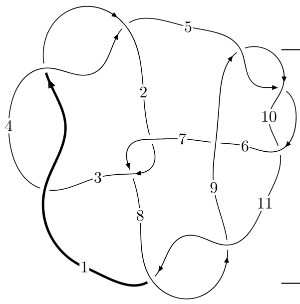
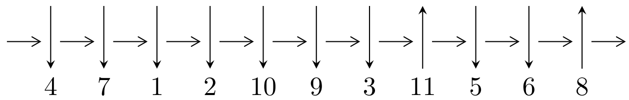
$11a_{259}$ ($K11a_{259}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{43} + u^{42} + \cdots + b - u,\ u^{43} + u^{42} + \cdots + a - 2,\ u^{44} + 2u^{43} + \cdots - 3u - 1\rangle$$
$$I_2^u = \langle b + 1,\ u^3 + a - 2u + 1,\ u^5 + u^4 - 2u^3 - u^2 + u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 49 representations.

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[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.

$$\boldsymbol{I_1^u = \langle u^{43} + u^{42} + \cdots + b - u,\ u^{43} + u^{42} + \cdots + a - 2,\ u^{44} + 2u^{43} + \cdots - 3u - 1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^{43} - u^{42} + \cdots + 6u + 2 \\ -u^{43} - u^{42} + \cdots + 3u^2 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -2u^{43} - 2u^{42} + \cdots + 7u + 3 \\ -u^{43} - u^{42} + \cdots + 11u^3 + 2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^9 + 4u^7 - 5u^5 + 2u^3 - u \\ -u^{11} + 5u^9 - 8u^7 + 3u^5 + u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -3u^{43} - 3u^{42} + \cdots + 6u + 3 \\ -u^{43} - u^{42} + \cdots - 17u^4 + 6u^3 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^4 + u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^{43} + 4u^{42} + \cdots + u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4	$u^{44} - 6u^{43} + \cdots + 3u - 1$
c_2, c_7	$u^{44} - u^{43} + \cdots + 32u + 32$
c_5, c_9, c_{10}	$u^{44} + 2u^{43} + \cdots - 3u - 1$
c_6	$u^{44} - 6u^{43} + \cdots + 175u + 53$
c_8, c_{11}	$u^{44} + 6u^{43} + \cdots - 57u - 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4	$y^{44} - 46y^{43} + \cdots - 17y + 1$
c_2, c_7	$y^{44} - 33y^{43} + \cdots - 512y + 1024$
c_5, c_9, c_{10}	$y^{44} - 42y^{43} + \cdots + y + 1$
c_6	$y^{44} - 18y^{43} + \cdots - 41755y + 2809$
c_8, c_{11}	$y^{44} + 42y^{43} + \cdots - 3555y + 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.899130 + 0.176754I$ $a = 0.521391 + 0.292332I$ $b = 1.43714 + 0.02392I$	$-6.64112 - 0.04136I$	$-14.06391 - 0.57797I$
$u = -0.899130 - 0.176754I$ $a = 0.521391 - 0.292332I$ $b = 1.43714 - 0.02392I$	$-6.64112 + 0.04136I$	$-14.06391 + 0.57797I$
$u = 0.425086 + 0.710647I$ $a = 1.05109 - 1.91783I$ $b = 1.56049 + 0.28855I$	$-11.4356 - 8.9717I$	$-12.8397 + 6.3159I$
$u = 0.425086 - 0.710647I$ $a = 1.05109 + 1.91783I$ $b = 1.56049 - 0.28855I$	$-11.4356 + 8.9717I$	$-12.8397 - 6.3159I$
$u = 0.553555 + 0.613338I$ $a = 1.044040 - 0.369018I$ $b = 1.57148 - 0.25916I$	$-11.90460 + 4.53656I$	$-13.93261 - 0.49755I$
$u = 0.553555 - 0.613338I$ $a = 1.044040 + 0.369018I$ $b = 1.57148 + 0.25916I$	$-11.90460 - 4.53656I$	$-13.93261 + 0.49755I$
$u = -0.460055 + 0.640339I$ $a = -1.73542 - 1.22014I$ $b = -1.47584 + 0.02352I$	$-6.79823 + 2.11103I$	$-12.35870 - 3.20933I$
$u = -0.460055 - 0.640339I$ $a = -1.73542 + 1.22014I$ $b = -1.47584 - 0.02352I$	$-6.79823 - 2.11103I$	$-12.35870 + 3.20933I$
$u = 0.433137 + 0.657379I$ $a = -0.966620 + 0.943319I$ $b = -0.550396 - 0.837192I$	$-4.52260 - 4.83043I$	$-11.16325 + 6.23604I$
