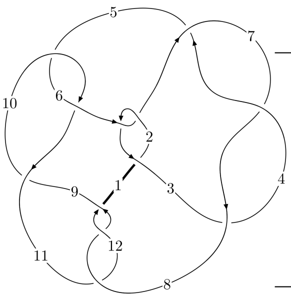
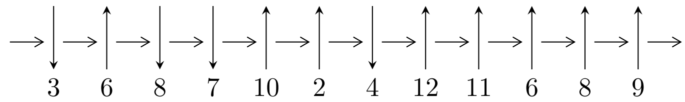
$12n_{0331}$ ($K12n_{0331}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$2{,}7 \xrightarrow[c_6]{} 6 \xrightarrow[c_2]{} 3{,}10 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_1]{} 1 \xrightarrow[c_5]{} 5 \xrightarrow[c_4]{} 4 \xrightarrow[c_7]{} 8 \xrightarrow[c_9]{} 9 \xrightarrow[c_{12}]{} 12 \twoheadrightarrow c_3, c_8, c_{11}$$

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

$$\begin{aligned}
I^u_1 = \langle &-1.19705\times10^{30}u^{29} + 3.06307\times10^{30}u^{28} + \cdots + 1.34207\times10^{30}b - 3.67175\times10^{31},\\
&-3.01996\times10^{31}u^{29} + 7.71851\times10^{31}u^{28} + \cdots + 2.28151\times10^{31}a - 8.92737\times10^{32},\\
&u^{30} - 2u^{29} + \cdots + 54u + 17\rangle\\
I^u_2 = \langle &19a^4u + 83a^4 - 123a^3u + 119a^3 + 186a^2u + 202a^2 - 333au + 145b + 499a - 9u - 253,\\
&a^5 - 2a^4u + a^4 + 2a^3u + 2a^3 - 5a^2u + 4a^2 + au - 6a + 1,\ u^2 + 1\rangle\\
I^u_3 = \langle &-u^3 + 2b + u + 1,\ -u^3 - 2u^2 + 2a - 3u - 1,\ u^4 + u^3 + u^2 + 1\rangle\\
I^u_4 = \langle &-u^5 + u^4 - u^3 + 3u^2 + b - 2u,\ -u^4 - u^3 - u^2 + a + u + 2,\ u^6 + 2u^4 - 3u^3 + u^2 - 3u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 50 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. $\boldsymbol{I^u_1 = \langle -1.20 \times 10^{30} u^{29} + 3.06 \times 10^{30} u^{28} + \cdots + 1.34 \times 10^{30} b - 3.67 \times 10^{31},\ -3.02 \times 10^{31} u^{29} + 7.72 \times 10^{31} u^{28} + \cdots + 2.28 \times 10^{31} a - 8.93 \times 10^{32},\ u^{30} - 2u^{29} + \cdots + 54u + 17 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1.32367u^{29} - 3.38307u^{28} + \cdots + 56.8890u + 39.1292 \\ 0.891947u^{29} - 2.28235u^{28} + \cdots + 38.3521u + 27.3589 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1.81045u^{29} - 4.61918u^{28} + \cdots + 78.0139u + 53.9806 \\ 1.03280u^{29} - 2.64107u^{28} + \cdots + 44.2541u + 31.8222 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.469748u^{29} - 1.23844u^{28} + \cdots + 19.5553u + 13.1538 \\ 1.06033u^{29} - 2.72603u^{28} + \cdots + 44.9653u + 31.7036 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.53008u^{29} - 3.96448u^{28} + \cdots + 64.5205u + 44.8574 \\ 1.06033u^{29} - 2.72603u^{28} + \cdots + 44.9653u + 31.7036 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.960602u^{29} + 2.44978u^{28} + \cdots - 40.1263u - 29.7290 \\ 0.605372u^{29} - 1.56263u^{28} + \cdots + 25.5542u + 17.0256 