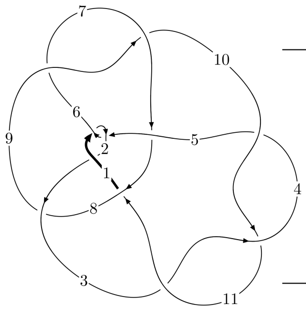
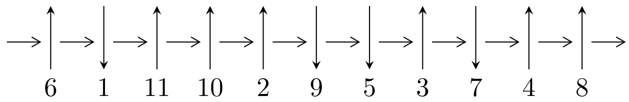
$11a_{152}$ ($K11a_{152}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3.06173 \times 10^{60} u^{58} - 4.84579 \times 10^{60} u^{57} + \cdots + 7.53869 \times 10^{60} b - 6.50731 \times 10^{60},$$
$$3.66584 \times 10^{60} u^{58} - 7.89631 \times 10^{60} u^{57} + \cdots + 7.53869 \times 10^{60} a - 4.93339 \times 10^{60},\ u^{59} - 2u^{58} + \cdots - 2u + 1\rangle$$
$$I_2^u = \langle 3b - 2,\ 3a - 1,\ u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 60 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.

$\boldsymbol{I_1^u = \langle 3.06\times 10^{60}u^{58} - 4.85\times 10^{60}u^{57} + \cdots + 7.54\times 10^{60}b - 6.51\times 10^{60},\ 3.67\times 10^{60}u^{58} - 7.90\times 10^{60}u^{57} + \cdots + 7.54\times 10^{60}a - 4.93\times 10^{60},\ u^{59} - 2u^{58} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.486270u^{58} + 1.04744u^{57} + \cdots - 3.97604u + 0.654410 \\ -0.406136u^{58} + 0.642788u^{57} + \cdots + 0.0112412u + 0.863189 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 0.162396u^{58} - 0.0414876u^{57} + \cdots - 0.620453u + 0.289562 \\ 0.264365u^{58} - 0.566519u^{57} + \cdots - 0.385454u - 0.631376 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.418108u^{58} + 0.310255u^{57} + \cdots - 0.686190u + 0.663142 \\ -0.104972u^{58} + 0.436443u^{57} + \cdots - 0.736202u + 0.995922 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.892406u^{58} + 1.69023u^{57} + \cdots - 3.96480u + 1.51760 \\ -0.406136u^{58} + 0.642788u^{57} + \cdots + 0.0112412u + 0.863189 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.855262u^{58} + 1.72021u^{57} + \cdots - 3.82594u + 1.72628 \\ -0.432378u^{58} + 0.672814u^{57} + \cdots + 1.00305u + 0.933233 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0187345u^{58} - 0.208269u^{57} + \cdots - 0.169215u - 0.637633 \\ -0.0593368u^{58} + 0.0928833u^{57} + \cdots - 1.26241u - 0.102333 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0187345u^{58} - 0.208269u^{57} + \cdots - 0.169215u - 0.637633 \\ -0.0593368u^{58} + 0.0928833u^{57} + \cdots - 1.26241u - 0.102333 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.834501u^{58} - 3.42749u^{57} + \cdots - 17.5070u - 8.87218$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{59} - 2u^{58} + \cdots + 2u - 1$
c_2	$u^{59} + 24u^{58} + \cdots - 4u - 1$
c_3, c_4, c_{10}	$u^{59} + 2u^{58} + \cdots - 2u - 1$
c_6, c_9	$u^{59} - 2u^{58} + \cdots - 32u - 9$
c_7	$3(3u^{59} + 29u^{58} + \cdots + 96336u - 7216)$
c_8	$3(3u^{59} - 44u^{58} + \cdots - 96u - 64)$
c_{11}	$u^{59} - 5u^{58} + \cdots + 108u - 18$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{59} + 24y^{58} + \cdots - 4y - 1$
c_2	$y^{59} + 16y^{58} + \cdots - 76y - 1$
c_3, c_4, c_{10}	$y^{59} + 60y^{58} + \cdots - 4y - 1$
