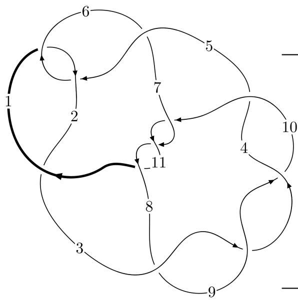
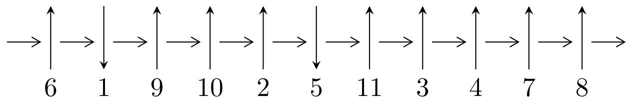
$11a_{142}$ $(K11a_{142})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -6.36795 \times 10^{16} u^{34} - 7.90337 \times 10^{16} u^{33} + \cdots + 3.65214 \times 10^{17} b - 1.06187 \times 10^{17},$$
$$3.20846 \times 10^{16} u^{34} + 7.33609 \times 10^{16} u^{33} + \cdots + 3.65214 \times 10^{17} a + 5.49062 \times 10^{17},\ u^{35} - u^{34} + \cdots - 12u - 4$$
$$I_2^u = \langle 2b + 2a + u,\ 2a^2 - 2au - 2a + u + 3,\ u^2 - 2 \rangle$$

$$I_1^v = \langle a,\ b - v + 1,\ v^2 - v + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 41 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.

