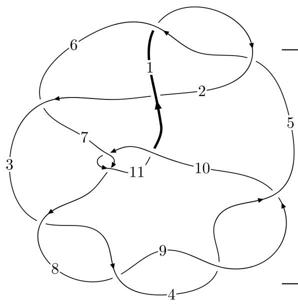
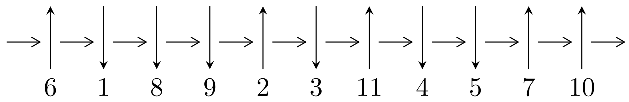
$11a_{86}$ $(K11a_{86})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.06825 \times 10^{16} u^{50} + 1.14118 \times 10^{17} u^{49} + \cdots + 1.72441 \times 10^{17} b + 1.78982 \times 10^{17},$$
$$1.65108 \times 10^{17} u^{50} - 3.23686 \times 10^{17} u^{49} + \cdots + 1.72441 \times 10^{17} a + 6.56927 \times 10^{17},\ u^{51} - 2u^{50} + \cdots + 2u - 1$$
$$I_2^u = \langle -au + b - a - 1,\ a^2 - 2au + u + 1,\ u^2 + u + 1 \rangle$$
$$I_3^u = \langle b,\ a - u,\ u^2 - u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 57 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.

$\boldsymbol{I_1^u = \langle -1.07\times10^{16}u^{50}+1.14\times10^{17}u^{49}+\cdots+1.72\times10^{17}b+1.79\times10^{17},\ 1.65\times10^{17}u^{50}-3.24\times10^{17}u^{49}+\cdots+1.72\times10^{17}a+6.57\times10^{17},\ u^{51}-2u^{50}+\cdots+2u-1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.957478u^{50}+1.87709u^{49}+\cdots+6.34747u-3.80958 \\ 0.0619485u^{50}-0.661781u^{49}+\cdots-0.419204u-1.03793 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1.01943u^{50}+2.53887u^{49}+\cdots+6.76667u-2.77164 \\ 0.0619485u^{50}-0.661781u^{49}+\cdots-0.419204u-1.03793 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ u^5+u^3+u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^6-u^4+1 \\ u^8+2u^6+2u^4 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.197966u^{50}+0.121740u^{49}+\cdots+6.34202u-3.22404 \\ 0.475917u^{50}-0.906399u^{49}+\cdots-1.37093u-1.53340 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.37822u^{50}-3.01777u^{49}+\cdots-6.77353u+2.71826 \\ 0.314717u^{50}+0.217072u^{49}+\cdots+1.51590u+0.995630 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1.28901u^{50}+2.47244u^{49}+\cdots+6.66242u-3.49712 \\ -0.225525u^{50}-0.324327u^{49}+\cdots-0.729101u-1.01135 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1.28901u^{50}+2.47244u^{49}+\cdots+6.66242u-3.49712 \\ -0.225525u^{50}-0.324327u^{49}+\cdots-0.729101u-1.01135 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{159651415798743733}{86220451832092937}u^{50}-\frac{251339651139007465}{86220451832092937}u^{49}+\cdots-\frac{382063726346780762}{86220451832092937}u-\frac{177790526868945837}{86220451832092937}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{51} - 2u^{50} + \cdots + 2u - 1$
c_2	$u^{51} + 26u^{50} + \cdots - 4u - 1$
c_3, c_4, c_8 c_9	$u^{51} - u^{50} + \cdots + 12u + 4$
c_6	$u^{51} + 2u^{50} + \cdots + 102u - 289$
c_7, c_{10}	$u^{51} - 3u^{50} + \cdots - u + 7$
c_{11}	$u^{51} - 23u^{50} + \cdots + 85u - 49$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{51} + 26y^{50} + \cdots - 4y - 1$
c_2	$y^{51} + 2y^{50} + \cdots + 20y - 1$
c_3, c_4, c_8 c_9	$y^{51} - 61y^{50} + \cdots + 208y - 16$
c_6	$y^{51} - 22y^{50} + \cdots - 130628y - 83521$
c_7, c_{10}	$y^{51} - 23y^{50} + \cdots + 85y - 49$
c_{11}	$y^{51} + 17y^{50} + \cdots + 63869y - 2401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.653226 + 0.692698I$ $a = -0.148299 + 0.771802I$ $b = 0.548925 - 0.344769I$	$1.91333 + 3.68884I$	$-0.17566 - 8.64084I$
