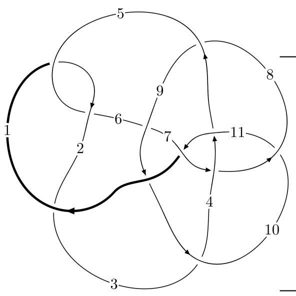
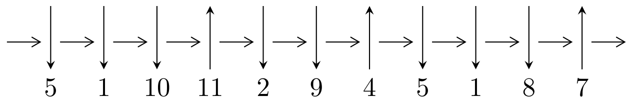
$11n_{133}$ ($K11n_{133}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -u^2 + b + u,\ a - 1,\ u^5 - 5u^4 + 7u^3 - 2u^2 + u - 1 \rangle \\
I_2^u &= \langle u^2 + b + u,\ a + 1,\ u^5 + 3u^4 + u^3 - 2u^2 - u + 1 \rangle \\
I_3^u &= \langle -u^2 a + b + u,\ a^2 - au + u^2 + 3u + 3,\ u^3 + 2u^2 + 1 \rangle \\
I_4^u &= \langle -u^5 + 4u^4 - u^3 - 8u^2 + 4b + 7u,\ -u^5 + 3u^4 + 3u^3 - 11u^2 + 4a - 3u + 9, \\
&\quad u^6 - 4u^5 - u^4 + 18u^3 - 9u^2 - 20u + 16 \rangle \\
I_5^u &= \langle -u^2 b + b^2 + u^2 - u - 1,\ a - 1,\ u^3 + 2u^2 + 1 \rangle \\
I_6^u &= \langle b + u + 1,\ a - u - 1,\ u^2 + u + 1 \rangle \\
I_7^u &= \langle b - a + 1,\ a^2 - a + 1,\ u - 1 \rangle \\
I_8^u &= \langle b^2 + b + 1,\ a + 1,\ u - 1 \rangle
\end{aligned}$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 34 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. $\boldsymbol{I_1^u = \langle -u^2 + b + u,\ a - 1,\ u^5 - 5u^4 + 7u^3 - 2u^2 + u - 1 \rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6u^3 - 15u^2 - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_8	$u^5 + 5u^4 + 7u^3 + 2u^2 + u + 1$
c_2	$u^5 + 11u^4 + 31u^3 - 3u + 1$
c_4, c_7, c_{11}	$u^5 - 3u^4 + 5u^3 - 3u^2 + 1$
c_6, c_9	$u^5 - 6u^4 + 9u^3 + 4u + 1$
c_{10}	$u^5 - 4u^4 + 6u^3 - u^2 - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_8	$y^5 - 11y^4 + 31y^3 - 3y - 1$
c_2	$y^5 - 59y^4 + 955y^3 - 208y^2 + 9y - 1$
c_4, c_7, c_{11}	$y^5 + y^4 + 7y^3 - 3y^2 + 6y - 1$
c_6, c_9	$y^5 - 18y^4 + 89y^3 + 84y^2 + 16y - 1$
c_{10}	$y^5 - 4y^4 + 24y^3 - 17y^2 + 6y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.668174$ $a = 1.00000$ $b = -0.221718$	-1.20060	-7.90700
$u = -0.181543 + 0.487016I$ $a = 1.00000$ $b = -0.022683 - 0.663845I$	$1.11858 - 1.59084I$	$0.80256 + 2.24828I$
$u = -0.181543 - 0.487016I$ $a = 1.00000$ $b = -0.022683 + 0.663845I$	$1.11858 + 1.59084I$	$0.80256 - 2.24828I$
$u = 2.34746 + 0.17191I$ $a = 1.00000$ $b = 3.13354 + 0.63521I$	$-18.6126 - 10.9920I$	$-8.84907 + 4.91483I$
$u = 2.34746 - 0.17191I$ $a = 1.00000$ $b = 3.13354 - 0.63521I$	$-18.6126 + 10.9920I$	$-8.84907 - 4.91483I$

