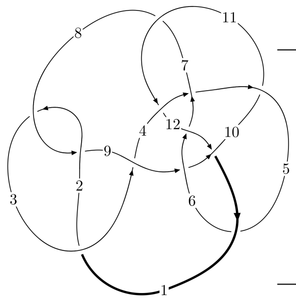
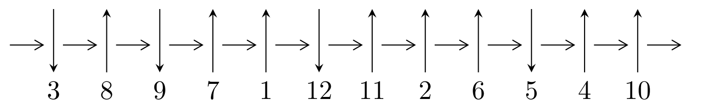
$12a_{0712}$ $(K12a_{0712})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

[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`).

$$
\begin{aligned}
I^u_1 &= \langle 1200u^{27} - 22896u^{26} + \cdots + b - 220937,\ -220937u^{27} + 3436077u^{26} + \cdots + 1003a - 276943727,\\
&\quad u^{28} - 21u^{27} + \cdots - 8019u + 1003\rangle\\
I^u_2 &= \langle 58u^{21} - 1336u^{20} + \cdots + b - 184389,\ -184389u^{21} + 4180402u^{20} + \cdots + 4223a + 427232464,\\
&\quad u^{22} - 24u^{21} + \cdots - 46453u + 4223\rangle\\
I^u_3 &= \langle a^7u + 2a^7 - 8a^5u - 7a^5 - 4a^4u - a^4 + 13a^3u + 8a^3 + 4a^2u - 2a^2 - 7au + b - 3a + 3,\\
&\quad a^8 - 3a^6u - 5a^6 - 3a^5u - 2a^5 + 6a^4u + 7a^4 + 5a^3u - 3a^2u - 4a^2 - 2au + 2a + u + 1,\ u^2 + u + 1\rangle\\
I^u_4 &= \langle 466047239a^7u^3 + 39554105a^6u^3 + \cdots + 1099016629a + 1191577537,\\
&\quad 5a^6u^3 - 6a^5u^3 + \cdots + 8a + 151,\ u^4 + u^3 - 2u + 1\rangle\\
I^u_5 &= \langle 1.27748 \times 10^{33}u^{41} + 1.90856 \times 10^{34}u^{40} + \cdots + 6.44565 \times 10^{32}b - 1.07355 \times 10^{33},\\
&\quad 1.07355 \times 10^{33}u^{41} + 1.73807 \times 10^{34}u^{40} + \cdots + 6.44565 \times 10^{32}a - 5.56931 \times 10^{33},\ u^{42} + 15u^{41} + \cdots - u + 1\\
I^u_6 &= \langle 32a^7 + 2a^6 - 9a^5 - 140a^4 + 168a^3 + 111a^2 + 61b + 49a + 13,\ a^8 - a^6 - 4a^5 + 6a^4 + 6a^3 - 5a^2 - a + 2,\\
&\quad u + 1\rangle\\
I^u_7 &= \langle 1.76268 \times 10^{24}a^{11}u^3 - 8.39105 \times 10^{22}a^{10}u^3 + \cdots + 3.22438 \times 10^{23}a - 1.26409 \times 10^{24},\\
&\quad -4a^{11}u^3 + 14a^{10}u^3 + \cdots - 616a - 69,\ u^4 + u^3 - 2u + 1\rangle\\
I^u_8 &= \langle 28032a^{11}u + 4413a^{10}u + \cdots + 275661a - 56296,\ -a^{11}u - 5a^{10}u + \cdots - 2a + 1,\ u^2 + u + 1\rangle\\
I^u_9 &= \langle 31947a^{11} + 53734b + \cdots + 140465a - 40927,\\
&\quad a^{12} + a^{11} - a^{10} + a^9 + 4a^8 + 6a^7 - 4a^6 - 21a^5 + 7a^4 + 10a^3 - 2a^2 - 2a + 1,\ u + 1\rangle\\
I^u_{10} &= \langle b - 1,\ a + 1,\ u + 1\rangle
\end{aligned}
$$

$$
\begin{aligned}
I^v_1 &= \langle a,\ b^4 + b^2 - b + 1,\ v - 1\rangle\\
I^v_2 &= \langle a,\ b^6 + b^5 + 2b^4 + 2b^3 + 2b^2 + 2b + 1,\ v - 1\rangle
\end{aligned}
$$

* 12 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 243 representations.

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle 1200u^{27} - 22896u^{26} + \cdots + b - 220937,\ -2.21 \times 10^5 u^{27} + 3.44 \times 10^6 u^{26} + \cdots + 1003a - 2.77 \times 10^8,\ u^{28} - 21u^{27} + \cdots - 8019u + 1003\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} 220.276u^{27} - 3425.80u^{26} + \cdots - 1.85179 \times 10^6 u + 276115. \\ -1200u^{27} + 22896u^{26} + \cdots - 2042510u + 220937 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.500499u^{27} - 9.51047u^{26} + \cdots + 267.069u - 4.49751 \\ -u^{27} + 20u^{26} + \cdots - 4008u + 502 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -979.724u^{27} + 19470.2u^{26} + \cdots - 3.89430 \times 10^6 u + 497052. \\ -1200u^{27} + 22896u^{26} + \cdots - 2042510u + 220937 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.499501u^{27} + 9.48953u^{26} + \cdots - 233.931u - 3.49751 \\ -u^{26} + 19u^{25} + \cdots + 3509u - 501 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1324.28u^{27} - 26401.8u^{26} + \cdots + 5.50756 \times 10^6 u - 706548. \\ 1022u^{27} - 17985u^{26} + \cdots - 2603150u + 429561 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 428.276u^{27} - 10015.8u^{26} + \cdots + 6.01852 \times 10^6 u - 831197. \\ 2277u^{27} - 44386u^{26} + \cdots + 6582469u - 804129 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1331.36u^{27} + 25723.6u^{26} + \cdots - 3.16627 \times 10^6 u + 372898. \\ 678u^{27} - 14540u^{26} + \cdots + 5772856u - 781700 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -14.3749u^{27} + 325.872u^{26} + \cdots - 186238.u + 25702.1 \\ -48u^{27} + 972u^{26} + \cdots - 243822u + 31720 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -424.843u^{27} + 8504.71u^{26} + \cdots - 1.87799 \times 10^6 u + 241784. \\ 134u^{27} - 3113u^{26} + \cdots + 1909522u - 264635 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1298u^{27} - 23514u^{26} + \cdots - 1450392u + 283234$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} + 12u^{27} + \cdots + 160u + 64$
c_2, c_8	$u^{28} + 6u^{27} + \cdots + 40u + 8$
c_3	$u^{28} - 6u^{27} + \cdots - 28744u + 3880$
c_4, c_{12}	$u^{28} + 21u^{27} + \cdots + 8019u + 1003$
c_5, c_7, c_9 c_{11}	$u^{28} - u^{27} + \cdots - u + 1$
c_6, c_{10}	$u^{28} - u^{27} + \cdots - 2u + 10$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 8y^{27} + \cdots + 58880y + 4096$
c_2, c_8	$y^{28} + 12y^{27} + \cdots + 160y + 64$
c_3	$y^{28} + 4y^{27} + \cdots - 22855776y + 15054400$
c_4, c_{12}	$y^{28} - 21y^{27} + \cdots + 2369061y + 1006009$
c_5, c_7, c_9 c_{11}	$y^{28} + 9y^{27} + \cdots + 35y + 1$
c_6, c_{10}	$y^{28} + 19y^{27} + \cdots + 1736y + 100$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.255884 + 0.893158I$ $a = -0.602738 - 0.627925I$ $b = -0.406606 + 0.699016I$	$-1.81341 - 7.68614I$	$0. + 8.22778I$
$u = 0.255884 - 0.893158I$ $a = -0.602738 + 0.627925I$ $b = -0.406606 - 0.699016I$	$-1.81341 + 7.68614I$	$0. - 8.22778I$
$u = 0.068858 + 0.795615I$ $a = 0.780549 + 0.451588I$ $b = 0.305543 - 0.652112I$	$0.21428 - 2.63147I$	$2.98987 + 4.53509I$
$u = 0.068858 - 0.795615I$ $a = 0.780549 - 0.451588I$ $b = 0.305543 + 0.652112I$	$0.21428 + 2.63147I$	$2.98987 - 4.53509I$
$u = 0.364425 + 0.513652I$ $a = -0.885699 - 1.065110I$ $b = -0.224323 + 0.843093I$	$-4.24210 - 0.23687I$	$-3.97755 + 0.78715I$
$u = 0.364425 - 0.513652I$ $a = -0.885699 + 1.065110I$ $b = -0.224323 - 0.843093I$	$-4.24210 + 0.23687I$	$-3.97755 - 0.78715I$
$u = -0.446227 + 0.363269I$ $a = 0.739248 - 0.644391I$ $b = 0.095785 - 0.556090I$	$0.57015 - 1.33238I$	$4.21018 + 5.70611I$
$u = -0.446227 - 0.363269I$ $a = 0.739248 + 0.644391I$ $b = 0.095785 + 0.556090I$	$0.57015 + 1.33238I$	$4.21018 - 5.70611I$
$u = 1.30381 + 0.63944I$ $a = 0.508862 + 0.586733I$ $b = -0.288283 - 1.090380I$	$-5.45715 + 1.59172I$	0
$u = 1.30381 - 0.63944I$ $a = 0.508862 - 0.586733I$ $b = -0.288283 + 1.090380I$	$-5.45715 - 1.59172I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.28320 + 0.83837I$ $a = 0.717468 + 0.432432I$ $b = -0.558117 - 1.156400I$	$-5.20632 + 10.84520I$	0
$u = 1.28320 - 0.83837I$ $a = 0.717468 - 0.432432I$ $b = -0.558117 + 1.156400I$	$-5.20632 - 10.84520I$	0
$u = 1.16856 + 1.02636I$ $a = -1.091200 - 0.031262I$ $b = 1.24305 + 1.15649I$	$0.9229 + 21.6752I$	0
$u = 1.16856 - 1.02636I$ $a = -1.091200 + 0.031262I$ $b = 1.24305 - 1.15649I$	$0.9229 - 21.6752I$	0
$u = 1.19278 + 1.00782I$ $a = -1.020190 - 0.114174I$ $b = 1.10179 + 1.16435I$	$-1.81840 + 13.23660I$	0
$u = 1.19278 - 1.00782I$ $a = -1.020190 + 0.114174I$ $b = 1.10179 - 1.16435I$	$-1.81840 - 13.23660I$	0
$u = 1.18001 + 1.03031I$ $a = 1.046090 + 0.029745I$ $b = -1.20375 - 1.11290I$	$3.3671 + 16.3184I$	0
$u = 1.18001 - 1.03031I$ $a = 1.046090 - 0.029745I$ $b = -1.20375 + 1.11290I$	$3.3671 - 16.3184I$	0
$u = 1.38335 + 0.78280I$ $a = -0.565439 - 0.415823I$ $b = 0.456694 + 1.017860I$	$-1.41308 + 6.14508I$	0
$u = 1.38335 - 0.78280I$ $a = -0.565439 + 0.415823I$ $b = 0.456694 - 1.017860I$	$-1.41308 - 6.14508I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.22841 + 1.05657I$ $a = 0.884436 + 0.007946I$ $b = -1.07806 - 0.94423I$	$5.4565 + 13.1132I$	0
$u = 1.22841 - 1.05657I$ $a = 0.884436 - 0.007946I$ $b = -1.07806 + 0.94423I$	$5.4565 - 13.1132I$	0
$u = 1.26956 + 1.06446I$ $a = -0.794082 - 0.027969I$ $b = 0.978364 + 0.880777I$	$4.78086 + 7.54326I$	0
$u = 1.26956 - 1.06446I$ $a = -0.794082 + 0.027969I$ $b = 0.978364 - 0.880777I$	$4.78086 - 7.54326I$	0
$u = -1.67808 + 0.17720I$ $a = 0.033642 - 0.204254I$ $b = 0.020260 - 0.348715I$	$5.76082 - 2.91752I$	0
$u = -1.67808 - 0.17720I$ $a = 0.033642 + 0.204254I$ $b = 0.020260 + 0.348715I$	$5.76082 + 2.91752I$	0
$u = 1.92546 + 0.15687I$ $a = -0.060515 - 0.375245I$ $b = 0.057653 + 0.732010I$	$4.63509 + 3.17553I$	0
$u = 1.92546 - 0.15687I$ $a = -0.060515 + 0.375245I$ $b = 0.057653 - 0.732010I$	$4.63509 - 3.17553I$	0