c_6, c_9	$y^{59} - 44y^{58} + \cdots + 3472y - 81$
c_7	$9(9y^{59} - 787y^{58} + \cdots + 4.57874 \times 10^9 y - 5.20707 \times 10^7)$
c_8	$9(9y^{59} - 424y^{58} + \cdots - 148480y - 4096)$
c_{11}	$y^{59} + 9y^{58} + \cdots - 6300y - 324$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.772835 + 0.630169I$ $a = 0.486457 + 0.408560I$ $b = -1.20441 + 0.80693I$	$-2.98475 + 11.82370I$	$0. - 9.15160I$
$u = 0.772835 - 0.630169I$ $a = 0.486457 - 0.408560I$ $b = -1.20441 - 0.80693I$	$-2.98475 - 11.82370I$	$0. + 9.15160I$
$u = 0.893809 + 0.462202I$ $a = -0.354680 + 0.593555I$ $b = -0.839382 - 0.317177I$	$-2.42227 - 6.38133I$	0
$u = 0.893809 - 0.462202I$ $a = -0.354680 - 0.593555I$ $b = -0.839382 + 0.317177I$	$-2.42227 + 6.38133I$	0
$u = -0.769320 + 0.665358I$ $a = -0.399111 + 0.329878I$ $b = 1.017530 + 0.758404I$	$-0.73398 - 6.05254I$	0
$u = -0.769320 - 0.665358I$ $a = -0.399111 - 0.329878I$ $b = 1.017530 - 0.758404I$	$-0.73398 + 6.05254I$	0
$u = 0.871014 + 0.643445I$ $a = 0.171049 + 0.483786I$ $b = -1.045410 + 0.327693I$	$-7.08101 + 2.98588I$	0
$u = 0.871014 - 0.643445I$ $a = 0.171049 - 0.483786I$ $b = -1.045410 - 0.327693I$	$-7.08101 - 2.98588I$	0
$u = -1.058830 + 0.406799I$ $a = 0.273276 + 0.303483I$ $b = 0.621331 - 0.083380I$	$0.196305 + 0.379080I$	0
$u = -1.058830 - 0.406799I$ $a = 0.273276 - 0.303483I$ $b = 0.621331 + 0.083380I$	$0.196305 - 0.379080I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.421425+0.652253I$ $a=-0.229200-0.191547I$ $b=\ \ 0.073389+0.936603I$	$1.67726-2.08783I$	$6.30981+5.41216I$
$u=-0.421425-0.652253I$ $a=-0.229200+0.191547I$ $b=\ \ 0.073389-0.936603I$	$1.67726+2.08783I$	$6.30981-5.41216I$
$u=\ \ 0.538558+0.434252I$ $a=-1.52889-0.28560I$ $b=\ \ 0.560561-0.856660I$	$1.09865+6.46666I$	$3.55713-8.78536I$
$u=\ \ 0.538558-0.434252I$ $a=-1.52889+0.28560I$ $b=\ \ 0.560561+0.856660I$	$1.09865-6.46666I$	$3.55713+8.78536I$
$u=-0.564831+0.382666I$ $a=\ \ 1.263980-0.143409I$ $b=-0.352394-0.726889I$	$2.45484-1.46486I$	$7.14865+3.00711I$
$u=-0.564831-0.382666I$ $a=\ \ 1.263980+0.143409I$ $b=-0.352394+0.726889I$	$2.45484+1.46486I$	$7.14865-3.00711I$
$u=\ \ 0.407938+0.495194I$ $a=\ \ 0.234399-0.376842I$ $b=\ \ 0.290086+1.044180I$	$0.82881-3.06030I$	$4.18689+0.59937I$
$u=\ \ 0.407938-0.495194I$ $a=\ \ 0.234399+0.376842I$ $b=\ \ 0.290086-1.044180I$	$0.82881+3.06030I$	$4.18689-0.59937I$
$u=-0.133674+1.400600I$ $a=\ \ 1.029390-0.297689I$ $b=-0.654687+0.290826I$	$-3.80970-2.30389I$	0
$u=-0.133674-1.400600I$ $a=\ \ 1.029390+0.297689I$ $b=-0.654687-0.290826I$	$-3.80970+2.30389I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.065188 + 1.410510I$ $a = -0.86471 - 1.34195I$ $b = 0.80222 + 1.22589I$	$-5.12435 - 1.84537I$	0
$u = 0.065188 - 1.410510I$ $a = -0.86471 + 1.34195I$ $b = 0.80222 - 1.22589I$	$-5.12435 + 1.84537I$	0
