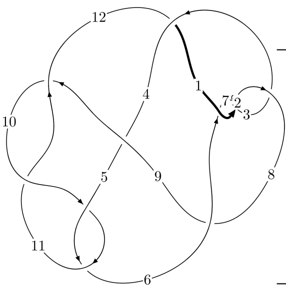
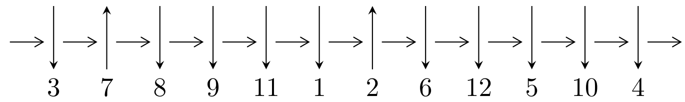
$12a_{0522}$ $(K12a_{0522})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{86} + u^{85} + \cdots + u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 86 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. $I_1^u = \langle u^{86} + u^{85} + \cdots + u - 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^9 - 2u^7 + 3u^5 - 2u^3 + u \\ -u^9 + u^7 - u^5 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^{16} + 3u^{14} - 7u^{12} + 10u^{10} - 11u^8 + 8u^6 - 4u^4 + 1 \\ u^{16} - 2u^{14} + 4u^{12} - 4u^{10} + 2u^8 - 2u^4 + 2u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{35} - 6u^{33} + \cdots - u^3 - 2u \\ -u^{35} + 5u^{33} + \cdots - 3u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^8 + u^6 - u^4 + 1 \\ -u^{10} + 2u^8 - 3u^6 + 2u^4 - u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^{27} + 4u^{25} + \cdots - u^3 + 2u \\ -u^{29} + 5u^{27} + \cdots - u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{72} + 11u^{70} + \cdots + 2u^2 + 1 \\ -u^{74} + 12u^{72} + \cdots - 8u^4 + 3u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{84} + 52u^{82} + \cdots + 8u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{86} + 45u^{85} + \cdots - u + 1$
c_2, c_7	$u^{86} + u^{85} + \cdots - 3u - 1$
c_3, c_6	$u^{86} - u^{85} + \cdots + 365u - 37$
c_4	$u^{86} + u^{85} + \cdots + 561u - 193$
c_5, c_{10}	$u^{86} - u^{85} + \cdots - u - 1$
c_8, c_{12}	$u^{86} - 7u^{85} + \cdots + 313u + 101$
c_9, c_{11}	$u^{86} + 27u^{85} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{86} - 7y^{85} + \cdots - 29y + 1$
c_2, c_7	$y^{86} + 45y^{85} + \cdots - y + 1$
c_3, c_6	$y^{86} - 59y^{85} + \cdots + 46891y + 1369$
c_4	$y^{86} + 17y^{85} + \cdots - 460629y + 37249$
c_5, c_{10}	$y^{86} - 27y^{85} + \cdots - y + 1$
c_8, c_{12}	$y^{86} + 61y^{85} + \cdots - 636905y + 10201$
c_9, c_{11}	$y^{86} + 65y^{85} + \cdots + 27y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.969092 + 0.230577I$	$1.222170 - 0.569978I$	0
$u = 0.969092 - 0.230577I$	$1.222170 + 0.569978I$	0
$u = -1.01398$	-5.66716	0
$u = -0.994526 + 0.214365I$	$1.02801 + 5.02852I$	0
$u = -0.994526 - 0.214365I$	$1.02801 - 5.02852I$	0
$u = -0.913207 + 0.337928I$	$-3.63978 - 4.81115I$	0
$u = -0.913207 - 0.337928I$	$-3.63978 + 4.81115I$	0
$u = 1.027160 + 0.012565I$	$-9.09448 - 4.31679I$	0
$u = 1.027160 - 0.012565I$	$-9.09448 + 4.31679I$	0
$u = -0.956850 + 0.092671I$	$-3.76254 + 2.30799I$	$-17.1614 - 5.2119I$