II. $\boldsymbol{I_2^u = \langle 58u^{21} - 1336u^{20} + \cdots + b - 184389,\ -1.84 \times 10^5 u^{21} + 4.18 \times 10^6 u^{20} + \cdots + 4223a + 4.27 \times 10^8,\ u^{22} - 24u^{21} + \cdots - 46453u + 4223\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} 43.6630u^{21} - 989.913u^{20} + \cdots + 1.08626 \times 10^6 u - 101168 \\ -58u^{21} + 1336u^{20} + \cdots - 1927111u + 184389 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.499882u^{21} - 10.9972u^{20} + \cdots + 20030.3u - 2105 \\ -u^{21} + 22u^{20} + \cdots - 21115u + 2111 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -14.3370u^{21} + 346.087u^{20} + \cdots - 840852.u + 83221 \\ -58u^{21} + 1336u^{20} + \cdots - 1927111u + 184389 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.499882u^{21} - 11.9972u^{20} + \cdots + 22140.3u - 2106 \\ u^{21} - 23u^{20} + \cdots + 23227u - 2112 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 41.6630u^{21} - 970.913u^{20} + \cdots + 1.66903 \times 10^6 u - 161713 \\ 2u^{21} - 22u^{20} + \cdots - 588420u + 61922 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 72.6630u^{21} - 1625.91u^{20} + \cdots + 1.23544 \times 10^6 u - 108237 \\ -114u^{21} + 2650u^{20} + \cdots - 4438373u + 429323 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 62.9946u^{21} - 1471.87u^{20} + \cdots + 2.59856 \times 10^6 u - 251727 \\ 19u^{21} - 393u^{20} + \cdots - 557436u + 63322 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -10.1253u^{21} + 229.006u^{20} + \cdots - 152359.u + 12682 \\ -u^{21} + 13u^{20} + \cdots + 211150u - 21644 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.468387u^{21} - 48.2413u^{20} + \cdots + 1.09162 \times 10^6 u - 112815 \\ 34u^{21} - 771u^{20} + \cdots + 696795u - 61367 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -166u^{21} + 3833u^{20} - 43763u^{19} + 327218u^{18} - 1793102u^{17} + 7643905u^{16} - 26278137u^{15} + 74562324u^{14} - 177325077u^{13} + 357053127u^{12} - 612487772u^{11} + 897797312u^{10} - 1124753307u^9 + 1201124031u^8 - 1087079978u^7 + 825843900u^6 - 518873251u^5 + 263618515u^4 - 104567593u^3 + 30542893u^2 - 5878416u + 563603$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{11} + 5u^{10} + \cdots + 12u - 16)^2$
c_2, c_8	$(u^{11} + 3u^{10} + \cdots + 14u + 4)^2$
c_3	$(u^{11} - 3u^{10} + \cdots - 122u + 52)^2$
c_4, c_{12}	$u^{22} + 24u^{21} + \cdots + 46453u + 4223$
c_5, c_7, c_9 c_{11}	$u^{22} + 3u^{20} + \cdots + 3u + 1$
c_6, c_{10}	$(u^{11} - u^9 - u^8 + u^7 - 2u^5 + u^3 + u^2 + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{11} + y^{10} + \cdots + 880y - 256)^2$
c_2, c_8	$(y^{11} + 5y^{10} + \cdots + 12y - 16)^2$
c_3	$(y^{11} + 3y^{10} + \cdots + 2508y - 2704)^2$
c_4, c_{12}	$y^{22} - 6y^{21} + \cdots - 6355615y + 17833729$
c_5, c_7, c_9 c_{11}	$y^{22} + 6y^{21} + \cdots - 5y + 1$
c_6, c_{10}	$(y^{11} - 2y^{10} + 3y^9 - 7y^8 + 7y^7 - 6y^6 + 8y^5 - 2y^4 + y^3 - y^2 - 2y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.569190 + 0.902443I$ $a = 1.002770 + 0.118181I$ $b = -0.464117 - 0.972214I$	-3.98200	0
$u = 0.569190 - 0.902443I$ $a = 1.002770 - 0.118181I$ $b = -0.464117 + 0.972214I$	-3.98200	0
$u = 0.665961 + 0.873592I$ $a = -1.119080 - 0.226419I$ $b = 0.547464 + 1.128400I$	$-7.32685 + 4.12958I$	0
$u = 0.665961 - 0.873592I$ $a = -1.119080 + 0.226419I$ $b = 0.547464 - 1.128400I$	$-7.32685 - 4.12958I$	0
$u = 0.965148 + 0.597000I$ $a = 1.37873 + 0.32939I$ $b = -1.13404 - 1.14101I$	$-3.07896 + 4.61958I$	0
$u = 0.965148 - 0.597000I$ $a = 1.37873 - 0.32939I$ $b = -1.13404 + 1.14101I$	$-3.07896 - 4.61958I$	0
$u = 0.618130 + 0.998682I$ $a = -0.898873 - 0.254107I$ $b = 0.301849 + 1.054760I$	$-7.32685 - 4.12958I$	0
$u = 0.618130 - 0.998682I$ $a = -0.898873 + 0.254107I$ $b = 0.301849 - 1.054760I$	$-7.32685 + 4.12958I$	0
$u = 1.075720 + 0.659234I$ $a = -1.250770 - 0.261696I$ $b = 1.17295 + 1.10606I$	$2.54096 + 7.62702I$	0
$u = 1.075720 - 0.659234I$ $a = -1.250770 + 0.261696I$ $b = 1.17295 - 1.10606I$	$2.54096 - 7.62702I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.056510 + 0.700607I$ $a = 1.289360 + 0.212601I$ $b = -1.21327 - 1.12795I$	$0.14523 + 13.14880I$	0
$u = 1.056510 - 0.700607I$ $a = 1.289360 - 0.212601I$ $b = -1.21327 + 1.12795I$	$0.14523 - 13.14880I$	0
$u = 1.364160 + 0.332809I$ $a = -0.656827 - 0.739936I$ $b = 0.649759 + 1.227990I$	$4.77583 + 3.28335I$	0
$u = 1.364160 - 0.332809I$ $a = -0.656827 + 0.739936I$ $b = 0.649759 - 1.227990I$	$4.77583 - 3.28335I$	0
$u = 1.11439 + 1.41811I$ $a = -0.035380 + 0.452400I$ $b = 0.680977 - 0.453977I$	$0.14523 - 13.14880I$	0
$u = 1.11439 - 1.41811I$ $a = -0.035380 - 0.452400I$ $b = 0.680977 + 0.453977I$	$0.14523 + 13.14880I$	0
$u = 0.90255 + 1.66935I$ $a = 0.120689 + 0.278102I$ $b = 0.355322 - 0.452472I$	$-3.07896 - 4.61958I$	0
$u = 0.90255 - 1.66935I$ $a = 0.120689 - 0.278102I$ $b = 0.355322 + 0.452472I$	$-3.07896 + 4.61958I$	0
$u = 1.17195 + 1.49716I$ $a = 0.050918 - 0.369879I$ $b = -0.613442 + 0.357248I$	$2.54096 - 7.62702I$	0
$u = 1.17195 - 1.49716I$ $a = 0.050918 + 0.369879I$ $b = -0.613442 - 0.357248I$	$2.54096 + 7.62702I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 2.49630 + 1.36748I$ $a = 0.1184540 + 0.0089508I$ $b = -0.283455 - 0.184327I$	$4.77583 - 3.28335I$	0
$u = 2.49630 - 1.36748I$ $a = 0.1184540 - 0.0089508I$ $b = -0.283455 + 0.184327I$	$4.77583 + 3.28335I$	0