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.804706u^{29} - 2.05555u^{28} + \cdots + 34.2505u + 23.3776 \\ -0.518550u^{29} + 1.32875u^{28} + \cdots - 22.1403u - 15.5691 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.580383u^{29} - 1.46053u^{28} + \cdots + 25.3284u + 18.2709 \\ 0.354478u^{29} - 0.902566u^{28} + \cdots + 15.0764u + 11.6477 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.31952u^{29} + 6.05662u^{28} + \cdots - 101.386u - 62.1980$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} + 36u^{28} + \cdots - 842u + 289$
c_2, c_6	$u^{30} - 2u^{29} + \cdots + 54u + 17$
c_3, c_4, c_7	$u^{30} - 2u^{29} + \cdots + 134u + 17$
c_5, c_{10}	$u^{30} - 2u^{29} + \cdots - 16u + 64$
c_8, c_{11}, c_{12}	$u^{30} + 4u^{29} + \cdots + 35u + 4$
c_9	$u^{30} - 24u^{29} + \cdots + 37632u + 4096$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} + 72y^{29} + \cdots - 1286386y + 83521$
c_2, c_6	$y^{30} + 36y^{28} + \cdots - 842y + 289$
c_3, c_4, c_7	$y^{30} + 48y^{29} + \cdots + 1526y + 289$
c_5, c_{10}	$y^{30} - 24y^{29} + \cdots + 37632y + 4096$
c_8, c_{11}, c_{12}	$y^{30} - 32y^{29} + \cdots - 785y + 16$
c_9	$y^{30} - 44y^{29} + \cdots - 830537728y + 16777216$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.829037 + 0.437570I$ $a = 2.03295 + 0.07010I$ $b = -0.12264 - 1.43896I$	$3.48161 - 3.37472I$	$9.82032 + 5.06127I$
$u = -0.829037 - 0.437570I$ $a = 2.03295 - 0.07010I$ $b = -0.12264 + 1.43896I$	$3.48161 + 3.37472I$	$9.82032 - 5.06127I$
$u = 0.126583 + 0.923400I$ $a = 0.197805 - 0.967738I$ $b = -0.642069 + 0.460134I$	$-1.43679 + 1.72806I$	$-2.66066 - 5.45071I$
$u = 0.126583 - 0.923400I$ $a = 0.197805 + 0.967738I$ $b = -0.642069 - 0.460134I$	$-1.43679 - 1.72806I$	$-2.66066 + 5.45071I$
$u = 0.186023 + 1.138800I$ $a = 0.312069 + 0.834385I$ $b = 0.489861 - 0.585323I$	$3.94202 + 3.99509I$	$4.27681 - 3.33940I$
$u = 0.186023 - 1.138800I$ $a = 0.312069 - 0.834385I$ $b = 0.489861 + 0.585323I$	$3.94202 - 3.99509I$	$4.27681 + 3.33940I$
$u = 0.776216 + 0.200551I$ $a = -0.122985 + 0.288246I$ $b = -0.437118 - 1.021360I$	$5.08101 + 0.72288I$	$10.46952 - 1.61581I$
$u = 0.776216 - 0.200551I$ $a = -0.122985 - 0.288246I$ $b = -0.437118 + 1.021360I$	$5.08101 - 0.72288I$	$10.46952 + 1.61581I$
$u = -0.100734 + 0.756568I$ $a = -1.29597 + 1.74435I$ $b = 1.38516 - 0.30781I$	$1.052880 - 0.788287I$	$1.82250 - 2.44795I$
