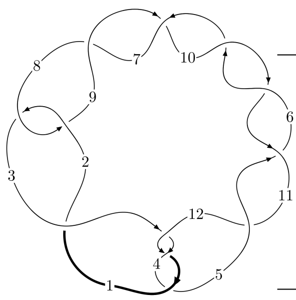
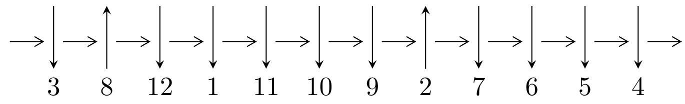
$12a_{0802}$ ($K12a_{0802}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{23} + u^{22} + \cdots + 4u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 23 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. $I_1^u = \langle u^{23} + u^{22} + \cdots + 4u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{21} + 32u^{19} - 4u^{18} - 108u^{17} + 28u^{16} + 172u^{15} - 80u^{14} - 56u^{13} + 96u^{12} - 232u^{11} + 16u^{10} + 312u^9 - 160u^8 - 8u^7 + 108u^6 - 208u^5 + 60u^4 + 60u^3 - 64u^2 + 56u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_7, c_9, c_{10} c_{11}	$u^{23} + 3u^{22} + \cdots - 4u - 1$
c_2, c_8	$u^{23} - u^{22} + \cdots + 2u^2 + 1$
c_3, c_4, c_{12}	$u^{23} - u^{22} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_7, c_9, c_{10} c_{11}	$y^{23} + 35y^{22} + \cdots + 12y - 1$
c_2, c_8	$y^{23} + 3y^{22} + \cdots - 4y - 1$
c_3, c_4, c_{12}	$y^{23} - 17y^{22} + \cdots - 4y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.005035 + 0.961413I$	$-16.4609 - 3.5087I$	$0.05644 + 2.17240I$
$u = 0.005035 - 0.961413I$	$-16.4609 + 3.5087I$	$0.05644 - 2.17240I$
$u = 1.09712$	-2.03689	-3.73850
$u = 1.124750 + 0.248700I$	$-0.036937 - 1.040240I$	$-3.53344 + 0.53233I$
$u = 1.124750 - 0.248700I$	$-0.036937 + 1.040240I$	$-3.53344 - 0.53233I$
$u = 0.023924 + 0.839260I$	$10.61860 - 3.02352I$	$0.20094 + 2.84696I$
$u = 0.023924 - 0.839260I$	$10.61860 + 3.02352I$	$0.20094 - 2.84696I$
$u = -1.226160 + 0.078178I$	$-4.38972 + 1.90192I$	$-14.5499 - 5.2542I$
$u = -1.226160 - 0.078178I$	$-4.38972 - 1.90192I$	$-14.5499 + 5.2542I$
$u = -1.229170 + 0.244467I$	$-0.94527 + 5.21093I$	$-7.03360 - 8.08654I$
$u = -1.229170 - 0.244467I$	$-0.94527 - 5.21093I$	$-7.03360 + 8.08654I$
$u = 1.232150 + 0.405721I$	$6.90735 - 1.43601I$	$-3.19412 + 0.64909I$
$u = 1.232150 - 0.405721I$	$6.90735 + 1.43601I$	$-3.19412 - 0.64909I$
$u = -1.266670 + 0.390063I$	$6.62684 + 7.42151I$	$-3.89329 - 6.10029I$
$u = -1.266670 - 0.390063I$	$6.62684 - 7.42151I$	$-3.89329 + 6.10029I$
$u = 0.076206 + 0.610358I$	$2.98734 - 2.14446I$	$0.00654 + 4.85802I$
$u = 0.076206 - 0.610358I$	$2.98734 + 2.14446I$	$0.00654 - 4.85802I$
$u = 1.300390 + 0.478071I$	$18.9960 - 1.6154I$	$-3.04292 + 0.64980I$
$u = 1.300390 - 0.478071I$	$18.9960 + 1.6154I$	$-3.04292 - 0.64980I$
$u = -1.307350 + 0.473703I$	$18.9379 + 8.6191I$	$-3.15110 - 4.96250I$
$u = -1.307350 - 0.473703I$	$18.9379 - 8.6191I$	$-3.15110 + 4.96250I$
$u = 0.218328 + 0.243819I$	$-0.276943 - 0.794269I$	$-6.99628 + 8.47319I$
$u = 0.218328 - 0.243819I$	$-0.276943 + 0.794269I$	$-6.99628 - 8.47319I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_7, c_9, c_{10} c_{11}	$u^{23} + 3u^{22} + \cdots - 4u - 1$
c_2, c_8	$u^{23} - u^{22} + \cdots + 2u^2 + 1$
c_3, c_4, c_{12}	$u^{23} - u^{22} + \cdots + 4u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_7, c_9, c_{10} c_{11}	$y^{23} + 35y^{22} + \cdots + 12y - 1$
c_2, c_8	$y^{23} + 3y^{22} + \cdots - 4y - 1$
c_3, c_4, c_{12}	$y^{23} - 17y^{22} + \cdots - 4y - 1$