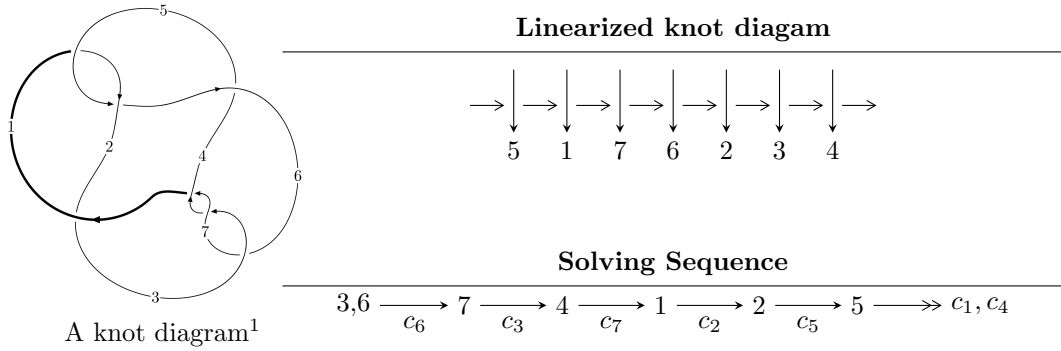


7₅ (K7a₃)



Ideals for irreducible components² of X_{par}

$$I_1^u = \langle u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 8 representations.

¹The 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>).

²All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\text{I. } I_1^u = \langle u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1 \rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $-4u^6 + 12u^4 + 4u^3 - 8u^2 - 8u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1$
c_2, c_4	$u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1$
c_3, c_6, c_7	$u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_2, c_4	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_3, c_6, c_7	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.180120 + 0.268597I$	$-1.04066 + 1.13123I$	$-7.41522 - 0.51079I$
$u = -1.180120 - 0.268597I$	$-1.04066 - 1.13123I$	$-7.41522 + 0.51079I$
$u = -0.108090 + 0.747508I$	$2.15941 + 2.57849I$	$-4.27708 - 3.56796I$
$u = -0.108090 - 0.747508I$	$2.15941 - 2.57849I$	$-4.27708 + 3.56796I$
$u = 1.37100$	-6.50273	-13.8640
$u = 1.334530 + 0.318930I$	$-2.37968 - 6.44354I$	$-9.42845 + 5.29417I$
$u = 1.334530 - 0.318930I$	$-2.37968 + 6.44354I$	$-9.42845 - 5.29417I$
$u = -0.463640$	-0.845036	-11.8940

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1$
c_2, c_4	$u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1$
c_3, c_6, c_7	$u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_2, c_4	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_3, c_6, c_7	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$