III. $I_3^u = \langle a^7u - 8a^5u + \cdots - 3a + 3,\ -3a^6u - 3a^5u + \cdots + 2a + 1,\ u^2 + u + 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -a^7u + 8a^5u + \cdots + 3a - 3 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a^2u \\ a^5u + a^5 - 4a^3u - a^3 - 2a^2u + 3au - 2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -a^7u + 8a^5u + \cdots + 4a - 3 \\ -a^7u + 8a^5u + \cdots + 3a - 3 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} a^5u - a^3u + 3a^3 + a^2u + a^2 - 3a - 2u \\ -a^5 + 3a^3u + 4a^3 + 2a^2u + a^2 - 3au - 3a + 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -a^7u + 8a^5u + \cdots + 3a - 3 \\ -3a^7u + 15a^5u + \cdots - a - 6 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -2a^7u + 7a^5u + \cdots - 2a - 3 \\ -a^7u - a^5u + \cdots + 4a^2 - 6a \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a^3u + a^3 - 2au - a \\ -a^7u + 8a^5u + \cdots + 4a - 3 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -a^7u + 5a^5u + \cdots + 3a - 2 \\ -a^7u + 9a^5u + \cdots + 4a - 4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -a^7u + 5a^5u + \cdots + 4a - 2 \\ a^7u + 2a^5u + \cdots + 6a - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -8a^7u - 4a^7 - 4a^6 + 24a^5u - 8a^5 + 16a^4u + 4a^4 - 4a^3u + 32a^3 + 4a^2u + 12a^2 - 8au - 8a - 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^4+2u^3+3u^2+u+1)^4$
c_2, c_8	$(u^4+u^2+u+1)^4$
c_3	$(u^4+3u^3+4u^2+3u+2)^4$
c_4, c_{12}	$(u^2-u+1)^8$
c_5, c_7, c_9 c_{11}	$u^{16}-u^{14}+\cdots+6u+1$
c_6, c_{10}	$u^{16}-5u^{14}+\cdots-48u+13$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^4+2y^3+7y^2+5y+1)^4$
c_2, c_8	$(y^4+2y^3+3y^2+y+1)^4$
c_3	$(y^4-y^3+2y^2+7y+4)^4$
c_4, c_{12}	$(y^2+y+1)^8$
c_5, c_7, c_9 c_{11}	$y^{16}-2y^{15}+\cdots-8y+1$
c_6, c_{10}	$y^{16}-10y^{15}+\cdots-120y+169$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=\ \ 1.001440+0.170413I$ $b=-1.42920+0.60080I$	$0.98010-5.45685I$	$3.77019+10.79556I$
$u=-0.500000+0.866025I$ $a=\ \ 0.920317+0.321873I$ $b=-0.505431-0.130828I$	$0.98010-2.66268I$	$3.77019+3.06084I$
$u=-0.500000+0.866025I$ $a=-1.073320+0.161507I$ $b=\ \ 1.64121-1.09663I$	$-2.62503-11.70310I$	$-1.77019+13.43907I$
$u=-0.500000+0.866025I$ $a=-1.294380+0.345375I$ $b=-0.348905-0.259137I$	$-2.62503+3.58361I$	$-1.77019+0.41733I$
$u=-0.500000+0.866025I$ $a=-0.139416-0.503130I$ $b=\ \ 0.738909-0.636081I$	$0.98010-2.66268I$	$3.77019+3.06084I$
$u=-0.500000+0.866025I$ $a=-1.23491-0.93732I$ $b=\ \ 0.648300-0.782062I$	$0.98010-5.45685I$	$3.77019+10.79556I$
$u=-0.500000+0.866025I$ $a=\ \ 0.049967-0.431729I$ $b=-0.348088+1.293660I$	$-2.62503+3.58361I$	$-1.77019+0.41733I$
$u=-0.500000+0.866025I$ $a=\ \ 1.77032+0.87301I$ $b=-0.396792+1.010280I$	$-2.62503-11.70310I$	$-1.77019+13.43907I$
$u=-0.500000-0.866025I$ $a=\ \ 1.001440-0.170413I$ $b=-1.42920-0.60080I$	$0.98010+5.45685I$	$3.77019-10.79556I$
$u=-0.500000-0.866025I$ $a=\ \ 0.920317-0.321873I$ $b=-0.505431+0.130828I$	$0.98010+2.66268I$	$3.77019-3.06084I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 - 0.866025I$ $a = -1.073320 - 0.161507I$ $b = \quad 1.64121 + 1.09663I$	$-2.62503 + 11.70310I$	$-1.77019 - 13.43907I$
$u = -0.500000 - 0.866025I$ $a = -1.294380 - 0.345375I$ $b = -0.348905 + 0.259137I$	$-2.62503 - 3.58361I$	$-1.77019 - 0.41733I$
$u = -0.500000 - 0.866025I$ $a = -0.139416 + 0.503130I$ $b = \quad 0.738909 + 0.636081I$	$0.98010 + 2.66268I$	$3.77019 - 3.06084I$
$u = -0.500000 - 0.866025I$ $a = -1.23491 + 0.93732I$ $b = \quad 0.648300 + 0.782062I$	$0.98010 + 5.45685I$	$3.77019 - 10.79556I$
$u = -0.500000 - 0.866025I$ $a = \quad 0.049967 + 0.431729I$ $b = -0.348088 - 1.293660I$	$-2.62503 - 3.58361I$	$-1.77019 - 0.41733I$
$u = -0.500000 - 0.866025I$ $a = \quad 1.77032 - 0.87301I$ $b = -0.396792 - 1.010280I$	$-2.62503 + 11.70310I$	$-1.77019 - 13.43907I$

IV. $\boldsymbol{I^u_4 = \langle 4.66\times 10^{8}a^7u^3 + 3.96\times 10^{7}a^6u^3 + \cdots + 1.10\times 10^{9}a + 1.19\times 10^{9},\ 5a^6u^3 - 6a^5u^3 + \cdots + 8a + 151,\ u^4 + u^3 - 2u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix}a\\-1.19133a^7u^3 - 0.101110a^6u^3 + \cdots - 2.80935a - 3.04596\end{pmatrix}$$

$$a_8 = \begin{pmatrix}a^2u\\0.747094a^7u^3 + 1.26829a^6u^3 + \cdots - 1.44020a - 0.455661\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-1.19133a^7u^3 - 0.101110a^6u^3 + \cdots - 1.80935a - 3.04596\\-1.19133a^7u^3 - 0.101110a^6u^3 + \cdots - 2.80935a - 3.04596\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-1.64138a^7u^3 - 1.21333a^6u^3 + \cdots + 1.06681a - 0.725432\\-2.38847a^7u^3 - 2.48162a^6u^3 + \cdots + 2.50700a - 0.269771\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-1.19133a^7u^3 - 0.101110a^6u^3 + \cdots - 1.80935a - 3.04596\\-0.189051a^7u^3 + 1.44010a^6u^3 + \cdots - 2.87624a - 0.702324\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-2.04568a^7u^3 - 0.255362a^6u^3 + \cdots - 3.42226a + 5.35118\\-1.94824a^7u^3 + 0.693009a^6u^3 + \cdots - 3.47520a + 2.00606\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.750635a^7u^3 + 0.917910a^6u^3 + \cdots + 2.93356a - 3.60664\\2.55051a^7u^3 + 1.09438a^6u^3 + \cdots + 0.923181a + 1.14900\end{pmatrix}$$

$$a_3 = \begin{pmatrix}1.45888a^7u^3 + 1.41417a^6u^3 + \cdots + 3.04678a + 1.31020\\3.29760a^7u^3 + 2.36267a^6u^3 + \cdots - 0.517014a + 1.69334\end{pmatrix}$$

