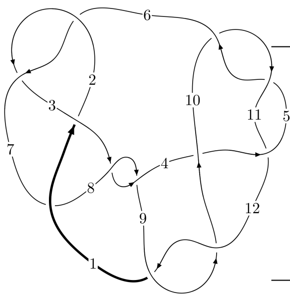
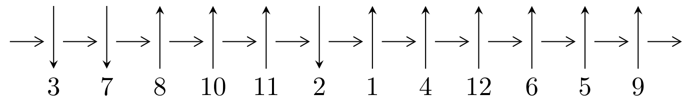
$12a_{0534}$ ($K12a_{0534}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{81} + u^{80} + \cdots - u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 81 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. $I_1^u = \langle u^{81} + u^{80} + \cdots - u - 1 \rangle$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^6 - 3u^4 - 2u^2 + 1 \\ u^8 + 4u^6 + 4u^4 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{10} + 5u^8 + 8u^6 + 3u^4 - u^2 + 1 \\ -u^{12} - 6u^{10} - 12u^8 - 8u^6 - u^4 - 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{14} - 7u^{12} - 18u^{10} - 19u^8 - 6u^6 - 2u^4 - 4u^2 + 1 \\ u^{14} + 6u^{12} + 13u^{10} + 12u^8 + 6u^6 + 4u^4 + u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{25} + 12u^{23} + \cdots + 4u^3 - 3u \\ -u^{25} - 11u^{23} + \cdots - 3u^5 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{62} + 29u^{60} + \cdots - 4u^2 + 1 \\ -u^{62} - 28u^{60} + \cdots - 8u^4 - u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{36} + 17u^{34} + \cdots - 7u^2 + 1 \\ -u^{38} - 18u^{36} + \cdots + 10u^4 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{79} + 4u^{78} + \cdots + 16u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{81}+37u^{80}+\cdots+5u+1$
c_2, c_6	$u^{81}-u^{80}+\cdots+u-1$
c_3, c_8	$u^{81}+u^{80}+\cdots-453u-61$
c_4	$u^{81}-u^{80}+\cdots-1961u-1237$
c_5, c_{10}, c_{11}	$u^{81}+u^{80}+\cdots-u-1$
c_7	$u^{81}-3u^{80}+\cdots+19u-1$
c_9, c_{12}	$u^{81}+13u^{80}+\cdots-5071u-283$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{81} + 15y^{80} + \cdots - 7y - 1$
c_2, c_6	$y^{81} - 37y^{80} + \cdots + 5y - 1$
c_3, c_8	$y^{81} - 53y^{80} + \cdots + 186177y - 3721$
c_4	$y^{81} + 23y^{80} + \cdots - 35110083y - 1530169$
c_5, c_{10}, c_{11}	$y^{81} + 75y^{80} + \cdots + 5y - 1$
c_7	$y^{81} + 7y^{80} + \cdots + 145y - 1$
c_9, c_{12}	$y^{81} + 59y^{80} + \cdots - 6263y - 80089$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.197771 + 1.183570I$	$0.84481 - 3.23672I$	0
$u = 0.197771 - 1.183570I$	$0.84481 + 3.23672I$	0
$u = 0.046171 + 1.211660I$	$-2.27651 + 1.93915I$	0
$u = 0.046171 - 1.211660I$	$-2.27651 - 1.93915I$	0
$u = -0.204035 + 1.199890I$	$2.50774 - 1.86243I$	0
$u = -0.204035 - 1.199890I$	$2.50774 + 1.86243I$	0
$u = -0.688192 + 0.370410I$	$-0.29265 - 12.11820I$	$5.45285 + 10.14700I$
$u = -0.688192 - 0.370410I$	$-0.29265 + 12.11820I$	$5.45285 - 10.14700I$
