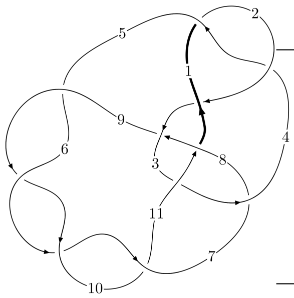
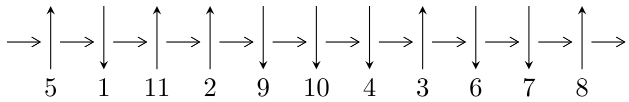
$11a_{68}$ $(K11a_{68})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.33754 \times 10^{33} u^{52} - 3.23197 \times 10^{33} u^{51} + \cdots + 3.06100 \times 10^{33} b - 5.79603 \times 10^{32},$$
$$2.88344 \times 10^{33} u^{52} - 6.19301 \times 10^{33} u^{51} + \cdots + 1.53050 \times 10^{33} a + 5.13286 \times 10^{33},\ u^{53} - 3u^{52} + \cdots - 2u - 1$$
$$I_2^u = \langle 2b - a - 1,\ a^2 + 3,\ u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 55 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.
$\boldsymbol{I^u_1 = \langle 1.34\times10^{33}u^{52} - 3.23\times10^{33}u^{51} + \cdots + 3.06\times10^{33}b - 5.80\times10^{32},\ 2.88\times10^{33}u^{52} - 6.19\times10^{33}u^{51} + \cdots + 1.53\times10^{33}a + 5.13\times10^{33},\ u^{53} - 3u^{52} + \cdots - 2u - 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-1.88398u^{52} + 4.04640u^{51} + \cdots - 10.2306u - 3.35372\\-0.436961u^{52} + 1.05586u^{51} + \cdots + 2.97372u + 0.189351\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^2+1\\-u^4+2u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1.44702u^{52} + 2.99054u^{51} + \cdots - 13.2043u - 3.54307\\-0.436961u^{52} + 1.05586u^{51} + \cdots + 2.97372u + 0.189351\end{pmatrix}$$
$$a_3 = \begin{pmatrix}7.03077u^{52} - 17.2162u^{51} + \cdots + 48.9314u + 11.3527\\-0.134450u^{52} + 0.381432u^{51} + \cdots + 3.81964u + 1.58483\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-7.77919u^{52} + 19.0017u^{51} + \cdots - 53.0234u - 12.7464\\0.270228u^{52} - 0.655751u^{51} + \cdots - 3.43986u - 1.30077\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-4.90683u^{52} + 11.3667u^{51} + \cdots - 31.5879u - 8.19442\\-0.449321u^{52} + 0.286138u^{51} + \cdots + 3.58531u + 0.111845\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u^3-2u\\u^5-3u^3+u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u^3-2u\\u^5-3u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 44.2881u^{52} - 103.441u^{51} + \cdots + 256.874u + 76.5517$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{53} + 2u^{52} + \cdots - 11u - 1$
c_2	$u^{53} + 24u^{52} + \cdots + 25u - 1$
c_3	$u^{53} + 5u^{52} + \cdots + 4u - 4$
c_5, c_6, c_9 c_{10}	$u^{53} + 3u^{52} + \cdots - 2u + 1$
c_7	$u^{53} + 2u^{52} + \cdots - 127u - 29$
c_8	$u^{53} - 20u^{51} + \cdots + 127u + 59$
c_{11}	$u^{53} - 3u^{52} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{53} + 24y^{52} + \cdots + 25y - 1$
c_2	$y^{53} + 12y^{52} + \cdots + 425y - 1$
c_3	$y^{53} + 15y^{52} + \cdots + 8y - 16$
c_5, c_6, c_9 c_{10}	$y^{53} - 63y^{52} + \cdots + 8y - 1$
c_7	$y^{53} - 60y^{52} + \cdots + 14273y - 841$
c_8	$y^{53} - 40y^{52} + \cdots - 44759y - 3481$
c_{11}	$y^{53} - 7y^{52} + \cdots + 8y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.733711 + 0.645681I$ $a = -1.46416 - 1.02659I$ $b = 0.413624 - 1.013730I$	$-3.39428 - 3.43400I$	0
$u = 0.733711 - 0.645681I$ $a = -1.46416 + 1.02659I$ $b = 0.413624 + 1.013730I$	$-3.39428 + 3.43400I$	0
