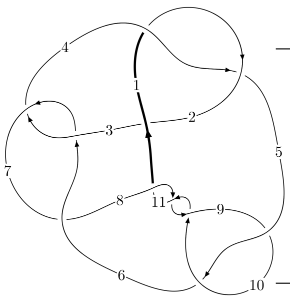
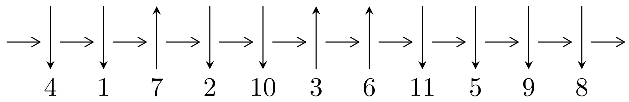
$11a_{23}$ $(K11a_{23})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{53} - 2u^{52} + \cdots + b + 1,\ u^{52} - u^{51} + \cdots + a - u,\ u^{54} - 2u^{53} + \cdots + 2u^2 - 1\rangle$$
$$I_2^u = \langle -u^2 + b + u,\ u^2 + a - u,\ u^3 - u^2 + 1\rangle$$

* 2 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.

$$\boldsymbol{I_1^u = \langle u^{53} - 2u^{52} + \cdots + b + 1,\ u^{52} - u^{51} + \cdots + a - u,\ u^{54} - 2u^{53} + \cdots + 2u^2 - 1 \rangle}$$

(i) Arc colorings

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

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

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{52} + u^{51} + \cdots + 7u^3 + u \\ -u^{53} + 2u^{52} + \cdots - 2u - 1 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^{52} + u^{51} + \cdots + u - 1 \\ u^{52} - u^{51} + \cdots - u^2 - u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ u^6 + u^2 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u^8 - u^6 + 3u^4 - 2u^2 + 1 \\ u^{10} - 2u^8 + 3u^6 - 4u^4 + u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{52} + u^{51} + \cdots + 3u^3 + 2u \\ -2u^{53} + 3u^{52} + \cdots - 2u - 2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{52} + u^{51} + \cdots + 3u^3 + 2u \\ -2u^{53} + 3u^{52} + \cdots - 2u - 2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= u^{53} + 2u^{52} + \cdots - 13u - 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{54} - 4u^{53} + \cdots + 5u - 1$
c_2	$u^{54} + 28u^{53} + \cdots + 5u + 1$
c_3, c_6	$u^{54} - u^{53} + \cdots + 28u + 8$
c_5, c_9	$u^{54} + 2u^{53} + \cdots + 2u^2 - 1$
c_7	$u^{54} - 21u^{53} + \cdots - 912u + 64$
c_8, c_{10}, c_{11}	$u^{54} + 14u^{53} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{54} - 28y^{53} + \cdots - 5y + 1$
c_2	$y^{54} + 44y^{52} + \cdots - 29y + 1$
c_3, c_6	$y^{54} - 21y^{53} + \cdots - 912y + 64$
c_5, c_9	$y^{54} - 14y^{53} + \cdots - 4y + 1$
c_7	$y^{54} + 19y^{53} + \cdots - 85248y + 4096$
c_8, c_{10}, c_{11}	$y^{54} + 54y^{53} + \cdots - 28y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.948112 + 0.298354I$ $a = 1.205050 + 0.065806I$ $b = -2.47632 + 1.36880I$	$-4.67558 - 3.96496I$	$-10.65253 + 5.36076I$
$u = 0.948112 - 0.298354I$ $a = 1.205050 - 0.065806I$ $b = -2.47632 - 1.36880I$	$-4.67558 + 3.96496I$	$-10.65253 - 5.36076I$
$u = -0.718756 + 0.708822I$ $a = 0.989080 + 0.349916I$ $b = -0.893237 - 0.687723I$	$1.72344 + 4.24877I$	$-1.89208 - 7.05777I$
$u = -0.718756 - 0.708822I$ $a = 0.989080 - 0.349916I$ $b = -0.893237 + 0.687723I$	$1.72344 - 4.24877I$	$-1.89208 + 7.05777I$
$u = -0.953732 + 0.349837I$ $a = -0.061370 + 0.782367I$ $b = 0.558618 - 0.498636I$	$-0.69346 + 4.89748I$	$-4.90328 - 6.49260I$
$u = -0.953732 - 0.349837I$ $a = -0.061370 - 0.782367I$ $b = 0.558618 + 0.498636I$	$-0.69346 - 4.89748I$	$-4.90328 + 6.49260I$
$u = -0.829612 + 0.586776I$ $a = 0.900184 + 0.101382I$ $b = -1.216120 - 0.670600I$	$1.80763 + 4.19776I$	$-1.27767 - 7.87465I$
$u = -0.829612 - 0.586776I$ $a = 0.900184 - 0.101382I$ $b = -1.216120 + 0.670600I$	$1.80763 - 4.19776I$	$-1.27767 + 7.87465I$
$u = 1.006640 + 0.186947I$ $a = -0.985399 + 0.649993I$ $b = 1.58875 - 0.30591I$	$-4.34560 + 3.65314I$	$-10.05122 - 3.06776I$
$u = 1.006640 - 0.186947I$ $a = -0.985399 - 0.649993I$ $b = 1.58875 + 0.30591I$	$-4.34560 - 3.65314I$	$-10.05122 + 3.06776I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.936944 + 0.259765I$ $a = -1.088760 - 0.644557I$ $b = 1.68766 + 0.11648I$	$-4.90867 + 1.39018I$	$-11.17255 - 4.35263I$
$u = -0.936944 - 0.259765I$ $a = -1.088760 + 0.644557I$ $b = 1.68766 - 0.11648I$	$-4.90867 - 1.39018I$	$-11.17255 + 4.35263I$
$u = -1.007510 + 0.341711I$ $a = 1.191860 - 0.125655I$ $b = -2.43976 - 0.96569I$	$-3.43639 + 9.75051I$	$-8.30305 - 9.36472I$
$u = -1.007510 - 0.341711I$ $a = 1.191860 + 0.125655I$ $b = -2.43976 + 0.96569I$	$-3.43639 - 9.75051I$	$-8.30305 + 9.36472I$
$u = 0.892491 + 0.183773I$ $a = -0.171964 - 0.552035I$ $b = 0.779603 + 0.338273I$	$-1.67290 - 0.31402I$	$-7.28536 + 0.85083I$
$u = 0.892491 - 0.183773I$ $a = -0.171964 + 0.552035I$ $b = 0.779603 - 0.338273I$	$-1.67290 + 0.31402I$	$-7.28536 - 0.85083I$
$u = 0.880753$ $a = -0.535851$ $b = 1.06380$	-1.51820	-5.33260
$u = 0.831263 + 0.825334I$ $a = 0.897031 - 0.632195I$ $b = -0.774607 + 0.728358I$	$1.86207 - 0.72710I$	$-3.27217 + 0.I$