$$a_2 = \begin{pmatrix}3.35619a^7u^3 + 2.53901a^6u^3 + \cdots + 0.983459a + 2.72072\\2.69534a^7u^3 + 0.575282a^6u^3 + \cdots + 2.03500a - 1.46172\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{226626196}{391199161}a^7u^3 + \frac{812287948}{391199161}a^6u^3 + \cdots - \frac{1739775136}{391199161}a + \frac{15821222826}{391199161}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^4 + 2u^3 + 3u^2 + u + 1)^8$
c_2, c_8	$(u^4 + u^2 + u + 1)^8$
c_3	$(u^4 + 3u^3 + 4u^2 + 3u + 2)^8$
c_4, c_{12}	$(u^4 - u^3 + 2u + 1)^8$
c_5, c_7, c_9 c_{11}	$u^{32} - 7u^{30} + \cdots - 62u + 19$
c_6, c_{10}	$(u^{16} + 7u^{14} + \cdots + 50u + 19)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^4 + 2y^3 + 7y^2 + 5y + 1)^8$
c_2, c_8	$(y^4 + 2y^3 + 3y^2 + y + 1)^8$
c_3	$(y^4 - y^3 + 2y^2 + 7y + 4)^8$
c_4, c_{12}	$(y^4 - y^3 + 6y^2 - 4y + 1)^8$
c_5, c_7, c_9 c_{11}	$y^{32} - 14y^{31} + \cdots - 13914y + 361$
c_6, c_{10}	$(y^{16} + 14y^{15} + \cdots + 1984y + 361)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.621964 + 0.187730I$ $a = -0.977151 + 0.454354I$ $b = 0.77300 + 1.30665I$	$4.26996 + 2.66268I$	$15.7702 - 3.0608I$
$u = 0.621964 + 0.187730I$ $a = -1.210180 + 0.185764I$ $b = 1.78156 - 1.57240I$	$0.66484 + 11.70310I$	$10.2298 - 13.4391I$
$u = 0.621964 + 0.187730I$ $a = 0.673950 + 0.107343I$ $b = -0.90454 + 1.57461I$	$4.26996 + 5.45685I$	$15.7702 - 10.7956I$
$u = 0.621964 + 0.187730I$ $a = 1.81059 - 0.09585I$ $b = -1.58749 - 0.84779I$	$0.66484 - 3.58361I$	$10.22981 - 0.41733I$
$u = 0.621964 + 0.187730I$ $a = -1.72022 - 1.58162I$ $b = 0.693049 - 0.099151I$	$4.26996 + 2.66268I$	$15.7702 - 3.0608I$
$u = 0.621964 + 0.187730I$ $a = 2.71633 + 0.54320I$ $b = -1.144120 - 0.280285I$	$0.66484 - 3.58361I$	$10.22981 - 0.41733I$
$u = 0.621964 + 0.187730I$ $a = 0.63256 - 2.72260I$ $b = -0.399022 - 0.193284I$	$4.26996 + 5.45685I$	$15.7702 - 10.7956I$
$u = 0.621964 + 0.187730I$ $a = -1.92588 + 3.10942I$ $b = 0.787562 + 0.111649I$	$0.66484 + 11.70310I$	$10.2298 - 13.4391I$
$u = 0.621964 - 0.187730I$ $a = -0.977151 - 0.454354I$ $b = 0.77300 - 1.30665I$	$4.26996 - 2.66268I$	$15.7702 + 3.0608I$
$u = 0.621964 - 0.187730I$ $a = -1.210180 - 0.185764I$ $b = 1.78156 + 1.57240I$	$0.66484 - 11.70310I$	$10.2298 + 13.4391I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621964 - 0.187730I$ $a = 0.673950 - 0.107343I$ $b = -0.90454 - 1.57461I$	$4.26996 - 5.45685I$	$15.7702 + 10.7956I$
$u = 0.621964 - 0.187730I$ $a = 1.81059 + 0.09585I$ $b = -1.58749 + 0.84779I$	$0.66484 + 3.58361I$	$10.22981 + 0.41733I$
$u = 0.621964 - 0.187730I$ $a = -1.72022 + 1.58162I$ $b = 0.693049 + 0.099151I$	$4.26996 - 2.66268I$	$15.7702 + 3.0608I$
$u = 0.621964 - 0.187730I$ $a = 2.71633 - 0.54320I$ $b = -1.144120 + 0.280285I$	$0.66484 + 3.58361I$	$10.22981 + 0.41733I$
$u = 0.621964 - 0.187730I$ $a = 0.63256 + 2.72260I$ $b = -0.399022 + 0.193284I$	$4.26996 - 5.45685I$	$15.7702 + 10.7956I$
$u = 0.621964 - 0.187730I$ $a = -1.92588 - 3.10942I$ $b = 0.787562 - 0.111649I$	$0.66484 - 11.70310I$	$10.2298 + 13.4391I$
$u = -1.12196 + 1.05376I$ $a = 0.979313 + 0.156439I$ $b = -1.207890 + 0.522688I$	$4.26996 - 5.45685I$	$15.7702 + 10.7956I$
$u = -1.12196 + 1.05376I$ $a = -1.077380 + 0.148392I$ $b = 1.121690 - 0.779857I$	$0.66484 - 11.70310I$	$10.2298 + 13.4391I$
$u = -1.12196 + 1.05376I$ $a = 0.878049 + 0.129588I$ $b = -1.05242 + 1.30179I$	$0.66484 - 11.70310I$	$10.2298 + 13.4391I$
$u = -1.12196 + 1.05376I$ $a = -0.804489 - 0.289712I$ $b = 1.26360 - 0.85644I$	$4.26996 - 5.45685I$	$15.7702 + 10.7956I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.12196+1.05376I$ $a=\quad 0.649337+0.477773I$ $b=-0.902753+0.226276I$	$4.26996-2.66268I$	$15.7702+3.0608I$
$u=-1.12196+1.05376I$ $a=-0.528150-0.294364I$ $b=\quad 1.231990-0.148198I$	$4.26996-2.66268I$	$15.7702+3.0608I$
$u=-1.12196+1.05376I$ $a=-0.183232-0.497918I$ $b=\quad 0.276041+0.099305I$	$0.66484+3.58361I$	$10.22981+0.41733I$
$u=-1.12196+1.05376I$ $a=\quad 0.086554+0.169802I$ $b=-0.730263-0.365565I$	$0.66484+3.58361I$	$10.22981+0.41733I$
$u=-1.12196-1.05376I$ $a=\quad 0.979313-0.156439I$ $b=-1.207890-0.522688I$	$4.26996+5.45685I$	$15.7702-10.7956I$
$u=-1.12196-1.05376I$ $a=-1.077380-0.148392I$ $b=\quad 1.121690+0.779857I$	$0.66484+11.70310I$	$10.2298-13.4391I$
$u=-1.12196-1.05376I$ $a=\quad 0.878049-0.129588I$ $b=-1.05242-1.30179I$	$0.66484+11.70310I$	$10.2298-13.4391I$
$u=-1.12196-1.05376I$ $a=-0.804489+0.289712I$ $b=\quad 1.26360+0.85644I$	$4.26996+5.45685I$	$15.7702-10.7956I$
$u=-1.12196-1.05376I$ $a=\quad 0.649337-0.477773I$ $b=-0.902753-0.226276I$	$4.26996+2.66268I$	$15.7702-3.0608I$
$u=-1.12196-1.05376I$ $a=-0.528150+0.294364I$ $b=\quad 1.231990+0.148198I$	$4.26996+2.66268I$	$15.7702-3.0608I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.12196-1.05376I$ $a=-0.183232+0.497918I$ $b=\ \ 0.276041-0.099305I$	$0.66484-3.58361I$	$10.22981-0.41733I$
$u=-1.12196-1.05376I$ $a=\ \ 0.086554-0.169802I$ $b=-0.730263+0.365565I$	$0.66484-3.58361I$	$10.22981-0.41733I$

V.
$\boldsymbol{I_5^u = \langle 1.28\times10^{33}u^{41} + 1.91\times10^{34}u^{40} + \cdots + 6.45\times10^{32}b - 1.07\times10^{33},\ 1.07\times10^{33}u^{41} + 1.74\times10^{34}u^{40} + \cdots + 6.45\times10^{32}a - 5.57\times10^{33},\ u^{42} + 15u^{41} + \cdots - u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-1.66554u^{41} - 26.9650u^{40} + \cdots - 3.84330u + 8.64041\\-1.98193u^{41} - 29.6101u^{40} + \cdots + 6.97487u + 1.66554\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-8.53838u^{41} - 121.963u^{40} + \cdots + 37.4134u - 17.0826\\6.11285u^{41} + 88.3892u^{40} + \cdots - 24.6209u + 8.53838\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-3.64747u^{41} - 56.5751u^{40} + \cdots + 3.13158u + 10.3059\\-1.98193u^{41} - 29.6101u^{40} + \cdots + 6.97487u + 1.66554\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.383756u^{41} + 7.30611u^{40} + \cdots + 0.822780u - 6.11865\\2.80928u^{41} + 40.8797u^{40} + \cdots - 9.96971u + 2.42553\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-3.52865u^{41} - 55.7576u^{40} + \cdots + 2.81519u + 12.2879\\-0.485887u^{41} - 8.91958u^{40} + \cdots + 5.95760u + 0.819692\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-7.94641u^{41} - 115.880u^{40} + \cdots + 27.8228u - 12.5337\\3.66038u^{41} + 52.3024u^{40} + \cdots - 20.0368u + 8.68418\end{pmatrix}$$
$$a_9 = \begin{pmatrix}4.25719u^{41} + 64.1917u^{40} + \cdots - 7.34303u - 0.456602\\-1.01130u^{41} - 14.1686u^{40} + \cdots + 10.3749u - 6.00626\end{pmatrix}$$
$$a_3 = \begin{pmatrix}7.79160u^{41} + 111.524u^{40} + \cdots - 42.9937u + 17.6407\\-8.57486u^{41} - 123.729u^{40} + \cdots + 34.0005u - 10.9299\end{pmatrix}$$
$$a_2 = \begin{pmatrix}23.1394u^{41} + 328.560u^{40} + \cdots - 94.7998u + 47.3295\\-15.7355u^{41} - 226.885u^{40} + \cdots + 59.6762u - 19.9526\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 90.5206u^{41} + 1300.34u^{40} + \cdots - 351.273u + 134.214$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{21} - 11u^{20} + \cdots - 2u + 1)^2$
c_2, c_8	$u^{42} + 11u^{40} + \cdots - 2u^2 - 1$
c_3	$u^{42} + 5u^{40} + \cdots + 14u^2 - 1$
c_4	$u^{42} + 15u^{41} + \cdots - u + 1$
c_5, c_9	$u^{42} + 3u^{41} + \cdots + 5u + 1$
c_6, c_{10}	$u^{42} + 12u^{40} + \cdots + 29u^2 - 1$
c_7, c_{11}	$u^{42} - 3u^{41} + \cdots - 5u + 1$
c_{12}	$u^{42} - 15u^{41} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{21}+5y^{20}+\cdots+14y-1)^2$
c_2, c_8	$(y^{21}+11y^{20}+\cdots-2y-1)^2$
c_3	$(y^{21}+5y^{20}+\cdots+14y-1)^2$
c_4, c_{12}	$y^{42}-25y^{41}+\cdots-17y+1$
c_5, c_7, c_9 c_{11}	$y^{42}-15y^{41}+\cdots+43y+1$
c_6, c_{10}	$(y^{21}+12y^{20}+\cdots+29y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_5	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.843299$ $a=-1.41614$ $b=\ \ 1.19423$	3.24670	13.8130
$u=-1.23223$ $a=-0.653952$ $b=\ \ 0.805821$	3.24670	0
$u=-0.574753+0.504148I$ $a=\ \ 1.72067+0.51327I$ $b=-1.247720+0.572473I$	$-1.90716-4.43445I$	$-1.93239+10.23598I$
$u=-0.574753-0.504148I$ $a=\ \ 1.72067-0.51327I$ $b=-1.247720-0.572473I$	$-1.90716+4.43445I$	$-1.93239-10.23598I$
$u=-0.863744+0.908039I$ $a=\ \ 1.010870-0.008849I$ $b=-0.865097+0.925552I$	$-2.24999-3.58506I$	0
$u=-0.863744-0.908039I$ $a=\ \ 1.010870+0.008849I$ $b=-0.865097-0.925552I$	$-2.24999+3.58506I$	0
$u=\ \ 0.593725+0.363088I$ $a=\ \ 0.635051+0.944176I$ $b=\ \ 0.034226+0.791160I$	$3.40776+3.10864I$	$6.48262-8.04147I$
$u=\ \ 0.593725-0.363088I$ $a=\ \ 0.635051-0.944176I$ $b=\ \ 0.034226-0.791160I$	$3.40776-3.10864I$	$6.48262+8.04147I$
$u=-0.996147+0.881069I$ $a=-1.068970+0.009212I$ $b=\ \ 1.05673-0.95101I$	$2.09472-6.24827I$	0
$u=-0.996147-0.881069I$ $a=-1.068970-0.009212I$ $b=\ \ 1.05673+0.95101I$	$2.09472+6.24827I$	0