$u = -0.100734 - 0.756568I$ $a = -1.29597 - 1.74435I$ $b = 1.38516 + 0.30781I$	$1.052880 + 0.788287I$	$1.82250 + 2.44795I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.405861 + 0.639492I$ $a = -0.273422 - 0.284148I$ $b = 0.206163 + 0.373793I$	$0.05508 + 1.46864I$	$0.73396 - 4.75961I$
$u = 0.405861 - 0.639492I$ $a = -0.273422 + 0.284148I$ $b = 0.206163 - 0.373793I$	$0.05508 - 1.46864I$	$0.73396 + 4.75961I$
$u = -0.531183 + 0.468483I$ $a = 0.20768 + 1.54378I$ $b = -0.307002 + 0.554265I$	$7.65219 - 5.07226I$	$12.77738 + 5.27340I$
$u = -0.531183 - 0.468483I$ $a = 0.20768 - 1.54378I$ $b = -0.307002 - 0.554265I$	$7.65219 + 5.07226I$	$12.77738 - 5.27340I$
$u = -0.928021 + 0.930066I$ $a = 0.284525 + 0.123937I$ $b = 0.185780 + 0.143992I$	$7.86055 - 3.38055I$	$1.34955 + 4.07729I$
$u = -0.928021 - 0.930066I$ $a = 0.284525 - 0.123937I$ $b = 0.185780 - 0.143992I$	$7.86055 + 3.38055I$	$1.34955 - 4.07729I$
$u = -1.128230 + 0.737366I$ $a = -1.42056 - 0.51782I$ $b = -0.24507 + 1.51911I$	$11.39290 - 6.89335I$	$10.03435 + 4.47976I$
$u = -1.128230 - 0.737366I$ $a = -1.42056 + 0.51782I$ $b = -0.24507 - 1.51911I$	$11.39290 + 6.89335I$	$10.03435 - 4.47976I$
$u = -0.566721 + 0.006749I$ $a = -1.95664 + 1.43740I$ $b = 0.389339 + 0.933911I$	$2.43486 + 1.42637I$	$9.21244 - 2.51396I$
$u = -0.566721 - 0.006749I$ $a = -1.95664 - 1.43740I$ $b = 0.389339 - 0.933911I$	$2.43486 - 1.42637I$	$9.21244 + 2.51396I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.22801 + 1.05643I$ $a = 1.121090 - 0.442399I$ $b = 0.00806 + 2.83114I$	$13.79620 + 0.94673I$	$9.08350 + 0.I$
$u = 1.22801 - 1.05643I$ $a = 1.121090 + 0.442399I$ $b = 0.00806 - 2.83114I$	$13.79620 - 0.94673I$	$9.08350 + 0.I$
$u = 1.10289 + 1.19850I$ $a = -1.146390 + 0.819322I$ $b = -0.38922 - 2.83191I$	$13.2760 + 7.5606I$	$8.25231 - 4.41681I$
$u = 1.10289 - 1.19850I$ $a = -1.146390 - 0.819322I$ $b = -0.38922 + 2.83191I$	$13.2760 - 7.5606I$	$8.25231 + 4.41681I$
$u = -1.18793 + 1.15252I$ $a = -0.518013 - 0.112474I$ $b = -0.508297 - 0.220564I$	$15.8822 - 4.3416I$	$9.48749 + 2.02953I$
$u = -1.18793 - 1.15252I$ $a = -0.518013 + 0.112474I$ $b = -0.508297 + 0.220564I$	$15.8822 + 4.3416I$	$9.48749 - 2.02953I$
$u = 1.00823 + 1.34227I$ $a = 0.94025 - 1.06187I$ $b = 0.56557 + 2.56886I$	$-19.2136 + 12.8082I$	$9.69103 - 5.43858I$
$u = 1.00823 - 1.34227I$ $a = 0.94025 + 1.06187I$ $b = 0.56557 - 2.56886I$	$-19.2136 - 12.8082I$	$9.69103 + 5.43858I$
$u = 1.43803 + 0.89416I$ $a = -0.818277 + 0.222471I$ $b = 0.17149 - 2.49018I$	$-17.5541 - 4.0475I$	$10.77450 + 0.I$
$u = 1.43803 - 0.89416I$ $a = -0.818277 - 0.222471I$ $b = 0.17149 + 2.49018I$	$-17.5541 + 4.0475I$	$10.77450 + 0.I$

