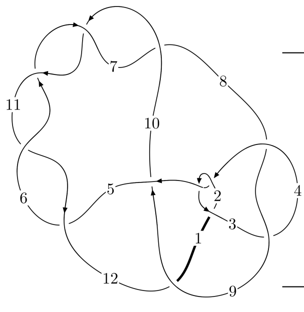
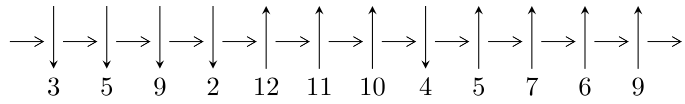
$12n_{0250}$ ($K12n_{0250}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{21} - 2u^{20} + \cdots + b - 1,\ u^{24} - 2u^{23} + \cdots + a + 3,\ u^{25} - 2u^{24} + \cdots + 5u - 1\rangle$$
$$I_2^u = \langle u^2 + b + u + 1,\ -u^4 - u^3 - 3u^2 + a - 2u - 1,\ u^5 + u^4 + 4u^3 + 3u^2 + 3u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 30 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.

$$\boldsymbol{I_1^u = \langle u^{21} - 2u^{20} + \cdots + b - 1,\ u^{24} - 2u^{23} + \cdots + a + 3,\ u^{25} - 2u^{24} + \cdots + 5u - 1\rangle}$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{24} + 2u^{23} + \cdots + 2u - 3 \\ -u^{21} + 2u^{20} + \cdots - u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{24} + 2u^{23} + \cdots + 2u - 4 \\ -u^{22} - 11u^{20} + \cdots - u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{13} + 8u^{11} + 23u^9 + 30u^7 + 20u^5 + 6u^3 + u \\ u^{13} + 7u^{11} + 15u^9 + 8u^7 - 4u^5 - 3u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{24} - 2u^{23} + \cdots + u + 3 \\ -u^{22} + 2u^{21} + \cdots + 2u - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^7 - 4u^5 - 4u^3 - 2u \\ -u^7 - 3u^5 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -u^{24} + 2u^{23} - 18u^{22} + 32u^{21} - 142u^{20} + 222u^{19} - 644u^{18} + 875u^{17} - 1848u^{16} + 2155u^{15} - 3472u^{14} + 3429u^{13} - 4258u^{12} + 3506u^{11} - 3270u^{10} + 2195u^9 - 1387u^8 + 732u^7 - 164u^6 + 62u^5 + 90u^4 - 28u^3 + 16u^2 - 3u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{25} + 4u^{24} + \cdots - 5u + 1$
c_2, c_4	$u^{25} - 6u^{24} + \cdots - 5u + 1$
c_3, c_8	$u^{25} - u^{24} + \cdots + 32u + 32$
c_5, c_6, c_7 c_{10}, c_{11}	$u^{25} + 2u^{24} + \cdots + 5u + 1$
c_9	$u^{25} + 2u^{24} + \cdots + 3u + 1$
c_{12}	$u^{25} - 8u^{24} + \cdots + 14437u - 1751$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{25} + 40y^{24} + \cdots - 5y - 1$
c_2, c_4	$y^{25} - 4y^{24} + \cdots - 5y - 1$
c_3, c_8	$y^{25} + 33y^{24} + \cdots - 3584y - 1024$
c_5, c_6, c_7 c_{10}, c_{11}	$y^{25} + 32y^{24} + \cdots + 25y - 1$
c_9	$y^{25} - 32y^{24} + \cdots + 25y - 1$
c_{12}	$y^{25} - 44y^{24} + \cdots + 245499141y - 3066001$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.459758 + 0.889622I$ $a = 0.076243 - 0.510379I$ $b = 0.96095 + 1.37863I$	$7.04309 + 7.69753I$	$0.69223 - 5.87020I$
$u = 0.459758 - 0.889622I$ $a = 0.076243 + 0.510379I$ $b = 0.96095 - 1.37863I$	$7.04309 - 7.69753I$	$0.69223 + 5.87020I$
$u = -0.233597 + 0.958426I$ $a = -0.400131 + 0.212647I$ $b = 0.719444 - 0.275653I$	$-2.25524 - 2.86318I$	$0.67832 + 5.18628I$
