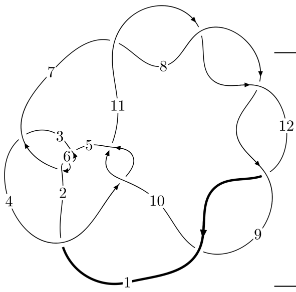
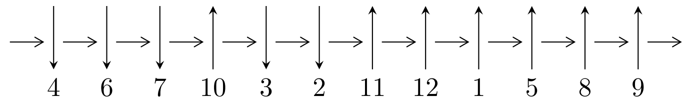
$12a_{0881}$ ($K12a_{0881}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 30u^{49} + 63u^{48} + \cdots + 4b + 19,\ 7u^{48} + 15u^{47} + \cdots + 4a - 3,\ u^{50} + 4u^{49} + \cdots - u + 1\rangle$$
$$I_2^u = \langle b + a,\ a^3 + a^2 - 1,\ u^2 - u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 56 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. $I_1^u =$
$\langle 30u^{49}+63u^{48}+\cdots+4b+19,\ 7u^{48}+15u^{47}+\cdots+4a-3,\ u^{50}+4u^{49}+\cdots-u+1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-\frac{7}{4}u^{48}-\frac{15}{4}u^{47}+\cdots-\frac{7}{2}u+\frac{3}{4}\\-\frac{15}{2}u^{49}-\frac{63}{4}u^{48}+\cdots+6u-\frac{19}{4}\end{pmatrix}$$
$$a_2 = \begin{pmatrix}\frac{1}{4}u^{49}+\frac{3}{4}u^{48}+\cdots+\frac{23}{4}u+1\\-\frac{1}{4}u^{49}-\frac{3}{4}u^{48}+\cdots-5u^2+\frac{1}{4}u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-20u^{49}-\frac{185}{4}u^{48}+\cdots+\frac{29}{2}u-\frac{43}{4}\\\frac{51}{2}u^{49}+\frac{235}{4}u^{48}+\cdots-23u+\frac{55}{4}\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^2+1\\u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-\frac{111}{4}u^{49}-65u^{48}+\cdots+\frac{85}{4}u-\frac{63}{4}\\34.7500u^{49}+81.2500u^{48}+\cdots-32.7500u+19.5000\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-\frac{9}{2}u^{49}-\frac{21}{2}u^{48}+\cdots+4u-2\\\frac{21}{4}u^{49}+\frac{51}{4}u^{48}+\cdots-\frac{19}{4}u+3\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 25u^{49}+59u^{48}+\cdots-\frac{83}{2}u+\frac{25}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{50} - 9u^{49} + \cdots + 1832u + 113$
c_2, c_5, c_6	$u^{50} - 3u^{49} + \cdots - 10u + 1$
c_3	$u^{50} + 3u^{49} + \cdots - 2392u + 241$
c_4, c_{10}	$u^{50} - u^{49} + \cdots - 96u + 64$
c_7, c_8, c_9 c_{11}, c_{12}	$u^{50} - 4u^{49} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{50} + 31y^{49} + \cdots - 5984830y + 12769$
c_2, c_5, c_6	$y^{50} + 47y^{49} + \cdots - 54y + 1$
c_3	$y^{50} + 11y^{49} + \cdots - 2239214y + 58081$
c_4, c_{10}	$y^{50} - 35y^{49} + \cdots - 54272y + 4096$
c_7, c_8, c_9 c_{11}, c_{12}	$y^{50} - 68y^{49} + \cdots + 9y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.952202 + 0.085743I$ $a = 0.263868 + 0.811802I$ $b = 0.109466 + 1.005260I$	$1.99660 - 1.56126I$	$0. + 4.54210I$
$u = -0.952202 - 0.085743I$ $a = 0.263868 - 0.811802I$ $b = 0.109466 - 1.005260I$	$1.99660 + 1.56126I$	$0. - 4.54210I$
$u = -1.051590 + 0.116393I$ $a = -0.460087 - 1.130740I$ $b = 0.029530 - 1.139970I$	$7.55680 - 4.35419I$	0
