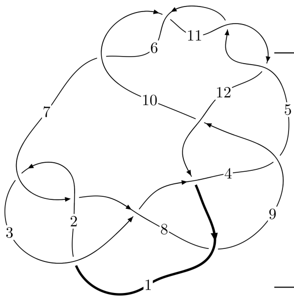
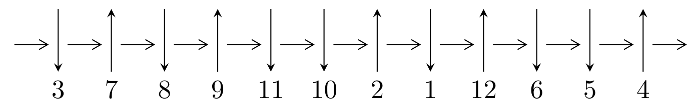
$12a_{0518}$ ($K12a_{0518}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{78} + u^{77} + \cdots + u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 78 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. $I_1^u = \langle u^{78} + u^{77} + \cdots + u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^{10} + 2u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{21} + 4u^{19} + 9u^{17} + 12u^{15} + 12u^{13} + 10u^{11} + 9u^9 + 6u^7 + 3u^5 + u \\ u^{23} + 5u^{21} + \cdots + 2u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{11} + 3u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{32} + 7u^{30} + \cdots + 2u^{12} + 1 \\ -u^{32} - 8u^{30} + \cdots - 12u^8 - 4u^6 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{66} + 15u^{64} + \cdots + u^2 + 1 \\ -u^{66} - 16u^{64} + \cdots - 4u^8 + u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{55} + 12u^{53} + \cdots + 5u^7 + 2u^3 \\ u^{57} + 13u^{55} + \cdots + 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{76} - 4u^{75} + \cdots - 8u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{78} + 37u^{77} + \cdots + 3u + 1$
c_2, c_7	$u^{78} + u^{77} + \cdots + u + 1$
c_3	$u^{78} - u^{77} + \cdots - 711u + 185$
c_4	$u^{78} + u^{77} + \cdots - 2625u + 2061$
c_5, c_6, c_{10} c_{11}	$u^{78} + u^{77} + \cdots + 3u + 1$
c_8	$u^{78} + 5u^{77} + \cdots + 233u + 259$
c_9	$u^{78} + 21u^{77} + \cdots + 3489u + 187$
c_{12}	$u^{78} + 9u^{77} + \cdots + 1209u + 109$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{78} + 9y^{77} + \cdots + 7y + 1$
c_2, c_7	$y^{78} + 37y^{77} + \cdots + 3y + 1$
c_3	$y^{78} - 19y^{77} + \cdots - 1149321y + 34225$
c_4	$y^{78} - 27y^{77} + \cdots - 82982745y + 4247721$
c_5, c_6, c_{10} c_{11}	$y^{78} + 89y^{77} + \cdots + 3y + 1$
c_8	$y^{78} + 17y^{77} + \cdots + 3777875y + 67081$
c_9	$y^{78} - 11y^{77} + \cdots - 42057y + 34969$
c_{12}	$y^{78} + 13y^{77} + \cdots + 852607y + 11881$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.176293 + 1.038900I$	$7.18444 - 1.67019I$	0
$u = -0.176293 - 1.038900I$	$7.18444 + 1.67019I$	0
$u = \quad 0.250777 + 1.048820I$	$-0.743942 + 0.717138I$	0
$u = \quad 0.250777 - 1.048820I$	$-0.743942 - 0.717138I$	0
$u = \quad 0.662622 + 0.622414I$	$11.08790 + 7.77112I$	$6.08947 - 6.15924I$
$u = \quad 0.662622 - 0.622414I$	$11.08790 - 7.77112I$	$6.08947 + 6.15924I$
$u = -0.559696 + 0.953541I$	$2.23246 + 0.83804I$	0
$u = -0.559696 - 0.953541I$	$2.23246 - 0.83804I$	0
$u = -0.644680 + 0.615060I$	$3.22743 - 5.55791I$	$3.92619 + 8.07198I$