$u = -0.858540 + 0.570989I$ $a = -1.30456 + 1.52035I$ $b = 0.626693 + 1.121900I$	$-2.08339 + 11.83770I$	0
$u = -0.858540 - 0.570989I$ $a = -1.30456 - 1.52035I$ $b = 0.626693 - 1.121900I$	$-2.08339 - 11.83770I$	0
$u = -0.890477 + 0.316821I$ $a = 0.33516 - 1.62827I$ $b = 0.071350 - 1.206910I$	$-5.68960 + 3.88038I$	$-9.36604 - 5.67169I$
$u = -0.890477 - 0.316821I$ $a = 0.33516 + 1.62827I$ $b = 0.071350 + 1.206910I$	$-5.68960 - 3.88038I$	$-9.36604 + 5.67169I$
$u = -0.790831 + 0.511450I$ $a = 0.133210 + 0.424681I$ $b = 0.848973 - 0.421707I$	$0.02021 + 6.36572I$	$0. - 6.01738I$
$u = -0.790831 - 0.511450I$ $a = 0.133210 - 0.424681I$ $b = 0.848973 + 0.421707I$	$0.02021 - 6.36572I$	$0. + 6.01738I$
$u = 1.042420 + 0.526470I$ $a = 0.186261 + 0.817290I$ $b = 0.483358 + 1.013930I$	$-2.96394 + 2.74414I$	0
$u = 1.042420 - 0.526470I$ $a = 0.186261 - 0.817290I$ $b = 0.483358 - 1.013930I$	$-2.96394 - 2.74414I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.143820 + 0.277610I$ $a = -0.769630 - 1.108100I$ $b = 0.398755 - 0.662277I$	$-1.68806 - 1.03417I$	0
$u = 1.143820 - 0.277610I$ $a = -0.769630 + 1.108100I$ $b = 0.398755 + 0.662277I$	$-1.68806 + 1.03417I$	0
$u = -0.058774 + 0.801973I$ $a = -0.804431 - 0.186468I$ $b = 0.583629 - 1.059960I$	$0.34476 - 7.28943I$	$-1.89770 + 7.29263I$
$u = -0.058774 - 0.801973I$ $a = -0.804431 + 0.186468I$ $b = 0.583629 + 1.059960I$	$0.34476 + 7.28943I$	$-1.89770 - 7.29263I$
$u = 0.687960 + 0.265512I$ $a = -0.675163 - 0.410284I$ $b = 0.229892 + 0.048634I$	$-1.33343 - 0.48154I$	$-6.01943 + 1.63910I$
$u = 0.687960 - 0.265512I$ $a = -0.675163 + 0.410284I$ $b = 0.229892 - 0.048634I$	$-1.33343 + 0.48154I$	$-6.01943 - 1.63910I$
$u = -0.651505 + 0.261966I$ $a = 1.01458 - 2.10036I$ $b = -0.598899 - 1.150440I$	$-0.87805 + 4.69027I$	$-3.22278 - 10.95263I$
$u = -0.651505 - 0.261966I$ $a = 1.01458 + 2.10036I$ $b = -0.598899 + 1.150440I$	$-0.87805 - 4.69027I$	$-3.22278 + 10.95263I$
$u = -0.116335 + 0.680396I$ $a = -1.030080 + 0.147365I$ $b = 0.691596 + 0.477793I$	$2.06084 - 2.35698I$	$2.09384 + 2.25421I$
$u = -0.116335 - 0.680396I$ $a = -1.030080 - 0.147365I$ $b = 0.691596 - 0.477793I$	$2.06084 + 2.35698I$	$2.09384 - 2.25421I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.269726 + 0.624271I$ $a = -0.593135 - 0.023709I$ $b = 0.209100 + 0.945558I$	$-2.15945 - 0.98457I$	$-6.47095 + 3.55570I$
$u = 0.269726 - 0.624271I$ $a = -0.593135 + 0.023709I$ $b = 0.209100 - 0.945558I$	$-2.15945 + 0.98457I$	$-6.47095 - 3.55570I$
$u = 0.655763 + 0.086361I$ $a = 2.67182 + 5.33529I$ $b = -0.482724 + 0.895174I$	$-1.15754 - 2.23299I$	$20.7265 - 16.6825I$
$u = 0.655763 - 0.086361I$ $a = 2.67182 - 5.33529I$ $b = -0.482724 - 0.895174I$	$-1.15754 + 2.23299I$	$20.7265 + 16.6825I$
$u = -0.466397 + 0.273654I$ $a = 0.439898 - 0.865824I$ $b = -0.801200 - 0.670609I$	$1.29588 + 2.67274I$	$3.47265 - 8.90150I$
$u = -0.466397 - 0.273654I$ $a = 0.439898 + 0.865824I$ $b = -0.801200 + 0.670609I$	$1.29588 - 2.67274I$	$3.47265 + 8.90150I$