$I_1^u = \langle -6.37\times10^{16}u^{34} - 7.90\times10^{16}u^{33} + \cdots + 3.65\times10^{17}b - 1.06\times10^{17},\ 3.21\times10^{16}u^{34} + 7.34\times10^{16}u^{33} + \cdots + 3.65\times10^{17}a + 5.49\times10^{17},\ u^{35} - u^{34} + \cdots - 12u - 4\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.0878513u^{34} - 0.200871u^{33} + \cdots - 1.92802u - 1.50340\\0.174362u^{34} + 0.216404u^{33} + \cdots + 2.30563u + 0.290753\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.0624444u^{34} + 0.0343900u^{33} + \cdots - 0.357458u - 1.09522\\0.148955u^{34} - 0.0188573u^{33} + \cdots + 0.735065u - 0.117420\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.00194352u^{34} + 0.344883u^{33} + \cdots + 1.74022u + 2.04509\\-0.0876840u^{34} - 0.158849u^{33} + \cdots - 1.60828u - 0.239291\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.0878513u^{34} + 0.200871u^{33} + \cdots + 1.92802u + 1.50340\\-0.268809u^{34} - 0.150206u^{33} + \cdots - 1.51044u - 0.864136\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.0328237u^{34} - 0.0751277u^{33} + \cdots + 0.506093u + 0.865585\\0.00374850u^{34} - 0.0472669u^{33} + \cdots + 0.524988u - 0.0604220\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.0328237u^{34} - 0.0751277u^{33} + \cdots + 0.506093u + 0.865585\\0.00374850u^{34} - 0.0472669u^{33} + \cdots + 0.524988u - 0.0604220\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =
$-\frac{32902895900849614}{91303571055107371}u^{34} + \frac{12004762532282944}{91303571055107371}u^{33} + \cdots + \frac{2397839048234677776}{91303571055107371}u + \frac{13658449037785052 04}{91303571055107371}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{35} - 2u^{34} + \cdots - 2u + 1$
c_2, c_6	$u^{35} + 10u^{34} + \cdots + 4u - 1$
c_3, c_4, c_8 c_9	$u^{35} + u^{34} + \cdots - 12u + 4$
c_7, c_{10}, c_{11}	$u^{35} - 3u^{34} + \cdots + 7u + 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{35} + 10y^{34} + \cdots + 4y - 1$
c_2, c_6	$y^{35} + 34y^{34} + \cdots + 108y - 1$
c_3, c_4, c_8 c_9	$y^{35} - 45y^{34} + \cdots + 80y - 16$
c_7, c_{10}, c_{11}	$y^{35} - 39y^{34} + \cdots + 749y - 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.01124$ $a = 0.435017$ $b = -1.74489$	5.84048	16.2440
$u = 0.842940 + 0.301389I$ $a = 0.279499 + 1.063810I$ $b = 0.541332 - 0.560583I$	$3.15741 + 4.91553I$	$11.80461 - 7.26359I$
$u = 0.842940 - 0.301389I$ $a = 0.279499 - 1.063810I$ $b = 0.541332 + 0.560583I$	$3.15741 - 4.91553I$	$11.80461 + 7.26359I$
$u = -0.046502 + 0.876821I$ $a = -0.05406 - 1.61301I$ $b = 0.014495 - 0.143542I$	$7.57337 + 3.08858I$	$11.98726 - 2.45837I$
$u = -0.046502 - 0.876821I$ $a = -0.05406 + 1.61301I$ $b = 0.014495 + 0.143542I$	$7.57337 - 3.08858I$	$11.98726 + 2.45837I$
$u = -0.924843 + 0.638045I$ $a = -0.377611 + 0.218222I$ $b = 1.63025 + 0.42363I$	$10.22050 - 8.11783I$	$13.7681 + 6.1510I$
$u = -0.924843 - 0.638045I$ $a = -0.377611 - 0.218222I$ $b = 1.63025 - 0.42363I$	$10.22050 + 8.11783I$	$13.7681 - 6.1510I$
$u = -0.855744 + 0.143816I$ $a = -0.530278 + 1.121980I$ $b = -0.261867 - 0.584427I$	$3.37741 + 0.53913I$	$12.96867 + 0.98562I$
$u = -0.855744 - 0.143816I$ $a = -0.530278 - 1.121980I$ $b = -0.261867 + 0.584427I$	$3.37741 - 0.53913I$	$12.96867 - 0.98562I$
$u = 1.002070 + 0.587960I$ $a = 0.398952 + 0.208816I$ $b = -1.62413 + 0.38544I$	$10.76680 + 1.81479I$	$14.8433 - 1.1672I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002070 - 0.587960I$		
$a = 0.398952 - 0.208816I$	$10.76680 - 1.81479I$	$14.8433 + 1.1672I$
$b = -1.62413 - 0.38544I$		
$u = -0.746503 + 0.235179I$		
$a = -0.327678 + 0.089960I$	$2.70500 - 3.34459I$	$11.31994 + 5.51487I$
$b = 1.94693 + 0.30523I$		
$u = -0.746503 - 0.235179I$		
$a = -0.327678 - 0.089960I$	$2.70500 + 3.34459I$	$11.31994 - 5.51487I$
$b = 1.94693 - 0.30523I$		
$u = 0.418462 + 0.378689I$		
$a = 0.176733 + 0.515354I$	$-1.54201 + 1.37506I$	$2.61836 - 5.92080I$
$b = 0.541640 + 0.031955I$		
$u = 0.418462 - 0.378689I$		
$a = 0.176733 - 0.515354I$	$-1.54201 - 1.37506I$	$2.61836 + 5.92080I$
$b = 0.541640 - 0.031955I$		
$u = 1.45544 + 0.05665I$		
$a = 0.731751 + 0.109995I$	$6.70444 + 0.15451I$	$13.90887 + 0.I$
$b = -1.382100 + 0.064187I$		
$u = 1.45544 - 0.05665I$		
$a = 0.731751 - 0.109995I$	$6.70444 - 0.15451I$	$13.90887 + 0.I$
$b = -1.382100 - 0.064187I$		
$u = -1.48918 + 0.04339I$		
$a = -1.030150 - 0.268681I$	$4.71864 - 2.64789I$	$7.00000 + 4.86854I$
$b = 1.268110 + 0.012077I$		
$u = -1.48918 - 0.04339I$		
$a = -1.030150 + 0.268681I$	$4.71864 + 2.64789I$	$7.00000 - 4.86854I$
$b = 1.268110 - 0.012077I$		
$u = -0.267965 + 0.386180I$		
$a = -1.06586 - 2.12149I$	$1.31539 + 1.16539I$	$7.47416 + 2.51618I$
$b = 0.0421102 - 0.0027654I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.267965 - 0.386180I$ $a = -1.06586 + 2.12149I$ $b = 0.0421102 + 0.0027654I$	$1.31539 - 1.16539I$	$7.47416 - 2.51618I$
$u = 0.026938 + 0.426896I$ $a = -0.010788 + 0.289994I$ $b = 0.286121 + 0.820389I$	$0.70287 - 2.35372I$	$3.69812 + 3.90292I$
$u = 0.026938 - 0.426896I$ $a = -0.010788 - 0.289994I$ $b = 0.286121 - 0.820389I$	$0.70287 + 2.35372I$	$3.69812 - 3.90292I$
$u = -0.410201$ $a = -0.632763$ $b = -0.224697$	0.605164	16.5250
$u = 1.65775 + 0.05997I$ $a = -2.99916 + 0.53570I$ $b = 3.92472 - 0.49978I$	$11.20700 + 4.43486I$	0
$u = 1.65775 - 0.05997I$ $a = -2.99916 - 0.53570I$ $b = 3.92472 + 0.49978I$	$11.20700 - 4.43486I$	0
$u = -1.67466 + 0.07865I$ $a = -0.776181 - 0.438183I$ $b = 1.157350 - 0.141346I$	$12.00650 - 6.36730I$	0
$u = -1.67466 - 0.07865I$ $a = -0.776181 + 0.438183I$ $b = 1.157350 + 0.141346I$	$12.00650 + 6.36730I$	0
$u = 1.67898 + 0.03136I$ $a = 0.756308 - 0.404108I$ $b = -1.189480 - 0.156593I$	$12.35470 + 0.09189I$	0
$u = 1.67898 - 0.03136I$ $a = 0.756308 + 0.404108I$ $b = -1.189480 + 0.156593I$	$12.35470 - 0.09189I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.70626$ $a = \quad 2.73816$ $b = -3.68944$	15.4583	0
$u = \quad 1.70118 + 0.18976I$ $a = -2.19546 + 0.94563I$ $b = \quad 3.16027 - 0.84490I$	$19.2288 + 11.4138I$	0
$u = \quad 1.70118 - 0.18976I$ $a = -2.19546 - 0.94563I$ $b = \quad 3.16027 + 0.84490I$	$19.2288 - 11.4138I$	0
$u = -1.72576 + 0.15889I$ $a = \quad 2.25378 + 0.76495I$ $b = -3.22623 - 0.68282I$	$-19.2201 - 4.8251I$	0
$u = -1.72576 - 0.15889I$ $a = \quad 2.25378 - 0.76495I$ $b = -3.22623 + 0.68282I$	$-19.2201 + 4.8251I$	0

