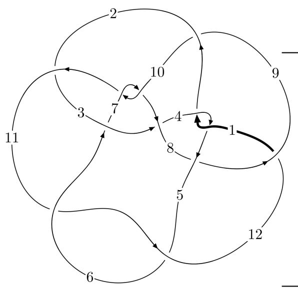
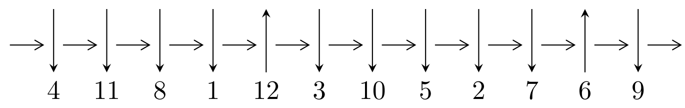
$12a_{1206}$ $(K12a_{1206})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle -3u^{18} + 21u^{17} + \cdots + 4b + 12,\ 3u^{18} - 15u^{17} + \cdots + 8a + 60,\ u^{19} - 7u^{18} + \cdots - 36u + 8 \rangle \\
I_2^u &= \langle -992688u^{27} + 12625506u^{26} + \cdots + 34453b + 67406583, \\
&\quad 67406583u^{27} - 859313682u^{26} + \cdots + 2928505a - 5202887920,\ u^{28} - 14u^{27} + \cdots - 855u + 85 \rangle \\
I_3^u &= \langle 545822815415u^{11}a^5 - 8124336604603u^{11}a^4 + \cdots - 7690591677159a + 38068629937764, \\
&\quad -3u^{11}a^4 + u^{11}a^3 + \cdots + 21a + 95, \\
&\quad u^{12} + 3u^{11} + 8u^{10} + 13u^9 + 18u^8 + 21u^7 + 19u^6 + 17u^5 + 10u^4 + 6u^3 + 4u^2 + 1 \rangle \\
I_4^u &= \langle -15385u^{25} - 30619u^{24} + \cdots + 143017b + 1607536, \\
&\quad -229648u^{25} - 1852569u^{24} + \cdots + 143017a - 478848,\ u^{26} + 8u^{25} + \cdots + 62u + 7 \rangle \\
I_5^u &= \langle -a^3u^2 + a^3u - a^2u^2 + a^3 - 2a^2u - 2u^2a - a^2 - 6au + 2u^2 + 2b - 2a + u + 2, \\
&\quad a^3u^2 + a^4 + 2a^3 - 2a^2u + 3u^2a - a^2 + au + 10u^2 + 5a + 5u + 17,\ u^3 + u^2 + 2u + 1 \rangle \\
I_6^u &= \langle -9a^5u - 20a^5 + 14a^4u - 31a^4 + 73a^3u + 38a^3 - 18a^2u + 46a^2 - 82au + 43b - 15a - 17u - 33, \\
&\quad a^6 - a^5u - 2a^4u - 3a^4 + 3a^3u + 2a^3 + a^2u - a^2 - 2au + a + u + 1,\ u^2 + u + 1 \rangle \\
I_7^u &= \langle -u^2 + b - u - 1,\ u^2 + a + 1,\ u^3 + u^2 + 2u + 1 \rangle \\
I_8^u &= \langle b,\ a - 1,\ u^3 + u^2 + 2u + 1 \rangle \\
I_9^u &= \langle b + u,\ a,\ u^3 + u^2 + 2u + 1 \rangle \\
I_{10}^u &= \langle b + u,\ a - 1,\ u^2 - u + 1 \rangle
\end{aligned}
$$

[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`).