$u = 0.495853 + 0.132805I$ $a = -2.14393 + 2.54599I$ $b = -0.437475 - 0.833838I$	$-0.90053 + 1.58968I$	$-1.24595 - 11.67218I$
$u = 0.495853 - 0.132805I$ $a = -2.14393 - 2.54599I$ $b = -0.437475 + 0.833838I$	$-0.90053 - 1.58968I$	$-1.24595 + 11.67218I$
$u = -0.339540 + 0.303762I$ $a = -0.849048 - 0.809276I$ $b = -0.694807 + 0.319248I$	$1.60066 - 0.35812I$	$5.75025 - 1.86999I$
$u = -0.339540 - 0.303762I$ $a = -0.849048 + 0.809276I$ $b = -0.694807 - 0.319248I$	$1.60066 + 0.35812I$	$5.75025 + 1.86999I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.56006$ $a = -0.846407$ $b = -1.04242$	-4.89339	0
$u = 1.57394 + 0.03176I$ $a = -0.266076 + 0.952973I$ $b = -0.981473 + 0.829936I$	$-5.77422 - 3.45795I$	0
$u = 1.57394 - 0.03176I$ $a = -0.266076 - 0.952973I$ $b = -0.981473 - 0.829936I$	$-5.77422 + 3.45795I$	0
$u = -1.58085 + 0.00270I$ $a = -0.420614 + 0.517476I$ $b = -0.490850 - 0.618356I$	$-8.08310 + 1.37745I$	0
$u = -1.58085 - 0.00270I$ $a = -0.420614 - 0.517476I$ $b = -0.490850 + 0.618356I$	$-8.08310 - 1.37745I$	0
$u = 1.60794 + 0.05864I$ $a = 0.21792 + 2.23198I$ $b = -0.60448 + 1.28732I$	$-8.69900 - 5.79684I$	0
$u = 1.60794 - 0.05864I$ $a = 0.21792 - 2.23198I$ $b = -0.60448 - 1.28732I$	$-8.69900 + 5.79684I$	0
$u = -1.61440 + 0.12056I$ $a = 0.0040355 + 0.1222230I$ $b = 0.623522 - 0.278275I$	$-9.21922 + 2.19279I$	0
$u = -1.61440 - 0.12056I$ $a = 0.0040355 - 0.1222230I$ $b = 0.623522 + 0.278275I$	$-9.21922 - 2.19279I$	0
$u = -1.61997 + 0.02761I$ $a = 1.27413 - 2.99101I$ $b = -0.490506 - 0.975564I$	$-9.14547 + 2.68229I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.61997 - 0.02761I$ $a = 1.27413 + 2.99101I$ $b = -0.490506 + 0.975564I$	$-9.14547 - 2.68229I$	0
$u = 1.64104 + 0.14587I$ $a = 0.552638 - 0.075300I$ $b = 0.956160 + 0.388075I$	$-8.29591 - 8.86132I$	0
$u = 1.64104 - 0.14587I$ $a = 0.552638 + 0.075300I$ $b = 0.956160 - 0.388075I$	$-8.29591 + 8.86132I$	0
$u = -1.64394 + 0.19308I$ $a = -0.87986 + 1.71349I$ $b = 0.514455 + 1.092180I$	$-11.49850 + 6.63397I$	0
$u = -1.64394 - 0.19308I$ $a = -0.87986 - 1.71349I$ $b = 0.514455 - 1.092180I$	$-11.49850 - 6.63397I$	0
$u = 1.66296 + 0.08851I$ $a = 0.24702 + 2.16359I$ $b = 0.098247 + 1.348150I$	$-14.5372 - 5.4639I$	0
$u = 1.66296 - 0.08851I$ $a = 0.24702 - 2.16359I$ $b = 0.098247 - 1.348150I$	$-14.5372 + 5.4639I$	0
$u = 1.66393 + 0.16732I$ $a = -0.72953 - 1.98988I$ $b = 0.650090 - 1.173960I$	$-10.7030 - 14.7003I$	0
$u = 1.66393 - 0.16732I$ $a = -0.72953 + 1.98988I$ $b = 0.650090 + 1.173960I$	$-10.7030 + 14.7003I$	0
$u = -0.111963 + 0.267344I$ $a = -0.771605 - 0.811778I$ $b = -0.612381 + 0.946401I$	$0.54222 - 2.63785I$	$2.19810 + 0.73658I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.111963-0.267344I$ $a=-0.771605+0.811778I$ $b=-0.612381-0.946401I$	$0.54222+2.63785I$	$2.19810-0.73658I$
$u=-1.71557+0.08761I$ $a=0.04836-1.70377I$ $b=0.316553-1.065110I$	$-12.82680-0.50129I$	0
$u=-1.71557-0.08761I$ $a=0.04836+1.70377I$ $b=0.316553+1.065110I$	$-12.82680+0.50129I$	0