$u = 0.653226 - 0.692698I$ $a = -0.148299 - 0.771802I$ $b = 0.548925 + 0.344769I$	$1.91333 - 3.68884I$	$-0.17566 + 8.64084I$
$u = -0.373145 + 0.994821I$ $a = 1.14320 - 1.08432I$ $b = 1.269780 + 0.040551I$	$-4.95677 - 2.83280I$	$-9.17472 + 5.31542I$
$u = -0.373145 - 0.994821I$ $a = 1.14320 + 1.08432I$ $b = 1.269780 - 0.040551I$	$-4.95677 + 2.83280I$	$-9.17472 - 5.31542I$
$u = -0.761774 + 0.749195I$ $a = -0.278985 + 1.056910I$ $b = -1.57317 - 0.07465I$	$-5.34945 - 5.09088I$	$-4.00636 + 5.74458I$
$u = -0.761774 - 0.749195I$ $a = -0.278985 - 1.056910I$ $b = -1.57317 + 0.07465I$	$-5.34945 + 5.09088I$	$-4.00636 - 5.74458I$
$u = 0.873962 + 0.290660I$ $a = -0.558370 + 0.726636I$ $b = -1.61853 - 0.15433I$	$-8.11783 - 8.19112I$	$-3.54072 + 4.45146I$
$u = 0.873962 - 0.290660I$ $a = -0.558370 - 0.726636I$ $b = -1.61853 + 0.15433I$	$-8.11783 + 8.19112I$	$-3.54072 - 4.45146I$
$u = 0.606693 + 0.904521I$ $a = 0.425610 - 0.192324I$ $b = -0.478539 - 0.218508I$	$1.29833 + 1.21266I$	$-3.42209 + 3.60169I$
$u = 0.606693 - 0.904521I$ $a = 0.425610 + 0.192324I$ $b = -0.478539 + 0.218508I$	$1.29833 - 1.21266I$	$-3.42209 - 3.60169I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.477844 + 1.005770I$ $a = -1.81776 + 1.00351I$ $b = -0.550123 - 0.216418I$	$1.10277 - 2.92056I$	$-4.16055 + 6.87287I$
$u = -0.477844 - 1.005770I$ $a = -1.81776 - 1.00351I$ $b = -0.550123 + 0.216418I$	$1.10277 + 2.92056I$	$-4.16055 - 6.87287I$
$u = 0.848872 + 0.178353I$ $a = 0.815584 - 0.510581I$ $b = 1.63006 + 0.09121I$	$-10.01400 - 2.30364I$	$-5.81940 + 0.26148I$
$u = 0.848872 - 0.178353I$ $a = 0.815584 + 0.510581I$ $b = 1.63006 - 0.09121I$	$-10.01400 + 2.30364I$	$-5.81940 - 0.26148I$
$u = -0.715111 + 0.887420I$ $a = 0.440048 - 0.989396I$ $b = 1.56489 - 0.03455I$	$-5.76367 - 0.45170I$	$-5.30593 + 0.I$
$u = -0.715111 - 0.887420I$ $a = 0.440048 + 0.989396I$ $b = 1.56489 + 0.03455I$	$-5.76367 + 0.45170I$	$-5.30593 + 0.I$
$u = 0.385624 + 1.094960I$ $a = -0.487613 - 0.077571I$ $b = -0.003368 + 0.682499I$	$-1.93767 + 1.33394I$	$-3.91651 + 0.I$
$u = 0.385624 - 1.094960I$ $a = -0.487613 + 0.077571I$ $b = -0.003368 - 0.682499I$	$-1.93767 - 1.33394I$	$-3.91651 + 0.I$
$u = -0.777418 + 0.276187I$ $a = 0.106054 + 0.767256I$ $b = 0.725460 - 0.523141I$	$-0.15019 + 5.64266I$	$-1.04154 - 6.14060I$
$u = -0.777418 - 0.276187I$ $a = 0.106054 - 0.767256I$ $b = 0.725460 + 0.523141I$	$-0.15019 - 5.64266I$	$-1.04154 + 6.14060I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.393138 + 1.114690I$ $a = 1.037440 - 0.580996I$ $b = 1.049420 - 0.251699I$	$-5.15851 - 2.68412I$	$-8.38581 + 3.33159I$
$u = -0.393138 - 1.114690I$ $a = 1.037440 + 0.580996I$ $b = 1.049420 + 0.251699I$	$-5.15851 + 2.68412I$	$-8.38581 - 3.33159I$
$u = -0.282693 + 1.153160I$ $a = -0.980168 + 0.289348I$ $b = -0.854041 + 0.456398I$	$-4.54342 + 2.50022I$	$-7.39422 - 3.48023I$
$u = -0.282693 - 1.153160I$ $a = -0.980168 - 0.289348I$ $b = -0.854041 - 0.456398I$	$-4.54342 - 2.50022I$	$-7.39422 + 3.48023I$
