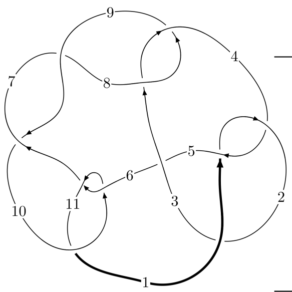
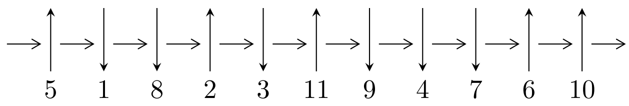
$11a_{11}$ $(K11a_{11})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I_1^u = \langle 5u^{57} + 12u^{56} + \cdots + 2b + 7,\ -13u^{57} - 30u^{56} + \cdots + 2a - 17,\ u^{58} + 3u^{57} + \cdots + 2u + 1\rangle$
$I_2^u = \langle b + a,\ a^2 - a + 1,\ u + 1\rangle$

* 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. $I_1^u = \langle 5u^{57} + 12u^{56} + \cdots + 2b + 7,\ -13u^{57} - 30u^{56} + \cdots + 2a - 17,\ u^{58} + 3u^{57} + \cdots + 2u + 1\rangle$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} \frac{13}{2}u^{57} + 15u^{56} + \cdots + \frac{21}{2}u + \frac{17}{2} \\ -\frac{5}{2}u^{57} - 6u^{56} + \cdots - \frac{3}{2}u - \frac{7}{2} \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -\frac{1}{2}u^{57} - u^{56} + \cdots + \frac{1}{2}u + \frac{3}{2} \\ \frac{1}{2}u^{57} + u^{56} + \cdots + \frac{3}{2}u + \frac{1}{2} \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 6u^{57} + 13u^{56} + \cdots + 10u + 7 \\ -\frac{9}{2}u^{57} - 10u^{56} + \cdots - \frac{7}{2}u - \frac{11}{2} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{9}{2}u^{57} + 9u^{56} + \cdots + \frac{13}{2}u + \frac{11}{2} \\ -\frac{11}{2}u^{57} - 12u^{56} + \cdots - \frac{11}{2}u - \frac{13}{2} \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 7u^{57} + 19u^{56} + \cdots + 5u + 8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{58} + 2u^{57} + \cdots + 3u + 1$
c_2	$u^{58} + 26u^{57} + \cdots + 5u + 1$
c_3, c_8	$u^{58} - u^{57} + \cdots + 4u + 4$
c_5	$u^{58} - 2u^{57} + \cdots - 5u + 1$
c_6, c_{10}	$u^{58} + 3u^{57} + \cdots + 2u + 1$
c_7, c_9	$u^{58} + 15u^{57} + \cdots + 168u + 16$
c_{11}	$u^{58} - 33u^{57} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{58} + 26y^{57} + \cdots + 5y + 1$
c_2	$y^{58} + 14y^{57} + \cdots + 29y + 1$
c_3, c_8	$y^{58} - 15y^{57} + \cdots - 168y + 16$
c_5	$y^{58} + 2y^{57} + \cdots + 53y + 1$
c_6, c_{10}	$y^{58} - 33y^{57} + \cdots + 2y + 1$
c_7, c_9	$y^{58} + 53y^{57} + \cdots + 2784y + 256$
c_{11}	$y^{58} - 13y^{57} + \cdots + 42y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.936894 + 0.279112I$ $a = 1.047720 + 0.605690I$ $b = 0.369891 - 0.435412I$	$1.77616 + 0.94992I$	$4.44755 - 1.71410I$
$u = 0.936894 - 0.279112I$ $a = 1.047720 - 0.605690I$ $b = 0.369891 + 0.435412I$	$1.77616 - 0.94992I$	$4.44755 + 1.71410I$
$u = -0.916311 + 0.325300I$ $a = -0.44495 + 1.43722I$ $b = -0.115014 - 1.191470I$	$1.56865 - 3.63401I$	$0.50067 + 8.81328I$
$u = -0.916311 - 0.325300I$ $a = -0.44495 - 1.43722I$ $b = -0.115014 + 1.191470I$	$1.56865 + 3.63401I$	$0.50067 - 8.81328I$