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.664367+0.045163I$ $a=\ \ 2.13243+0.63238I$ $b=-1.44528-0.32383I$	$0.45068-4.20753I$	$6.6007+13.6446I$
$u=-0.664367-0.045163I$ $a=\ \ 2.13243-0.63238I$ $b=-1.44528+0.32383I$	$0.45068+4.20753I$	$6.6007-13.6446I$
$u=-0.978913+0.920650I$ $a=\ \ 1.107530-0.022551I$ $b=-1.06342+1.04173I$	$-0.25722-11.15780I$	0
$u=-0.978913-0.920650I$ $a=\ \ 1.107530+0.022551I$ $b=-1.06342-1.04173I$	$-0.25722+11.15780I$	0
$u=-0.017661+0.632268I$ $a=\ \ 0.00455-1.57428I$ $b=\ \ 0.995289+0.030682I$	$-2.24999-3.58506I$	$-0.59837+3.73397I$
$u=-0.017661-0.632268I$ $a=\ \ 0.00455+1.57428I$ $b=\ \ 0.995289-0.030682I$	$-2.24999+3.58506I$	$-0.59837-3.73397I$
$u=\ \ 0.334034+0.500387I$ $a=-1.27714+0.71003I$ $b=-0.781900-0.401892I$	$2.09472-6.24827I$	$5.90455+4.30327I$
$u=\ \ 0.334034-0.500387I$ $a=-1.27714-0.71003I$ $b=-0.781900+0.401892I$	$2.09472+6.24827I$	$5.90455-4.30327I$
$u=\ \ 0.557686+0.004861I$ $a=-0.58961-1.46487I$ $b=-0.321698-0.819806I$	$3.78104-4.89859I$	$6.74639+0.46418I$
$u=\ \ 0.557686-0.004861I$ $a=-0.58961+1.46487I$ $b=-0.321698+0.819806I$	$3.78104+4.89859I$	$6.74639-0.46418I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.42771+0.25315I$ $a=-0.444722+0.820962I$ $b=\ \ 0.427103-1.284680I$	$4.76533-3.36777I$	0
$u=-1.42771-0.25315I$ $a=-0.444722-0.820962I$ $b=\ \ 0.427103+1.284680I$	$4.76533+3.36777I$	0
$u=-0.60496+1.34098I$ $a=-0.420247-0.131204I$ $b=\ \ 0.430177-0.484171I$	$-1.90716-4.43445I$	0
$u=-0.60496-1.34098I$ $a=-0.420247+0.131204I$ $b=\ \ 0.430177+0.484171I$	$-1.90716+4.43445I$	0
$u=-1.06621+1.02009I$ $a=\ \ 0.917361+0.381399I$ $b=-1.36717+0.52914I$	$2.45161-0.89322I$	0
$u=-1.06621-1.02009I$ $a=\ \ 0.917361-0.381399I$ $b=-1.36717-0.52914I$	$2.45161+0.89322I$	0
$u=-1.09969+0.99358I$ $a=-0.894840-0.241819I$ $b=\ \ 1.224310-0.623167I$	$3.78104-4.89859I$	0
$u=-1.09969-0.99358I$ $a=-0.894840+0.241819I$ $b=\ \ 1.224310+0.623167I$	$3.78104+4.89859I$	0
$u=\ \ 0.436024+0.274043I$ $a=-1.02640-1.58737I$ $b=-0.012529-0.973412I$	$2.28921+6.86346I$	$-0.50086-9.25967I$
$u=\ \ 0.436024-0.274043I$ $a=-1.02640+1.58737I$ $b=-0.012529+0.973412I$	$2.28921-6.86346I$	$-0.50086+9.25967I$

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.05789 + 1.07412I$ $a = 0.741922 + 0.468741I$ $b = -1.288360 + 0.301037I$	$2.28921 - 6.86346I$	0
$u = -1.05789 - 1.07412I$ $a = 0.741922 - 0.468741I$ $b = -1.288360 - 0.301037I$	$2.28921 + 6.86346I$	0
$u = 0.219100 + 0.415395I$ $a = 1.81651 - 1.35538I$ $b = 0.961016 + 0.457604I$	$-0.25722 - 11.15780I$	$2.12054 + 8.30958I$
$u = 0.219100 - 0.415395I$ $a = 1.81651 + 1.35538I$ $b = 0.961016 - 0.457604I$	$-0.25722 + 11.15780I$	$2.12054 - 8.30958I$
$u = 0.435293 + 0.085043I$ $a = 0.12294 - 2.34678I$ $b = 0.253094 - 1.011080I$	$2.45161 + 0.89322I$	$0.23604 + 3.59460I$
$u = 0.435293 - 0.085043I$ $a = 0.12294 + 2.34678I$ $b = 0.253094 + 1.011080I$	$2.45161 - 0.89322I$	$0.23604 - 3.59460I$
$u = -1.10590 + 1.11558I$ $a = -0.640202 - 0.361768I$ $b = 1.111580 - 0.314119I$	$3.40776 - 3.10864I$	0
$u = -1.10590 - 1.11558I$ $a = -0.640202 + 0.361768I$ $b = 1.111580 + 0.314119I$	$3.40776 + 3.10864I$	0
$u = -1.49469 + 0.63238I$ $a = 0.222955 + 0.313790I$ $b = -0.531685 - 0.328025I$	$0.45068 + 4.20753I$	0
$u = -1.49469 - 0.63238I$ $a = 0.222955 - 0.313790I$ $b = -0.531685 + 0.328025I$	$0.45068 - 4.20753I$	0

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 2.91453 + 0.82313I$ $a = -0.0356095 - 0.0426239I$ $b = -0.068700 - 0.153540I$	$4.76533 - 3.36777I$	0
$u = \quad 2.91453 - 0.82313I$ $a = -0.0356095 + 0.0426239I$ $b = -0.068700 + 0.153540I$	$4.76533 + 3.36777I$	0

VI.

$\boldsymbol{I_6^u = \langle 32a^7+61b+\cdots+49a+13,\ a^8-a^6-4a^5+6a^4+6a^3-5a^2-a+2,\ u+1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} a \\ -0.524590a^7 - 0.0327869a^6 + \cdots - 0.803279a - 0.213115 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -a^2 \\ 0.0327869a^7 + 0.377049a^6 + \cdots + 0.737705a - 2.04918 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.524590a^7 - 0.0327869a^6 + \cdots + 0.196721a - 0.213115 \\ -0.524590a^7 - 0.0327869a^6 + \cdots - 0.803279a - 0.213115 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0327869a^7 - 0.377049a^6 + \cdots - 0.737705a + 2.04918 \\ -0.0655738a^7 - 0.754098a^6 + \cdots - 1.47541a + 2.09836 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.524590a^7 - 0.0327869a^6 + \cdots + 1.19672a - 0.213115 \\ -a \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -a \\ -0.524590a^7 - 0.0327869a^6 + \cdots + 0.196721a - 0.213115 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.147541a^7 - 0.196721a^6 + \cdots - 0.819672a - 0.278689 \\ 0.754098a^7 - 0.327869a^6 + \cdots - 3.03279a - 0.131148 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.213115a^7 - 0.0491803a^6 + \cdots - 1.70492a + 0.180328 \\ 0.786885a^7 + 0.0491803a^6 + \cdots - 2.29508a - 1.18033 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.590164a^7 - 0.213115a^6 + \cdots - 2.72131a + 0.114754 \\ 0.557377a^7 + 0.409836a^6 + \cdots + 0.540984a - 0.836066 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{48}{61}a^7 - \frac{180}{61}a^6 - \frac{44}{61}a^5 - \frac{88}{61}a^4 + \frac{984}{61}a^3 - \frac{840}{61}a^2 - \frac{872}{61}a + \frac{1270}{61}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^4 + 2y^3 + 7y^2 + 5y + 1)^2$
c_2, c_6, c_8 c_{10}	$(y^4 + 2y^3 + 3y^2 + y + 1)^2$
c_3	$(y^4 - y^3 + 2y^2 + 7y + 4)^2$
c_4, c_{12}	$(y - 1)^8$
c_5, c_7, c_9 c_{11}	$y^8 - 2y^7 + 13y^6 - 38y^5 + 98y^4 - 108y^3 + 61y^2 - 21y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.771666 + 0.090528I$ $b = 1.31909 - 0.67618I$	$4.26996 - 1.39709I$	$15.7702 + 3.8674I$
$u = -1.00000$ $a = -0.771666 - 0.090528I$ $b = 1.31909 + 0.67618I$	$4.26996 + 1.39709I$	$15.7702 - 3.8674I$
$u = -1.00000$ $a = 0.548048 + 0.372915I$ $b = -1.09547 - 1.49379I$	$0.66484 + 7.64338I$	$10.22981 - 6.51087I$
$u = -1.00000$ $a = 0.548048 - 0.372915I$ $b = -1.09547 + 1.49379I$	$0.66484 - 7.64338I$	$10.22981 + 6.51087I$
$u = -1.00000$ $a = 1.31909 + 0.67618I$ $b = -0.771666 - 0.090528I$	$4.26996 + 1.39709I$	$15.7702 - 3.8674I$
$u = -1.00000$ $a = 1.31909 - 0.67618I$ $b = -0.771666 + 0.090528I$	$4.26996 - 1.39709I$	$15.7702 + 3.8674I$
$u = -1.00000$ $a = -1.09547 + 1.49379I$ $b = 0.548048 - 0.372915I$	$0.66484 - 7.64338I$	$10.22981 + 6.51087I$
$u = -1.00000$ $a = -1.09547 - 1.49379I$ $b = 0.548048 + 0.372915I$	$0.66484 + 7.64338I$	$10.22981 - 6.51087I$

