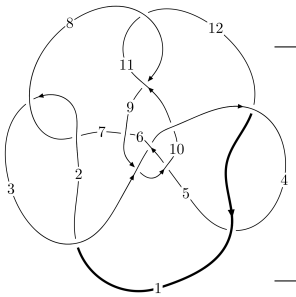
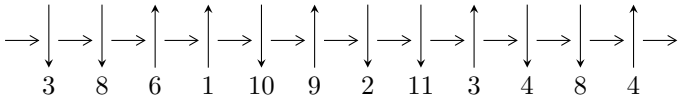
$12n_{0650}$ $(K12n_{0650})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1989385u^{25} - 36760790u^{24} + \cdots + 9723136b - 272866048,$$
$$- 3511211u^{25} - 66741367u^{24} + \cdots + 9723136a - 730323648,\ u^{26} + 20u^{25} + \cdots + 1536u + 256\rangle$$
$$I_2^u = \langle 1174u^{17} + 443u^{16} + \cdots + 2225b - 946,\ 13156u^{17} + 10017u^{16} + \cdots + 6675a - 37699,$$
$$u^{18} - 8u^{16} + \cdots + 5u + 3\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 44 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. $I_1^u =$
$\langle -1.99\times10^{6}u^{25}-3.68\times10^{7}u^{24}+\cdots+9.72\times10^{6}b-2.73\times10^{8},\ -3.51\times10^{6}u^{25}-6.67\times10^{7}u^{24}+\cdots+9.72\times10^{6}a-7.30\times10^{8},\ u^{26}+20u^{25}+\cdots+1536u+256\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.361119u^{25}+6.86418u^{24}+\cdots+406.596u+75.1119\\0.204603u^{25}+3.78075u^{24}+\cdots+161.401u+28.0636\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.156516u^{25}+3.08343u^{24}+\cdots+245.195u+47.0484\\0.204603u^{25}+3.78075u^{24}+\cdots+161.401u+28.0636\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.110888u^{25}+2.05128u^{24}+\cdots+135.662u+27.3983\\-0.168663u^{25}-3.00422u^{24}+\cdots-83.4070u-14.2327\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.132026u^{25}+2.48277u^{24}+\cdots+132.959u+25.2820\\0.306676u^{25}+5.66909u^{24}+\cdots+248.834u+44.7104\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.0156496u^{25}-0.512299u^{24}+\cdots-170.823u-36.1491\\-0.731644u^{25}-13.8490u^{24}+\cdots-665.992u-115.163\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.168353u^{25}+3.05304u^{24}+\cdots+177.060u+35.1491\\0.500752u^{25}+9.22376u^{24}+\cdots+470.444u+88.3760\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.0156496u^{25}+0.512299u^{24}+\cdots+170.823u+36.1491\\0.266199u^{25}+5.25708u^{24}+\cdots+355.852u+64.1406\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1519127}{151924}u^{25}-\frac{228486283}{1215392}u^{24}+\cdots-\frac{399437504}{37981}u-\frac{3997508}{1999}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{26}+16u^{25}+\cdots+65536u+65536$
c_2, c_7	$u^{26}-20u^{25}+\cdots-1536u+256$
c_3	$u^{26}+3u^{25}+\cdots+5u+1$
c_4, c_{12}	$u^{26}+u^{25}+\cdots-2u+1$
c_5	$u^{26}+u^{25}+\cdots+217u+193$
c_6, c_9	$u^{26}+2u^{25}+\cdots+2u+1$
c_8, c_{11}	$u^{26}-4u^{25}+\cdots-6u+1$
c_{10}	$u^{26}+24u^{24}+\cdots+107u+43$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{26} + 120y^{25} + \cdots + 122406567936y + 4294967296$
c_2, c_7	$y^{26} - 16y^{25} + \cdots - 65536y + 65536$
c_3	$y^{26} + 3y^{25} + \cdots + 13y + 1$
c_4, c_{12}	$y^{26} - 47y^{25} + \cdots - 2y + 1$
c_5	$y^{26} + 53y^{25} + \cdots + 99205y + 37249$
c_6, c_9	$y^{26} - 54y^{25} + \cdots - 2y + 1$
c_8, c_{11}	$y^{26} + 30y^{24} + \cdots + 2y + 1$
c_{10}	$y^{26} + 48y^{25} + \cdots + 3085y + 1849$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.016860+0.515617I$ $a=-0.547952-0.593599I$ $b=-0.005131-0.349931I$	$1.14259+4.55293I$	$0.67584-2.96671I$