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

(i) Arc colorings

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

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

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

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

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

$$a_9 = \begin{pmatrix} -1 \\ -u^2 - u \end{pmatrix}$$

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

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

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

$$a_{11} = \begin{pmatrix} u^3 + 3u^2 + u - 1 \\ u^4 + 2u^3 - u^2 - u \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 6u^3 + 15u^2 - 15$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^5 + 3u^4 + u^3 - 2u^2 - u + 1$
c_2	$u^5 + 7u^4 + 11u^3 + 12u^2 + 5u + 1$
c_3, c_5, c_8	$u^5 - 3u^4 + u^3 + 2u^2 - u - 1$
c_4, c_7, c_{11}	$u^5 + u^4 + u^3 - u^2 - 1$
c_6, c_9	$u^5 - 4u^4 + 3u^3 - 1$
c_{10}	$u^5 + 2u^4 - 5u^2 - 6u - 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_8	$y^5 - 7y^4 + 11y^3 - 12y^2 + 5y - 1$
c_2	$y^5 - 27y^4 - 37y^3 - 48y^2 + y - 1$
c_4, c_7, c_{11}	$y^5 + y^4 + 3y^3 + y^2 - 2y - 1$
c_6, c_9	$y^5 - 10y^4 + 9y^3 - 8y^2 - 1$
c_{10}	$y^5 - 4y^4 + 8y^3 - 13y^2 + 6y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.921567+0.544227I$ $a=-1.00000$ $b=\ \ 0.368464+0.458856I$	$-2.41702+7.42796I$	$-6.48635-7.69371I$
$u=-0.921567-0.544227I$ $a=-1.00000$ $b=\ \ 0.368464-0.458856I$	$-2.41702-7.42796I$	$-6.48635+7.69371I$
$u=\ \ 0.575451+0.217130I$ $a=-1.00000$ $b=-0.859450-0.467025I$	$-2.58971-1.95896I$	$-10.08501+4.98123I$
$u=\ \ 0.575451-0.217130I$ $a=-1.00000$ $b=-0.859450+0.467025I$	$-2.58971+1.95896I$	$-10.08501-4.98123I$
$u=-2.30777$ $a=-1.00000$ $b=-3.01803$	-16.3055	-8.85730

III. $\boldsymbol{I_3^u = \langle -u^2a + b + u,\ a^2 - au + u^2 + 3u + 3,\ u^3 + 2u^2 + 1 \rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^2a - 3u^2 + 3u - 11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5	$(u^3 - 2u^2 - 1)^2$
c_2	$(u^3 + 4u^2 - 4u + 1)^2$
c_4	$u^6 - 5u^5 + 12u^4 - 15u^3 + 11u^2 - 4u + 4$
c_6	$u^6 - 4u^5 - u^4 + 18u^3 - 9u^2 - 20u + 16$
c_7, c_{11}	$(u^2 + u + 1)^3$
c_8	$u^6 + 4u^5 - u^4 - 18u^3 - 9u^2 + 20u + 16$
c_9	$u^6 + 7u^5 + 18u^4 + 27u^3 + 38u^2 + 11u + 1$
c_{10}	$(u^3 + u^2 - u - 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5	$(y^3 - 4y^2 - 4y - 1)^2$
c_2	$(y^3 - 24y^2 + 8y - 1)^2$
c_4	$y^6 - y^5 + 16y^4 + 7y^3 + 97y^2 + 72y + 16$
c_6, c_8	$y^6 - 18y^5 + 127y^4 - 434y^3 + 769y^2 - 688y + 256$
c_7, c_{11}	$(y^2 + y + 1)^3$
c_9	$y^6 - 13y^5 + 22y^4 + 487y^3 + 886y^2 - 45y + 1$
c_{10}	$(y^3 - 3y^2 + 5y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.102785 + 0.665457I$ $a = 0.62769 - 1.48834I$ $b = -0.170516 + 0.063771I$	$-2.25297 - 0.53909I$	$-9.12391 - 1.33093I$
$u = 0.102785 + 0.665457I$ $a = -0.52491 + 2.15379I$ $b = -0.17052 - 1.66828I$	$-2.25297 - 4.59885I$	$-9.12391 + 5.59727I$
$u = 0.102785 - 0.665457I$ $a = 0.62769 + 1.48834I$ $b = -0.170516 - 0.063771I$	$-2.25297 + 0.53909I$	$-9.12391 + 1.33093I$
$u = 0.102785 - 0.665457I$ $a = -0.52491 - 2.15379I$ $b = -0.17052 + 1.66828I$	$-2.25297 + 4.59885I$	$-9.12391 - 5.59727I$
$u = -2.20557$ $a = -1.102790 + 0.178028I$ $b = -3.15897 + 0.86603I$	$-16.8782 + 2.0299I$	$-10.75217 - 3.46410I$
$u = -2.20557$ $a = -1.102790 - 0.178028I$ $b = -3.15897 - 0.86603I$	$-16.8782 - 2.0299I$	$-10.75217 + 3.46410I$