$u = 0.452176 + 1.119860I$ $a = 3.26876 + 1.81417I$ $b = 1.58540 - 0.04944I$	$-6.32061 + 3.82021I$	0
$u = 0.452176 - 1.119860I$ $a = 3.26876 - 1.81417I$ $b = 1.58540 + 0.04944I$	$-6.32061 - 3.82021I$	0
$u = 0.503800 + 1.120900I$ $a = 0.470374 + 0.032521I$ $b = -0.202005 - 0.728941I$	$-1.07037 + 6.18731I$	0
$u = 0.503800 - 1.120900I$ $a = 0.470374 - 0.032521I$ $b = -0.202005 + 0.728941I$	$-1.07037 - 6.18731I$	0
$u = -0.484334 + 1.137730I$ $a = 1.38555 - 0.92980I$ $b = 0.839056 + 0.455492I$	$-4.51627 - 5.12379I$	0
$u = -0.484334 - 1.137730I$ $a = 1.38555 + 0.92980I$ $b = 0.839056 - 0.455492I$	$-4.51627 + 5.12379I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.269126 + 0.708216I$ $a = -0.449611 - 0.544666I$ $b = -0.265341 + 0.389045I$	$-0.326016 + 1.158490I$	$-3.80255 - 5.96760I$
$u = 0.269126 - 0.708216I$ $a = -0.449611 + 0.544666I$ $b = -0.265341 - 0.389045I$	$-0.326016 - 1.158490I$	$-3.80255 + 5.96760I$
$u = -0.468235 + 0.565840I$ $a = 0.731516 + 1.135060I$ $b = 0.363476 - 0.377017I$	$2.43662 - 1.03982I$	$2.70309 - 2.37854I$
$u = -0.468235 - 0.565840I$ $a = 0.731516 - 1.135060I$ $b = 0.363476 + 0.377017I$	$2.43662 + 1.03982I$	$2.70309 + 2.37854I$
$u = 0.241188 + 1.242520I$ $a = 2.55925 + 0.13213I$ $b = 1.65434 + 0.12357I$	$-13.17000 - 4.70678I$	0
$u = 0.241188 - 1.242520I$ $a = 2.55925 - 0.13213I$ $b = 1.65434 - 0.12357I$	$-13.17000 + 4.70678I$	0
$u = -0.551420 + 1.150110I$ $a = -1.29108 + 0.99248I$ $b = -0.754244 - 0.593767I$	$-2.72526 - 10.62070I$	0
$u = -0.551420 - 1.150110I$ $a = -1.29108 - 0.99248I$ $b = -0.754244 + 0.593767I$	$-2.72526 + 10.62070I$	0
$u = 0.330757 + 1.237090I$ $a = -2.64813 - 0.57334I$ $b = -1.67128 - 0.05432I$	$-14.4656 + 1.6283I$	0
$u = 0.330757 - 1.237090I$ $a = -2.64813 + 0.57334I$ $b = -1.67128 + 0.05432I$	$-14.4656 - 1.6283I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.533489 + 1.196450I$ $a = -2.19793 - 1.79578I$ $b = -1.64958 + 0.12738I$	$-13.0576 + 7.3517I$	0
$u = 0.533489 - 1.196450I$ $a = -2.19793 + 1.79578I$ $b = -1.64958 - 0.12738I$	$-13.0576 - 7.3517I$	0
$u = 0.585702 + 1.179630I$ $a = 1.87475 + 2.03032I$ $b = 1.62902 - 0.17990I$	$-10.7944 + 13.5574I$	0
$u = 0.585702 - 1.179630I$ $a = 1.87475 - 2.03032I$ $b = 1.62902 + 0.17990I$	$-10.7944 - 13.5574I$	0
$u = -0.658054 + 0.143633I$ $a = -0.156833 - 0.508796I$ $b = -0.772507 + 0.296101I$	$-1.73343 + 0.77952I$	$-4.48847 - 1.15850I$
$u = -0.658054 - 0.143633I$ $a = -0.156833 + 0.508796I$ $b = -0.772507 - 0.296101I$	$-1.73343 - 0.77952I$	$-4.48847 + 1.15850I$
$u = 0.624363 + 0.237680I$ $a = 0.082181 + 1.030970I$ $b = 0.193282 - 0.611091I$	$1.42567 - 1.76270I$	$2.33352 + 1.54024I$
$u = 0.624363 - 0.237680I$ $a = 0.082181 - 1.030970I$ $b = 0.193282 + 0.611091I$	$1.42567 + 1.76270I$	$2.33352 - 1.54024I$
$u = -0.207283 + 0.506525I$ $a = -0.41811 + 2.77427I$ $b = -1.406490 - 0.077528I$	$-3.26856 - 0.24799I$	$-3.08378 - 1.55453I$
$u = -0.207283 - 0.506525I$ $a = -0.41811 - 2.77427I$ $b = -1.406490 + 0.077528I$	$-3.26856 + 0.24799I$	$-3.08378 + 1.55453I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.482939$ $a = -2.81485$ $b = -1.50782$	-3.54033	-1.57180

