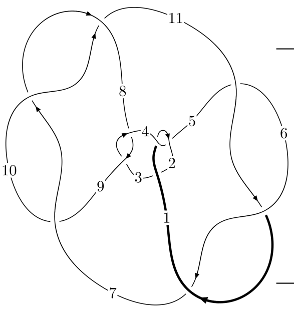
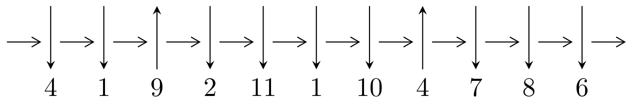
$11n_{81}$ ($K11n_{81}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -u^3+u^2+2d+3u-1,\ u^4+2u^3-4u^2+2c-8u+1,\ b-u,\ -u^4-u^3+3u^2+2a+3u,\\
&\quad u^5+u^4-4u^3-4u^2+3u-1\rangle\\
I_2^u &= \langle -u^4+2u^2+d-2u,\ u^4+u^3-2u^2+c+2,\ b-u,\ u^3+2u^2+a-u-1,\ u^5+2u^4-2u^3-3u^2+3u+1\rangle\\
I_3^u &= \langle -u^4+2u^2+d-2u,\ u^4+u^3-2u^2+c+2,\ -u^4-u^3+2u^2+b+u-1,\ -u^4-2u^3+2u^2+a+3u-3,\\
&\quad u^5+2u^4-2u^3-3u^2+3u+1\rangle\\
I_4^u &= \langle -5u^4+6u^3-3u^2+4d-9u+14,\ 3u^4-2u^3+u^2+8c+3u-10,\ u^4-2u^3-u^2+4b+5u-2,\\
&\quad u^4-u^2+4a+3u,\ u^5-u^3+3u^2-4\rangle\\
I_5^u &= \langle d+1,\ c,\ b,\ a+1,\ u-1\rangle\\
I_6^u &= \langle d+1,\ c,\ b+1,\ a+1,\ u-1\rangle\\
I_7^u &= \langle da+d+1,\ c,\ b+1,\ u-1\rangle
\end{aligned}$$

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

* 7 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 23 representations.
* 1 irreducible components of $\dim_{\mathbb{C}} = 1$

[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. $\boldsymbol{I_1^u = \langle -u^3+u^2+2d+3u-1,\ u^4+2u^3+\cdots+2c+1,\ b-u,\ -u^4-u^3+3u^2+2a+3u,\ u^5+u^4+\cdots+3u-1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}\frac{1}{2}u^4+\frac{1}{2}u^3-\frac{3}{2}u^2-\frac{3}{2}u\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}\frac{1}{2}u^4+\frac{1}{2}u^3-\frac{3}{2}u^2-\frac{5}{2}u\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-\frac{1}{2}u^4-u^3+2u^2+4u-\frac{1}{2}\\\frac{1}{2}u^3-\frac{1}{2}u^2-\frac{3}{2}u+\frac{1}{2}\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^2+1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-\frac{1}{2}u^4-u^3+2u^2+4u-\frac{1}{2}\\\frac{1}{2}u^4+\frac{1}{2}u^3-\frac{3}{2}u^2-\frac{1}{2}u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-\frac{1}{2}u^3-\frac{1}{2}u^2+\frac{3}{2}u+\frac{1}{2}\\-u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-\frac{1}{2}u^4-\frac{1}{2}u^3+\frac{3}{2}u^2+\frac{5}{2}u\\\frac{1}{2}u^3+\frac{1}{2}u^2-\frac{3}{2}u+\frac{1}{2}\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-\frac{1}{2}u^4-\frac{1}{2}u^3+\frac{3}{2}u^2+\frac{5}{2}u\\\frac{1}{2}u^3+\frac{1}{2}u^2-\frac{3}{2}u+\frac{1}{2}\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3u^4-6u^3+10u^2+22u-13$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_9 c_{10}, c_{11}	$u^5 - u^4 - 4u^3 + 4u^2 + 3u + 1$
c_2	$u^5 + 9u^4 + 30u^3 + 38u^2 + u + 1$
c_3, c_8	$u^5 + 4u^4 + 8u^3 + 8u^2 + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_9 c_{10}, c_{11}	$y^5 - 9y^4 + 30y^3 - 38y^2 + y - 1$
c_2	$y^5 - 21y^4 + 218y^3 - 1402y^2 - 75y - 1$
c_3, c_8	$y^5 - 96y^2 - 64y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.287923 + 0.283171I$ $a = -0.471944 - 0.645049I$ $b = 0.287923 + 0.283171I$ $c = 0.71581 + 1.41065I$ $d = 0.044061 - 0.482429I$	$-0.341586 - 0.921914I$	$-6.28644 + 7.57142I$
$u = 0.287923 - 0.283171I$ $a = -0.471944 + 0.645049I$ $b = 0.287923 - 0.283171I$ $c = 0.71581 - 1.41065I$ $d = 0.044061 + 0.482429I$	$-0.341586 + 0.921914I$	$-6.28644 - 7.57142I$
$u = -1.72935 + 0.51571I$ $a = -1.26784 - 0.71317I$ $b = -1.72935 + 0.51571I$ $c = -0.297131 - 1.134290I$ $d = -0.16439 + 2.36316I$	$16.6614 + 10.9560I$	$-13.7735 - 4.2698I$
$u = -1.72935 - 0.51571I$ $a = -1.26784 + 0.71317I$ $b = -1.72935 - 0.51571I$ $c = -0.297131 + 1.134290I$ $d = -0.16439 - 2.36316I$	$16.6614 - 10.9560I$	$-13.7735 + 4.2698I$
$u = 1.88286$ $a = 1.47956$ $b = 1.88286$ $c = 1.16265$ $d = -0.759351$	-17.8353	-13.8800