$u = 0.879809 + 0.411472I$ $a = -1.87353 - 0.91118I$ $b = -0.963620 + 0.647776I$	$-0.11517 + 4.84774I$	$-0.96980 - 7.14409I$
$u = 0.879809 - 0.411472I$ $a = -1.87353 + 0.91118I$ $b = -0.963620 - 0.647776I$	$-0.11517 - 4.84774I$	$-0.96980 + 7.14409I$
$u = -0.872696 + 0.564700I$ $a = 0.11167 - 1.42828I$ $b = 0.724370 - 0.075036I$	$-4.33981 - 1.99854I$	$-7.41077 + 3.19574I$
$u = -0.872696 - 0.564700I$ $a = 0.11167 + 1.42828I$ $b = 0.724370 + 0.075036I$	$-4.33981 + 1.99854I$	$-7.41077 - 3.19574I$
$u = -0.961005 + 0.511826I$ $a = -0.391548 + 1.205530I$ $b = -0.865496 - 0.577881I$	$-0.45426 - 4.86179I$	0
$u = -0.961005 - 0.511826I$ $a = -0.391548 - 1.205530I$ $b = -0.865496 + 0.577881I$	$-0.45426 + 4.86179I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.091850 + 0.182421I$ $a = 0.618739 + 0.378922I$ $b = -0.033551 - 0.584136I$	$2.16202 + 0.77457I$	0
$u = 1.091850 - 0.182421I$ $a = 0.618739 - 0.378922I$ $b = -0.033551 + 0.584136I$	$2.16202 - 0.77457I$	0
$u = -0.114948 + 0.879124I$ $a = 0.293332 + 0.657468I$ $b = 1.34552 - 1.00402I$	$2.14956 + 9.66192I$	$-1.84579 - 7.09878I$
$u = -0.114948 - 0.879124I$ $a = 0.293332 - 0.657468I$ $b = 1.34552 + 1.00402I$	$2.14956 - 9.66192I$	$-1.84579 + 7.09878I$
$u = -0.847792 + 0.237371I$ $a = 1.00423 - 1.29055I$ $b = -0.610270 + 1.159360I$	$1.09083 + 1.19632I$	$-2.67942 + 2.86295I$
$u = -0.847792 - 0.237371I$ $a = 1.00423 + 1.29055I$ $b = -0.610270 - 1.159360I$	$1.09083 - 1.19632I$	$-2.67942 - 2.86295I$
$u = -0.620020 + 0.619213I$ $a = 0.637420 + 0.321223I$ $b = 0.877359 + 0.237702I$	$-5.05702 - 2.63543I$	$-8.96800 + 3.93457I$
$u = -0.620020 - 0.619213I$ $a = 0.637420 - 0.321223I$ $b = 0.877359 - 0.237702I$	$-5.05702 + 2.63543I$	$-8.96800 - 3.93457I$
$u = -0.089885 + 0.858078I$ $a = -0.112768 - 0.635694I$ $b = -0.786700 + 1.168860I$	$4.07167 + 4.42773I$	$1.08988 - 2.76799I$
$u = -0.089885 - 0.858078I$ $a = -0.112768 + 0.635694I$ $b = -0.786700 - 1.168860I$	$4.07167 - 4.42773I$	$1.08988 + 2.76799I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.985848 + 0.568576I$ $a = 0.69359 - 1.33426I$ $b = 1.237080 + 0.630163I$	$-2.89029 - 9.39325I$	0
$u = -0.985848 - 0.568576I$ $a = 0.69359 + 1.33426I$ $b = 1.237080 - 0.630163I$	$-2.89029 + 9.39325I$	0
$u = -0.468879 + 0.677261I$ $a = 0.599662 - 0.565289I$ $b = 1.104110 - 0.515806I$	$-4.36361 + 4.61978I$	$-7.52611 - 4.69531I$
$u = -0.468879 - 0.677261I$ $a = 0.599662 + 0.565289I$ $b = 1.104110 + 0.515806I$	$-4.36361 - 4.61978I$	$-7.52611 + 4.69531I$
$u = -0.008417 + 0.809874I$ $a = 0.341800 - 0.733041I$ $b = 0.587922 + 1.243870I$	$4.43701 + 1.53415I$	$1.72366 - 2.51421I$