$u = 0.433137 - 0.657379I$ $a = -0.966620 - 0.943319I$ $b = -0.550396 + 0.837192I$	$-4.52260 + 4.83043I$	$-11.16325 - 6.23604I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.479430 + 0.610552I$ $a = 0.236070 + 0.053486I$ $b = -0.609155 + 0.800806I$	$-4.71947 + 0.64919I$	$-11.99618 + 0.22434I$
$u = 0.479430 - 0.610552I$ $a = 0.236070 - 0.053486I$ $b = -0.609155 - 0.800806I$	$-4.71947 - 0.64919I$	$-11.99618 - 0.22434I$
$u = -1.233270 + 0.075682I$ $a = 0.824540 + 0.353873I$ $b = 0.058722 - 0.367772I$	$-2.14292 + 0.55015I$	$-5.79202 + 0.I$
$u = -1.233270 - 0.075682I$ $a = 0.824540 - 0.353873I$ $b = 0.058722 + 0.367772I$	$-2.14292 - 0.55015I$	$-5.79202 + 0.I$
$u = -0.156977 + 0.697187I$ $a = -0.81527 + 1.27945I$ $b = 1.42769 - 0.10914I$	$-4.26770 + 3.54538I$	$-9.88379 - 4.33460I$
$u = -0.156977 - 0.697187I$ $a = -0.81527 - 1.27945I$ $b = 1.42769 + 0.10914I$	$-4.26770 - 3.54538I$	$-9.88379 + 4.33460I$
$u = 1.315480 + 0.178595I$ $a = -0.371113 + 0.634542I$ $b = -0.262321 - 0.630465I$	$-3.43627 - 4.29473I$	0
$u = 1.315480 - 0.178595I$ $a = -0.371113 - 0.634542I$ $b = -0.262321 + 0.630465I$	$-3.43627 + 4.29473I$	0
$u = -0.359435 + 0.567287I$ $a = 0.738087 + 0.401907I$ $b = 0.328694 - 0.089361I$	$-0.76310 + 1.71420I$	$-4.36493 - 4.23791I$
$u = -0.359435 - 0.567287I$ $a = 0.738087 - 0.401907I$ $b = 0.328694 + 0.089361I$	$-0.76310 - 1.71420I$	$-4.36493 + 4.23791I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.334190 + 0.073613I$ $a = -0.545890 - 0.301912I$ $b = -0.878617 + 0.388577I$	$-5.28913 - 0.51604I$	0
$u = 1.334190 - 0.073613I$ $a = -0.545890 + 0.301912I$ $b = -0.878617 - 0.388577I$	$-5.28913 + 0.51604I$	0
$u = 1.323300 + 0.265801I$ $a = 1.05667 - 1.60928I$ $b = 1.43422 + 0.16711I$	$-8.90196 - 7.03042I$	0
$u = 1.323300 - 0.265801I$ $a = 1.05667 + 1.60928I$ $b = 1.43422 - 0.16711I$	$-8.90196 + 7.03042I$	0
$u = -1.345120 + 0.133766I$ $a = -2.19486 - 1.55848I$ $b = -1.237690 + 0.186516I$	$-6.11126 + 2.71120I$	0
$u = -1.345120 - 0.133766I$ $a = -2.19486 + 1.55848I$ $b = -1.237690 - 0.186516I$	$-6.11126 - 2.71120I$	0
$u = -0.107997 + 0.549878I$ $a = 0.469723 - 1.325100I$ $b = -0.192197 + 0.469108I$	$0.99729 + 1.64755I$	$-2.31020 - 6.18875I$
$u = -0.107997 - 0.549878I$ $a = 0.469723 + 1.325100I$ $b = -0.192197 - 0.469108I$	$0.99729 - 1.64755I$	$-2.31020 + 6.18875I$
$u = 1.43477 + 0.21962I$ $a = 1.086810 - 0.327306I$ $b = 0.432601 + 0.117164I$	$-6.51912 - 4.63399I$	0
$u = 1.43477 - 0.21962I$ $a = 1.086810 + 0.327306I$ $b = 0.432601 - 0.117164I$	$-6.51912 + 4.63399I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.46361$ $a = 2.48778$ $b = 1.56570$	-13.6319	0
$u = -1.47141 + 0.23987I$ $a = -1.43868 - 0.10244I$ $b = -0.545081 + 0.886664I$	$-10.66990 + 8.11106I$	0
$u = -1.47141 - 0.23987I$ $a = -1.43868 + 0.10244I$ $b = -0.545081 - 0.886664I$	$-10.66990 - 8.11106I$	0
$u = -1.47725 + 0.21569I$ $a = -0.386925 - 0.779700I$ $b = -0.663066 - 0.832758I$	$-11.03430 + 2.36395I$	0
$u = -1.47725 - 0.21569I$ $a = -0.386925 + 0.779700I$ $b = -0.663066 + 0.832758I$	$-11.03430 - 2.36395I$	0
$u = 1.47753 + 0.22911I$ $a = -2.97141 + 1.15676I$ $b = -1.50758 - 0.04579I$	$-13.05820 - 5.28645I$	0
$u = 1.47753 - 0.22911I$ $a = -2.97141 - 1.15676I$ $b = -1.50758 + 0.04579I$	$-13.05820 + 5.28645I$	0