$u = -0.956850 - 0.092671I$	$-3.76254 - 2.30799I$	$-17.1614 + 5.2119I$
$u = 1.026270 + 0.167617I$	$-5.81618 - 2.16784I$	0
$u = 1.026270 - 0.167617I$	$-5.81618 + 2.16784I$	0
$u = -1.025220 + 0.185100I$	$-1.77300 + 5.86734I$	0
$u = -1.025220 - 0.185100I$	$-1.77300 - 5.86734I$	0
$u = 1.035860 + 0.186249I$	$-4.69302 - 10.67460I$	0
$u = 1.035860 - 0.186249I$	$-4.69302 + 10.67460I$	0
$u = 0.775009 + 0.716780I$	$1.56773 + 1.42389I$	0
$u = 0.775009 - 0.716780I$	$1.56773 - 1.42389I$	0
$u = -0.843801 + 0.414336I$	$-4.40588 + 3.41670I$	$-13.4225 - 4.5615I$
$u = -0.843801 - 0.414336I$	$-4.40588 - 3.41670I$	$-13.4225 + 4.5615I$
$u = 0.878143 + 0.294105I$	$-0.795053 + 0.238091I$	$-8.00000 + 1.18884I$
$u = 0.878143 - 0.294105I$	$-0.795053 - 0.238091I$	$-8.00000 - 1.18884I$
$u = 0.886214 + 0.621303I$	$-1.01077 - 2.41495I$	0
$u = 0.886214 - 0.621303I$	$-1.01077 + 2.41495I$	0
$u = -0.713390 + 0.817998I$	$0.74450 - 1.77637I$	0
$u = -0.713390 - 0.817998I$	$0.74450 + 1.77637I$	0
$u = 0.719042 + 0.826403I$	$4.93045 + 5.39470I$	0
$u = 0.719042 - 0.826403I$	$4.93045 - 5.39470I$	0
$u = -0.714867 + 0.830441I$	$2.06695 - 10.28130I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.714867-0.830441I$	$2.06695+10.28130I$	0
$u=-0.839663+0.705927I$	$2.78123+2.29980I$	0
$u=-0.839663-0.705927I$	$2.78123-2.29980I$	0
$u=\ \ 0.767562+0.787698I$	$1.78506+1.25650I$	0
$u=\ \ 0.767562-0.787698I$	$1.78506-1.25650I$	0
$u=\ \ 0.666858+0.594632I$	$-0.969478+0.460798I$	$-8.00000-0.37110I$
$u=\ \ 0.666858-0.594632I$	$-0.969478-0.460798I$	$-8.00000+0.37110I$
$u=\ \ 0.738232+0.826282I$	$7.79709+4.20556I$	0
$u=\ \ 0.738232-0.826282I$	$7.79709-4.20556I$	0
$u=-0.625946+0.633374I$	$-4.13835-4.86582I$	$-10.89777+3.77751I$
$u=-0.625946-0.633374I$	$-4.13835+4.86582I$	$-10.89777-3.77751I$
$u=-0.747855+0.823375I$	$7.97492+0.47103I$	0
$u=-0.747855-0.823375I$	$7.97492-0.47103I$	0
$u=-0.767300+0.812390I$	$5.81249+1.85290I$	0
$u=-0.767300-0.812390I$	$5.81249-1.85290I$	0
$u=\ \ 0.776497+0.815133I$	$3.17912-6.61298I$	0
$u=\ \ 0.776497-0.815133I$	$3.17912+6.61298I$	0
$u=-0.889718+0.702646I$	$2.62802+3.10264I$	0
$u=-0.889718-0.702646I$	$2.62802-3.10264I$	0
$u=-0.970512+0.634156I$	$-5.41959+1.29410I$	0
$u=-0.970512-0.634156I$	$-5.41959-1.29410I$	0
$u=\ \ 0.968130+0.648442I$	$-1.82536-5.45883I$	0
$u=\ \ 0.968130-0.648442I$	$-1.82536+5.45883I$	0
$u=\ \ 0.934330+0.712069I$	$1.09209-6.89776I$	0
$u=\ \ 0.934330-0.712069I$	$1.09209+6.89776I$	0
$u=-0.980007+0.650482I$	$-5.11693+9.93293I$	0
$u=-0.980007-0.650482I$	$-5.11693-9.93293I$	0