$u = 0.831263 - 0.825334I$ $a = 0.897031 + 0.632195I$ $b = -0.774607 - 0.728358I$	$1.86207 + 0.72710I$	$-3.27217 + 0.I$
$u = -0.823137 + 0.844727I$ $a = -0.312862 - 0.944385I$ $b = -1.73844 - 0.80253I$	$2.56847 - 1.88759I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.823137-0.844727I$ $a=-0.312862+0.944385I$ $b=-1.73844+0.80253I$	$2.56847+1.88759I$	0
$u=-0.862381+0.818968I$ $a=-0.583547+0.090309I$ $b=\ \ 0.49799+1.75744I$	$4.38756+2.45269I$	0
$u=-0.862381-0.818968I$ $a=-0.583547-0.090309I$ $b=\ \ 0.49799-1.75744I$	$4.38756-2.45269I$	0
$u=\ \ 0.804605+0.877981I$ $a=-0.294081+1.060590I$ $b=-1.35489+0.61945I$	$4.52521+8.09679I$	0
$u=\ \ 0.804605-0.877981I$ $a=-0.294081-1.060590I$ $b=-1.35489-0.61945I$	$4.52521-8.09679I$	0
$u=-0.956300+0.721294I$ $a=\ \ 0.490288+0.770861I$ $b=-0.371501-0.639488I$	$1.09373+1.25845I$	0
$u=-0.956300-0.721294I$ $a=\ \ 0.490288-0.770861I$ $b=-0.371501+0.639488I$	$1.09373-1.25845I$	0
$u=\ \ 0.826228+0.868166I$ $a=-0.706693-0.315162I$ $b=\ \ 0.91045-1.19576I$	$7.09944+2.70045I$	0
$u=\ \ 0.826228-0.868166I$ $a=-0.706693+0.315162I$ $b=\ \ 0.91045+1.19576I$	$7.09944-2.70045I$	0
$u=-0.926090+0.797649I$ $a=\ \ 0.083529-0.557091I$ $b=-1.82650+0.41695I$	$4.18784+3.59964I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.926090 - 0.797649I$ $a = 0.083529 + 0.557091I$ $b = -1.82650 - 0.41695I$	$4.18784 - 3.59964I$	0
$u = -0.516406 + 0.577695I$ $a = -0.036990 + 1.075540I$ $b = 0.657739 + 0.015042I$	$2.66225 + 0.01615I$	$2.03217 - 0.16196I$
$u = -0.516406 - 0.577695I$ $a = -0.036990 - 1.075540I$ $b = 0.657739 - 0.015042I$	$2.66225 - 0.01615I$	$2.03217 + 0.16196I$
$u = 0.950127 + 0.790670I$ $a = 0.667535 - 0.810906I$ $b = -0.527757 + 0.770419I$	$1.49449 - 5.32145I$	0
$u = 0.950127 - 0.790670I$ $a = 0.667535 + 0.810906I$ $b = -0.527757 - 0.770419I$	$1.49449 + 5.32145I$	0
$u = 0.896659 + 0.861407I$ $a = -0.040376 + 0.871785I$ $b = -1.82541 + 0.01530I$	$9.95886 - 0.40591I$	0
$u = 0.896659 - 0.861407I$ $a = -0.040376 - 0.871785I$ $b = -1.82541 - 0.01530I$	$9.95886 + 0.40591I$	0
$u = -0.962624 + 0.798447I$ $a = -0.928929 - 0.233282I$ $b = 2.53779 + 2.34211I$	$2.13549 + 8.01692I$	0
$u = -0.962624 - 0.798447I$ $a = -0.928929 + 0.233282I$ $b = 2.53779 - 2.34211I$	$2.13549 - 8.01692I$	0
$u = 0.923219 + 0.851100I$ $a = -0.876432 + 0.007481I$ $b = 1.57894 - 1.93563I$	$9.87556 - 5.94354I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.923219 - 0.851100I$ $a = -0.876432 - 0.007481I$ $b = 1.57894 + 1.93563I$	$9.87556 + 5.94354I$	0
$u = 0.972034 + 0.812571I$ $a = 0.275106 + 0.680780I$ $b = -1.73893 - 0.27634I$	$6.64241 - 8.94495I$	0
$u = 0.972034 - 0.812571I$ $a = 0.275106 - 0.680780I$ $b = -1.73893 + 0.27634I$	$6.64241 + 8.94495I$	0
$u = 0.988340 + 0.806697I$ $a = -1.009690 + 0.227138I$ $b = 2.56726 - 1.93517I$	$3.9497 - 14.3488I$	0
$u = 0.988340 - 0.806697I$ $a = -1.009690 - 0.227138I$ $b = 2.56726 + 1.93517I$	$3.9497 + 14.3488I$	0
$u = -0.137568 + 0.670291I$ $a = -0.44103 + 1.74491I$ $b = 0.799841 - 0.000276I$	$-0.68378 - 6.18510I$	$-2.38929 + 5.41509I$
$u = -0.137568 - 0.670291I$ $a = -0.44103 - 1.74491I$ $b = 0.799841 + 0.000276I$	$-0.68378 + 6.18510I$	$-2.38929 - 5.41509I$
$u = 0.571380 + 0.287951I$ $a = 1.207730 - 0.200032I$ $b = 0.06093 + 1.45702I$	$-1.12376 - 1.18488I$	$-5.58028 + 5.43531I$
$u = 0.571380 - 0.287951I$ $a = 1.207730 + 0.200032I$ $b = 0.06093 - 1.45702I$	$-1.12376 + 1.18488I$	$-5.58028 - 5.43531I$
$u = -0.211819 + 0.582109I$ $a = 1.207330 + 0.116243I$ $b = -0.531021 - 0.291086I$	$1.59069 - 1.49648I$	$1.55257 + 1.21320I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.211819 - 0.582109I$ $a = 1.207330 - 0.116243I$ $b = -0.531021 + 0.291086I$	$1.59069 + 1.49648I$	$1.55257 - 1.21320I$
$u = -0.567584$ $a = -1.94525$ $b = 1.23770$	-2.29901	2.64120
$u = 0.075195 + 0.497044I$ $a = -0.33607 - 2.18707I$ $b = 0.838168 - 0.011197I$	$-2.17031 + 1.07616I$	$-4.84925 - 0.51569I$
$u = 0.075195 - 0.497044I$ $a = -0.33607 + 2.18707I$ $b = 0.838168 + 0.011197I$	$-2.17031 - 1.07616I$	$-4.84925 + 0.51569I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^2 + 7u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 0.662359 - 0.562280I$ $b = -0.662359 + 0.562280I$	$1.37919 - 2.82812I$	$-4.28809 + 2.59975I$
$u = 0.877439 - 0.744862I$ $a = 0.662359 + 0.562280I$ $b = -0.662359 - 0.562280I$	$1.37919 + 2.82812I$	$-4.28809 - 2.59975I$
$u = -0.754878$ $a = -1.32472$ $b = 1.32472$	-2.75839	-16.4240