$u=-1.016860-0.515617I$ $a=-0.547952+0.593599I$ $b=-0.005131+0.349931I$	$1.14259-4.55293I$	$0.67584+2.96671I$
$u=-0.367875+0.728872I$ $a=-0.726824+0.229748I$ $b=-0.305544+0.145494I$	$1.79332-1.76675I$	$0.88475+2.70026I$
$u=-0.367875-0.728872I$ $a=-0.726824-0.229748I$ $b=-0.305544-0.145494I$	$1.79332+1.76675I$	$0.88475-2.70026I$
$u=-0.527735+0.607198I$ $a=-0.345868-0.800773I$ $b=-0.121889-0.310496I$	$2.58885-0.08583I$	$6.93906-0.29216I$
$u=-0.527735-0.607198I$ $a=-0.345868+0.800773I$ $b=-0.121889+0.310496I$	$2.58885+0.08583I$	$6.93906+0.29216I$
$u=1.203720+0.288453I$ $a=0.465886+0.245129I$ $b=0.749365+0.223786I$	$-2.65605-1.02761I$	$-3.38805+0.66160I$
$u=1.203720-0.288453I$ $a=0.465886-0.245129I$ $b=0.749365-0.223786I$	$-2.65605+1.02761I$	$-3.38805-0.66160I$
$u=-1.102930+0.577266I$ $a=0.450976-0.348600I$ $b=0.295113+0.026156I$	$-0.34242+6.74821I$	$1.68908-12.55727I$
$u=-1.102930-0.577266I$ $a=0.450976+0.348600I$ $b=0.295113-0.026156I$	$-0.34242-6.74821I$	$1.68908+12.55727I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.296079 + 0.669488I$ $a = -1.52910 + 0.28993I$ $b = -0.675653 + 0.872173I$	$-0.13239 - 2.18215I$	$-1.31091 + 4.66032I$
$u = 0.296079 - 0.669488I$ $a = -1.52910 - 0.28993I$ $b = -0.675653 - 0.872173I$	$-0.13239 + 2.18215I$	$-1.31091 - 4.66032I$
$u = -1.398550 + 0.175389I$ $a = 0.859045 - 0.438947I$ $b = 0.029505 + 1.040670I$	$-6.70940 + 3.17946I$	$-11.81324 + 0.I$
$u = -1.398550 - 0.175389I$ $a = 0.859045 + 0.438947I$ $b = 0.029505 - 1.040670I$	$-6.70940 - 3.17946I$	$-11.81324 + 0.I$
$u = -1.42731 + 0.24870I$ $a = 1.005720 - 0.776152I$ $b = 0.774240 + 1.177450I$	$-5.69335 + 5.51976I$	$0. - 13.25882I$
$u = -1.42731 - 0.24870I$ $a = 1.005720 + 0.776152I$ $b = 0.774240 - 1.177450I$	$-5.69335 - 5.51976I$	$0. + 13.25882I$
$u = 0.407621 + 0.360624I$ $a = -0.738146 + 0.444980I$ $b = 0.212985 + 0.764335I$	$-1.12681 - 1.09104I$	$-5.44567 + 3.98120I$
$u = 0.407621 - 0.360624I$ $a = -0.738146 - 0.444980I$ $b = 0.212985 - 0.764335I$	$-1.12681 + 1.09104I$	$-5.44567 - 3.98120I$
$u = -1.44306 + 1.35548I$ $a = 3.43426 - 0.14475I$ $b = 2.80277 + 0.65564I$	$14.1380 + 5.5276I$	0
$u = -1.44306 - 1.35548I$ $a = 3.43426 + 0.14475I$ $b = 2.80277 - 0.65564I$	$14.1380 - 5.5276I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.56135+1.29391I$ $a=-3.52741-0.39308I$ $b=-2.83872-1.22660I$	$13.8077+5.1544I$	0
$u=-1.56135-1.29391I$ $a=-3.52741+0.39308I$ $b=-2.83872+1.22660I$	$13.8077-5.1544I$	0
$u=-1.52058+1.37669I$ $a=\ \ 3.67620+0.32681I$ $b=\ \ 2.97403+1.10938I$	$13.8209+12.8202I$	0
$u=-1.52058-1.37669I$ $a=\ \ 3.67620-0.32681I$ $b=\ \ 2.97403-1.10938I$	$13.8209-12.8202I$	0
$u=-1.54118+1.38126I$ $a=-3.47680-0.05371I$ $b=-2.89107-0.84018I$	$13.78230-1.84091I$	0
$u=-1.54118-1.38126I$ $a=-3.47680+0.05371I$ $b=-2.89107+0.84018I$	$13.78230+1.84091I$	0