$u = -0.240543 + 0.535915I$ $a = 1.08834 - 2.33107I$ $b = -1.011390 + 0.003314I$	$-3.33182 - 4.55345I$	$-4.30626 + 8.52736I$
$u = -0.240543 - 0.535915I$ $a = 1.08834 + 2.33107I$ $b = -1.011390 - 0.003314I$	$-3.33182 + 4.55345I$	$-4.30626 - 8.52736I$
$u = 0.01950 + 1.43251I$ $a = -6.58810 + 3.57964I$ $b = 6.56362 - 4.27440I$	$-6.55441 + 2.12552I$	0
$u = 0.01950 - 1.43251I$ $a = -6.58810 - 3.57964I$ $b = 6.56362 + 4.27440I$	$-6.55441 - 2.12552I$	0
$u = -0.087504 + 0.546858I$ $a = 0.39073 - 2.81411I$ $b = -0.423741 + 0.227336I$	$-4.10264 + 1.33087I$	$-6.62416 - 1.43922I$
$u = -0.087504 - 0.546858I$ $a = 0.39073 + 2.81411I$ $b = -0.423741 - 0.227336I$	$-4.10264 - 1.33087I$	$-6.62416 + 1.43922I$
$u = -0.541912$ $a = 0.611273$ $b = -0.123892$	0.892681	11.5980
$u = 0.356131 + 0.401711I$ $a = -0.91403 - 1.19911I$ $b = 0.886772 - 0.315941I$	$-1.79094 + 1.03849I$	$-2.00439 - 5.37844I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.356131 - 0.401711I$ $a = -0.91403 + 1.19911I$ $b = 0.886772 + 0.315941I$	$-1.79094 - 1.03849I$	$-2.00439 + 5.37844I$
$u = -0.15816 + 1.47252I$ $a = 1.59643 + 0.26788I$ $b = -0.817080 - 0.366010I$	$-3.60110 - 3.99693I$	0
$u = -0.15816 - 1.47252I$ $a = 1.59643 - 0.26788I$ $b = -0.817080 + 0.366010I$	$-3.60110 + 3.99693I$	0
$u = 0.10761 + 1.48343I$ $a = -1.90601 - 0.15341I$ $b = 1.253580 - 0.326367I$	$-7.99699 + 2.70852I$	0
$u = 0.10761 - 1.48343I$ $a = -1.90601 + 0.15341I$ $b = 1.253580 + 0.326367I$	$-7.99699 - 2.70852I$	0
$u = 0.04741 + 1.49720I$ $a = -1.53150 - 0.05275I$ $b = 1.18789 - 0.84677I$	$-8.07186 + 1.71448I$	0
$u = 0.04741 - 1.49720I$ $a = -1.53150 + 0.05275I$ $b = 1.18789 + 0.84677I$	$-8.07186 - 1.71448I$	0
$u = 0.15594 + 1.49285I$ $a = -1.83827 + 0.36366I$ $b = 0.915367 - 0.530137I$	$-5.23405 + 8.92854I$	0
$u = 0.15594 - 1.49285I$ $a = -1.83827 - 0.36366I$ $b = 0.915367 + 0.530137I$	$-5.23405 - 8.92854I$	0
$u = -0.05816 + 1.52227I$ $a = 1.62424 - 0.57913I$ $b = -1.082160 - 0.473836I$	$-10.18440 - 5.57197I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.05816-1.52227I$ $a=1.62424+0.57913I$ $b=-1.082160+0.473836I$	$-10.18440+5.57197I$	0
$u=-0.02356+1.52322I$ $a=0.755412-0.573027I$ $b=-0.529705-0.615962I$	$-10.99430+0.93911I$	0
$u=-0.02356-1.52322I$ $a=0.755412+0.573027I$ $b=-0.529705+0.615962I$	$-10.99430-0.93911I$	0
$u=0.226157+0.399881I$ $a=-0.44978-1.85794I$ $b=0.880240-0.289353I$	$-1.71907+0.84714I$	$-1.58416-2.44825I$
$u=0.226157-0.399881I$ $a=-0.44978+1.85794I$ $b=0.880240+0.289353I$	$-1.71907-0.84714I$	$-1.58416+2.44825I$
$u=0.338130+0.233977I$ $a=0.284402-0.906149I$ $b=1.53304+0.15644I$	$-1.34852+1.21434I$	$-0.61490-9.36280I$
$u=0.338130-0.233977I$ $a=0.284402+0.906149I$ $b=1.53304-0.15644I$	$-1.34852-1.21434I$	$-0.61490+9.36280I$
$u=0.25843+1.57442I$ $a=1.86661-0.09363I$ $b=-1.66038+1.05895I$	$-10.2296+15.6414I$	0
