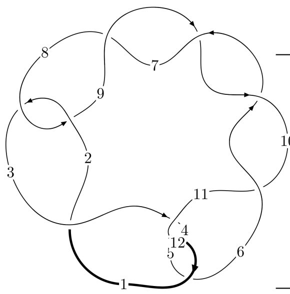
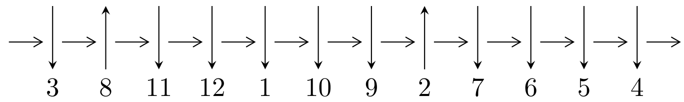
$12a_{0797}$ ($K12a_{0797}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{41} + u^{40} + \cdots - u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 41 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. $I_1^u = \langle u^{41} + u^{40} + \cdots - u - 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^6 + u^4 + 2u^2 + 1 \\ u^6 + u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^8 + u^6 + 3u^4 + 2u^2 + 1 \\ u^8 + 2u^4 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{19} - 2u^{17} - 8u^{15} - 12u^{13} - 21u^{11} - 22u^9 - 20u^7 - 12u^5 - 5u^3 \\ -u^{19} - u^{17} - 6u^{15} - 5u^{13} - 11u^{11} - 7u^9 - 6u^7 - 2u^5 + u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{14} - u^{12} - 4u^{10} - 3u^8 - 2u^6 + 2u^2 + 1 \\ -u^{16} - 2u^{14} - 6u^{12} - 8u^{10} - 10u^8 - 6u^6 - 4u^4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{38} + 3u^{36} + \cdots + 2u^2 + 1 \\ u^{40} + 4u^{38} + \cdots + 25u^8 + 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{40} - 12u^{38} + 4u^{37} - 72u^{36} + 12u^{35} - 172u^{34} + 68u^{33} - 532u^{32} + 156u^{31} - 1020u^{30} + 456u^{29} - 2104u^{28} + 808u^{27} - 3232u^{26} + 1556u^{25} - 4840u^{24} + 2116u^{23} - 5884u^{22} + 2876u^{21} - 6544u^{20} + 2924u^{19} - 6116u^{18} + 2796u^{17} - 4940u^{16} + 1988u^{15} - 3316u^{14} + 1224u^{13} - 1768u^{12} + 472u^{11} - 688u^{10} + 92u^9 - 148u^8 - 68u^7 + 24u^6 - 44u^5 + 24u^4 - 24u^3 - 4u^2 + 8u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_7 c_9, c_{10}	$u^{41} + 7u^{40} + \cdots - 3u - 1$
c_2, c_8	$u^{41} - u^{40} + \cdots - u + 1$
c_3, c_5	$u^{41} + u^{40} + \cdots + 7u + 1$
c_4, c_{11}, c_{12}	$u^{41} - u^{40} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_7 c_9, c_{10}	$y^{41} + 55y^{40} + \cdots + 21y - 1$
c_2, c_8	$y^{41} + 7y^{40} + \cdots - 3y - 1$
c_3, c_5	$y^{41} - 17y^{40} + \cdots - 3y - 1$
c_4, c_{11}, c_{12}	$y^{41} + 35y^{40} + \cdots - 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.746721 + 0.668302I$	$6.12347 - 4.43186I$	$-0.64976 + 2.52749I$
$u = 0.746721 - 0.668302I$	$6.12347 + 4.43186I$	$-0.64976 - 2.52749I$
$u = 0.640826 + 0.762779I$	$3.41343 + 2.37839I$	$-1.91604 - 4.49876I$
$u = 0.640826 - 0.762779I$	$3.41343 - 2.37839I$	$-1.91604 + 4.49876I$
$u = 0.577712 + 0.822944I$	$3.32469 + 2.15500I$	$-4.15170 - 3.81656I$
$u = 0.577712 - 0.822944I$	$3.32469 - 2.15500I$	$-4.15170 + 3.81656I$
$u = -0.699230 + 0.665301I$	$1.31088 + 0.84318I$	$-5.61398 - 1.15748I$
$u = -0.699230 - 0.665301I$	$1.31088 - 0.84318I$	$-5.61398 + 1.15748I$
$u = -0.624667 + 0.879172I$	$0.61729 - 5.77850I$	$-7.67117 + 7.41312I$
$u = -0.624667 - 0.879172I$	$0.61729 + 5.77850I$	$-7.67117 - 7.41312I$