$u = -0.233597 - 0.958426I$ $a = -0.400131 - 0.212647I$ $b = 0.719444 + 0.275653I$	$-2.25524 + 2.86318I$	$0.67832 - 5.18628I$
$u = 0.480913 + 0.815098I$ $a = -0.540781 - 0.132936I$ $b = -1.59979 - 0.36621I$	$7.50954 + 0.03310I$	$1.50006 - 1.57887I$
$u = 0.480913 - 0.815098I$ $a = -0.540781 + 0.132936I$ $b = -1.59979 + 0.36621I$	$7.50954 - 0.03310I$	$1.50006 + 1.57887I$
$u = -0.277299 + 0.715967I$ $a = -0.206006 + 0.120919I$ $b = -0.106133 + 1.044080I$	$-0.57147 - 2.01138I$	$1.23672 + 5.35998I$
$u = -0.277299 - 0.715967I$ $a = -0.206006 - 0.120919I$ $b = -0.106133 - 1.044080I$	$-0.57147 + 2.01138I$	$1.23672 - 5.35998I$
$u = 0.085005 + 0.759627I$ $a = 1.31404 + 0.60640I$ $b = 0.296392 - 1.022520I$	$-3.36592 + 0.96368I$	$-4.01560 + 0.59686I$
$u = 0.085005 - 0.759627I$ $a = 1.31404 - 0.60640I$ $b = 0.296392 + 1.022520I$	$-3.36592 - 0.96368I$	$-4.01560 - 0.59686I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.683438 + 0.037064I$ $a = 0.47321 - 1.98307I$ $b = -0.484746 + 0.125338I$	$9.85760 + 3.86250I$	$4.92075 - 2.49747I$
$u = 0.683438 - 0.037064I$ $a = 0.47321 + 1.98307I$ $b = -0.484746 - 0.125338I$	$9.85760 - 3.86250I$	$4.92075 + 2.49747I$
$u = -0.454087 + 0.131996I$ $a = -0.930347 + 0.905066I$ $b = -0.170032 - 0.148405I$	$1.125730 - 0.539778I$	$7.59664 + 2.57696I$
$u = -0.454087 - 0.131996I$ $a = -0.930347 - 0.905066I$ $b = -0.170032 + 0.148405I$	$1.125730 + 0.539778I$	$7.59664 - 2.57696I$
$u = -0.05917 + 1.63615I$ $a = 0.26489 + 2.09173I$ $b = 0.28511 + 2.85242I$	$-8.78516 - 3.17139I$	$-0.87361 + 3.19607I$
$u = -0.05917 - 1.63615I$ $a = 0.26489 - 2.09173I$ $b = 0.28511 - 2.85242I$	$-8.78516 + 3.17139I$	$-0.87361 - 3.19607I$
$u = 0.12897 + 1.64332I$ $a = -1.43354 - 1.14853I$ $b = -1.74726 - 1.22919I$	$-0.90994 + 2.33809I$	$-0.195140 - 0.570968I$
$u = 0.12897 - 1.64332I$ $a = -1.43354 + 1.14853I$ $b = -1.74726 + 1.22919I$	$-0.90994 - 2.33809I$	$-0.195140 + 0.570968I$
$u = 0.01776 + 1.65047I$ $a = -0.47939 - 1.88937I$ $b = -1.43279 - 2.83187I$	$-11.86300 + 1.31883I$	$-3.44425 + 0.I$
$u = 0.01776 - 1.65047I$ $a = -0.47939 + 1.88937I$ $b = -1.43279 + 2.83187I$	$-11.86300 - 1.31883I$	$-3.44425 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.12689 + 1.67737I$ $a = 1.19016 + 2.59619I$ $b = 2.22016 + 3.74930I$	$-1.85042 + 9.98114I$	$-1.18698 - 4.78469I$
$u = 0.12689 - 1.67737I$ $a = 1.19016 - 2.59619I$ $b = 2.22016 - 3.74930I$	$-1.85042 - 9.98114I$	$-1.18698 + 4.78469I$
$u = -0.05535 + 1.70735I$ $a = 1.56322 - 0.66579I$ $b = 2.67420 - 0.95840I$	$-11.72920 - 3.98033I$	$0. + 4.58718I$
$u = -0.05535 - 1.70735I$ $a = 1.56322 + 0.66579I$ $b = 2.67420 + 0.95840I$	$-11.72920 + 3.98033I$	$0. - 4.58718I$
$u = 0.193537$ $a = -2.78315$ $b = 0.768975$	-1.31003	-10.0440

II.