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

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ -u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -a - \frac{1}{2}u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} a - u \\ -a + \frac{1}{2}u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{2}au + a - \frac{1}{2}u + \frac{1}{2} \\ -a + \frac{1}{2}u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} a - u \\ -a + \frac{1}{2}u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}u \\ -a + \frac{1}{2}u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}u \\ -a + \frac{1}{2}u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a - 2u + 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.41421$ $a = 1.20711 + 0.86603I$ $b = -1.91421 - 0.86603I$	$6.57974 - 2.02988I$	$14.0000 + 3.4641I$
$u = 1.41421$ $a = 1.20711 - 0.86603I$ $b = -1.91421 + 0.86603I$	$6.57974 + 2.02988I$	$14.0000 - 3.4641I$
$u = -1.41421$ $a = -0.207107 + 0.866025I$ $b = 0.914214 - 0.866025I$	$6.57974 - 2.02988I$	$14.0000 + 3.4641I$
$u = -1.41421$ $a = -0.207107 - 0.866025I$ $b = 0.914214 + 0.866025I$	$6.57974 + 2.02988I$	$14.0000 - 3.4641I$

III. $I^v_1 = \langle a,\ b - v + 1,\ v^2 - v + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v + 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.500000 + 0.866025I$ $a = 0$ $b = -0.500000 + 0.866025I$	$1.64493 + 2.02988I$	$12.00000 - 3.46410I$
$v = 0.500000 - 0.866025I$ $a = 0$ $b = -0.500000 - 0.866025I$	$1.64493 - 2.02988I$	$12.00000 + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^2)(u^2+u+1)(u^{35}-2u^{34}+\cdots-2u+1)$
c_2, c_6	$((u^2+u+1)^3)(u^{35}+10u^{34}+\cdots+4u-1)$
c_3, c_4, c_8 c_9	$u^2(u^2-2)^2(u^{35}+u^{34}+\cdots-12u+4)$
c_5	$(u^2-u+1)(u^2+u+1)^2(u^{35}-2u^{34}+\cdots-2u+1)$
c_7	$((u-1)^4)(u+1)^2(u^{35}-3u^{34}+\cdots+7u+7)$
c_{10}, c_{11}	$((u-1)^2)(u+1)^4(u^{35}-3u^{34}+\cdots+7u+7)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y^2+y+1)^3)(y^{35}+10y^{34}+\cdots+4y-1)$
c_2, c_6	$((y^2+y+1)^3)(y^{35}+34y^{34}+\cdots+108y-1)$
c_3, c_4, c_8 c_9	$y^2(y-2)^4(y^{35}-45y^{34}+\cdots+80y-16)$
c_7, c_{10}, c_{11}	$((y-1)^6)(y^{35}-39y^{34}+\cdots+749y-49)$