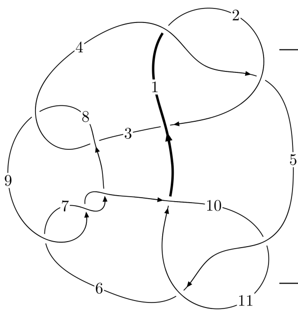
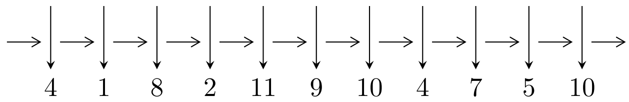
$11n_{77}$ ($K11n_{77}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^3+u^2+2d+u+1,\ -u^3+u^2+2c-u+1,\ -u^3+u^2+2b+u+1,\ u^4-2u^3+2a+3,\ u^5-u^4+3u+$$

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

$$I_3^u = \langle u^3-u^2+d+1,\ u^4-2u^3+2u^2+c+u-1,\ u^3-u^2+b+1,\ a+u-1,\ u^5-2u^4+2u^3+u^2-u+1\rangle$$

$$I_4^u = \langle -u^4+2u^3+u^2+4d-5u+2,\ -u^4+u^2+4c-3u,\ -u^4+2u^3+u^2+4b-5u+2,\ -3u^4-u^2+4a-9u,$$
$$u^5-u^3+3u^2-4\rangle$$

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

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

$$I_7^u = \langle d+b,\ c+b+1,\ b^2-ba+b-1,\ u+1\rangle$$

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

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -u^4 + 2u^3 + 2u^2 - 2u - 15$

(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}	$u^5 - u^4 + 3u + 1$
c_2, c_{11}	$u^5 + u^4 + 6u^3 - 2u^2 + 9u + 1$
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}	$y^5 - y^4 + 6y^3 + 2y^2 + 9y - 1$
c_2, c_{11}	$y^5 + 11y^4 + 58y^3 + 102y^2 + 85y - 1$
c_3, c_8	$y^5 - 32y^2 + 64y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.629322 + 0.921686I$ $a = 0.424671 - 0.213935I$ $b = 0.718690 + 0.275250I$ $c = 0.089368 + 1.196940I$ $d = 0.718690 + 0.275250I$	$1.14410 + 3.50618I$	$-10.79893 - 4.59139I$
$u = -0.629322 - 0.921686I$ $a = 0.424671 + 0.213935I$ $b = 0.718690 - 0.275250I$ $c = 0.089368 - 1.196940I$ $d = 0.718690 - 0.275250I$	$1.14410 - 3.50618I$	$-10.79893 + 4.59139I$
$u = 1.29342 + 0.87939I$ $a = -0.15409 + 1.68698I$ $b = -2.01497 + 0.28960I$ $c = -0.721553 + 1.168990I$ $d = -2.01497 + 0.28960I$	$6.61272 - 11.96040I$	$-13.0958 + 6.1649I$
$u = 1.29342 - 0.87939I$ $a = -0.15409 - 1.68698I$ $b = -2.01497 - 0.28960I$ $c = -0.721553 - 1.168990I$ $d = -2.01497 - 0.28960I$	$6.61272 + 11.96040I$	$-13.0958 - 6.1649I$
$u = -0.328197$ $a = -1.54115$ $b = -0.407434$ $c = -0.735630$ $d = -0.407434$	-0.709220	-14.2100