$u = -0.008417 - 0.809874I$ $a = 0.341800 + 0.733041I$ $b = 0.587922 - 1.243870I$	$4.43701 - 1.53415I$	$1.72366 + 2.51421I$
$u = 1.191990 + 0.080409I$ $a = -0.975096 - 0.416483I$ $b = 0.809328 + 0.659275I$	$0.90066 - 2.88860I$	0
$u = 1.191990 - 0.080409I$ $a = -0.975096 + 0.416483I$ $b = 0.809328 - 0.659275I$	$0.90066 + 2.88860I$	0
$u = 0.038017 + 0.792195I$ $a = -0.558913 + 0.868902I$ $b = -1.20038 - 1.07211I$	$2.81999 - 3.64889I$	$-0.72605 + 2.41695I$
$u = 0.038017 - 0.792195I$ $a = -0.558913 - 0.868902I$ $b = -1.20038 + 1.07211I$	$2.81999 + 3.64889I$	$-0.72605 - 2.41695I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.135832 + 0.774619I$ $a = 0.029723 + 0.956439I$ $b = 0.224876 - 0.143157I$	$-1.07636 + 2.53447I$	$-5.45479 - 2.49966I$
$u = -0.135832 - 0.774619I$ $a = 0.029723 - 0.956439I$ $b = 0.224876 + 0.143157I$	$-1.07636 - 2.53447I$	$-5.45479 + 2.49966I$
$u = 1.181050 + 0.400971I$ $a = -0.091410 - 1.158760I$ $b = -0.061904 + 0.135595I$	$2.74272 + 1.35672I$	0
$u = 1.181050 - 0.400971I$ $a = -0.091410 + 1.158760I$ $b = -0.061904 - 0.135595I$	$2.74272 - 1.35672I$	0
$u = 0.653392 + 0.334802I$ $a = -0.95931 - 1.89944I$ $b = -0.695507 - 0.477939I$	$-0.81275 - 1.40752I$	$-3.05190 + 0.70072I$
$u = 0.653392 - 0.334802I$ $a = -0.95931 + 1.89944I$ $b = -0.695507 + 0.477939I$	$-0.81275 + 1.40752I$	$-3.05190 - 0.70072I$
$u = -0.480577 + 0.547338I$ $a = -0.133346 + 0.235167I$ $b = -0.763916 + 0.261710I$	$-1.79712 + 0.58239I$	$-4.29390 - 0.53701I$
$u = -0.480577 - 0.547338I$ $a = -0.133346 - 0.235167I$ $b = -0.763916 - 0.261710I$	$-1.79712 - 0.58239I$	$-4.29390 + 0.53701I$
$u = -1.211310 + 0.439886I$ $a = 1.64164 - 0.97222I$ $b = -1.21429 + 1.19635I$	$6.48025 - 0.70893I$	0
$u = -1.211310 - 0.439886I$ $a = 1.64164 + 0.97222I$ $b = -1.21429 - 1.19635I$	$6.48025 + 0.70893I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.188910 + 0.500899I$ $a = 0.126269 - 1.350040I$ $b = 0.214574 + 0.310119I$	$2.01751 - 7.25755I$	0
$u = -1.188910 - 0.500899I$ $a = 0.126269 + 1.350040I$ $b = 0.214574 - 0.310119I$	$2.01751 + 7.25755I$	0
$u = 1.207870 + 0.472373I$ $a = -0.30001 - 2.69705I$ $b = -1.30956 + 1.04786I$	$6.24695 + 8.22888I$	0
$u = 1.207870 - 0.472373I$ $a = -0.30001 + 2.69705I$ $b = -1.30956 - 1.04786I$	$6.24695 - 8.22888I$	0
$u = 1.218760 + 0.453390I$ $a = 0.67289 + 2.30853I$ $b = 0.72918 - 1.22228I$	$8.06195 + 2.97069I$	0
$u = 1.218760 - 0.453390I$ $a = 0.67289 - 2.30853I$ $b = 0.72918 + 1.22228I$	$8.06195 - 2.97069I$	0
$u = -1.217390 + 0.461266I$ $a = -1.34002 + 1.45284I$ $b = 0.58894 - 1.38167I$	$8.00524 - 6.08837I$	0
