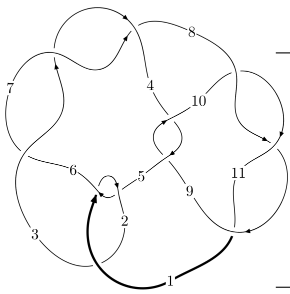
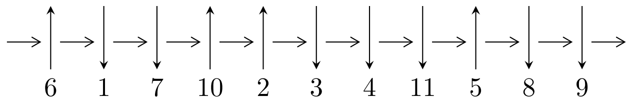
$11a_{74}$ ($K11a_{74}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{39} - u^{38} + \cdots + b - u,\ u^{39} + u^{38} + \cdots + a + 1,\ u^{41} + 2u^{40} + \cdots + u + 1\rangle$$
$$I_2^u = \langle b + 1,\ -u^3 + u^2 + a - u,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 46 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.

$$I_1^u = \langle -u^{39} - u^{38} + \cdots + b - u,\ u^{39} + u^{38} + \cdots + a + 1,\ u^{41} + 2u^{40} + \cdots + u + 1 \rangle$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^5 - 2u^3 - u \\ u^5 + u^3 + u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -u^{39} - u^{38} + \cdots + 3u^2 - 1 \\ u^{39} + u^{38} + \cdots - 2u^2 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{38} - u^{37} + \cdots + 7u^3 + 2u^2 \\ 2u^{39} + u^{38} + \cdots - 2u^2 + 2u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^8 - 3u^6 - 3u^4 + 1 \\ u^8 + 2u^6 + 2u^4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^{37} - u^{36} + \cdots + 2u^2 - u \\ u^{39} + u^{38} + \cdots - 2u^2 + 2u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{11} - 4u^9 - 6u^7 - 2u^5 + 3u^3 + 2u \\ u^{11} + 3u^9 + 4u^7 + u^5 - u^3 - u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{11} - 4u^9 - 6u^7 - 2u^5 + 3u^3 + 2u \\ u^{11} + 3u^9 + 4u^7 + u^5 - u^3 - u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 4u^{40}+7u^{39}+54u^{38}+82u^{37}+340u^{36}+462u^{35}+1312u^{34}+1616u^{33}+3403u^{32}+3822u^{31}+6077u^{30}+6214u^{29}+7177u^{28}+6582u^{27}+4494u^{26}+3388u^{25}-1027u^{24}-1627u^{23}-4964u^{22}-4460u^{21}-4186u^{20}-3422u^{19}-796u^{18}-982u^{17}+949u^{16}+82u^{15}+258u^{14}-40u^{13}-510u^{12}+20u^{11}-226u^{10}+250u^9+184u^8+183u^7+146u^6+8u^5+26u^4-2u^3+6u^2+10u-1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{41} - 2u^{40} + \cdots + u - 1$
c_2	$u^{41} + 24u^{40} + \cdots + u - 1$
c_3, c_6, c_7	$u^{41} + 2u^{40} + \cdots + 21u - 9$
c_4, c_9	$u^{41} + u^{40} + \cdots - 64u - 32$
c_8, c_{10}, c_{11}	$u^{41} - 6u^{40} + \cdots + 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{41} + 24y^{40} + \cdots + y - 1$
c_2	$y^{41} - 12y^{40} + \cdots + 33y - 1$
c_3, c_6, c_7	$y^{41} - 48y^{40} + \cdots + 81y - 81$
c_4, c_9	$y^{41} + 33y^{40} + \cdots + 512y - 1024$
c_8, c_{10}, c_{11}	$y^{41} - 44y^{40} + \cdots - 5y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.364109 + 0.887001I$ $a = 0.877550 - 0.609658I$ $b = 0.140178 + 0.229591I$	$-0.38668 - 1.88770I$	$-0.82834 + 4.08923I$
$u = -0.364109 - 0.887001I$ $a = 0.877550 + 0.609658I$ $b = 0.140178 - 0.229591I$	$-0.38668 + 1.88770I$	$-0.82834 - 4.08923I$
$u = -0.565729 + 0.744684I$ $a = -1.96011 - 1.23038I$ $b = 1.43778 + 0.03286I$	$-4.81720 - 2.24797I$	$-7.05405 + 3.58512I$
$u = -0.565729 - 0.744684I$ $a = -1.96011 + 1.23038I$ $b = 1.43778 - 0.03286I$	$-4.81720 + 2.24797I$	$-7.05405 - 3.58512I$
$u = 0.298074 + 1.039800I$ $a = 0.514134 + 0.273626I$ $b = -0.700394 - 0.515888I$	$-3.51943 + 0.95935I$	$-11.65925 - 0.88774I$
$u = 0.298074 - 1.039800I$ $a = 0.514134 - 0.273626I$ $b = -0.700394 + 0.515888I$	$-3.51943 - 0.95935I$	$-11.65925 + 0.88774I$