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

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} u^3-2u^2+3u-1 \\ u^3-2u^2+2u-1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ u^4-2u^3+u^2+u-1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -u^4+2u^3-u^2-2u+1 \\ u^4-2u^3+u^2+u-1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u^4-2u^3+2u^2-u+1 \\ -2u^3+3u^2-u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^4-2u^3+2u^2-u+1 \\ -2u^3+3u^2-u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^3-4u^2+6u-12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$y^5 + 6y^3 - y^2 - y - 1$
c_2, c_{11}	$y^5 + 12y^4 + 34y^3 - 13y^2 - y - 1$
c_3, c_8	$y^5 + 9y^4 + 27y^3 + 23y^2 + 8y - 4$
c_6, c_7, c_9	$y^5 - 2y^4 + y^3 - 9y^2 + 24y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.833800$ $a = -5.23246$ $b = -4.63772$ $c = -5.47152$ $d = -4.63772$	-4.49352	-20.9430
$u = \quad 0.317129 + 0.618084I$ $a = -0.36862 - 1.94340I$ $b = -0.134390 + 0.402477I$ $c = \quad 0.182739 + 1.020560I$ $d = -0.134390 + 0.402477I$	$-1.43849 - 1.10891I$	$-9.63452 + 2.04112I$
$u = \quad 0.317129 - 0.618084I$ $a = -0.36862 + 1.94340I$ $b = -0.134390 - 0.402477I$ $c = \quad 0.182739 - 1.020560I$ $d = -0.134390 - 0.402477I$	$-1.43849 + 1.10891I$	$-9.63452 - 2.04112I$
$u = \quad 1.09977 + 1.12945I$ $a = -0.015153 + 0.220489I$ $b = -1.54675 - 0.05223I$ $c = -0.446980 + 1.077220I$ $d = -1.54675 - 0.05223I$	$8.62005 - 4.12490I$	$-10.89396 + 2.15443I$
$u = \quad 1.09977 - 1.12945I$ $a = -0.015153 - 0.220489I$ $b = -1.54675 + 0.05223I$ $c = -0.446980 - 1.077220I$ $d = -1.54675 + 0.05223I$	$8.62005 + 4.12490I$	$-10.89396 - 2.15443I$

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^3 - 4u^2 + 6u - 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6 c_7, c_9	$u^5 - 2u^4 + 2u^3 + u^2 - u + 1$
c_2	$u^5 + 6u^3 + u^2 - u + 1$
c_3, c_8	$u^5 + u^4 + 5u^3 + u^2 + 2u - 2$
c_5, c_{10}	$u^5 - u^3 + 3u^2 - 4$
c_{11}	$u^5 + 2u^4 + u^3 + 9u^2 + 24u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_7, c_9	$y^5 + 6y^3 - y^2 - y - 1$
c_2	$y^5 + 12y^4 + 34y^3 - 13y^2 - y - 1$
c_3, c_8	$y^5 + 9y^4 + 27y^3 + 23y^2 + 8y - 4$
c_5, c_{10}	$y^5 - 2y^4 + y^3 - 9y^2 + 24y - 16$
c_{11}	$y^5 - 2y^4 + 13y^3 - 97y^2 + 288y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.833800$ $a = 1.83380$ $b = 0.274898$ $c = -1.19933$ $d = 0.274898$	-4.49352	-20.9430
$u = 0.317129 + 0.618084I$ $a = 0.682871 - 0.618084I$ $b = -0.949895 + 0.441667I$ $c = 0.65713 - 1.28074I$ $d = -0.949895 + 0.441667I$	$-1.43849 - 1.10891I$	$-9.63452 + 2.04112I$
$u = 0.317129 - 0.618084I$ $a = 0.682871 + 0.618084I$ $b = -0.949895 - 0.441667I$ $c = 0.65713 + 1.28074I$ $d = -0.949895 - 0.441667I$	$-1.43849 + 1.10891I$	$-9.63452 - 2.04112I$
$u = 1.09977 + 1.12945I$ $a = -0.099771 - 1.129450I$ $b = 1.81245 - 0.17314I$ $c = 0.442538 - 0.454479I$ $d = 1.81245 - 0.17314I$	$8.62005 - 4.12490I$	$-10.89396 + 2.15443I$
$u = 1.09977 - 1.12945I$ $a = -0.099771 + 1.129450I$ $b = 1.81245 + 0.17314I$ $c = 0.442538 + 0.454479I$ $d = 1.81245 + 0.17314I$	$8.62005 + 4.12490I$	$-10.89396 - 2.15443I$

IV. $I_4^u = \langle -u^4 + 2u^3 + \cdots + 4d + 2,\ -u^4 + u^2 + 4c - 3u,\ -u^4 + 2u^3 + \cdots + 4b + 2,\ -3u^4 - u^2 + 4a - 9u,\ u^5 - u^3 + 3u^2 - 4\rangle$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{3}{4}u^4 + \frac{1}{4}u^2 + \frac{9}{4}u \\ \frac{1}{4}u^4 - \frac{1}{2}u^3 + \cdots + \frac{5}{4}u - \frac{1}{2} \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} \frac{7}{8}u^4 - \frac{1}{4}u^3 + \cdots + \frac{23}{8}u - \frac{1}{4} \\ \frac{1}{4}u^4 - \frac{1}{2}u^3 + \cdots + \frac{5}{4}u - \frac{3}{2} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} \frac{5}{8}u^4 + \frac{1}{4}u^3 + \cdots + \frac{13}{8}u + \frac{5}{4} \\ \frac{1}{4}u^4 - \frac{1}{2}u^3 + \cdots + \frac{5}{4}u - \frac{3}{2} \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -\frac{5}{8}u^4 + \frac{1}{4}u^3 + \cdots - \frac{9}{8}u + \frac{5}{4} \\ u^3 - 2u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{5}{8}u^4 + \frac{1}{4}u^3 + \cdots - \frac{9}{8}u + \frac{5}{4} \\ u^3 - 2u + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^3 - 2u - 16$