VII. $I^u_7 = \langle 1.76\times10^{24}a^{11}u^3 - 8.39\times10^{22}a^{10}u^3 + \cdots + 3.22\times10^{23}a - 1.26\times10^{24},\ -4a^{11}u^3 + 14a^{10}u^3 + \cdots - 616a - 69,\ u^4 + u^3 - 2u + 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}a\\-5.34716a^{11}u^3 + 0.254545a^{10}u^3 + \cdots - 0.978124a + 3.83467\end{pmatrix}$$
$$a_8 = \begin{pmatrix}a^2u\\-3.04118a^{11}u^3 - 1.15528a^{10}u^3 + \cdots + 3.04555a + 0.377772\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-5.34716a^{11}u^3 + 0.254545a^{10}u^3 + \cdots + 0.0218757a + 3.83467\\-5.34716a^{11}u^3 + 0.254545a^{10}u^3 + \cdots - 0.978124a + 3.83467\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.501622a^{11}u^3 - 2.39878a^{10}u^3 + \cdots - 1.19856a - 0.394662\\3.54280a^{11}u^3 - 1.24351a^{10}u^3 + \cdots - 4.24411a - 0.772434\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-5.34716a^{11}u^3 + 0.254545a^{10}u^3 + \cdots + 0.0218757a + 3.83467\\9.09783a^{11}u^3 + 1.26462a^{10}u^3 + \cdots - 0.788236a + 1.54331\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-9.75458a^{11}u^3 + 0.321737a^{10}u^3 + \cdots - 2.83633a - 2.93560\\-2.98430a^{11}u^3 + 1.07383a^{10}u^3 + \cdots - 2.71867a - 1.07643\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-10.4447a^{11}u^3 + 3.59920a^{10}u^3 + \cdots + 4.39400a + 2.72104\\-19.4996a^{11}u^3 - 3.15835a^{10}u^3 + \cdots + 3.17653a + 0.490005\end{pmatrix}$$
$$a_3 = \begin{pmatrix}13.6981a^{11}u^3 + 4.12977a^{10}u^3 + \cdots - 11.3469a - 0.656610\\5.98651a^{11}u^3 + 5.94550a^{10}u^3 + \cdots - 5.99717a + 0.401935\end{pmatrix}$$
$$a_2 = \begin{pmatrix}7.00872a^{11}u^3 + 5.13524a^{10}u^3 + \cdots - 10.9359a - 0.321431\\9.33703a^{11}u^3 + 8.36219a^{10}u^3 + \cdots - 6.36694a + 1.00508\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{144425764675657828261 2}{18516478257642672247}a^{11}u^3 - \frac{233926054440874263756}{18516478257642672247}a^{10}u^3 + \cdots + \frac{235272260902340315932}{18516478257642672247}a + \frac{443655158928766892178}{18516478257642672247}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6 + 3u^5 + 4u^4 + 2u^3 + 1)^8$
c_2, c_8	$(u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1)^8$
c_3	$(u^3 - u^2 + 1)^{16}$
c_4, c_{12}	$(u^4 - u^3 + 2u + 1)^{12}$
c_5, c_7, c_9 c_{11}	$u^{48} + u^{47} + \cdots - 38u + 19$
c_6, c_{10}	$(u^{24} + u^{23} + \cdots + 38u + 19)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1)^8$
c_2, c_8	$(y^6 + 3y^5 + 4y^4 + 2y^3 + 1)^8$
c_3	$(y^3 - y^2 + 2y - 1)^{16}$
c_4, c_{12}	$(y^4 - y^3 + 6y^2 - 4y + 1)^{12}$
c_5, c_7, c_9 c_{11}	$y^{48} - 21y^{47} + \cdots - 28424y + 361$
c_6, c_{10}	$(y^{24} + 21y^{23} + \cdots + 6156y + 361)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.621964 + 0.187730I$ $a = 1.129810 - 0.076852I$ $b = -1.57648 + 1.49241I$	$3.02413 + 6.88789I$	$13.5098 - 9.9077I$
$u = 0.621964 + 0.187730I$ $a = -1.359640 - 0.038104I$ $b = 1.75603 - 1.11814I$	$-1.11345 + 4.05977I$	$6.98049 - 6.92820I$
$u = 0.621964 + 0.187730I$ $a = 0.552012 - 0.200535I$ $b = -0.44814 - 1.66379I$	$3.02413 + 6.88789I$	$13.5098 - 9.9077I$
$u = 0.621964 + 0.187730I$ $a = -0.263646 - 0.039356I$ $b = 0.46064 - 1.80744I$	$3.02413 + 1.23164I$	$13.50976 - 3.94876I$
$u = 0.621964 + 0.187730I$ $a = -1.71804 + 0.33117I$ $b = 1.31093 + 0.91437I$	$3.02413 + 1.23164I$	$13.50976 - 3.94876I$
$u = 0.621964 + 0.187730I$ $a = 1.90388 + 0.35114I$ $b = -1.56087 + 0.06760I$	$-1.11345 + 4.05977I$	$6.98049 - 6.92820I$
$u = 0.621964 + 0.187730I$ $a = 2.26997 - 0.79384I$ $b = -1.118230 - 0.575815I$	$-1.11345 + 4.05977I$	$6.98049 - 6.92820I$
$u = 0.621964 + 0.187730I$ $a = -2.33842 - 0.76431I$ $b = 1.130730 + 0.116552I$	$3.02413 + 1.23164I$	$13.50976 - 3.94876I$
$u = 0.621964 + 0.187730I$ $a = 1.40037 + 2.25238I$ $b = -0.380978 + 0.021096I$	$3.02413 + 6.88789I$	$13.5098 - 9.9077I$
$u = 0.621964 + 0.187730I$ $a = 0.12513 + 2.86825I$ $b = 0.156590 + 0.073972I$	$3.02413 + 1.23164I$	$13.50976 - 3.94876I$

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.621964 + 0.187730I$ $a = -2.09030 + 2.42869I$ $b = 0.838495 + 0.278945I$	$-1.11345 + 4.05977I$	$6.98049 - 6.92820I$
$u = 0.621964 + 0.187730I$ $a = 1.65925 - 2.90033I$ $b = -0.717127 - 0.164300I$	$3.02413 + 6.88789I$	$13.5098 - 9.9077I$
$u = 0.621964 - 0.187730I$ $a = 1.129810 + 0.076852I$ $b = -1.57648 - 1.49241I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$
$u = 0.621964 - 0.187730I$ $a = -1.359640 + 0.038104I$ $b = 1.75603 + 1.11814I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = 0.621964 - 0.187730I$ $a = 0.552012 + 0.200535I$ $b = -0.44814 + 1.66379I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$
$u = 0.621964 - 0.187730I$ $a = -0.263646 + 0.039356I$ $b = 0.46064 + 1.80744I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$
$u = 0.621964 - 0.187730I$ $a = -1.71804 - 0.33117I$ $b = 1.31093 - 0.91437I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$
$u = 0.621964 - 0.187730I$ $a = 1.90388 - 0.35114I$ $b = -1.56087 - 0.06760I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = 0.621964 - 0.187730I$ $a = 2.26997 + 0.79384I$ $b = -1.118230 + 0.575815I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = 0.621964 - 0.187730I$ $a = -2.33842 + 0.76431I$ $b = 1.130730 - 0.116552I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621964 - 0.187730I$ $a = 1.40037 - 2.25238I$ $b = -0.380978 - 0.021096I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$
$u = 0.621964 - 0.187730I$ $a = 0.12513 - 2.86825I$ $b = 0.156590 - 0.073972I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$
$u = 0.621964 - 0.187730I$ $a = -2.09030 - 2.42869I$ $b = 0.838495 - 0.278945I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = 0.621964 - 0.187730I$ $a = 1.65925 + 2.90033I$ $b = -0.717127 + 0.164300I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$
$u = -1.12196 + 1.05376I$ $a = 1.022580 - 0.081870I$ $b = -1.119460 + 0.700856I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$
$u = -1.12196 + 1.05376I$ $a = -0.994199 - 0.313700I$ $b = 1.266430 - 0.421436I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$
$u = -1.12196 + 1.05376I$ $a = -0.802294 - 0.507994I$ $b = 1.113020 - 0.216287I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$
$u = -1.12196 + 1.05376I$ $a = -0.898391 + 0.192258I$ $b = 0.965603 - 0.703775I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = -1.12196 + 1.05376I$ $a = 0.787176 + 0.363697I$ $b = -1.44602 + 0.69568I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$
$u = -1.12196 + 1.05376I$ $a = -0.841854 - 0.166006I$ $b = 1.06102 - 1.16940I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.12196 + 1.05376I$ $a = 0.770292 + 0.096192I$ $b = -0.805369 + 1.162390I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = -1.12196 + 1.05376I$ $a = 0.623281 + 0.392613I$ $b = -1.43545 + 0.27547I$	$3.02413 - 6.88789I$	$13.5098 + 9.9077I$
$u = -1.12196 + 1.05376I$ $a = 0.344921 + 0.424263I$ $b = -0.424844 + 0.123021I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$
$u = -1.12196 + 1.05376I$ $a = -0.402249 - 0.126456I$ $b = 0.223975 - 0.607538I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = -1.12196 + 1.05376I$ $a = 0.376282 - 0.188089I$ $b = -0.584563 + 0.281994I$	$-1.11345 - 4.05977I$	$6.98049 + 6.92820I$
$u = -1.12196 + 1.05376I$ $a = -0.255906 - 0.130701I$ $b = 0.834059 + 0.112545I$	$3.02413 - 1.23164I$	$13.50976 + 3.94876I$
$u = -1.12196 - 1.05376I$ $a = 1.022580 + 0.081870I$ $b = -1.119460 - 0.700856I$	$3.02413 + 6.88789I$	$13.5098 - 9.9077I$
$u = -1.12196 - 1.05376I$ $a = -0.994199 + 0.313700I$ $b = 1.266430 + 0.421436I$	$3.02413 + 1.23164I$	$13.50976 - 3.94876I$
$u = -1.12196 - 1.05376I$ $a = -0.802294 + 0.507994I$ $b = 1.113020 + 0.216287I$	$3.02413 + 6.88789I$	$13.5098 - 9.9077I$
$u = -1.12196 - 1.05376I$ $a = -0.898391 - 0.192258I$ $b = 0.965603 + 0.703775I$	$-1.11345 + 4.05977I$	$6.98049 - 6.92820I$

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.12196-1.05376I$ $a=\ \ 0.787176-0.363697I$ $b=-1.44602-0.69568I$	$3.02413+1.23164I$	$13.50976-3.94876I$
$u=-1.12196-1.05376I$ $a=-0.841854+0.166006I$ $b=\ \ 1.06102+1.16940I$	$3.02413+6.88789I$	$13.5098-9.9077I$
$u=-1.12196-1.05376I$ $a=\ \ 0.770292-0.096192I$ $b=-0.805369-1.162390I$	$-1.11345+4.05977I$	$6.98049-6.92820I$
$u=-1.12196-1.05376I$ $a=\ \ 0.623281-0.392613I$ $b=-1.43545-0.27547I$	$3.02413+6.88789I$	$13.5098-9.9077I$
$u=-1.12196-1.05376I$ $a=\ \ 0.344921-0.424263I$ $b=-0.424844-0.123021I$	$3.02413+1.23164I$	$13.50976-3.94876I$
$u=-1.12196-1.05376I$ $a=-0.402249+0.126456I$ $b=\ \ 0.223975+0.607538I$	$-1.11345+4.05977I$	$6.98049-6.92820I$
$u=-1.12196-1.05376I$ $a=\ \ 0.376282+0.188089I$ $b=-0.584563-0.281994I$	$-1.11345+4.05977I$	$6.98049-6.92820I$
$u=-1.12196-1.05376I$ $a=-0.255906+0.130701I$ $b=\ \ 0.834059-0.112545I$	$3.02413+1.23164I$	$13.50976-3.94876I$