II.

$$I_2^u = \langle 19a^4u - 123a^3u + \cdots + 499a - 253,\ -2a^4u + 2a^3u + \cdots - 6a + 1,\ u^2 + 1\rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ -0.131034a^4u + 0.848276a^3u + \cdots - 3.44138a + 1.74483 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.131034a^4u + 0.848276a^3u + \cdots - 1.44138a + 1.74483 \\ -a \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.165517a^4u + 0.124138a^3u + \cdots - 1.82069a + 1.57241 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.165517a^4u + 0.124138a^3u + \cdots - 1.82069a + 1.57241 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0137931a^4u - 0.510345a^3u + \cdots + 0.151724a - 0.131034 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0689655a^4u - 0.551724a^3u + \cdots + 2.75862a - 1.65517 \\ 0.186207a^4u + 1.11034a^3u + \cdots - 1.95172a + 1.73103 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.275862a^4u + 0.206897a^3u + \cdots - 3.03448a + 1.62069 \\ -0.0620690a^4u - 0.703448a^3u + \cdots + 1.31724a - 1.91034 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{132}{145}a^4u - \frac{156}{145}a^4 + \frac{336}{145}a^3u - \frac{28}{145}a^3 - \frac{112}{145}a^2u - \frac{764}{145}a^2 + \frac{556}{145}au - \frac{288}{145}a - \frac{612}{145}u + \frac{1356}{145}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^{10}$
c_2, c_3, c_4 c_6, c_7	$(u^2+1)^5$
c_5, c_{10}	$u^{10}-3u^8+4u^6-u^4-u^2+1$
c_8	$(u^5-u^4-2u^3+u^2+u+1)^2$
c_9	$(u^5+3u^4+4u^3+u^2-u-1)^2$
c_{11}, c_{12}	$(u^5+u^4-2u^3-u^2+u-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^{10}$
c_2, c_3, c_4 c_6, c_7	$(y+1)^{10}$
c_5, c_{10}	$(y^5 - 3y^4 + 4y^3 - y^2 - y + 1)^2$
c_8, c_{11}, c_{12}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2$
c_9	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 0.645450 + 0.271616I$ $b = -1.46782 - 0.61073I$	$0.32910 + 1.53058I$	$4.51511 - 4.43065I$
$u = 1.000000I$ $a = -0.74843 + 1.46044I$ $b = -0.451726 - 1.004750I$	$5.87256 - 4.40083I$	$8.74431 + 3.49859I$
$u = 1.000000I$ $a = 0.195404 + 0.003972I$ $b = 1.004750 + 0.451726I$	$5.87256 + 4.40083I$	$8.74431 - 3.49859I$
$u = 1.000000I$ $a = 0.21165 - 1.80694I$ $b = 0.61073 + 1.46782I$	$0.32910 - 1.53058I$	$4.51511 + 4.43065I$
$u = 1.000000I$ $a = -1.30408 + 2.07090I$ $b = 1.30408 - 1.30408I$	2.40108	$5.48114 + 0.I$
$u = -1.000000I$ $a = 0.645450 - 0.271616I$ $b = -1.46782 + 0.61073I$	$0.32910 - 1.53058I$	$4.51511 + 4.43065I$
$u = -1.000000I$ $a = -0.74843 - 1.46044I$ $b = -0.451726 + 1.004750I$	$5.87256 + 4.40083I$	$8.74431 - 3.49859I$
$u = -1.000000I$ $a = 0.195404 - 0.003972I$ $b = 1.004750 - 0.451726I$	$5.87256 - 4.40083I$	$8.74431 + 3.49859I$
$u = -1.000000I$ $a = 0.21165 + 1.80694I$ $b = 0.61073 - 1.46782I$	$0.32910 + 1.53058I$	$4.51511 - 4.43065I$
$u = -1.000000I$ $a = -1.30408 - 2.07090I$ $b = 1.30408 + 1.30408I$	2.40108	$5.48114 + 0.I$

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{2}u^3 + u^2 + \frac{3}{2}u + \frac{1}{2} \\ \frac{1}{2}u^3 - \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{2}u^3 + u^2 + \frac{3}{2}u + \frac{1}{2} \\ \frac{1}{2}u^3 - \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^3 + u^2 + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3 \\ -u^3 - u^2 - 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{2}u^3 + u^2 + \frac{3}{2}u + \frac{1}{2} \\ \frac{1}{2}u^3 - \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{3}{2}u^3 + u^2 + \frac{3}{2}u + \frac{1}{2} \\ \frac{3}{2}u^3 + u^2 - \frac{1}{2}u + \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1}{4}u^3 - \frac{7}{2}u^2 - \frac{23}{4}u + \frac{37}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.351808 + 0.720342I$ $a = 0.38053 + 1.53420I$ $b = -0.927958 - 0.413327I$	$1.43393 + 1.41510I$	$8.73606 - 5.88934I$
$u = 0.351808 - 0.720342I$ $a = 0.38053 - 1.53420I$ $b = -0.927958 + 0.413327I$	$1.43393 - 1.41510I$	$8.73606 + 5.88934I$
$u = -0.851808 + 0.911292I$ $a = -0.130534 + 0.427872I$ $b = 0.677958 + 0.157780I$	$8.43568 - 3.16396I$	$14.13894 - 0.11292I$
$u = -0.851808 - 0.911292I$ $a = -0.130534 - 0.427872I$ $b = 0.677958 - 0.157780I$	$8.43568 + 3.16396I$	$14.13894 + 0.11292I$