$u = -0.906696 + 0.062300I$ $a = -0.638168 + 1.087060I$ $b = 1.59428 - 0.29257I$	$-14.7183 + 7.2472I$	$-9.00971 - 3.32831I$
$u = -0.906696 - 0.062300I$ $a = -0.638168 - 1.087060I$ $b = 1.59428 + 0.29257I$	$-14.7183 - 7.2472I$	$-9.00971 + 3.32831I$
$u = 0.887554$ $a = -0.0395218$ $b = -1.52039$	-9.70106	-8.09810
$u = -0.881624 + 0.022769I$ $a = 0.255857 - 1.353200I$ $b = -0.605844 + 0.876406I$	$-7.47580 + 2.91735I$	$-7.30362 - 2.76521I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.881624 - 0.022769I$ $a = 0.255857 + 1.353200I$ $b = -0.605844 - 0.876406I$	$-7.47580 - 2.91735I$	$-7.30362 + 2.76521I$
$u = 0.432258 + 1.033390I$ $a = -0.47465 - 1.53898I$ $b = -0.391212 + 0.669630I$	$-2.52915 + 5.16995I$	$-7.30241 - 8.37437I$
$u = 0.432258 - 1.033390I$ $a = -0.47465 + 1.53898I$ $b = -0.391212 - 0.669630I$	$-2.52915 - 5.16995I$	$-7.30241 + 8.37437I$
$u = -0.373802 + 1.057220I$ $a = -1.20238 + 1.81940I$ $b = -1.310670 - 0.105352I$	$-4.92250 - 3.20490I$	$-9.59732 + 4.05642I$
$u = -0.373802 - 1.057220I$ $a = -1.20238 - 1.81940I$ $b = -1.310670 + 0.105352I$	$-4.92250 + 3.20490I$	$-9.59732 - 4.05642I$
$u = 0.525055 + 1.060430I$ $a = -0.31545 + 2.34266I$ $b = 1.48731 - 0.19599I$	$-8.67231 + 8.22528I$	$-10.03835 - 7.21842I$
$u = 0.525055 - 1.060430I$ $a = -0.31545 - 2.34266I$ $b = 1.48731 + 0.19599I$	$-8.67231 - 8.22528I$	$-10.03835 + 7.21842I$
$u = 0.195299 + 1.170820I$ $a = 0.767934 + 0.191612I$ $b = 1.56724 + 0.10428I$	$-11.13990 - 1.05429I$	$-13.63109 + 0.13245I$
$u = 0.195299 - 1.170820I$ $a = 0.767934 - 0.191612I$ $b = 1.56724 - 0.10428I$	$-11.13990 + 1.05429I$	$-13.63109 - 0.13245I$
$u = 0.800839$ $a = 0.186265$ $b = 0.436537$	-3.04591	-0.386480

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.128656 + 0.767561I$ $a = 0.21319 - 1.98784I$ $b = -1.017510 + 0.191133I$	$-2.24222 + 0.82014I$	$-9.63668 + 2.36048I$
$u = 0.128656 - 0.767561I$ $a = 0.21319 + 1.98784I$ $b = -1.017510 - 0.191133I$	$-2.24222 - 0.82014I$	$-9.63668 - 2.36048I$
$u = 0.688250 + 0.327330I$ $a = -1.66239 - 0.83418I$ $b = 1.48572 + 0.13886I$	$-6.57625 - 3.60929I$	$-7.29460 + 2.69532I$
$u = 0.688250 - 0.327330I$ $a = -1.66239 + 0.83418I$ $b = 1.48572 - 0.13886I$	$-6.57625 + 3.60929I$	$-7.29460 - 2.69532I$
$u = -0.333948 + 0.659183I$ $a = 0.690566 + 1.131080I$ $b = -0.109267 - 0.349284I$	$0.264887 - 1.334670I$	$0.48301 + 5.63905I$
$u = -0.333948 - 0.659183I$ $a = 0.690566 - 1.131080I$ $b = -0.109267 + 0.349284I$	$0.264887 + 1.334670I$	$0.48301 - 5.63905I$
$u = 0.457167 + 1.214570I$ $a = 0.555238 + 0.444951I$ $b = 0.484933 - 0.052973I$	$-6.61640 + 4.50390I$	$-3.48122 - 3.67405I$
$u = 0.457167 - 1.214570I$ $a = 0.555238 - 0.444951I$ $b = 0.484933 + 0.052973I$	$-6.61640 - 4.50390I$	$-3.48122 + 3.67405I$
$u = -0.454729 + 1.257900I$ $a = 0.400211 - 0.118984I$ $b = -0.645598 + 0.885516I$	$-11.36890 - 1.81360I$	$-10.77547 + 0.I$
$u = -0.454729 - 1.257900I$ $a = 0.400211 + 0.118984I$ $b = -0.645598 - 0.885516I$	$-11.36890 + 1.81360I$	$-10.77547 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.478913+1.251130I$ $a=-0.91026+1.09596I$ $b=-0.586679-0.909041I$	$-11.19120-7.77933I$	$-10.30522+0.I$
