422I$	$9.40169 - 0.46654I$
$u = 0.687807 - 0.092383I$	$1.071350 - 0.173422I$	$9.40169 + 0.46654I$
$u = -0.915560 + 0.932311I$	$-8.66424 + 5.12373I$	$-1.21591 - 2.77049I$
$u = -0.915560 - 0.932311I$	$-8.66424 - 5.12373I$	$-1.21591 + 2.77049I$
$u = 0.940784 + 0.913719I$	$-11.90030 + 3.36395I$	$0. - 2.30636I$
$u = 0.940784 - 0.913719I$	$-11.90030 - 3.36395I$	$0. + 2.30636I$
$u = 0.963476 + 0.899832I$	$-7.74288 + 5.77907I$	$0. - 2.48353I$
$u = 0.963476 - 0.899832I$	$-7.74288 - 5.77907I$	$0. + 2.48353I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.936757 + 0.927705I$	$-15.3144 - 0.1076I$	$-5.83673 - 1.11315I$
$u = -0.936757 - 0.927705I$	$-15.3144 + 0.1076I$	$-5.83673 + 1.11315I$
$u = -0.954303 + 0.917987I$	$-15.2565 - 6.6798I$	$-5.66567 + 5.71643I$
$u = -0.954303 - 0.917987I$	$-15.2565 + 6.6798I$	$-5.66567 - 5.71643I$
$u = -0.968399 + 0.903607I$	$-8.4907 - 11.8771I$	$-0.89615 + 7.29232I$
$u = -0.968399 - 0.903607I$	$-8.4907 + 11.8771I$	$-0.89615 - 7.29232I$
$u = -0.027916 + 0.568771I$	$3.61497 + 2.92206I$	$-0.55528 - 2.79244I$
$u = -0.027916 - 0.568771I$	$3.61497 - 2.92206I$	$-0.55528 + 2.79244I$
$u = -0.296155 + 0.379057I$	$-1.252400 + 0.309569I$	$-6.95116 - 0.49193I$
$u = -0.296155 - 0.379057I$	$-1.252400 - 0.309569I$	$-6.95116 + 0.49193I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6	$u^{40} + 11u^{39} + \cdots + 4u + 1$
c_2, c_5	$u^{40} + u^{39} + \cdots - 2u + 1$
c_3, c_{10}	$u^{40} + u^{39} + \cdots + 2u + 1$
c_7, c_8, c_9 c_{11}, c_{12}	$u^{40} - 7u^{39} + \cdots - 4u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6	$y^{40} + 37y^{39} + \cdots + 12y + 1$
c_2, c_5	$y^{40} - 11y^{39} + \cdots - 4y + 1$
c_3, c_{10}	$y^{40} - 7y^{39} + \cdots - 4y + 1$
c_7, c_8, c_9 c_{11}, c_{12}	$y^{40} + 53y^{39} + \cdots + 20y + 1$