IV. $\boldsymbol{I^u_4 = \langle -u^5 + 4u^4 - u^3 - 8u^2 + 4b + 7u,\ -u^5 + 3u^4 + 3u^3 - 11u^2 + 4a - 3u + 9,\ u^6 - 4u^5 - u^4 + 18u^3 - 9u^2 - 20u + 16\rangle}$

(i) Arc colorings

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

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

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

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

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

$$a_9 = \begin{pmatrix}\frac{1}{4}u^5 - \frac{3}{4}u^4 + \cdots + \frac{3}{4}u - \frac{9}{4}\\ \frac{1}{4}u^5 - u^4 + \frac{1}{4}u^3 + 2u^2 - \frac{7}{4}u\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-\frac{3}{16}u^5 + \frac{1}{2}u^4 + \cdots - \frac{21}{16}u + 1\\ -\frac{1}{4}u^5 + u^4 - \frac{1}{4}u^3 - 3u^2 + \frac{7}{4}u + 1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}\frac{1}{4}u^4 - u^3 + \frac{3}{4}u^2 + \frac{5}{2}u - \frac{9}{4}\\ \frac{1}{4}u^5 - u^4 + \frac{1}{4}u^3 + 2u^2 - \frac{7}{4}u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}\frac{1}{4}u^5 - \frac{3}{4}u^4 + \cdots + \frac{3}{4}u - \frac{9}{4}\\ -\frac{1}{4}u^5 + \frac{1}{2}u^4 + \cdots - \frac{11}{4}u + 4\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}\frac{1}{8}u^5 - \frac{1}{4}u^4 + \cdots + \frac{19}{8}u - \frac{11}{4}\\ \frac{1}{4}u^5 - u^4 + \frac{5}{4}u^3 + u^2 - \frac{15}{4}u + 2\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-\frac{3}{16}u^5 + \frac{1}{2}u^4 + \cdots - \frac{29}{16}u + 4\\ \frac{1}{4}u^5 - \frac{1}{2}u^4 + \cdots + \frac{11}{4}u - 3\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-\frac{3}{16}u^5 + \frac{1}{2}u^4 + \cdots - \frac{29}{16}u + 4\\ \frac{1}{4}u^5 - \frac{1}{2}u^4 + \cdots + \frac{11}{4}u - 3\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1}{2}u^5 + 3u^4 - 3u^3 - \frac{13}{2}u^2 + 8u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^6 + 4u^5 - u^4 - 18u^3 - 9u^2 + 20u + 16$
c_2	$u^6 + 18u^5 + 127u^4 + 434u^3 + 769u^2 + 688u + 256$
c_3, c_8	$(u^3 - 2u^2 - 1)^2$
c_4, c_7	$(u^2 + u + 1)^3$
c_6, c_9	$u^6 + 7u^5 + 18u^4 + 27u^3 + 38u^2 + 11u + 1$
c_{10}	$u^6 - 8u^5 + 29u^4 - 54u^3 + 51u^2 - 22u + 4$
c_{11}	$u^6 - 5u^5 + 12u^4 - 15u^3 + 11u^2 - 4u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^6 - 18y^5 + 127y^4 - 434y^3 + 769y^2 - 688y + 256$
c_2	$y^6 - 70y^5 + 2043y^4 - 17286y^3 + 59201y^2 - 79616y + 65536$
c_3, c_8	$(y^3 - 4y^2 - 4y - 1)^2$
c_4, c_7	$(y^2 + y + 1)^3$
c_6, c_9	$y^6 - 13y^5 + 22y^4 + 487y^3 + 886y^2 - 45y + 1$
c_{10}	$y^6 - 6y^5 + 79y^4 - 302y^3 + 457y^2 - 76y + 16$
c_{11}	$y^6 - y^5 + 16y^4 + 7y^3 + 97y^2 + 72y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.054940 + 0.264726I$ $a = \quad 0.240575 + 0.570430I$ $b = -0.170516 + 0.063771I$	$-2.25297 - 0.53909I$	$-9.12391 - 1.33093I$
$u = \quad 1.054940 - 0.264726I$ $a = \quad 0.240575 - 0.570430I$ $b = -0.170516 - 0.063771I$	$-2.25297 + 0.53909I$	$-9.12391 + 1.33093I$
$u = -1.48721 + 0.12793I$ $a = -0.106812 + 0.438266I$ $b = -0.17052 + 1.66828I$	$-2.25297 + 4.59885I$	$-9.12391 - 5.59727I$
$u = -1.48721 - 0.12793I$ $a = -0.106812 - 0.438266I$ $b = -0.17052 - 1.66828I$	$-2.25297 - 4.59885I$	$-9.12391 + 5.59727I$
$u = \quad 2.43227 + 0.39265I$ $a = -0.883763 + 0.142671I$ $b = -3.15897 - 0.86603I$	$-16.8782 - 2.0299I$	$-10.75217 + 3.46410I$
$u = \quad 2.43227 - 0.39265I$ $a = -0.883763 - 0.142671I$ $b = -3.15897 + 0.86603I$	$-16.8782 + 2.0299I$	$-10.75217 - 3.46410I$