$u = -0.729895 + 0.807771I$	$9.55876 - 2.69232I$	$1.62765 + 3.28476I$
$u = -0.729895 - 0.807771I$	$9.55876 + 2.69232I$	$1.62765 - 3.28476I$
$u = -0.261594 + 0.866448I$	$0.30761 - 5.87325I$	$-8.98780 + 8.12941I$
$u = -0.261594 - 0.866448I$	$0.30761 + 5.87325I$	$-8.98780 - 8.12941I$
$u = 0.646192 + 0.901469I$	$5.35322 + 9.58701I$	$-2.83138 - 8.65051I$
$u = 0.646192 - 0.901469I$	$5.35322 - 9.58701I$	$-2.83138 + 8.65051I$
$u = 0.211383 + 0.848155I$	$-3.89636 + 2.17908I$	$-14.9383 - 5.2468I$
$u = 0.211383 - 0.848155I$	$-3.89636 - 2.17908I$	$-14.9383 + 5.2468I$
$u = -0.143224 + 0.847989I$	$-0.30668 + 1.42021I$	$-11.22317 + 0.51661I$
$u = -0.143224 - 0.847989I$	$-0.30668 - 1.42021I$	$-11.22317 - 0.51661I$
$u = 0.536289 + 0.522200I$	$3.94243 + 1.95655I$	$-0.40351 - 3.68221I$
$u = 0.536289 - 0.522200I$	$3.94243 - 1.95655I$	$-0.40351 + 3.68221I$
$u = -0.918409 + 0.933266I$	$12.96880 - 3.08508I$	$-2.25641 + 3.40948I$
$u = -0.918409 - 0.933266I$	$12.96880 + 3.08508I$	$-2.25641 - 3.40948I$
$u = 0.928532 + 0.923939I$	$10.84470 - 1.03628I$	$-5.06255 + 1.18461I$
$u = 0.928532 - 0.923939I$	$10.84470 + 1.03628I$	$-5.06255 - 1.18461I$
$u = -0.909755 + 0.948945I$	$12.91700 - 3.64558I$	$-2.38906 + 1.25453I$
$u = -0.909755 - 0.948945I$	$12.91700 + 3.64558I$	$-2.38906 - 1.25453I$
$u = -0.936924 + 0.922936I$	$15.9484 + 4.9714I$	$-0.68196 - 2.33270I$
$u = -0.936924 - 0.922936I$	$15.9484 - 4.9714I$	$-0.68196 + 2.33270I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.908129 + 0.961589I$	$10.72100 + 7.79340I$	$-5.31261 - 5.70338I$
$u = 0.908129 - 0.961589I$	$10.72100 - 7.79340I$	$-5.31261 + 5.70338I$
$u = 0.930424 + 0.949937I$	$-19.2344 + 3.4189I$	$1.88979 - 2.27252I$
$u = 0.930424 - 0.949937I$	$-19.2344 - 3.4189I$	$1.88979 + 2.27252I$
$u = -0.911356 + 0.968477I$	$15.7979 - 11.7662I$	$-0.97634 + 6.84571I$
$u = -0.911356 - 0.968477I$	$15.7979 + 11.7662I$	$-0.97634 - 6.84571I$
$u = -0.193562 + 0.561475I$	$-0.310431 - 0.802598I$	$-7.57849 + 8.41194I$
$u = -0.193562 - 0.561475I$	$-0.310431 + 0.802598I$	$-7.57849 - 8.41194I$
$u = -0.534709 + 0.122960I$	$2.61523 + 3.18305I$	$-0.67808 - 2.90815I$
$u = -0.534709 - 0.122960I$	$2.61523 - 3.18305I$	$-0.67808 + 2.90815I$
$u = 0.474234$	-1.44617	-6.39030

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6, c_7 c_9, c_{10}	$u^{41} + 7u^{40} + \cdots - 3u - 1$
c_2, c_8	$u^{41} - u^{40} + \cdots - u + 1$
c_3, c_5	$u^{41} + u^{40} + \cdots + 7u + 1$
c_4, c_{11}, c_{12}	$u^{41} - u^{40} + \cdots + 3u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_7 c_9, c_{10}	$y^{41} + 55y^{40} + \cdots + 21y - 1$
c_2, c_8	$y^{41} + 7y^{40} + \cdots - 3y - 1$
c_3, c_5	$y^{41} - 17y^{40} + \cdots - 3y - 1$
c_4, c_{11}, c_{12}	$y^{41} + 35y^{40} + \cdots - 3y - 1$