$u = -0.644680 - 0.615060I$	$3.22743 + 5.55791I$	$3.92619 - 8.07198I$
$u = \quad 0.578452 + 0.948103I$	$10.12780 - 2.94206I$	0
$u = \quad 0.578452 - 0.948103I$	$10.12780 + 2.94206I$	0
$u = \quad 0.536776 + 0.978594I$	$0.45641 + 2.41567I$	0
$u = \quad 0.536776 - 0.978594I$	$0.45641 - 2.41567I$	0
$u = -0.494251 + 0.718740I$	$6.27468 - 2.02964I$	$2.37275 + 3.90100I$
$u = -0.494251 - 0.718740I$	$6.27468 + 2.02964I$	$2.37275 - 3.90100I$
$u = \quad 0.679159 + 0.543155I$	$12.45010 - 1.87294I$	$7.91266 + 0.01624I$
$u = \quad 0.679159 - 0.543155I$	$12.45010 + 1.87294I$	$7.91266 - 0.01624I$
$u = -0.248111 + 1.111540I$	$-4.03405 + 1.38195I$	0
$u = -0.248111 - 1.111540I$	$-4.03405 - 1.38195I$	0
$u = \quad 0.617031 + 0.594101I$	$1.58657 + 2.14626I$	$0.09014 - 3.07268I$
$u = \quad 0.617031 - 0.594101I$	$1.58657 - 2.14626I$	$0.09014 + 3.07268I$
$u = \quad 0.231696 + 1.122790I$	$-2.66484 - 4.98283I$	0
$u = \quad 0.231696 - 1.122790I$	$-2.66484 + 4.98283I$	0
$u = -0.220916 + 1.130910I$	$5.04714 + 7.32940I$	0
$u = -0.220916 - 1.130910I$	$5.04714 - 7.32940I$	0
$u = -0.561401 + 1.006840I$	$2.94053 - 5.15801I$	0
$u = -0.561401 - 1.006840I$	$2.94053 + 5.15801I$	0
$u = -0.646275 + 0.544185I$	$4.30217 + 0.43226I$	$6.84123 - 1.12347I$
$u = -0.646275 - 0.544185I$	$4.30217 - 0.43226I$	$6.84123 + 1.12347I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.769714 + 0.344540I$	$9.68605 + 10.02470I$	$4.54215 - 5.70117I$
$u = -0.769714 - 0.344540I$	$9.68605 - 10.02470I$	$4.54215 + 5.70117I$
$u = -0.330134 + 1.108880I$	$-4.86646 - 1.53988I$	0
$u = -0.330134 - 1.108880I$	$-4.86646 + 1.53988I$	0
$u = 0.294729 + 1.123740I$	$0.529229 - 0.096011I$	0
$u = 0.294729 - 1.123740I$	$0.529229 + 0.096011I$	0
$u = -0.734635 + 0.397114I$	$11.73850 + 0.41110I$	$7.04886 - 0.50949I$
$u = -0.734635 - 0.397114I$	$11.73850 - 0.41110I$	$7.04886 + 0.50949I$
$u = 0.580481 + 1.010610I$	$11.07250 + 6.74859I$	0
$u = 0.580481 - 1.010610I$	$11.07250 - 6.74859I$	0
$u = 0.758266 + 0.340646I$	$1.87500 - 7.66822I$	$2.06566 + 7.50138I$
$u = 0.758266 - 0.340646I$	$1.87500 + 7.66822I$	$2.06566 - 7.50138I$
$u = 0.353897 + 1.116280I$	$-3.95417 + 5.01127I$	0
$u = 0.353897 - 1.116280I$	$-3.95417 - 5.01127I$	0
$u = -0.369372 + 1.126780I$	$3.43300 - 7.21980I$	0
$u = -0.369372 - 1.126780I$	$3.43300 + 7.21980I$	0
$u = -0.739839 + 0.336830I$	$0.35594 + 4.04760I$	$-1.60822 - 2.48146I$
$u = -0.739839 - 0.336830I$	$0.35594 - 4.04760I$	$-1.60822 + 2.48146I$
$u = 0.716830 + 0.371362I$	$3.50311 - 1.57237I$	$5.70399 - 0.07635I$
$u = 0.716830 - 0.371362I$	$3.50311 + 1.57237I$	$5.70399 + 0.07635I$