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

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^3 - 2u^2 + u + 1 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 - 2u^2 + 1 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^4 - u^3 + 2u^2 - 2 \\ u^4 - 2u^2 + 2u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^4 - u^3 + 2u^2 - 2 \\ -u^4 - u^3 + 2u^2 - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^4 + 2u^3 - u^2 - u + 1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 + 2u^2 - 1 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 + 2u^2 - 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^4 + 6u^3 - 8u^2 - 6u - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_6, c_{11}	$u^5 - 2u^4 - 2u^3 + 3u^2 + 3u - 1$
c_2	$u^5 + 8u^4 + 22u^3 + 25u^2 + 15u + 1$
c_3, c_8	$u^5 - u^4 + 5u^3 - u^2 + 2u + 2$
c_7, c_9, c_{10}	$u^5 - u^3 - 3u^2 + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_{11}	$y^5 - 8y^4 + 22y^3 - 25y^2 + 15y - 1$
c_2	$y^5 - 20y^4 + 114y^3 + 19y^2 + 175y - 1$
c_3, c_8	$y^5 + 9y^4 + 27y^3 + 23y^2 + 8y - 4$
c_7, c_9, c_{10}	$y^5 - 2y^4 + y^3 - 9y^2 + 24y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.949895 + 0.441667I$ $a = 0.23423 - 2.34588I$ $b = 0.949895 + 0.441667I$ $c = -0.682871 - 0.618084I$ $d = 0.281458 + 0.392024I$	$-5.14125 - 1.10891I$	$-14.3655 + 2.0411I$
$u = 0.949895 - 0.441667I$ $a = 0.23423 + 2.34588I$ $b = 0.949895 - 0.441667I$ $c = -0.682871 + 0.618084I$ $d = 0.281458 - 0.392024I$	$-5.14125 + 1.10891I$	$-14.3655 - 2.0411I$
$u = -0.274898$ $a = 0.594739$ $b = -0.274898$ $c = -1.83380$ $d = -0.695222$	-2.08622	-3.05700
$u = -1.81245 + 0.17314I$ $a = -1.53160 - 0.27272I$ $b = -1.81245 + 0.17314I$ $c = 0.099771 + 1.129450I$ $d = 0.06615 - 2.48427I$	$-15.1998 + 4.1249I$	$-13.10604 - 2.15443I$
$u = -1.81245 - 0.17314I$ $a = -1.53160 + 0.27272I$ $b = -1.81245 - 0.17314I$ $c = 0.099771 - 1.129450I$ $d = 0.06615 + 2.48427I$	$-15.1998 - 4.1249I$	$-13.10604 + 2.15443I$