$$\boldsymbol{I_2^u = \langle u^2+b+u+1,\ -u^4-u^3-3u^2+a-2u-1,\ u^5+u^4+4u^3+3u^2+3u+1\rangle}$$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^4+u^3+3u^2+2u+1 \\ -u^2-u-1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^4+u^3+4u^2+2u+2 \\ -u-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2-1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4+u^3+4u^2+2u+2 \\ -u-1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2+1 \\ -u^4-2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2+1 \\ -u^4-2u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^4+5u^3+20u^2+14u+9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^5$
c_3, c_8	u^5
c_4	$(u+1)^5$
c_5, c_6, c_7	$u^5+u^4+4u^3+3u^2+3u+1$
c_9, c_{12}	$u^5-u^4+u^2+u-1$
c_{10}, c_{11}	$u^5-u^4+4u^3-3u^2+3u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_8	y^5
c_5, c_6, c_7 c_{10}, c_{11}	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_9, c_{12}	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.233677 + 0.885557I$ $a = -0.758138 + 0.584034I$ $b = -0.036717 - 0.471689I$	$-3.46474 - 2.21397I$	$-4.37343 + 4.39306I$
$u = -0.233677 - 0.885557I$ $a = -0.758138 - 0.584034I$ $b = -0.036717 + 0.471689I$	$-3.46474 + 2.21397I$	$-4.37343 - 4.39306I$
$u = -0.416284$ $a = 0.645200$ $b = -0.757008$	-0.762751	6.42730
$u = -0.05818 + 1.69128I$ $a = 0.935538 - 0.903908I$ $b = 1.91522 - 1.49448I$	$-12.60320 - 3.33174I$	$-5.84024 + 1.26157I$
$u = -0.05818 - 1.69128I$ $a = 0.935538 + 0.903908I$ $b = 1.91522 + 1.49448I$	$-12.60320 + 3.33174I$	$-5.84024 - 1.26157I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{25}+4u^{24}+\cdots-5u+1)$
c_2	$((u-1)^5)(u^{25}-6u^{24}+\cdots-5u+1)$
c_3, c_8	$u^5(u^{25}-u^{24}+\cdots+32u+32)$
c_4	$((u+1)^5)(u^{25}-6u^{24}+\cdots-5u+1)$
c_5, c_6, c_7	$(u^5+u^4+4u^3+3u^2+3u+1)(u^{25}+2u^{24}+\cdots+5u+1)$
c_9	$(u^5-u^4+u^2+u-1)(u^{25}+2u^{24}+\cdots+3u+1)$
c_{10}, c_{11}	$(u^5-u^4+4u^3-3u^2+3u-1)(u^{25}+2u^{24}+\cdots+5u+1)$
c_{12}	$(u^5-u^4+u^2+u-1)(u^{25}-8u^{24}+\cdots+14437u-1751)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^5)(y^{25}+40y^{24}+\cdots-5y-1)$
c_2, c_4	$((y-1)^5)(y^{25}-4y^{24}+\cdots-5y-1)$
c_3, c_8	$y^5(y^{25}+33y^{24}+\cdots-3584y-1024)$
c_5, c_6, c_7 c_{10}, c_{11}	$(y^5+7y^4+16y^3+13y^2+3y-1)(y^{25}+32y^{24}+\cdots+25y-1)$
c_9	$(y^5-y^4+4y^3-3y^2+3y-1)(y^{25}-32y^{24}+\cdots+25y-1)$
c_{12}	$(y^5-y^4+4y^3-3y^2+3y-1)$ $\cdot(y^{25}-44y^{24}+\cdots+245499141y-3066001)$