$u = -1.47671 + 0.26167I$ $a = 2.44784 + 1.62296I$ $b = 1.56869 - 0.31082I$	$-17.5761 + 12.5201I$	0
$u = -1.47671 - 0.26167I$ $a = 2.44784 - 1.62296I$ $b = 1.56869 + 0.31082I$	$-17.5761 - 12.5201I$	0
$u = -1.50093 + 0.19538I$ $a = 2.44900 + 0.53318I$ $b = 1.60536 + 0.25067I$	$-18.5896 - 1.6346I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.50093 - 0.19538I$ $a = 2.44900 - 0.53318I$ $b = 1.60536 - 0.25067I$	$-18.5896 + 1.6346I$	0
$u = 0.132479 + 0.398765I$ $a = -0.14251 + 2.47920I$ $b = -1.082710 - 0.136687I$	$-1.44721 - 0.71558I$	$-5.57948 - 1.23300I$
$u = 0.132479 - 0.398765I$ $a = -0.14251 - 2.47920I$ $b = -1.082710 + 0.136687I$	$-1.44721 + 0.71558I$	$-5.57948 + 1.23300I$
$u = -0.304939$ $a = 0.799083$ $b = -0.406553$	-0.758185	-13.9250

II. $\boldsymbol{I_2^u = \langle b+1,\ u^3+a-2u+1,\ u^5+u^4-2u^3-u^2+u-1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^3+2u-1 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^3+2u \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3+2u-1 \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^3+u^2+8u-15$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^5$
c_2, c_7	u^5
c_3, c_4	$(u+1)^5$
c_5	$u^5 + u^4 - 2u^3 - u^2 + u - 1$
c_6	$u^5 - 3u^4 + 4u^3 - u^2 - u + 1$
c_8	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_9, c_{10}	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_{11}	$u^5 + u^4 + 2u^3 + u^2 + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4	$(y-1)^5$
c_2, c_7	y^5
c_5, c_9, c_{10}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_6	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_8, c_{11}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.21774$ $a = -0.370286$ $b = -1.00000$	-4.04602	-9.19250
$u = 0.309916 + 0.549911I$ $a = -0.128779 + 1.107660I$ $b = -1.00000$	$-1.97403 - 1.53058I$	$-11.97286 + 4.76366I$
$u = 0.309916 - 0.549911I$ $a = -0.128779 - 1.107660I$ $b = -1.00000$	$-1.97403 + 1.53058I$	$-11.97286 - 4.76366I$
$u = -1.41878 + 0.21917I$ $a = -1.18608 - 0.87465I$ $b = -1.00000$	$-7.51750 + 4.40083I$	$-16.4309 - 2.8075I$
$u = -1.41878 - 0.21917I$ $a = -1.18608 + 0.87465I$ $b = -1.00000$	$-7.51750 - 4.40083I$	$-16.4309 + 2.8075I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{44}-6u^{43}+\cdots+3u-1)$
c_2, c_7	$u^5(u^{44}-u^{43}+\cdots+32u+32)$
c_3, c_4	$((u+1)^5)(u^{44}-6u^{43}+\cdots+3u-1)$
c_5	$(u^5+u^4-2u^3-u^2+u-1)(u^{44}+2u^{43}+\cdots-3u-1)$
c_6	$(u^5-3u^4+4u^3-u^2-u+1)(u^{44}-6u^{43}+\cdots+175u+53)$
c_8	$(u^5-u^4+2u^3-u^2+u-1)(u^{44}+6u^{43}+\cdots-57u-9)$
c_9, c_{10}	$(u^5-u^4-2u^3+u^2+u+1)(u^{44}+2u^{43}+\cdots-3u-1)$
c_{11}	$(u^5+u^4+2u^3+u^2+u+1)(u^{44}+6u^{43}+\cdots-57u-9)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4	$((y-1)^5)(y^{44} - 46y^{43} + \cdots - 17y + 1)$
c_2, c_7	$y^5(y^{44} - 33y^{43} + \cdots - 512y + 1024)$
c_5, c_9, c_{10}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{44} - 42y^{43} + \cdots + y + 1)$
c_6	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)(y^{44} - 18y^{43} + \cdots - 41755y + 2809)$
c_8, c_{11}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{44} + 42y^{43} + \cdots - 3555y + 81)$