II. $I_2^u = \langle 1174u^{17} + 443u^{16} + \cdots + 2225b - 946,\ 13156u^{17} + 10017u^{16} + \cdots + 6675a - 37699,\ u^{18} - 8u^{16} + \cdots + 5u + 3 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.97094u^{17} - 1.50067u^{16} + \cdots + 18.7823u + 5.64779 \\ -0.527640u^{17} - 0.199101u^{16} + \cdots + 1.60135u + 0.425169 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.44330u^{17} - 1.30157u^{16} + \cdots + 17.1810u + 5.22262 \\ -0.527640u^{17} - 0.199101u^{16} + \cdots + 1.60135u + 0.425169 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.390712u^{17} + 0.369888u^{16} + \cdots + 2.98816u + 0.0235206 \\ 0.185169u^{17} - 0.0970787u^{16} + \cdots + 3.65438u + 2.28180 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.419925u^{17} + 0.996854u^{16} + \cdots - 10.5714u - 4.42142 \\ 1.27910u^{17} - 0.282247u^{16} + \cdots - 1.02337u + 5.09708 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.149513u^{17} - 0.960449u^{16} + \cdots + 6.32599u + 5.44075 \\ -1.02472u^{17} + 0.838202u^{16} + \cdots - 3.24270u - 6.53034 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.326592u^{17} + 0.683146u^{16} + \cdots - 11.6419u - 4.20524 \\ 1.02876u^{17} - 0.248090u^{16} + \cdots + 0.227865u + 4.05348 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.149513u^{17} - 0.960449u^{16} + \cdots + 6.32599u + 5.44075 \\ -1.36584u^{17} + 0.405393u^{16} + \cdots + 2.00809u - 3.64899 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{8359}{2225}u^{17} + \frac{13288}{2225}u^{16} + \cdots - \frac{127808}{2225}u - \frac{6186}{2225}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} - 16u^{17} + \cdots - 109u + 9$
c_2	$u^{18} - 8u^{16} + \cdots + 5u + 3$
c_3	$u^{18} + 8u^{17} + \cdots + 5u + 1$
c_4	$u^{18} + 2u^{17} + \cdots + 2u + 1$
c_5	$u^{18} + 2u^{14} + \cdots - u + 3$
c_6, c_9	$u^{18} - u^{17} + \cdots + 2u + 1$
c_7	$u^{18} - 8u^{16} + \cdots - 5u + 3$
c_8	$u^{18} - 9u^{17} + \cdots - 6u + 1$
c_{10}	$u^{18} - u^{17} + \cdots + u + 1$
c_{11}	$u^{18} + 9u^{17} + \cdots + 6u + 1$
c_{12}	$u^{18} - 2u^{17} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} - 16y^{17} + \cdots - y + 81$
c_2, c_7	$y^{18} - 16y^{17} + \cdots - 109y + 9$
c_3	$y^{18} + 2y^{17} + \cdots + 9y + 1$
c_4, c_{12}	$y^{18} + 2y^{15} + \cdots + 2y + 1$
c_5	$y^{18} + 4y^{16} + \cdots - 7y + 9$
c_6, c_9	$y^{18} + y^{17} + \cdots + 2y + 1$
c_8, c_{11}	$y^{18} - y^{17} + \cdots - 2y + 1$
c_{10}	$y^{18} - y^{17} + \cdots + y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.866748+0.339139I$ $a=\ 0.585312-0.000404I$ $b=\ 0.850307+0.487196I$	$1.52696+5.64075I$	$5.02271-10.09643I$
$u=-0.866748-0.339139I$ $a=\ 0.585312+0.000404I$ $b=\ 0.850307-0.487196I$	$1.52696-5.64075I$	$5.02271+10.09643I$
$u=\ 0.835918+0.396708I$ $a=\ 1.08228+1.91732I$ $b=\ 0.572770+0.331333I$	$-3.84181+1.43571I$	$-2.77803+0.44283I$
$u=\ 0.835918-0.396708I$ $a=\ 1.08228-1.91732I$ $b=\ 0.572770-0.331333I$	$-3.84181-1.43571I$	$-2.77803-0.44283I$
$u=-0.556480+0.956948I$ $a=\ 0.659533+0.994382I$ $b=\ 0.138758+1.050230I$	$1.155690+0.058941I$	$-0.908103-0.566791I$