**IV. $I^u_4 =$
$\langle -u^5+u^4-u^3+3u^2+b-2u,\ -u^4-u^3-u^2+a+u+2,\ u^6+2u^4-3u^3+u^2-3u+1\rangle$**

(i) Arc colorings

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

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

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

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

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

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

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

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

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

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

$$a_9 = \begin{pmatrix} 2u^3 + u - 2 \\ 2u^5 + 2u^3 - 2u^2 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^4 - u^3 + u^2 - 3u \\ -u^5 - u^4 - u^3 - u^2 + 2u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^6 + 4u^5 + 6u^4 - 3u^3 - 13u^2 - 7u + 1$
c_2, c_3, c_4 c_6, c_7	$u^6 + 2u^4 - 3u^3 + u^2 - 3u + 1$
c_5, c_8, c_{10} c_{11}, c_{12}	$(u^2 + u - 1)^3$
c_9	$(u^2 - 3u + 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^6 - 4y^5 + 34y^4 - 107y^3 + 139y^2 - 75y + 1$
c_2, c_3, c_4 c_6, c_7	$y^6 + 4y^5 + 6y^4 - 3y^3 - 13y^2 - 7y + 1$
c_5, c_8, c_{10} c_{11}, c_{12}	$(y^2 - 3y + 1)^3$
c_9	$(y^2 - 7y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_4	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.170987 + 1.042930I$ $a = -1.34137 - 1.68750I$ $b = 1.43598 + 2.26458I$	0.986960	10.0000
$u = -0.170987 - 1.042930I$ $a = -1.34137 + 1.68750I$ $b = 1.43598 - 2.26458I$	0.986960	10.0000
$u = 1.13928$ $a = 1.32215$ $b = 0.0980714$	8.88264	10.0000
$u = -0.56964 + 1.40480I$ $a = 0.265976 + 0.868217I$ $b = -0.66707 - 1.85736I$	8.88264	10.0000
$u = -0.56964 - 1.40480I$ $a = 0.265976 - 0.868217I$ $b = -0.66707 + 1.85736I$	8.88264	10.0000
$u = 0.341974$ $a = -2.17136$ $b = 0.364102$	0.986960	10.0000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{10})(u^4-u^3+3u^2-2u+1)(u^6+4u^5+\cdots-7u+1)$ $\cdot(u^{30}+36u^{28}+\cdots-842u+289)$
c_2	$(u^2+1)^5(u^4-u^3+u^2+1)(u^6+2u^4-3u^3+u^2-3u+1)$ $\cdot(u^{30}-2u^{29}+\cdots+54u+17)$
c_3, c_4	$(u^2+1)^5(u^4-u^3+3u^2-2u+1)(u^6+2u^4-3u^3+u^2-3u+1)$ $\cdot(u^{30}-2u^{29}+\cdots+134u+17)$
c_5, c_{10}	$u^4(u^2+u-1)^3(u^{10}-3u^8+4u^6-u^4-u^2+1)$ $\cdot(u^{30}-2u^{29}+\cdots-16u+64)$
c_6	$(u^2+1)^5(u^4+u^3+u^2+1)(u^6+2u^4-3u^3+u^2-3u+1)$ $\cdot(u^{30}-2u^{29}+\cdots+54u+17)$
c_7	$(u^2+1)^5(u^4+u^3+3u^2+2u+1)(u^6+2u^4-3u^3+u^2-3u+1)$ $\cdot(u^{30}-2u^{29}+\cdots+134u+17)$
c_8	$(u+1)^4(u^2+u-1)^3(u^5-u^4-2u^3+u^2+u+1)^2$ $\cdot(u^{30}+4u^{29}+\cdots+35u+4)$
c_9	$u^4(u^2-3u+1)^3(u^5+3u^4+4u^3+u^2-u-1)^2$ $\cdot(u^{30}-24u^{29}+\cdots+37632u+4096)$
c_{11}, c_{12}	$(u-1)^4(u^2+u-1)^3(u^5+u^4-2u^3-u^2+u-1)^2$ $\cdot(u^{30}+4u^{29}+\cdots+35u+4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^{10}(y^4+5y^3+7y^2+2y+1)$ $\cdot(y^6-4y^5+34y^4-107y^3+139y^2-75y+1)$ $\cdot(y^{30}+72y^{29}+\cdots-1286386y+83521)$
c_2, c_6	$((y+1)^{10})(y^4+y^3+3y^2+2y+1)(y^6+4y^5+\cdots-7y+1)$ $\cdot(y^{30}+36y^{28}+\cdots-842y+289)$
c_3, c_4, c_7	$(y+1)^{10}(y^4+5y^3+7y^2+2y+1)$ $\cdot(y^6+4y^5+6y^4-3y^3-13y^2-7y+1)$ $\cdot(y^{30}+48y^{29}+\cdots+1526y+289)$
c_5, c_{10}	$y^4(y^2-3y+1)^3(y^5-3y^4+4y^3-y^2-y+1)^2$ $\cdot(y^{30}-24y^{29}+\cdots+37632y+4096)$
c_8, c_{11}, c_{12}	$(y-1)^4(y^2-3y+1)^3(y^5-5y^4+8y^3-3y^2-y-1)^2$ $\cdot(y^{30}-32y^{29}+\cdots-785y+16)$
c_9	$y^4(y^2-7y+1)^3(y^5-y^4+8y^3-3y^2+3y-1)^2$ $\cdot(y^{30}-44y^{29}+\cdots-830537728y+16777216)$