$u = -1.051590 - 0.116393I$ $a = -0.460087 + 1.130740I$ $b = 0.029530 + 1.139970I$	$7.55680 + 4.35419I$	0
$u = 0.926369 + 0.110294I$ $a = -0.951862 + 0.190261I$ $b = 1.207080 - 0.506059I$	$4.83990 + 3.67287I$	$11.52712 - 5.42395I$
$u = 0.926369 - 0.110294I$ $a = -0.951862 - 0.190261I$ $b = 1.207080 + 0.506059I$	$4.83990 - 3.67287I$	$11.52712 + 5.42395I$
$u = 0.926358$ $a = 1.08741$ $b = -1.30017$	1.12359	7.78030
$u = 1.075460 + 0.335893I$ $a = 0.318078 + 0.440056I$ $b = 0.173538 + 1.100140I$	$5.70451 + 6.74184I$	0
$u = 1.075460 - 0.335893I$ $a = 0.318078 - 0.440056I$ $b = 0.173538 - 1.100140I$	$5.70451 - 6.74184I$	0
$u = 1.101720 + 0.265116I$ $a = -0.631574 - 0.369790I$ $b = 0.069190 - 0.623696I$	$6.52824 + 2.59024I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.101720 - 0.265116I$ $a = -0.631574 + 0.369790I$ $b = 0.069190 + 0.623696I$	$6.52824 - 2.59024I$	0
$u = 1.091080 + 0.380456I$ $a = -0.163597 - 0.625898I$ $b = -0.536851 - 1.297450I$	$11.5454 + 10.2862I$	0
$u = 1.091080 - 0.380456I$ $a = -0.163597 + 0.625898I$ $b = -0.536851 + 1.297450I$	$11.5454 - 10.2862I$	0
$u = -0.740193 + 0.295777I$ $a = -0.361219 - 0.137662I$ $b = -0.870973 - 0.536080I$	$4.15678 - 0.49764I$	$9.03893 + 1.33769I$
$u = -0.740193 - 0.295777I$ $a = -0.361219 + 0.137662I$ $b = -0.870973 + 0.536080I$	$4.15678 + 0.49764I$	$9.03893 - 1.33769I$
$u = 1.199130 + 0.267015I$ $a = 0.903623 + 0.631411I$ $b = 0.208467 + 0.051458I$	$13.08760 + 0.25307I$	0
$u = 1.199130 - 0.267015I$ $a = 0.903623 - 0.631411I$ $b = 0.208467 - 0.051458I$	$13.08760 - 0.25307I$	0
$u = -0.470779 + 0.592707I$ $a = 0.805640 - 0.073631I$ $b = -0.525112 + 1.088250I$	$7.73029 + 2.70190I$	$9.92902 - 0.03562I$
$u = -0.470779 - 0.592707I$ $a = 0.805640 + 0.073631I$ $b = -0.525112 - 1.088250I$	$7.73029 - 2.70190I$	$9.92902 + 0.03562I$
$u = -0.301413 + 0.651199I$ $a = -1.27352 + 0.89636I$ $b = -0.537119 - 0.669077I$	$7.21081 - 6.77625I$	$8.31083 + 6.21335I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.301413-0.651199I$ $a=-1.27352-0.89636I$ $b=-0.537119+0.669077I$	$7.21081+6.77625I$	$8.31083-6.21335I$
$u=-0.295790+0.583078I$ $a=\ \ 0.912564-0.926539I$ $b=\ \ 0.190072+0.467950I$	$1.43056-3.60804I$	$4.24958+7.07743I$
$u=-0.295790-0.583078I$ $a=\ \ 0.912564+0.926539I$ $b=\ \ 0.190072-0.467950I$	$1.43056+3.60804I$	$4.24958-7.07743I$
$u=-0.405535+0.509845I$ $a=-0.537103+0.460008I$ $b=\ \ 0.355378-0.582565I$	$1.81710+0.00783I$	$6.28682+0.01976I$
$u=-0.405535-0.509845I$ $a=-0.537103-0.460008I$ $b=\ \ 0.355378+0.582565I$	$1.81710-0.00783I$	$6.28682-0.01976I$