$u = 0.682734 + 0.364569I$	$1.77767 + 6.96994I$	$8.59265 - 6.07951I$
$u = 0.682734 - 0.364569I$	$1.77767 - 6.96994I$	$8.59265 + 6.07951I$
$u = -0.667182 + 0.376841I$	$-3.10444 - 4.74353I$	$1.89111 + 5.31075I$
$u = -0.667182 - 0.376841I$	$-3.10444 + 4.74353I$	$1.89111 - 5.31075I$
$u = 0.627167 + 0.427079I$	$-5.80126 + 5.75467I$	$-0.15516 - 7.51536I$
$u = 0.627167 - 0.427079I$	$-5.80126 - 5.75467I$	$-0.15516 + 7.51536I$
$u = 0.669087 + 0.343377I$	$2.54734 + 4.35898I$	$9.79953 - 6.09005I$
$u = 0.669087 - 0.343377I$	$2.54734 - 4.35898I$	$9.79953 + 6.09005I$
$u = -0.220135 + 1.228700I$	$2.26970 - 4.55930I$	0
$u = -0.220135 - 1.228700I$	$2.26970 + 4.55930I$	0
$u = 0.600027 + 0.450919I$	$-5.90992 - 1.73415I$	$-0.700518 + 0.546897I$
$u = 0.600027 - 0.450919I$	$-5.90992 + 1.73415I$	$-0.700518 - 0.546897I$
$u = -0.518361 + 0.541766I$	$-0.99512 + 8.05238I$	$3.71543 - 4.26648I$
$u = -0.518361 - 0.541766I$	$-0.99512 - 8.05238I$	$3.71543 + 4.26648I$
$u = 0.186058 + 1.245240I$	$-2.71415 + 2.87763I$	0
$u = 0.186058 - 1.245240I$	$-2.71415 - 2.87763I$	0
$u = 0.227678 + 1.238350I$	$0.40246 + 9.70206I$	0
$u = 0.227678 - 1.238350I$	$0.40246 - 9.70206I$	0
$u = -0.661462 + 0.328497I$	$1.155840 + 0.658240I$	$7.68128 + 0.74467I$
$u = -0.661462 - 0.328497I$	$1.155840 - 0.658240I$	$7.68128 - 0.74467I$
$u = 0.504244 + 0.533281I$	$1.06272 - 2.96937I$	$6.86213 + 0.09191I$
$u = 0.504244 - 0.533281I$	$1.06272 + 2.96937I$	$6.86213 - 0.09191I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.599806+0.419570I$	$-2.86954-1.93751I$	$3.68977+3.76519I$
$u=-0.599806-0.419570I$	$-2.86954+1.93751I$	$3.68977-3.76519I$
$u=-0.528049+0.500416I$	$-3.65675+0.77452I$	$0.180179+1.063801I$
$u=-0.528049-0.500416I$	$-3.65675-0.77452I$	$0.180179-1.063801I$
$u=\ \ 0.445960+0.514360I$	$1.74475-0.56616I$	$7.81141-0.32467I$
$u=\ \ 0.445960-0.514360I$	$1.74475+0.56616I$	$7.81141+0.32467I$
$u=\ \ 0.090833+1.321820I$	$-3.48103+1.92013I$	0
$u=\ \ 0.090833-1.321820I$	$-3.48103-1.92013I$	0
$u=\ \ 0.664571+0.032433I$	$4.28824+6.44063I$	$11.37631-5.73427I$
$u=\ \ 0.664571-0.032433I$	$4.28824-6.44063I$	$11.37631+5.73427I$
$u=-0.660958+0.017589I$	$6.06487-1.33192I$	$14.4027+0.6799I$
$u=-0.660958-0.017589I$	$6.06487+1.33192I$	$14.4027-0.6799I$
$u=-0.394768+0.518007I$	$0.25427-4.31628I$	$4.96258+5.88678I$
$u=-0.394768-0.518007I$	$0.25427+4.31628I$	$4.96258-5.88678I$
$u=-0.042555+1.365360I$	$-6.77977+0.65328I$	0
$u=-0.042555-1.365360I$	$-6.77977-0.65328I$	0
$u=-0.110213+1.375120I$	$-5.52185-6.10195I$	0