$u = -0.481533 + 1.115440I$	$4.18249 - 0.46735I$	0
$u = -0.481533 - 1.115440I$	$4.18249 + 0.46735I$	0
$u = 0.501259 + 1.108890I$	$-2.96742 + 2.54824I$	0
$u = 0.501259 - 1.108890I$	$-2.96742 - 2.54824I$	0
$u = -0.520445 + 1.111910I$	$-3.57499 - 5.99088I$	0
$u = -0.520445 - 1.111910I$	$-3.57499 + 5.99088I$	0
$u = 0.562822 + 1.102750I$	$1.36314 + 6.46891I$	0
$u = 0.562822 - 1.102750I$	$1.36314 - 6.46891I$	0
$u = -0.575491 + 1.096660I$	$9.68171 - 5.40055I$	0
$u = -0.575491 - 1.096660I$	$9.68171 + 5.40055I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.708462 + 0.274901I$	$4.60181 - 3.06647I$	$0.82477 + 2.99322I$
$u = 0.708462 - 0.274901I$	$4.60181 + 3.06647I$	$0.82477 - 2.99322I$
$u = 0.537436 + 1.123660I$	$2.16314 + 7.81098I$	0
$u = 0.537436 - 1.123660I$	$2.16314 - 7.81098I$	0
$u = -0.562734 + 1.119050I$	$-1.93087 - 8.99165I$	0
$u = -0.562734 - 1.119050I$	$-1.93087 + 8.99165I$	0
$u = 0.569133 + 1.122950I$	$-0.42249 + 12.68200I$	0
$u = 0.569133 - 1.122950I$	$-0.42249 - 12.68200I$	0
$u = -0.573825 + 1.125130I$	$7.3870 - 15.0855I$	0
$u = -0.573825 - 1.125130I$	$7.3870 + 15.0855I$	0
$u = -0.642804 + 0.250728I$	$-1.16696 + 1.46809I$	$-3.90843 - 3.90329I$
$u = -0.642804 - 0.250728I$	$-1.16696 - 1.46809I$	$-3.90843 + 3.90329I$
$u = 0.243242 + 0.611279I$	$-0.183340 + 1.154680I$	$-2.33672 - 6.24031I$
$u = 0.243242 - 0.611279I$	$-0.183340 - 1.154680I$	$-2.33672 + 6.24031I$
$u = -0.645299 + 0.117141I$	$6.90376 - 3.74824I$	$1.81576 + 2.40321I$
$u = -0.645299 - 0.117141I$	$6.90376 + 3.74824I$	$1.81576 - 2.40321I$
$u = 0.614376 + 0.171121I$	$-0.44935 + 1.76162I$	$-1.34285 - 4.29386I$
$u = 0.614376 - 0.171121I$	$-0.44935 - 1.76162I$	$-1.34285 + 4.29386I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{78} + 37u^{77} + \cdots + 3u + 1$
c_2, c_7	$u^{78} + u^{77} + \cdots + u + 1$
c_3	$u^{78} - u^{77} + \cdots - 711u + 185$
c_4	$u^{78} + u^{77} + \cdots - 2625u + 2061$
c_5, c_6, c_{10} c_{11}	$u^{78} + u^{77} + \cdots + 3u + 1$
c_8	$u^{78} + 5u^{77} + \cdots + 233u + 259$
c_9	$u^{78} + 21u^{77} + \cdots + 3489u + 187$
c_{12}	$u^{78} + 9u^{77} + \cdots + 1209u + 109$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{78} + 9y^{77} + \cdots + 7y + 1$
c_2, c_7	$y^{78} + 37y^{77} + \cdots + 3y + 1$
c_3	$y^{78} - 19y^{77} + \cdots - 1149321y + 34225$
c_4	$y^{78} - 27y^{77} + \cdots - 82982745y + 4247721$
c_5, c_6, c_{10} c_{11}	$y^{78} + 89y^{77} + \cdots + 3y + 1$
c_8	$y^{78} + 17y^{77} + \cdots + 3777875y + 67081$
c_9	$y^{78} - 11y^{77} + \cdots - 42057y + 34969$
c_{12}	$y^{78} + 13y^{77} + \cdots + 852607y + 11881$