(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}	$u^5 - 2u^4 + 2u^3 + u^2 - u + 1$
c_{11}	$u^5 + 6u^3 + u^2 - u + 1$

(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}	$y^5 + 6y^3 - y^2 - y - 1$
c_{11}	$y^5 + 12y^4 + 34y^3 - 13y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.10870$ $a = 3.93509$ $b = 0.274898$ $c = 0.901960$ $d = 0.274898$	-4.49352	-20.9430
$u = -1.267020 + 0.176417I$ $a = -0.748496 - 0.770461I$ $b = -0.949895 - 0.441667I$ $c = -0.774241 - 0.107803I$ $d = -0.949895 - 0.441667I$	$-1.43849 + 1.10891I$	$-9.63452 - 2.04112I$
$u = -1.267020 - 0.176417I$ $a = -0.748496 + 0.770461I$ $b = -0.949895 + 0.441667I$ $c = -0.774241 + 0.107803I$ $d = -0.949895 + 0.441667I$	$-1.43849 - 1.10891I$	$-9.63452 + 2.04112I$
$u = 0.71268 + 1.30259I$ $a = -0.219048 + 0.084129I$ $b = 1.81245 + 0.17314I$ $c = 0.323261 - 0.590839I$ $d = 1.81245 + 0.17314I$	$8.62005 + 4.12490I$	$-10.89396 - 2.15443I$
$u = 0.71268 - 1.30259I$ $a = -0.219048 - 0.084129I$ $b = 1.81245 - 0.17314I$ $c = 0.323261 + 0.590839I$ $d = 1.81245 - 0.17314I$	$8.62005 - 4.12490I$	$-10.89396 + 2.15443I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

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

(i) Arc colorings

$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

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

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

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

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

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

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

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

VII. $I^u_7 = \langle d+b,\ c+b+1,\ b^2-ba+b-1,\ u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

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

(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	$-18.4052 - 0.7878I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(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
$c = -1.00000$		
$d = -1.00000$		

IX. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6, c_7	$u(u-1)^2(u^5-u^3+3u^2-4)(u^5-2u^4+2u^3+u^2-u+1)^2$ $\cdot(u^5-u^4+3u+1)$
c_2, c_{11}	$u(u+1)^2(u^5+6u^3+u^2-u+1)^2(u^5+u^4+6u^3-2u^2+9u+1)$ $\cdot(u^5+2u^4+u^3+9u^2+24u+16)$
c_3, c_8	$u^3(u^5-4u^4+8u^3-8u^2+4)(u^5+u^4+5u^3+u^2+2u-2)^3$
c_4, c_9	$u(u+1)^2(u^5-u^3+3u^2-4)(u^5-2u^4+2u^3+u^2-u+1)^2$ $\cdot(u^5-u^4+3u+1)$
c_5, c_{10}	$u(u-1)(u+1)(u^5-u^3+3u^2-4)(u^5-2u^4+2u^3+u^2-u+1)^2$ $\cdot(u^5-u^4+3u+1)$

X. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_9 c_{10}	$y(y-1)^2(y^5+6y^3-y^2-y-1)^2(y^5-2y^4+y^3-9y^2+24y-16)$ $\cdot(y^5-y^4+6y^3+2y^2+9y-1)$
c_2, c_{11}	$y(y-1)^2(y^5-2y^4+13y^3-97y^2+288y-256)$ $\cdot(y^5+11y^4+58y^3+102y^2+85y-1)$ $\cdot(y^5+12y^4+34y^3-13y^2-y-1)^2$
c_3, c_8	$y^3(y^5-32y^2+64y-16)(y^5+9y^4+27y^3+23y^2+8y-4)^3$