VIII. $\boldsymbol{I^u_8 = \langle 28032a^{11}u + 4413a^{10}u + \cdots + 275661a - 56296,\ -a^{11}u - 5a^{10}u + \cdots - 2a + 1,\ u^2 + u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} a \\ -0.189604a^{11}u - 0.0298488a^{10}u + \cdots - 1.86453a + 0.380777 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} a^2u \\ -0.0528865a^{11}u - 0.146917a^{10}u + \cdots + 0.486882a - 0.351267 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.189604a^{11}u - 0.0298488a^{10}u + \cdots - 0.864527a + 0.380777 \\ -0.189604a^{11}u - 0.0298488a^{10}u + \cdots - 1.86453a + 0.380777 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.191511a^{11}u + 0.0471440a^{10}u + \cdots + 0.700964a + 0.838337 \\ 0.244398a^{11}u + 0.194061a^{10}u + \cdots + 0.214082a + 1.18960 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.189604a^{11}u - 0.0298488a^{10}u + \cdots - 1.86453a + 0.380777 \\ -0.540871a^{11}u - 0.463851a^{10}u + \cdots - 5.67046a + 1.19255 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.351267a^{11}u - 0.434002a^{10}u + \cdots - 1.80593a + 0.811776 \\ -0.161663a^{11}u - 0.404153a^{10}u + \cdots - 0.941405a + 0.430999 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a^3u + a^3 - 2au - a \\ -0.187054a^{11}u + 0.385471a^{10}u + \cdots - 1.08035a + 0.572289 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.139842a^{11}u - 0.307011a^{10}u + \cdots - 0.994082a + 0.428388 \\ 0.623558a^{11}u - 0.558727a^{10}u + \cdots - 1.93933a - 0.134127 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.830275a^{11}u + 0.444635a^{10}u + \cdots + 1.69826a + 0.471074 \\ 0.865880a^{11}u - 0.655125a^{10}u + \cdots - 4.68477a - 0.514268 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{22124}{29569}a^{11}u + \frac{45592}{29569}a^{10}u + \cdots - \frac{127780}{29569}a + \frac{126826}{29569}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6 + 3u^5 + 4u^4 + 2u^3 + 1)^4$
c_2, c_8	$(u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1)^4$
c_3	$(u^3 - u^2 + 1)^8$
c_4, c_{12}	$(u^2 - u + 1)^{12}$
c_5, c_7, c_9 c_{11}	$u^{24} - u^{23} + \cdots - 6u + 1$
c_6, c_{10}	$u^{24} - 3u^{23} + \cdots + 228u + 37$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1)^4$
c_2, c_8	$(y^6 + 3y^5 + 4y^4 + 2y^3 + 1)^4$
c_3	$(y^3 - y^2 + 2y - 1)^8$
c_4, c_{12}	$(y^2 + y + 1)^{12}$
c_5, c_7, c_9 c_{11}	$y^{24} - 3y^{23} + \cdots + 4y + 1$
c_6, c_{10}	$y^{24} - 15y^{23} + \cdots - 12764y + 1369$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 1.018560 - 0.089361I$ $b = -1.54846 + 0.99543I$	$-0.26574 - 6.88789I$	$1.50976 + 9.90765I$
$u = -0.500000 + 0.866025I$ $a = 0.329704 + 0.906545I$ $b = -0.857852 + 0.603445I$	$-0.26574 - 6.88789I$	$1.50976 + 9.90765I$
$u = -0.500000 + 0.866025I$ $a = -0.951524 - 0.441199I$ $b = 0.949943 + 0.167740I$	$-0.26574 - 6.88789I$	$1.50976 + 9.90765I$
$u = -0.500000 + 0.866025I$ $a = -0.883620 + 0.205979I$ $b = 1.37163 - 1.17905I$	$-4.40332 - 4.05977I$	$-5.01951 + 6.92820I$
$u = -0.500000 + 0.866025I$ $a = -1.052750 - 0.314335I$ $b = 1.42042 - 0.28919I$	$-0.265740 - 1.231640I$	$1.50976 + 3.94876I$
$u = -0.500000 + 0.866025I$ $a = 1.161960 - 0.171014I$ $b = 0.184858 + 0.159144I$	$-0.265740 - 1.231640I$	$1.50976 + 3.94876I$
$u = -0.500000 + 0.866025I$ $a = 0.96066 + 1.08552I$ $b = -0.798597 + 0.754539I$	$-0.265740 - 1.231640I$	$1.50976 + 3.94876I$
$u = -0.500000 + 0.866025I$ $a = -1.46961 + 0.00084I$ $b = -0.089208 - 0.468821I$	$-4.40332 - 4.05977I$	$-5.01951 + 6.92820I$
$u = -0.500000 + 0.866025I$ $a = 0.361406 - 0.311667I$ $b = -0.73407 + 1.27314I$	$-4.40332 - 4.05977I$	$-5.01951 + 6.92820I$
$u = -0.500000 + 0.866025I$ $a = -0.045393 + 0.239664I$ $b = 0.432879 - 1.091800I$	$-0.265740 - 1.231640I$	$1.50976 + 3.94876I$

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=\;1.70690+0.59834I$ $b=-0.263427+0.868227I$	$-4.40332-4.05977I$	$-5.01951+6.92820I$
$u=-0.500000+0.866025I$ $a=-1.63629-0.84329I$ $b=\;0.431890-0.926776I$	$-0.26574-6.88789I$	$1.50976+9.90765I$
$u=-0.500000-0.866025I$ $a=\;1.018560+0.089361I$ $b=-1.54846-0.99543I$	$-0.26574+6.88789I$	$1.50976-9.90765I$
$u=-0.500000-0.866025I$ $a=\;0.329704-0.906545I$ $b=-0.857852-0.603445I$	$-0.26574+6.88789I$	$1.50976-9.90765I$
$u=-0.500000-0.866025I$ $a=-0.951524+0.441199I$ $b=\;0.949943-0.167740I$	$-0.26574+6.88789I$	$1.50976-9.90765I$
$u=-0.500000-0.866025I$ $a=-0.883620-0.205979I$ $b=\;1.37163+1.17905I$	$-4.40332+4.05977I$	$-5.01951-6.92820I$
$u=-0.500000-0.866025I$ $a=-1.052750+0.314335I$ $b=\;1.42042+0.28919I$	$-0.265740+1.231640I$	$1.50976-3.94876I$
$u=-0.500000-0.866025I$ $a=\;1.161960+0.171014I$ $b=\;0.184858-0.159144I$	$-0.265740+1.231640I$	$1.50976-3.94876I$
$u=-0.500000-0.866025I$ $a=\;0.96066-1.08552I$ $b=-0.798597-0.754539I$	$-0.265740+1.231640I$	$1.50976-3.94876I$
$u=-0.500000-0.866025I$ $a=-1.46961-0.00084I$ $b=-0.089208+0.468821I$	$-4.40332+4.05977I$	$-5.01951-6.92820I$

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 - 0.866025I$ $a = 0.361406 + 0.311667I$ $b = -0.73407 - 1.27314I$	$-4.40332 + 4.05977I$	$-5.01951 - 6.92820I$
$u = -0.500000 - 0.866025I$ $a = -0.045393 - 0.239664I$ $b = 0.432879 + 1.091800I$	$-0.265740 + 1.231640I$	$1.50976 - 3.94876I$
$u = -0.500000 - 0.866025I$ $a = 1.70690 - 0.59834I$ $b = -0.263427 - 0.868227I$	$-4.40332 + 4.05977I$	$-5.01951 - 6.92820I$
$u = -0.500000 - 0.866025I$ $a = -1.63629 + 0.84329I$ $b = 0.431890 + 0.926776I$	$-0.26574 + 6.88789I$	$1.50976 - 9.90765I$

IX.

$\boldsymbol{I^u_9 = \langle 31947a^{11}+53734b+\cdots+140465a-40927,\ a^{12}+a^{11}+\cdots-2a+1,\ u+1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -0.594540a^{11} - 0.715469a^{10} + \cdots - 2.61408a + 0.761659 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -a^2 \\ 0.120929a^{11} + 0.286243a^{10} + \cdots + 0.427420a - 1.59454 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.594540a^{11} - 0.715469a^{10} + \cdots - 1.61408a + 0.761659 \\ -0.594540a^{11} - 0.715469a^{10} + \cdots - 2.61408a + 0.761659 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.120929a^{11} - 0.286243a^{10} + \cdots - 0.427420a + 1.59454 \\ -0.241858a^{11} - 0.572487a^{10} + \cdots - 0.854841a + 1.18908 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.594540a^{11} - 0.715469a^{10} + \cdots - 0.614080a + 0.761659 \\ -a \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -a \\ -0.594540a^{11} - 0.715469a^{10} + \cdots - 1.61408a + 0.761659 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.429225a^{11} - 0.567239a^{10} + \cdots - 1.96676a + 0.640730 \\ 0.330629a^{11} + 0.296460a^{10} + \cdots - 1.70536a - 0.241858 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.582220a^{11} - 0.859437a^{10} + \cdots - 0.451576a + 1.32205 \\ -0.697063a^{11} - 1.06272a^{10} + \cdots - 0.541929a - 0.0392303 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.219972a^{11} - 0.127331a^{10} + \cdots - 0.0646518a + 1.07733 \\ -1.35661a^{11} - 2.21945a^{10} + \cdots - 3.01496a + 1.37282 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{35532}{26867}a^{11} + \frac{31860}{26867}a^{10} - \frac{22492}{26867}a^9 + \frac{72808}{26867}a^8 + \frac{156816}{26867}a^7 + \frac{239124}{26867}a^6 - \frac{57412}{26867}a^5 - \frac{528896}{26867}a^4 + \frac{450048}{26867}a^3 + \frac{143852}{26867}a^2 - \frac{183272}{26867}a + \frac{242678}{26867}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 0.895115 + 0.065061I$ $b = -1.60903 - 0.37090I$	$3.02413 - 2.82812I$	$13.50976 + 2.97945I$
$u = -1.00000$ $a = \quad 0.895115 - 0.065061I$ $b = -1.60903 + 0.37090I$	$3.02413 + 2.82812I$	$13.50976 - 2.97945I$
$u = -1.00000$ $a = -0.559232 + 0.271442I$ $b = \quad 1.05806 - 1.27274I$	$3.02413 - 2.82812I$	$13.50976 + 2.97945I$
$u = -1.00000$ $a = -0.559232 - 0.271442I$ $b = \quad 1.05806 + 1.27274I$	$3.02413 + 2.82812I$	$13.50976 - 2.97945I$
$u = -1.00000$ $a = -0.62279 + 1.38441I$ $b = \quad 0.337871 - 0.269271I$	-1.11345	$6.98049 + 0.I$
$u = -1.00000$ $a = -0.62279 - 1.38441I$ $b = \quad 0.337871 + 0.269271I$	-1.11345	$6.98049 + 0.I$
$u = -1.00000$ $a = \quad 0.337871 + 0.269271I$ $b = -0.62279 - 1.38441I$	-1.11345	$6.98049 + 0.I$
$u = -1.00000$ $a = \quad 0.337871 - 0.269271I$ $b = -0.62279 + 1.38441I$	-1.11345	$6.98049 + 0.I$
$u = -1.00000$ $a = -1.60903 + 0.37090I$ $b = \quad 0.895115 - 0.065061I$	$3.02413 + 2.82812I$	$13.50976 - 2.97945I$
$u = -1.00000$ $a = -1.60903 - 0.37090I$ $b = \quad 0.895115 + 0.065061I$	$3.02413 - 2.82812I$	$13.50976 + 2.97945I$