$u=-0.512306$ $a=\ \ 0.313006$ $b=\ \ 0.321368$	0.766149	13.4410
$u=-0.033821+0.416681I$ $a=-0.02102+1.94574I$ $b=\ \ 0.405990+0.159838I$	$2.06372-1.98561I$	$1.75080+4.13320I$
$u=-0.033821-0.416681I$ $a=-0.02102-1.94574I$ $b=\ \ 0.405990-0.159838I$	$2.06372+1.98561I$	$1.75080-4.13320I$
$u=\ \ 1.59708$ $a=-0.845107$ $b=\ \ 1.07699$	8.19154	0
$u=\ \ 1.61144+0.05910I$ $a=\ \ 1.25524-0.79623I$ $b=-1.80165+0.80672I$	$12.23120+1.76270I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.61144 - 0.05910I$ $a = 1.25524 + 0.79623I$ $b = -1.80165 - 0.80672I$	$12.23120 - 1.76270I$	0
$u = 0.267156 + 0.194860I$ $a = 0.14623 + 2.75307I$ $b = 0.727620 - 0.740672I$	$3.42049 + 3.22954I$	$-0.37490 - 5.13369I$
$u = 0.267156 - 0.194860I$ $a = 0.14623 - 2.75307I$ $b = 0.727620 + 0.740672I$	$3.42049 - 3.22954I$	$-0.37490 + 5.13369I$
$u = -1.71592$ $a = 0.726622$ $b = -0.423053$	10.6526	0
$u = -1.71698 + 0.02280I$ $a = -0.638945 - 0.755487I$ $b = 0.367724 + 1.082380I$	$14.3705 - 4.1609I$	0
$u = -1.71698 - 0.02280I$ $a = -0.638945 + 0.755487I$ $b = 0.367724 - 1.082380I$	$14.3705 + 4.1609I$	0
$u = 1.71834 + 0.01659I$ $a = -0.32264 + 2.56462I$ $b = 0.69393 - 4.29665I$	$11.59990 + 1.93326I$	0
$u = 1.71834 - 0.01659I$ $a = -0.32264 - 2.56462I$ $b = 0.69393 + 4.29665I$	$11.59990 - 1.93326I$	0
$u = 1.74020 + 0.02935I$ $a = 0.58408 - 2.98539I$ $b = -1.34410 + 5.19321I$	$17.6233 + 4.9552I$	0
$u = 1.74020 - 0.02935I$ $a = 0.58408 + 2.98539I$ $b = -1.34410 - 5.19321I$	$17.6233 - 4.9552I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.102654 + 0.234461I$ $a = -0.48752 - 2.52124I$ $b = -0.550472 + 0.258801I$	$-1.186530 + 0.460043I$	$-6.06013 - 1.97452I$
$u = 0.102654 - 0.234461I$ $a = -0.48752 + 2.52124I$ $b = -0.550472 - 0.258801I$	$-1.186530 - 0.460043I$	$-6.06013 + 1.97452I$
$u = -1.74331 + 0.08919I$ $a = -0.36769 + 2.41491I$ $b = 0.37187 - 4.07506I$	$15.7539 - 8.5170I$	0
$u = -1.74331 - 0.08919I$ $a = -0.36769 - 2.41491I$ $b = 0.37187 + 4.07506I$	$15.7539 + 8.5170I$	0
$u = -1.74805 + 0.07009I$ $a = 0.42579 - 1.94514I$ $b = -0.80402 + 3.33285I$	$16.7378 - 4.0067I$	0
$u = -1.74805 - 0.07009I$ $a = 0.42579 + 1.94514I$ $b = -0.80402 - 3.33285I$	$16.7378 + 4.0067I$	0
$u = -1.74828 + 0.10270I$ $a = 0.50895 - 2.70608I$ $b = -0.35501 + 4.68791I$	$-17.8318 - 12.3199I$	0
$u = -1.74828 - 0.10270I$ $a = 0.50895 + 2.70608I$ $b = -0.35501 - 4.68791I$	$-17.8318 + 12.3199I$	0
$u = -1.77321 + 0.06163I$ $a = -1.04826 + 1.68240I$ $b = 2.07789 - 3.22013I$	$-15.6447 - 1.6429I$	0