$u=-0.110213-1.375120I$	$-5.52185+6.10195I$	0
$u=\ \ 0.601777$	1.08479	8.90280
$u=-0.541617+0.228507I$	$-0.25287-3.77283I$	$7.91061+8.40043I$
$u=-0.541617-0.228507I$	$-0.25287+3.77283I$	$7.91061-8.40043I$
$u=-0.19013+1.41345I$	$-5.52475-6.36348I$	0
$u=-0.19013-1.41345I$	$-5.52475+6.36348I$	0
$u=\ \ 0.17372+1.43625I$	$-4.34343+1.67894I$	0
$u=\ \ 0.17372-1.43625I$	$-4.34343-1.67894I$	0
$u=-0.25166+1.43227I$	$-4.49351-2.67497I$	0
$u=-0.25166-1.43227I$	$-4.49351+2.67497I$	0
$u=\ \ 0.25453+1.43844I$	$-3.17261+7.73200I$	0
$u=\ \ 0.25453-1.43844I$	$-3.17261-7.73200I$	0
$u=\ \ 0.25853+1.44805I$	$-4.04746+10.40670I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.25853 - 1.44805I$	$-4.04746 - 10.40670I$	0
$u = 0.17326 + 1.46090I$	$-5.28963 - 0.54466I$	0
$u = 0.17326 - 1.46090I$	$-5.28963 + 0.54466I$	0
$u = -0.25138 + 1.45103I$	$-8.98223 - 8.10218I$	0
$u = -0.25138 - 1.45103I$	$-8.98223 + 8.10218I$	0
$u = -0.22226 + 1.45599I$	$-8.89843 - 4.95649I$	0
$u = -0.22226 - 1.45599I$	$-8.89843 + 4.95649I$	0
$u = -0.18698 + 1.46218I$	$-9.93180 - 1.82433I$	0
$u = -0.18698 - 1.46218I$	$-9.93180 + 1.82433I$	0
$u = -0.26014 + 1.45096I$	$-6.1479 - 15.5799I$	0
$u = -0.26014 - 1.45096I$	$-6.1479 + 15.5799I$	0
$u = -0.17307 + 1.46742I$	$-7.42202 + 5.58777I$	0
$u = -0.17307 - 1.46742I$	$-7.42202 - 5.58777I$	0
$u = 0.22921 + 1.46252I$	$-11.8872 + 8.8870I$	0
$u = 0.22921 - 1.46252I$	$-11.8872 - 8.8870I$	0
$u = 0.21649 + 1.46473I$	$-12.07490 + 1.25015I$	0
$u = 0.21649 - 1.46473I$	$-12.07490 - 1.25015I$	0
$u = 0.469947 + 0.071920I$	$0.851920 + 0.071772I$	$12.35395 - 1.18798I$
$u = 0.469947 - 0.071920I$	$0.851920 - 0.071772I$	$12.35395 + 1.18798I$
$u = -0.145910 + 0.409235I$	$-1.47601 + 1.33170I$	$0.709363 - 0.772030I$
$u = -0.145910 - 0.409235I$	$-1.47601 - 1.33170I$	$0.709363 + 0.772030I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{81}+37u^{80}+\cdots+5u+1$
c_2, c_6	$u^{81}-u^{80}+\cdots+u-1$
c_3, c_8	$u^{81}+u^{80}+\cdots-453u-61$
c_4	$u^{81}-u^{80}+\cdots-1961u-1237$
c_5, c_{10}, c_{11}	$u^{81}+u^{80}+\cdots-u-1$
c_7	$u^{81}-3u^{80}+\cdots+19u-1$
c_9, c_{12}	$u^{81}+13u^{80}+\cdots-5071u-283$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{81}+15y^{80}+\cdots-7y-1$
c_2, c_6	$y^{81}-37y^{80}+\cdots+5y-1$
c_3, c_8	$y^{81}-53y^{80}+\cdots+186177y-3721$
c_4	$y^{81}+23y^{80}+\cdots-35110083y-1530169$
c_5, c_{10}, c_{11}	$y^{81}+75y^{80}+\cdots+5y-1$
c_7	$y^{81}+7y^{80}+\cdots+145y-1$
c_9, c_{12}	$y^{81}+59y^{80}+\cdots-6263y-80089$