V. $I_5^u = \langle -u^2 b + b^2 + u^2 - u - 1,\ a - 1,\ u^3 + 2u^2 + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4bu + 5u^2 + 3u - 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_8	$(u^3 - 2u^2 - 1)^2$
c_2	$(u^3 + 4u^2 - 4u + 1)^2$
c_3	$u^6 + 4u^5 - u^4 - 18u^3 - 9u^2 + 20u + 16$
c_4, c_{11}	$(u^2 + u + 1)^3$
c_6	$u^6 + 7u^5 + 18u^4 + 27u^3 + 38u^2 + 11u + 1$
c_7	$u^6 - 5u^5 + 12u^4 - 15u^3 + 11u^2 - 4u + 4$
c_9	$u^6 - 4u^5 - u^4 + 18u^3 - 9u^2 - 20u + 16$
c_{10}	$(u^3 + u^2 - u - 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_8	$(y^3 - 4y^2 - 4y - 1)^2$
c_2	$(y^3 - 24y^2 + 8y - 1)^2$
c_3, c_9	$y^6 - 18y^5 + 127y^4 - 434y^3 + 769y^2 - 688y + 256$
c_4, c_{11}	$(y^2 + y + 1)^3$
c_6	$y^6 - 13y^5 + 22y^4 + 487y^3 + 886y^2 - 45y + 1$
c_7	$y^6 - y^5 + 16y^4 + 7y^3 + 97y^2 + 72y + 16$
c_{10}	$(y^3 - 3y^2 + 5y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.102785 + 0.665457I$ $a = 1.00000$ $b = 1.054940 + 0.264726I$	$-2.25297 - 4.59885I$	$-9.12391 + 5.59727I$
$u = 0.102785 + 0.665457I$ $a = 1.00000$ $b = -1.48721 - 0.12793I$	$-2.25297 - 0.53909I$	$-9.12391 - 1.33093I$
$u = 0.102785 - 0.665457I$ $a = 1.00000$ $b = 1.054940 - 0.264726I$	$-2.25297 + 4.59885I$	$-9.12391 - 5.59727I$
$u = 0.102785 - 0.665457I$ $a = 1.00000$ $b = -1.48721 + 0.12793I$	$-2.25297 + 0.53909I$	$-9.12391 + 1.33093I$
$u = -2.20557$ $a = 1.00000$ $b = 2.43227 + 0.39265I$	$-16.8782 + 2.0299I$	$-10.75217 - 3.46410I$
$u = -2.20557$ $a = 1.00000$ $b = 2.43227 - 0.39265I$	$-16.8782 - 2.0299I$	$-10.75217 + 3.46410I$

VI. $I_6^u = \langle b+u+1,\ a-u-1,\ u^2+u+1 \rangle$

(i) Arc colorings

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

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

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

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

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

$$a_9 = \begin{pmatrix} u+1 \\ -u-1 \end{pmatrix}$$

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

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

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

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

$$a_4 = \begin{pmatrix} -u \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u - 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_9	$y^2 + y + 1$
c_3, c_8, c_{11}	$(y-1)^2$
c_{10}	$y^2 - 3y + 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0.500000 + 0.866025I$ $b = -0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-9.00000 + 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 0.500000 - 0.866025I$ $b = -0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-9.00000 - 3.46410I$