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^3)(u^{54}-4u^{53}+\cdots+5u-1)$
c_2	$((u+1)^3)(u^{54}+28u^{53}+\cdots+5u+1)$
c_3, c_6	$u^3(u^{54}-u^{53}+\cdots+28u+8)$
c_4	$((u+1)^3)(u^{54}-4u^{53}+\cdots+5u-1)$
c_5	$(u^3+u^2-1)(u^{54}+2u^{53}+\cdots+2u^2-1)$
c_7	$u^3(u^{54}-21u^{53}+\cdots-912u+64)$
c_8	$(u^3-u^2+2u-1)(u^{54}+14u^{53}+\cdots+4u+1)$
c_9	$(u^3-u^2+1)(u^{54}+2u^{53}+\cdots+2u^2-1)$
c_{10}, c_{11}	$(u^3+u^2+2u+1)(u^{54}+14u^{53}+\cdots+4u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^3)(y^{54} - 28y^{53} + \cdots - 5y + 1)$
c_2	$((y-1)^3)(y^{54} + 44y^{52} + \cdots - 29y + 1)$
c_3, c_6	$y^3(y^{54} - 21y^{53} + \cdots - 912y + 64)$
c_5, c_9	$(y^3 - y^2 + 2y - 1)(y^{54} - 14y^{53} + \cdots - 4y + 1)$
c_7	$y^3(y^{54} + 19y^{53} + \cdots - 85248y + 4096)$
c_8, c_{10}, c_{11}	$(y^3 + 3y^2 + 2y - 1)(y^{54} + 54y^{53} + \cdots - 28y + 1)$