$u=-0.478913-1.251130I$ $a=-0.91026-1.09596I$ $b=-0.586679+0.909041I$	$-11.19120+7.77933I$	$-10.30522+0.I$
$u=\ \ 0.468114+1.257970I$ $a=-1.26020-1.20638I$ $b=-1.53681+0.02313I$	$-13.5218+4.8223I$	$-11.32712+0.I$
$u=\ \ 0.468114-1.257970I$ $a=-1.26020+1.20638I$ $b=-1.53681-0.02313I$	$-13.5218-4.8223I$	$-11.32712+0.I$
$u=-0.433062+1.278700I$ $a=\ \ 0.599578-0.329232I$ $b=\ \ 1.61634-0.28380I$	$-18.8600+2.5415I$	$-12.61033+0.I$
$u=-0.433062-1.278700I$ $a=\ \ 0.599578+0.329232I$ $b=\ \ 1.61634+0.28380I$	$-18.8600-2.5415I$	$-12.61033+0.I$
$u=-0.503212+1.254770I$ $a=\ \ 0.78669-2.05025I$ $b=\ \ 1.59379+0.31268I$	$-18.3390-12.3052I$	$-11.90943+0.I$
$u=-0.503212-1.254770I$ $a=\ \ 0.78669+2.05025I$ $b=\ \ 1.59379-0.31268I$	$-18.3390+12.3052I$	$-11.90943+0.I$
$u=\ \ 0.470933+0.246766I$ $a=\ \ 0.87628+1.55909I$ $b=-0.369677-0.476409I$	$-0.44649-1.42241I$	$-3.04926+5.00918I$
$u=\ \ 0.470933-0.246766I$ $a=\ \ 0.87628-1.55909I$ $b=-0.369677+0.476409I$	$-0.44649+1.42241I$	$-3.04926-5.00918I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.424359$ $a = -0.373964$ $b = -1.18396$	-2.34309	-2.85450

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

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^4-u^2-1 \\ u^4-u^3+u^2+1 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} u^3-u^2+u \\ -1 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u^3-u^2+u+1 \\ -1 \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^4+7u^3-8u^2+6u-12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_2	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_3, c_6, c_7	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_4, c_9	y^5
c_8, c_{10}, c_{11}	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = \quad 0.871221 + 1.107660I$ $b = -1.00000$	$-1.97403 - 1.53058I$	$-5.00899 + 6.23673I$
$u = -0.339110 - 0.822375I$ $a = \quad 0.871221 - 1.107660I$ $b = -1.00000$	$-1.97403 + 1.53058I$	$-5.00899 - 6.23673I$
$u = \quad 0.766826$ $a = \quad 0.629714$ $b = -1.00000$	-4.04602	-9.63840
$u = \quad 0.455697 + 1.200150I$ $a = -0.186078 - 0.874646I$ $b = -1.00000$	$-7.51750 + 4.40083I$	$-13.17182 - 3.02310I$
$u = \quad 0.455697 - 1.200150I$ $a = -0.186078 + 0.874646I$ $b = -1.00000$	$-7.51750 - 4.40083I$	$-13.17182 + 3.02310I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^5 - u^4 + 2u^3 - u^2 + u - 1)(u^{41} - 2u^{40} + \cdots + u - 1)$
c_2	$(u^5 + 3u^4 + 4u^3 + u^2 - u - 1)(u^{41} + 24u^{40} + \cdots + u - 1)$
c_3	$(u^5 + u^4 - 2u^3 - u^2 + u - 1)(u^{41} + 2u^{40} + \cdots + 21u - 9)$
c_4, c_9	$u^5(u^{41} + u^{40} + \cdots - 64u - 32)$
c_5	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)(u^{41} - 2u^{40} + \cdots + u - 1)$
c_6, c_7	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)(u^{41} + 2u^{40} + \cdots + 21u - 9)$
c_8	$((u - 1)^5)(u^{41} - 6u^{40} + \cdots + 3u - 1)$
c_{10}, c_{11}	$((u + 1)^5)(u^{41} - 6u^{40} + \cdots + 3u - 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^5+3y^4+4y^3+y^2-y-1)(y^{41}+24y^{40}+\cdots+y-1)$
c_2	$(y^5-y^4+8y^3-3y^2+3y-1)(y^{41}-12y^{40}+\cdots+33y-1)$
c_3, c_6, c_7	$(y^5-5y^4+8y^3-3y^2-y-1)(y^{41}-48y^{40}+\cdots+81y-81)$
c_4, c_9	$y^5(y^{41}+33y^{40}+\cdots+512y-1024)$
c_8, c_{10}, c_{11}	$((y-1)^5)(y^{41}-44y^{40}+\cdots-5y-1)$