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} a \\ au + a + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -au - 1 \\ au + a + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ u + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} au + 1 \\ -au - a - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -au - u - 1 \\ au + a + u + 2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -au - u - 1 \\ au + a + u + 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u$

(iv) u-Polynomials at the component

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

(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	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = \quad 0.207107 - 0.358719I$ $b = \quad 1.41421$	$-3.28987 - 2.02988I$	$-2.00000 + 3.46410I$
$u = -0.500000 + 0.866025I$ $a = -1.20711 + 2.09077I$ $b = -1.41421$	$-3.28987 - 2.02988I$	$-2.00000 + 3.46410I$
$u = -0.500000 - 0.866025I$ $a = \quad 0.207107 + 0.358719I$ $b = \quad 1.41421$	$-3.28987 + 2.02988I$	$-2.00000 - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = -1.20711 - 2.09077I$ $b = -1.41421$	$-3.28987 + 2.02988I$	$-2.00000 - 3.46410I$

III. $I_3^u = \langle b,\ a-u,\ u^2-u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(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^u_3	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.500000 + 0.866025I$		
$a =$	$0.500000 + 0.866025I$	$1.64493 + 2.02988I$	$0. - 3.46410I$
$b =$	0		
$u =$	$0.500000 - 0.866025I$		
$a =$	$0.500000 - 0.866025I$	$1.64493 - 2.02988I$	$0. + 3.46410I$
$b =$	0		

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^2)(u^2+u+1)(u^{51}-2u^{50}+\cdots+2u-1)$
c_2	$((u^2+u+1)^3)(u^{51}+26u^{50}+\cdots-4u-1)$
c_3, c_4, c_8 c_9	$u^2(u^2-2)^2(u^{51}-u^{50}+\cdots+12u+4)$
c_5	$(u^2-u+1)(u^2+u+1)^2(u^{51}-2u^{50}+\cdots+2u-1)$
c_6	$((u^2-u+1)^2)(u^2+u+1)(u^{51}+2u^{50}+\cdots+102u-289)$
c_7	$((u-1)^4)(u+1)^2(u^{51}-3u^{50}+\cdots-u+7)$
c_{10}	$((u-1)^2)(u+1)^4(u^{51}-3u^{50}+\cdots-u+7)$
c_{11}	$((u-1)^6)(u^{51}-23u^{50}+\cdots+85u-49)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y^2+y+1)^3)(y^{51}+26y^{50}+\cdots-4y-1)$
c_2	$((y^2+y+1)^3)(y^{51}+2y^{50}+\cdots+20y-1)$
c_3, c_4, c_8 c_9	$y^2(y-2)^4(y^{51}-61y^{50}+\cdots+208y-16)$
c_6	$((y^2+y+1)^3)(y^{51}-22y^{50}+\cdots-130628y-83521)$
c_7, c_{10}	$((y-1)^6)(y^{51}-23y^{50}+\cdots+85y-49)$
c_{11}	$((y-1)^6)(y^{51}+17y^{50}+\cdots+63869y-2401)$