$u = -1.217390 - 0.461266I$ $a = -1.34002 - 1.45284I$ $b = 0.58894 + 1.38167I$	$8.00524 + 6.08837I$	0
$u = 1.249820 + 0.409605I$ $a = 1.42176 + 1.29568I$ $b = -0.67640 - 1.24410I$	$8.16003 - 0.02626I$	0
$u = 1.249820 - 0.409605I$ $a = 1.42176 - 1.29568I$ $b = -0.67640 + 1.24410I$	$8.16003 + 0.02626I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.264910 + 0.391892I$ $a = -1.67105 - 0.82125I$ $b = 1.27143 + 1.06896I$	$6.42683 - 5.27485I$	0
$u = 1.264910 - 0.391892I$ $a = -1.67105 + 0.82125I$ $b = 1.27143 - 1.06896I$	$6.42683 + 5.27485I$	0
$u = -1.225810 + 0.504607I$ $a = -0.43554 + 2.29097I$ $b = -0.86675 - 1.23626I$	$7.47129 - 9.35808I$	0
$u = -1.225810 - 0.504607I$ $a = -0.43554 - 2.29097I$ $b = -0.86675 + 1.23626I$	$7.47129 + 9.35808I$	0
$u = -1.228790 + 0.519584I$ $a = 0.05132 - 2.55286I$ $b = 1.40940 + 1.03866I$	$5.5002 - 14.7239I$	0
$u = -1.228790 - 0.519584I$ $a = 0.05132 + 2.55286I$ $b = 1.40940 - 1.03866I$	$5.5002 + 14.7239I$	0
$u = 0.160056 + 0.305941I$ $a = 0.49573 + 2.06046I$ $b = -0.330626 + 0.576257I$	$-0.32061 + 1.54716I$	$-2.16073 - 4.65280I$
$u = 0.160056 - 0.305941I$ $a = 0.49573 - 2.06046I$ $b = -0.330626 - 0.576257I$	$-0.32061 - 1.54716I$	$-2.16073 + 4.65280I$

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

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ -a \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} a \\ -a + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0 \\ -a \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -a \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a + 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 0.500000 + 0.866025I$ $b = -0.500000 - 0.866025I$	$1.64493 - 2.02988I$	$3.00000 + 3.46410I$
$u = -1.00000$ $a = 0.500000 - 0.866025I$ $b = -0.500000 + 0.866025I$	$1.64493 + 2.02988I$	$3.00000 - 3.46410I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2+u+1)(u^{58}+2u^{57}+\cdots+3u+1)$
c_2	$(u^2+u+1)(u^{58}+26u^{57}+\cdots+5u+1)$
c_3, c_8	$u^2(u^{58}-u^{57}+\cdots+4u+4)$
c_4	$(u^2-u+1)(u^{58}+2u^{57}+\cdots+3u+1)$
c_5	$(u^2+u+1)(u^{58}-2u^{57}+\cdots-5u+1)$
c_6	$((u+1)^2)(u^{58}+3u^{57}+\cdots+2u+1)$
c_7, c_9	$u^2(u^{58}+15u^{57}+\cdots+168u+16)$
c_{10}	$((u-1)^2)(u^{58}+3u^{57}+\cdots+2u+1)$
c_{11}	$((u-1)^2)(u^{58}-33u^{57}+\cdots+2u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^2+y+1)(y^{58}+26y^{57}+\cdots+5y+1)$
c_2	$(y^2+y+1)(y^{58}+14y^{57}+\cdots+29y+1)$
c_3, c_8	$y^2(y^{58}-15y^{57}+\cdots-168y+16)$
c_5	$(y^2+y+1)(y^{58}+2y^{57}+\cdots+53y+1)$
c_6, c_{10}	$((y-1)^2)(y^{58}-33y^{57}+\cdots+2y+1)$
c_7, c_9	$y^2(y^{58}+53y^{57}+\cdots+2784y+256)$
c_{11}	$((y-1)^2)(y^{58}-13y^{57}+\cdots+42y+1)$