III. $\boldsymbol{I_3^u = \langle -u^4 + 2u^2 + d - 2u,\ u^4 + u^3 - 2u^2 + c + 2,\ -u^4 - u^3 + \cdots + b - 1,\ -u^4 - 2u^3 + \cdots + a - 3,\ u^5 + 2u^4 + \cdots + 3u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^4 + 2u^3 - 2u^2 - 3u + 3 \\ u^4 + u^3 - 2u^2 - u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^3 - 2u + 2 \\ u^4 + u^3 - 2u^2 - u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^4 - u^3 + 2u^2 - 2 \\ u^4 - 2u^2 + 2u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^4 - u^3 + 2u^2 - 2 \\ -u^4 - u^3 + 2u^2 - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^4 - u^3 + 3u^2 + u - 3 \\ -u^4 + 3u^2 - 2u - 2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 + 2u - 2 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 + 2u - 2 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^4 + 6u^3 - 8u^2 - 6u - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_9, c_{10}	$u^5 - 2u^4 - 2u^3 + 3u^2 + 3u - 1$
c_2	$u^5 + 8u^4 + 22u^3 + 25u^2 + 15u + 1$
c_3, c_8	$u^5 - u^4 + 5u^3 - u^2 + 2u + 2$
c_5, c_6, c_{11}	$u^5 - u^3 - 3u^2 + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_9, c_{10}	$y^5 - 8y^4 + 22y^3 - 25y^2 + 15y - 1$
c_2	$y^5 - 20y^4 + 114y^3 + 19y^2 + 175y - 1$
c_3, c_8	$y^5 + 9y^4 + 27y^3 + 23y^2 + 8y - 4$
c_5, c_6, c_{11}	$y^5 - 2y^4 + y^3 - 9y^2 + 24y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.949895 + 0.441667I$ $a = -0.865610 + 0.402477I$ $b = -1.267020 + 0.176417I$ $c = -0.682871 - 0.618084I$ $d = 0.281458 + 0.392024I$	$-5.14125 - 1.10891I$	$-14.3655 + 2.0411I$
$u = 0.949895 - 0.441667I$ $a = -0.865610 - 0.402477I$ $b = -1.267020 - 0.176417I$ $c = -0.682871 + 0.618084I$ $d = 0.281458 - 0.392024I$	$-5.14125 + 1.10891I$	$-14.3655 - 2.0411I$
$u = -0.274898$ $a = 3.63772$ $b = 1.10870$ $c = -1.83380$ $d = -0.695222$	-2.08622	-3.05700
$u = -1.81245 + 0.17314I$ $a = 0.546751 + 0.052231I$ $b = 0.71268 - 1.30259I$ $c = 0.099771 + 1.129450I$ $d = 0.06615 - 2.48427I$	$-15.1998 + 4.1249I$	$-13.10604 - 2.15443I$
$u = -1.81245 - 0.17314I$ $a = 0.546751 - 0.052231I$ $b = 0.71268 + 1.30259I$ $c = 0.099771 - 1.129450I$ $d = 0.06615 + 2.48427I$	$-15.1998 - 4.1249I$	$-13.10604 + 2.15443I$

IV. $\boldsymbol{I^u_4 = \langle -5u^4 + 6u^3 + \cdots + 4d + 14,\ 3u^4 - 2u^3 + \cdots + 8c - 10,\ u^4 - 2u^3 + \cdots + 4b - 2,\ u^4 - u^2 + 4a + 3u,\ u^5 - u^3 + 3u^2 - 4\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^5 - u^3 - 3u^2 + 4$
c_2	$u^5 + 2u^4 + u^3 + 9u^2 + 24u + 16$
c_3, c_8	$u^5 - u^4 + 5u^3 - u^2 + 2u + 2$
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$u^5 - 2u^4 - 2u^3 + 3u^2 + 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^5 - 2y^4 + y^3 - 9y^2 + 24y - 16$
c_2	$y^5 - 2y^4 + 13y^3 - 97y^2 + 288y - 256$
c_3, c_8	$y^5 + 9y^4 + 27y^3 + 23y^2 + 8y - 4$
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$y^5 - 8y^4 + 22y^3 - 25y^2 + 15y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.10870$ $a = -0.901960$ $b = -0.274898$ $c = 0.454684$ $d = -0.239061$	-2.08622	-3.05700
$u = -1.267020 + 0.176417I$ $a = 0.774241 + 0.107803I$ $b = 0.949895 + 0.441667I$ $c = 0.195051 + 0.728580I$ $d = 0.55136 - 2.96396I$	$-5.14125 - 1.10891I$	$-14.3655 + 2.0411I$
$u = -1.267020 - 0.176417I$ $a = 0.774241 - 0.107803I$ $b = 0.949895 - 0.441667I$ $c = 0.195051 - 0.728580I$ $d = 0.55136 + 2.96396I$	$-5.14125 + 1.10891I$	$-14.3655 - 2.0411I$
$u = 0.71268 + 1.30259I$ $a = -0.323261 + 0.590839I$ $b = -1.81245 - 0.17314I$ $c = 1.077610 + 0.878534I$ $d = -0.431826 - 0.856727I$	$-15.1998 - 4.1249I$	$-13.10604 + 2.15443I$
$u = 0.71268 - 1.30259I$ $a = -0.323261 - 0.590839I$ $b = -1.81245 + 0.17314I$ $c = 1.077610 - 0.878534I$ $d = -0.431826 + 0.856727I$	$-15.1998 + 4.1249I$	$-13.10604 - 2.15443I$