$u=0.25843-1.57442I$ $a=1.86661+0.09363I$ $b=-1.66038-1.05895I$	$-10.2296-15.6414I$	0
$u=-0.25542+1.58255I$ $a=-1.69347-0.15977I$ $b=1.51201+1.06731I$	$-8.11873-9.85959I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.25542 - 1.58255I$ $a = -1.69347 + 0.15977I$ $b = 1.51201 - 1.06731I$	$-8.11873 + 9.85959I$	0
$u = 0.27503 + 1.58999I$ $a = 1.46114 + 0.16066I$ $b = -1.41360 + 0.76345I$	$-14.4364 + 7.1649I$	0
$u = 0.27503 - 1.58999I$ $a = 1.46114 - 0.16066I$ $b = -1.41360 - 0.76345I$	$-14.4364 - 7.1649I$	0
$u = -0.359471 + 0.100084I$ $a = -0.622900 - 0.492336I$ $b = -2.26496 + 0.09975I$	$-2.01075 + 2.52108I$	$10.02369 + 7.46616I$
$u = -0.359471 - 0.100084I$ $a = -0.622900 + 0.492336I$ $b = -2.26496 - 0.09975I$	$-2.01075 - 2.52108I$	$10.02369 - 7.46616I$
$u = 0.34658 + 1.62518I$ $a = 0.678378 + 0.241908I$ $b = -0.828238 + 0.485899I$	$-9.14972 - 1.51752I$	0
$u = 0.34658 - 1.62518I$ $a = 0.678378 - 0.241908I$ $b = -0.828238 - 0.485899I$	$-9.14972 + 1.51752I$	0
$u = -0.27841 + 1.64508I$ $a = -0.922544 - 0.098475I$ $b = 0.925175 + 0.826150I$	$-7.26563 - 4.89851I$	0
$u = -0.27841 - 1.64508I$ $a = -0.922544 + 0.098475I$ $b = 0.925175 - 0.826150I$	$-7.26563 + 4.89851I$	0

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

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.333333\\0.666667\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}1\\2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}1\\2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}2\\3\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\0.666667\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\1.66667\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\-1\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7.11111$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_6 c_9, c_{10}	$y - 1$
c_7	$9(9y - 4)$
c_8	$9(9y - 1)$
c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	1.00000		
$a =$	0.333333	0	-7.11110
$b =$	0.666667		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u+1)(u^{59}-2u^{58}+\cdots+2u-1)$
c_2	$(u-1)(u^{59}+24u^{58}+\cdots-4u-1)$
c_3, c_4	$(u-1)(u^{59}+2u^{58}+\cdots-2u-1)$
c_5	$(u-1)(u^{59}-2u^{58}+\cdots+2u-1)$
c_6	$(u-1)(u^{59}-2u^{58}+\cdots-32u-9)$
c_7	$9(3u+2)(3u^{59}+29u^{58}+\cdots+96336u-7216)$
c_8	$9(3u+1)(3u^{59}-44u^{58}+\cdots-96u-64)$
c_9	$(u+1)(u^{59}-2u^{58}+\cdots-32u-9)$
c_{10}	$(u+1)(u^{59}+2u^{58}+\cdots-2u-1)$
c_{11}	$u(u^{59}-5u^{58}+\cdots+108u-18)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y-1)(y^{59}+24y^{58}+\cdots-4y-1)$
c_2	$(y-1)(y^{59}+16y^{58}+\cdots-76y-1)$
c_3, c_4, c_{10}	$(y-1)(y^{59}+60y^{58}+\cdots-4y-1)$
c_6, c_9	$(y-1)(y^{59}-44y^{58}+\cdots+3472y-81)$
c_7	$81(9y-4)(9y^{59}-787y^{58}+\cdots+4.57874\times10^{9}y-5.20707\times10^{7})$
c_8	$81(9y-1)(9y^{59}-424y^{58}+\cdots-148480y-4096)$
c_{11}	$y(y^{59}+9y^{58}+\cdots-6300y-324)$