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 1.05806 + 1.27274I$ $b = -0.559232 - 0.271442I$	$3.02413 + 2.82812I$	$13.50976 - 2.97945I$
$u = -1.00000$ $a = \quad 1.05806 - 1.27274I$ $b = -0.559232 + 0.271442I$	$3.02413 - 2.82812I$	$13.50976 + 2.97945I$

X. $I^u_{10} = \langle b-1,\ a+1,\ u+1\rangle$

(i) Arc colorings

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

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

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

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

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

$$a_{12} = \begin{pmatrix}0\\1\end{pmatrix}$$

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

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_6, c_8, c_{10}	y
c_4, c_5, c_7 c_9, c_{11}, c_{12}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_{10}^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = 1.00000$	3.28987	12.0000

XI. $I_1^v = \langle a,\ b^4 + b^2 - b + 1,\ v - 1 \rangle$

(i) Arc colorings

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

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

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

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

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

$$a_{12} = \begin{pmatrix} b \\ b \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -b^2 + 1 \\ -b^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} b \\ b \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} b^3 \\ b^3 + b \end{pmatrix}$$

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

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = 0.547424 + 0.585652I$	$0.98010 + 1.39709I$	$3.77019 - 3.86736I$
$v = 1.00000$ $a = 0$ $b = 0.547424 - 0.585652I$	$0.98010 - 1.39709I$	$3.77019 + 3.86736I$
$v = 1.00000$ $a = 0$ $b = -0.547424 + 1.120870I$	$-2.62503 - 7.64338I$	$-1.77019 + 6.51087I$
$v = 1.00000$ $a = 0$ $b = -0.547424 - 1.120870I$	$-2.62503 + 7.64338I$	$-1.77019 - 6.51087I$

XII. $I_2^v = \langle a,\ b^6 + b^5 + 2b^4 + 2b^3 + 2b^2 + 2b + 1,\ v - 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -b^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} b \\ b \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -b^2 + 1 \\ -b^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} b \\ b \end{pmatrix}$$
$$a_1 = \begin{pmatrix} b \\ b \end{pmatrix}$$
$$a_9 = \begin{pmatrix} b^3 \\ b^3 + b \end{pmatrix}$$
$$a_3 = \begin{pmatrix} b^5 + b^4 + 2b^3 + 2b^2 + 2b + 2 \\ b^5 + 2b^3 + b^2 + 2b + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} b^4 + b^2 + b + 1 \\ 2b^5 + b^4 + 3b^3 + 2b^2 + 3b + 2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4b^3 - 4b - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = 0.498832 + 1.001300I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$
$v = 1.00000$ $a = 0$ $b = 0.498832 - 1.001300I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$
$v = 1.00000$ $a = 0$ $b = -0.284920 + 1.115140I$	-4.40332	$-5.01951 + 0.I$
$v = 1.00000$ $a = 0$ $b = -0.284920 - 1.115140I$	-4.40332	$-5.01951 + 0.I$
$v = 1.00000$ $a = 0$ $b = -0.713912 + 0.305839I$	$-0.26574 + 2.82812I$	$1.50976 - 2.97945I$
$v = 1.00000$ $a = 0$ $b = -0.713912 - 0.305839I$	$-0.26574 - 2.82812I$	$1.50976 + 2.97945I$

XIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u^4+2u^3+3u^2+u+1)^{15}(u^6+3u^5+4u^4+2u^3+1)^{15}$ $\cdot((u^{11}+5u^{10}+\cdots+12u-16)^2)(u^{21}-11u^{20}+\cdots-2u+1)^2$ $\cdot(u^{28}+12u^{27}+\cdots+160u+64)$
c_2, c_8	$u(u^4+u^2-u+1)(u^4+u^2+u+1)^{14}$ $\cdot(u^6-u^5+2u^4-2u^3+2u^2-2u+1)^{14}$ $\cdot(u^6+u^5+2u^4+2u^3+2u^2+2u+1)(u^{11}+3u^{10}+\cdots+14u+4)^2$ $\cdot(u^{28}+6u^{27}+\cdots+40u+8)(u^{42}+11u^{40}+\cdots-2u^2-1)$
c_3	$u(u^3-u^2+1)^{28}(u^3+u^2-1)^2(u^4-3u^3+4u^2-3u+2)$ $\cdot((u^4+3u^3+4u^2+3u+2)^{14})(u^{11}-3u^{10}+\cdots-122u+52)^2$ $\cdot(u^{28}-6u^{27}+\cdots-28744u+3880)(u^{42}+5u^{40}+\cdots+14u^2-1)$
c_4	$u^{10}(u-1)^{20}(u+1)(u^2-u+1)^{20}(u^4-u^3+2u+1)^{20}$ $\cdot(u^{22}+24u^{21}+\cdots+46453u+4223)$ $\cdot(u^{28}+21u^{27}+\cdots+8019u+1003)(u^{42}+15u^{41}+\cdots-u+1)$
c_5, c_9	$(u-1)(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^8-u^6+\cdots-u+2)(u^{12}+u^{11}+\cdots-2u+1)$ $\cdot(u^{16}-u^{14}+\cdots+6u+1)(u^{22}+3u^{20}+\cdots+3u+1)$ $\cdot(u^{24}-u^{23}+\cdots-6u+1)(u^{28}-u^{27}+\cdots-u+1)$ $\cdot(u^{32}-7u^{30}+\cdots-62u+19)(u^{42}+3u^{41}+\cdots+5u+1)$ $\cdot(u^{48}+u^{47}+\cdots-38u+19)$
c_6, c_{10}	$u(u^4+u^2-u+1)^3(u^6+u^5+2u^4+2u^3+2u^2+2u+1)^3$ $\cdot((u^{11}-u^9+\cdots+u^2+1)^2)(u^{16}-5u^{14}+\cdots-48u+13)$ $\cdot((u^{16}+7u^{14}+\cdots+50u+19)^2)(u^{24}-3u^{23}+\cdots+228u+37)$ $\cdot((u^{24}+u^{23}+\cdots+38u+19)^2)(u^{28}-u^{27}+\cdots-2u+10)$ $\cdot(u^{42}+12u^{40}+\cdots+29u^2-1)$
c_7, c_{11}	$(u+1)(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^8-u^6+\cdots-u+2)(u^{12}+u^{11}+\cdots-2u+1)$ $\cdot(u^{16}-u^{14}+\cdots+6u+1)(u^{22}+3u^{20}+\cdots+3u+1)$ $\cdot(u^{24}-u^{23}+\cdots-6u+1)(u^{28}-u^{27}+\cdots-u+1)$ $\cdot(u^{32}-7u^{30}+\cdots-62u+19)(u^{42}-3u^{41}+\cdots-5u+1)$ $\cdot(u^{48}+u^{47}+\cdots-38u+19)$
c_{12}	$u^{10}(u-1)^{21}(u^2-u+1)^{20}(u^4-u^3+2u+1)^{20}$ $\cdot(u^{22}+24u^{21}+\cdots+46453u+4223)$ $\cdot(u^{28}+21u^{27}+\cdots+8019u+1003)(u^{42}-15u^{41}+\cdots+u+1)$

XIV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y^4+2y^3+7y^2+5y+1)^{15}(y^6-y^5+4y^4-2y^3+8y^2+1)^{15}$ $\cdot((y^{11}+y^{10}+\cdots+880y-256)^2)(y^{21}+5y^{20}+\cdots+14y-1)^2$ $\cdot(y^{28}+8y^{27}+\cdots+58880y+4096)$
c_2, c_8	$y(y^4+2y^3+3y^2+y+1)^{15}(y^6+3y^5+4y^4+2y^3+1)^{15}$ $\cdot((y^{11}+5y^{10}+\cdots+12y-16)^2)(y^{21}+11y^{20}+\cdots-2y-1)^2$ $\cdot(y^{28}+12y^{27}+\cdots+160y+64)$
c_3	$y(y^3-y^2+2y-1)^{30}(y^4-y^3+2y^2+7y+4)^{15}$ $\cdot((y^{11}+3y^{10}+\cdots+2508y-2704)^2)(y^{21}+5y^{20}+\cdots+14y-1)^2$ $\cdot(y^{28}+4y^{27}+\cdots-22855776y+15054400)$
c_4, c_{12}	$y^{10}(y-1)^{21}(y^2+y+1)^{20}(y^4-y^3+6y^2-4y+1)^{20}$ $\cdot(y^{22}-6y^{21}+\cdots-6355615y+17833729)$ $\cdot(y^{28}-21y^{27}+\cdots+2369061y+1006009)$ $\cdot(y^{42}-25y^{41}+\cdots-17y+1)$
c_5, c_7, c_9 c_{11}	$(y-1)(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^8-2y^7+13y^6-38y^5+98y^4-108y^3+61y^2-21y+4)$ $\cdot(y^{12}-3y^{11}+\cdots-8y+1)(y^{16}-2y^{15}+\cdots-8y+1)$ $\cdot(y^{22}+6y^{21}+\cdots-5y+1)(y^{24}-3y^{23}+\cdots+4y+1)$ $\cdot(y^{28}+9y^{27}+\cdots+35y+1)(y^{32}-14y^{31}+\cdots-13914y+361)$ $\cdot(y^{42}-15y^{41}+\cdots+43y+1)(y^{48}-21y^{47}+\cdots-28424y+361)$
c_6, c_{10}	$y(y^4+2y^3+3y^2+y+1)^3(y^6+3y^5+4y^4+2y^3+1)^3$ $\cdot(y^{11}-2y^{10}+3y^9-7y^8+7y^7-6y^6+8y^5-2y^4+y^3-y^2-2y-1)^2$ $\cdot(y^{16}-10y^{15}+\cdots-120y+169)(y^{16}+14y^{15}+\cdots+1984y+361)^2$ $\cdot((y^{21}+12y^{20}+\cdots+29y-1)^2)(y^{24}-15y^{23}+\cdots-12764y+1369)$ $\cdot(y^{24}+21y^{23}+\cdots+6156y+361)^2$ $\cdot(y^{28}+19y^{27}+\cdots+1736y+100)$