$u = -1.77321 - 0.06163I$ $a = -1.04826 - 1.68240I$ $b = 2.07789 + 3.22013I$	$-15.6447 + 1.6429I$	0

II. $I_2^u = \langle b + a,\ a^3 + a^2 - 1,\ u^2 - u - 1 \rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -u-1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ -u-1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a \\ -a \end{pmatrix}$$

$$a_2 = \begin{pmatrix} a^2+u \\ -a^2-u-1 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} a \\ -a \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} au+a \\ -au-2a \end{pmatrix}$$

$$a_6 = \begin{pmatrix} a^2u+a^2+a-u-1 \\ -a^2u-2a^2-a+u+2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= a^2u - 2a^2 - au - 5a - u + 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$(u^3 + u^2 - 1)^2$
c_2	$(u^3 - u^2 + 2u - 1)^2$
c_4, c_{10}	u^6
c_5, c_6	$(u^3 + u^2 + 2u + 1)^2$
c_7, c_8, c_9	$(u^2 - u - 1)^3$
c_{11}, c_{12}	$(u^2 + u - 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$(y^3 - y^2 + 2y - 1)^2$
c_2, c_5, c_6	$(y^3 + 3y^2 + 2y - 1)^2$
c_4, c_{10}	y^6
c_7, c_8, c_9 c_{11}, c_{12}	$(y^2 - 3y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.618034$ $a = -0.877439 + 0.744862I$ $b = \ \ 0.877439 - 0.744862I$	$4.01109 + 2.82812I$	$8.89985 + 0.15818I$
$u = -0.618034$ $a = -0.877439 - 0.744862I$ $b = \ \ 0.877439 + 0.744862I$	$4.01109 - 2.82812I$	$8.89985 - 0.15818I$
$u = -0.618034$ $a = \ \ 0.754878$ $b = -0.754878$	-0.126494	0.818320
$u = \ \ 1.61803$ $a = -0.877439 + 0.744862I$ $b = \ \ 0.877439 - 0.744862I$	$11.90680 + 2.82812I$	$9.10673 - 4.43024I$
$u = \ \ 1.61803$ $a = -0.877439 - 0.744862I$ $b = \ \ 0.877439 + 0.744862I$	$11.90680 - 2.82812I$	$9.10673 + 4.43024I$
$u = \ \ 1.61803$ $a = \ \ 0.754878$ $b = -0.754878$	7.76919	-1.83150

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3+u^2-1)^2)(u^{50}-9u^{49}+\cdots+1832u+113)$
c_2	$((u^3-u^2+2u-1)^2)(u^{50}-3u^{49}+\cdots-10u+1)$
c_3	$((u^3+u^2-1)^2)(u^{50}+3u^{49}+\cdots-2392u+241)$
c_4, c_{10}	$u^6(u^{50}-u^{49}+\cdots-96u+64)$
c_5, c_6	$((u^3+u^2+2u+1)^2)(u^{50}-3u^{49}+\cdots-10u+1)$
c_7, c_8, c_9	$((u^2-u-1)^3)(u^{50}-4u^{49}+\cdots+u+1)$
c_{11}, c_{12}	$((u^2+u-1)^3)(u^{50}-4u^{49}+\cdots+u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^3-y^2+2y-1)^2)(y^{50}+31y^{49}+\cdots-5984830y+12769)$
c_2, c_5, c_6	$((y^3+3y^2+2y-1)^2)(y^{50}+47y^{49}+\cdots-54y+1)$
c_3	$((y^3-y^2+2y-1)^2)(y^{50}+11y^{49}+\cdots-2239214y+58081)$
c_4, c_{10}	$y^6(y^{50}-35y^{49}+\cdots-54272y+4096)$
c_7, c_8, c_9 c_{11}, c_{12}	$((y^2-3y+1)^3)(y^{50}-68y^{49}+\cdots+9y+1)$