V. $I_5^u = \langle d+1,\ c,\ b,\ a+1,\ u-1 \rangle$

(i) Arc colorings

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

$$a_4 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_8 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$		
$a = -1.00000$		
$b = 0$	-3.28987	-12.0000
$c = 0$		
$d = -1.00000$		

VI. $I_6^u = \langle d+1,\ c,\ b+1,\ a+1,\ u-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.00000$ $b = -1.00000$ $c = 0$ $d = -1.00000$	-3.28987	-12.0000

VII. $\boldsymbol{I^u_7 = \langle da + d + 1,\ c,\ b + 1,\ u - 1\rangle}$

(i) Arc colorings

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

$a_4 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

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

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

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

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

$a_8 = \begin{pmatrix} 0 \\ d \end{pmatrix}$

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

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

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -d^2 - a^2 - 2a - 17$

(iv) u-Polynomials at the component : It cannot be defined for a positive dimension component.

(v) Riley Polynomials at the component : It cannot be defined for a positive dimension component.

(iv) Complex Volumes and Cusp Shapes

Solution to I^u_7	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \cdots$ $a = \cdots$ $b = \cdots$ $c = \cdots$ $d = \cdots$	-4.93480	$-16.0570 + 0.6676I$

VIII. $I_1^v = \langle a,\ d,\ c+1,\ b-1,\ v-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$		
$a = 0$		
$b = 1.00000$	-3.28987	-12.0000
$c = -1.00000$		
$d = 0$		

IX. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u(u-1)^2(u^5-u^3-3u^2+4)(u^5-2u^4-2u^3+3u^2+3u-1)^2$ $\cdot (u^5-u^4-4u^3+4u^2+3u+1)$
c_2	$u(u+1)^2(u^5+2u^4+u^3+9u^2+24u+16)$ $\cdot ((u^5+8u^4+22u^3+25u^2+15u+1)^2)(u^5+9u^4+30u^3+38u^2+u+1)$
c_3, c_8	$u^3(u^5-u^4+5u^3-u^2+2u+2)^3(u^5+4u^4+8u^3+8u^2+4)$
c_4, c_9, c_{10}	$u(u+1)^2(u^5-u^3-3u^2+4)(u^5-2u^4-2u^3+3u^2+3u-1)^2$ $\cdot (u^5-u^4-4u^3+4u^2+3u+1)$
c_5, c_6, c_{11}	$u(u-1)(u+1)(u^5-u^3-3u^2+4)(u^5-2u^4+\cdots+3u-1)^2$ $\cdot (u^5-u^4-4u^3+4u^2+3u+1)$

X. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_9 c_{10}, c_{11}	$y(y-1)^2(y^5-9y^4+30y^3-38y^2+y-1)$ $\cdot((y^5-8y^4+22y^3-25y^2+15y-1)^2)(y^5-2y^4+y^3-9y^2+24y-16)$
c_2	$y(y-1)^2(y^5-21y^4+218y^3-1402y^2-75y-1)$ $\cdot(y^5-20y^4+114y^3+19y^2+175y-1)^2$ $\cdot(y^5-2y^4+13y^3-97y^2+288y-256)$
c_3, c_8	$y^3(y^5-96y^2-64y-16)(y^5+9y^4+27y^3+23y^2+8y-4)^3$