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

(i) Arc colorings

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

$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

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

$a_{10} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

$a_2 = \begin{pmatrix} a \\ \frac{1}{2}a + \frac{1}{2} \end{pmatrix}$

$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_1 = \begin{pmatrix} \frac{1}{2}a - \frac{1}{2} \\ \frac{1}{2}a + \frac{1}{2} \end{pmatrix}$

$a_3 = \begin{pmatrix} \frac{1}{2}a - \frac{1}{2} \\ \frac{1}{2}a - \frac{1}{2} \end{pmatrix}$

$a_4 = \begin{pmatrix} \frac{1}{2}a - \frac{1}{2} \\ \frac{1}{2}a - \frac{1}{2} \end{pmatrix}$

$a_8 = \begin{pmatrix} \frac{1}{2}a + \frac{1}{2} \\ \frac{1}{2}a + \frac{3}{2} \end{pmatrix}$

$a_{11} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$

$a_{11} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2a - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^2 + u + 1$
c_3	u^2
c_4, c_7, c_8	$u^2 - u + 1$
c_5, c_6	$(u-1)^2$
c_9, 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_7, c_8	$y^2 + y + 1$
c_3	y^2
c_5, c_6, c_9 c_{10}, c_{11}	$(y-1)^2$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	1.00000		
$a =$	$1.73205I$	$-1.64493 + 2.02988I$	$-3.00000 - 3.46410I$
$b =$	$0.500000 + 0.866025I$		
$u =$	1.00000		
$a =$	$-1.73205I$	$-1.64493 - 2.02988I$	$-3.00000 + 3.46410I$
$b =$	$0.500000 - 0.866025I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2+u+1)(u^{53}+2u^{52}+\cdots-11u-1)$
c_2	$(u^2+u+1)(u^{53}+24u^{52}+\cdots+25u-1)$
c_3	$u^2(u^{53}+5u^{52}+\cdots+4u-4)$
c_4	$(u^2-u+1)(u^{53}+2u^{52}+\cdots-11u-1)$
c_5, c_6	$((u-1)^2)(u^{53}+3u^{52}+\cdots-2u+1)$
c_7	$(u^2-u+1)(u^{53}+2u^{52}+\cdots-127u-29)$
c_8	$(u^2-u+1)(u^{53}-20u^{51}+\cdots+127u+59)$
c_9, c_{10}	$((u+1)^2)(u^{53}+3u^{52}+\cdots-2u+1)$
c_{11}	$((u+1)^2)(u^{53}-3u^{52}+\cdots-2u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^2+y+1)(y^{53}+24y^{52}+\cdots+25y-1)$
c_2	$(y^2+y+1)(y^{53}+12y^{52}+\cdots+425y-1)$
c_3	$y^2(y^{53}+15y^{52}+\cdots+8y-16)$
c_5, c_6, c_9 c_{10}	$((y-1)^2)(y^{53}-63y^{52}+\cdots+8y-1)$
c_7	$(y^2+y+1)(y^{53}-60y^{52}+\cdots+14273y-841)$
c_8	$(y^2+y+1)(y^{53}-40y^{52}+\cdots-44759y-3481)$
c_{11}	$((y-1)^2)(y^{53}-7y^{52}+\cdots+8y-1)$