$u=-0.556480-0.956948I$ $a=\ 0.659533-0.994382I$ $b=\ 0.138758-1.050230I$	$1.155690-0.058941I$	$-0.908103+0.566791I$
$u=\ 0.765456+0.230677I$ $a=-0.44776-3.06535I$ $b=-0.332709-0.567316I$	$-2.87507-5.25661I$	$0.15175+7.52339I$
$u=\ 0.765456-0.230677I$ $a=-0.44776+3.06535I$ $b=-0.332709+0.567316I$	$-2.87507+5.25661I$	$0.15175-7.52339I$
$u=-1.142420+0.682096I$ $a=-0.060431+0.661371I$ $b=-0.317939+0.747295I$	$-0.62367+6.19450I$	$-4.05821-1.05531I$
$u=-1.142420-0.682096I$ $a=-0.060431-0.661371I$ $b=-0.317939-0.747295I$	$-0.62367-6.19450I$	$-4.05821+1.05531I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.354680+0.072381I$ $a=-1.003230+0.341552I$ $b=-1.47456+0.43997I$	$-0.97412-3.24688I$	$-2.87279+2.26909I$
$u=-1.354680-0.072381I$ $a=-1.003230-0.341552I$ $b=-1.47456-0.43997I$	$-0.97412+3.24688I$	$-2.87279-2.26909I$
$u=-0.544801+0.244143I$ $a=-0.114341-0.566988I$ $b=\ \ 0.906433-0.354928I$	$3.11907-2.19821I$	$8.90400+3.10341I$
$u=-0.544801-0.244143I$ $a=-0.114341+0.566988I$ $b=\ \ 0.906433+0.354928I$	$3.11907+2.19821I$	$8.90400-3.10341I$
$u=\ \ 1.38521+0.32967I$ $a=-1.44449-0.77157I$ $b=-0.87794+1.14508I$	$-5.93825-5.17067I$	$-10.95523-1.48147I$
$u=\ \ 1.38521-0.32967I$ $a=-1.44449+0.77157I$ $b=-0.87794-1.14508I$	$-5.93825+5.17067I$	$-10.95523+1.48147I$
$u=\ \ 1.47855+0.08650I$ $a=-0.423539-0.429164I$ $b=\ \ 0.034873+1.260500I$	$-6.35322-3.65803I$	$-3.50609+6.99719I$
$u=\ \ 1.47855-0.08650I$ $a=-0.423539+0.429164I$ $b=\ \ 0.034873-1.260500I$	$-6.35322+3.65803I$	$-3.50609-6.99719I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{18}-16u^{17}+\cdots-109u+9)(u^{26}+16u^{25}+\cdots+65536u+65536)$
c_2	$(u^{18}-8u^{16}+\cdots+5u+3)(u^{26}-20u^{25}+\cdots-1536u+256)$
c_3	$(u^{18}+8u^{17}+\cdots+5u+1)(u^{26}+3u^{25}+\cdots+5u+1)$
c_4	$(u^{18}+2u^{17}+\cdots+2u+1)(u^{26}+u^{25}+\cdots-2u+1)$
c_5	$(u^{18}+2u^{14}+\cdots-u+3)(u^{26}+u^{25}+\cdots+217u+193)$
c_6, c_9	$(u^{18}-u^{17}+\cdots+2u+1)(u^{26}+2u^{25}+\cdots+2u+1)$
c_7	$(u^{18}-8u^{16}+\cdots-5u+3)(u^{26}-20u^{25}+\cdots-1536u+256)$
c_8	$(u^{18}-9u^{17}+\cdots-6u+1)(u^{26}-4u^{25}+\cdots-6u+1)$
c_{10}	$(u^{18}-u^{17}+\cdots+u+1)(u^{26}+24u^{24}+\cdots+107u+43)$
c_{11}	$(u^{18}+9u^{17}+\cdots+6u+1)(u^{26}-4u^{25}+\cdots-6u+1)$
c_{12}	$(u^{18}-2u^{17}+\cdots-2u+1)(u^{26}+u^{25}+\cdots-2u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{18} - 16y^{17} + \cdots - y + 81)$ $\cdot (y^{26} + 120y^{25} + \cdots + 122406567936y + 4294967296)$
c_2, c_7	$(y^{18} - 16y^{17} + \cdots - 109y + 9)(y^{26} - 16y^{25} + \cdots - 65536y + 65536)$
c_3	$(y^{18} + 2y^{17} + \cdots + 9y + 1)(y^{26} + 3y^{25} + \cdots + 13y + 1)$
c_4, c_{12}	$(y^{18} + 2y^{15} + \cdots + 2y + 1)(y^{26} - 47y^{25} + \cdots - 2y + 1)$
c_5	$(y^{18} + 4y^{16} + \cdots - 7y + 9)(y^{26} + 53y^{25} + \cdots + 99205y + 37249)$
c_6, c_9	$(y^{18} + y^{17} + \cdots + 2y + 1)(y^{26} - 54y^{25} + \cdots - 2y + 1)$
c_8, c_{11}	$(y^{18} - y^{17} + \cdots - 2y + 1)(y^{26} + 30y^{24} + \cdots + 2y + 1)$
c_{10}	$(y^{18} - y^{17} + \cdots + y + 1)(y^{26} + 48y^{25} + \cdots + 3085y + 1849)$