VII. $I_7^u = \langle b - a + 1,\ a^2 - a + 1,\ u - 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a - 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0.500000 + 0.866025I$ $b = -0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-9.00000 - 3.46410I$
$u = 1.00000$ $a = 0.500000 - 0.866025I$ $b = -0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-9.00000 + 3.46410I$

VIII. $I_8^u = \langle b^2 + b + 1,\ a + 1,\ u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4b - 11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = -1.00000$ $b = -0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-9.00000 - 3.46410I$
$u = \quad 1.00000$ $a = -1.00000$ $b = -0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-9.00000 + 3.46410I$

IX. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^4(u^2+u+1)(u^3-2u^2-1)^4(u^5+3u^4+u^3-2u^2-u+1)$ $\cdot(u^5+5u^4+7u^3+2u^2+u+1)(u^6+4u^5+\cdots+20u+16)$
c_2	$(u+1)^4(u^2-u+1)(u^3+4u^2-4u+1)^4$ $\cdot(u^5+7u^4+11u^3+12u^2+5u+1)(u^5+11u^4+31u^3-3u+1)$ $\cdot(u^6+18u^5+127u^4+434u^3+769u^2+688u+256)$
c_3, c_5, c_8	$(u+1)^4(u^2-u+1)(u^3-2u^2-1)^4(u^5-3u^4+u^3+2u^2-u-1)$ $\cdot(u^5+5u^4+7u^3+2u^2+u+1)(u^6+4u^5+\cdots+20u+16)$
c_4, c_7, c_{11}	$(u+1)^2(u^2-u+1)^2(u^2+u+1)^6(u^5-3u^4+5u^3-3u^2+1)$ $\cdot(u^5+u^4+u^3-u^2-1)(u^6-5u^5+12u^4-15u^3+11u^2-4u+4)$
c_6, c_9	$(u^2-u+1)^3(u^5-6u^4+9u^3+4u+1)(u^5-4u^4+3u^3-1)$ $\cdot(u^6-4u^5-u^4+18u^3-9u^2-20u+16)$ $\cdot(u^6+7u^5+18u^4+27u^3+38u^2+11u+1)^2$
c_{10}	$u^4(u^2+3u+3)(u^3+u^2-u-2)^4(u^5-4u^4+6u^3-u^2-2u+1)$ $\cdot(u^5+2u^4-5u^2-6u-3)(u^6-8u^5+\cdots-22u+4)$

X. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_8	$((y-1)^4)(y^2+y+1)(y^3-4y^2-4y-1)^4(y^5-11y^4+\cdots-3y-1)$ $\cdot(y^5-7y^4+11y^3-12y^2+5y-1)$ $\cdot(y^6-18y^5+127y^4-434y^3+769y^2-688y+256)$
c_2	$(y-1)^4(y^2+y+1)(y^3-24y^2+8y-1)^4$ $\cdot(y^5-59y^4+\cdots+9y-1)(y^5-27y^4-37y^3-48y^2+y-1)$ $\cdot(y^6-70y^5+2043y^4-17286y^3+59201y^2-79616y+65536)$
c_4, c_7, c_{11}	$(y-1)^2(y^2+y+1)^8(y^5+y^4+3y^3+y^2-2y-1)$ $\cdot(y^5+y^4+7y^3-3y^2+6y-1)(y^6-y^5+\cdots+72y+16)$
c_6, c_9	$(y^2+y+1)^3(y^5-18y^4+89y^3+84y^2+16y-1)$ $\cdot(y^5-10y^4+9y^3-8y^2-1)$ $\cdot(y^6-18y^5+127y^4-434y^3+769y^2-688y+256)$ $\cdot(y^6-13y^5+22y^4+487y^3+886y^2-45y+1)^2$
c_{10}	$y^4(y^2-3y+9)(y^3-3y^2+5y-4)^4(y^5-4y^4+\cdots+6y-9)$ $\cdot(y^5-4y^4+24y^3-17y^2+6y-1)$ $\cdot(y^6-6y^5+79y^4-302y^3+457y^2-76y+16)$