$u=-0.580139+0.542430I$	$-4.45440+3.54027I$	$-11.64854-4.01491I$
$u=-0.580139-0.542430I$	$-4.45440-3.54027I$	$-11.64854+4.01491I$
$u=\ \ 0.964315+0.730403I$	$1.17862-6.98644I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.964315 - 0.730403I$	$1.17862 + 6.98644I$	0
$u = 0.966588 + 0.756138I$	$2.59346 + 0.72174I$	0
$u = 0.966588 - 0.756138I$	$2.59346 - 0.72174I$	0
$u = -0.971753 + 0.750409I$	$5.18325 + 4.01226I$	0
$u = -0.971753 - 0.750409I$	$5.18325 - 4.01226I$	0
$u = -0.987850 + 0.749439I$	$7.23739 + 5.42236I$	0
$u = -0.987850 - 0.749439I$	$7.23739 - 5.42236I$	0
$u = -1.003930 + 0.733770I$	$-0.14253 + 7.60118I$	0
$u = -1.003930 - 0.733770I$	$-0.14253 - 7.60118I$	0
$u = 0.994389 + 0.747284I$	$7.01063 - 10.09990I$	0
$u = 0.994389 - 0.747284I$	$7.01063 + 10.09990I$	0
$u = 1.004390 + 0.739778I$	$4.05668 - 11.26340I$	0
$u = 1.004390 - 0.739778I$	$4.05668 + 11.26340I$	0
$u = -1.007950 + 0.740102I$	$1.1693 + 16.1620I$	0
$u = -1.007950 - 0.740102I$	$1.1693 - 16.1620I$	0
$u = 0.682766$	-1.04113	-9.42630
$u = -0.090684 + 0.640558I$	$-1.07418 + 8.04275I$	$-6.21623 - 6.44974I$
$u = -0.090684 - 0.640558I$	$-1.07418 - 8.04275I$	$-6.21623 + 6.44974I$
$u = 0.015782 + 0.629251I$	$4.23854 - 2.26922I$	$-0.86018 + 3.68549I$
$u = 0.015782 - 0.629251I$	$4.23854 + 2.26922I$	$-0.86018 - 3.68549I$
$u = 0.078093 + 0.624459I$	$1.75192 - 3.27960I$	$-2.76013 + 3.15493I$
$u = 0.078093 - 0.624459I$	$1.75192 + 3.27960I$	$-2.76013 - 3.15493I$
$u = -0.108748 + 0.599313I$	$-2.21922 - 0.25000I$	$-7.93893 - 0.34480I$
$u = -0.108748 - 0.599313I$	$-2.21922 + 0.25000I$	$-7.93893 + 0.34480I$
$u = 0.207561 + 0.332577I$	$-0.520348 - 1.051870I$	$-7.34711 + 6.20714I$
$u = 0.207561 - 0.332577I$	$-0.520348 + 1.051870I$	$-7.34711 - 6.20714I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{86} + 45u^{85} + \cdots - u + 1$
c_2, c_7	$u^{86} + u^{85} + \cdots - 3u - 1$
c_3, c_6	$u^{86} - u^{85} + \cdots + 365u - 37$
c_4	$u^{86} + u^{85} + \cdots + 561u - 193$
c_5, c_{10}	$u^{86} - u^{85} + \cdots - u - 1$
c_8, c_{12}	$u^{86} - 7u^{85} + \cdots + 313u + 101$
c_9, c_{11}	$u^{86} + 27u^{85} + \cdots + u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{86} - 7y^{85} + \cdots - 29y + 1$
c_2, c_7	$y^{86} + 45y^{85} + \cdots - y + 1$
c_3, c_6	$y^{86} - 59y^{85} + \cdots + 46891y + 1369$
c_4	$y^{86} + 17y^{85} + \cdots - 460629y + 37249$
c_5, c_{10}	$y^{86} - 27y^{85} + \cdots - y + 1$
c_8, c_{12}	$y^{86} + 61y^{85} + \cdots - 636905y + 10201$
c_9, c_{11}	$y^{86} + 65y^{85} + \cdots + 27y + 1$