* 10 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 180 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. $\boldsymbol{I_1^u = \langle -3u^{18} + 21u^{17} + \cdots + 4b + 12,\ 3u^{18} - 15u^{17} + \cdots + 8a + 60,\ u^{19} - 7u^{18} + \cdots - 36u + 8\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.375000u^{18} + 1.87500u^{17} + \cdots + 29.7500u - 7.50000 \\ \frac{3}{4}u^{18} - \frac{21}{4}u^{17} + \cdots + 21u - 3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{3}{8}u^{18} + \frac{7}{8}u^{17} + \cdots + \frac{239}{4}u - \frac{27}{2} \\ -\frac{1}{4}u^{18} - \frac{1}{4}u^{17} + \cdots + 27u - 5 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{3}{8}u^{18} - \frac{27}{8}u^{17} + \cdots + \frac{203}{4}u - \frac{21}{2} \\ \frac{3}{4}u^{18} - \frac{21}{4}u^{17} + \cdots + 21u - 3 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{5}{8}u^{18} - \frac{37}{8}u^{17} + \cdots + \frac{83}{4}u - 3 \\ \frac{3}{4}u^{18} - \frac{19}{4}u^{17} + \cdots + \frac{15}{2}u - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1.37500u^{18} + 9.87500u^{17} + \cdots + 23.7500u - 7.50000 \\ -\frac{5}{4}u^{18} + \frac{31}{4}u^{17} + \cdots + 7u - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{7}{8}u^{18} + \frac{47}{8}u^{17} + \cdots - \frac{57}{4}u + 2 \\ \frac{1}{4}u^{18} - \frac{9}{4}u^{17} + \cdots + \frac{61}{2}u - 7 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{7}{8}u^{18} - \frac{37}{8}u^{17} + \cdots - \frac{25}{2}u + 3 \\ -u^{18} + \frac{15}{2}u^{17} + \cdots - \frac{71}{2}u + 9 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{8}u^{18} - \frac{17}{8}u^{17} + \cdots - \frac{11}{4}u + \frac{5}{2} \\ \frac{5}{4}u^{18} - \frac{35}{4}u^{17} + \cdots + 19u - 5 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= u^{18} - 7u^{17} + 28u^{16} - 77u^{15} + 159u^{14} - 256u^{13} + 322u^{12} - 304u^{11} + 174u^{10} + 38u^9 - 247u^8 + 357u^7 - 324u^6 + 183u^5 - 32u^4 - 69u^3 + 81u^2 - 50u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{19} - 7u^{18} + \cdots - 36u + 8$
c_2, c_6, c_8 c_{12}	$u^{19} + 2u^{17} + \cdots + 5u + 1$
c_3, c_9	$u^{19} - 5u^{18} + \cdots + 22u + 12$
c_5, c_{11}	$u^{19} - 11u^{18} + \cdots - 224u + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^{19} + 11y^{18} + \cdots - 304y - 64$
c_2, c_6, c_8 c_{12}	$y^{19} + 4y^{18} + \cdots + 5y - 1$
c_3, c_9	$y^{19} - 15y^{18} + \cdots - 164y - 144$
c_5, c_{11}	$y^{19} + 9y^{18} + \cdots + 512y - 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.089256 + 1.007980I$ $a = 1.05363 - 1.09151I$ $b = -1.00618 - 1.15946I$	$0.28070 - 2.38140I$	$-5.46513 + 2.98597I$
$u = -0.089256 - 1.007980I$ $a = 1.05363 + 1.09151I$ $b = -1.00618 + 1.15946I$	$0.28070 + 2.38140I$	$-5.46513 - 2.98597I$
$u = -0.129693 + 1.056200I$ $a = -0.901489 + 0.653587I$ $b = 0.573401 + 1.036920I$	$4.83655 + 0.75731I$	$0.29531 + 1.48803I$
$u = -0.129693 - 1.056200I$ $a = -0.901489 - 0.653587I$ $b = 0.573401 - 1.036920I$	$4.83655 - 0.75731I$	$0.29531 - 1.48803I$
$u = 1.070160 + 0.136306I$ $a = 0.880972 - 0.767951I$ $b = -1.047450 + 0.701745I$	$-8.89959 + 8.35587I$	$-14.4938 - 6.1627I$
$u = 1.070160 - 0.136306I$ $a = 0.880972 + 0.767951I$ $b = -1.047450 - 0.701745I$	$-8.89959 - 8.35587I$	$-14.4938 + 6.1627I$
$u = -0.283957 + 1.128460I$ $a = 0.468063 - 0.377219I$ $b = -0.292767 - 0.635305I$	$2.62810 + 3.46250I$	$-5.41765 - 4.29370I$
$u = -0.283957 - 1.128460I$ $a = 0.468063 + 0.377219I$ $b = -0.292767 + 0.635305I$	$2.62810 - 3.46250I$	$-5.41765 + 4.29370I$
$u = 1.041110 + 0.527820I$ $a = -0.102160 + 0.634385I$ $b = 0.441200 - 0.606542I$	$-1.27781 + 2.04691I$	$-4.21735 - 12.06061I$
$u = 1.041110 - 0.527820I$ $a = -0.102160 - 0.634385I$ $b = 0.441200 + 0.606542I$	$-1.27781 - 2.04691I$	$-4.21735 + 12.06061I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.726236$ $a = 0.400633$ $b = 0.290954$	-1.16657	-7.54420
$u = 0.311802 + 0.537677I$ $a = 0.371981 + 1.120770I$ $b = 0.486627 - 0.549464I$	$-0.73404 + 1.68177I$	$-4.58767 - 4.23908I$
$u = 0.311802 - 0.537677I$ $a = 0.371981 - 1.120770I$ $b = 0.486627 + 0.549464I$	$-0.73404 - 1.68177I$	$-4.58767 + 4.23908I$
$u = 0.56617 + 1.36797I$ $a = -1.054680 + 0.464599I$ $b = 1.23269 + 1.17973I$	$-1.0494 - 20.1774I$	$-7.61137 + 10.06897I$
$u = 0.56617 - 1.36797I$ $a = -1.054680 - 0.464599I$ $b = 1.23269 - 1.17973I$	$-1.0494 + 20.1774I$	$-7.61137 - 10.06897I$
$u = 0.61070 + 1.36309I$ $a = 0.904319 - 0.205921I$ $b = -0.832955 - 1.106920I$	$5.3054 - 14.5379I$	$-4.33039 + 10.14035I$
$u = 0.61070 - 1.36309I$ $a = 0.904319 + 0.205921I$ $b = -0.832955 + 1.106920I$	$5.3054 + 14.5379I$	$-4.33039 - 10.14035I$
$u = 0.76609 + 1.32486I$ $a = -0.570950 - 0.103738I$ $b = 0.299958 + 0.835901I$	$4.42824 - 6.79161I$	$0.60019 + 10.60796I$
$u = 0.76609 - 1.32486I$ $a = -0.570950 + 0.103738I$ $b = 0.299958 - 0.835901I$	$4.42824 + 6.79161I$	$0.60019 - 10.60796I$

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle -9.93\times 10^5u^{27}+1.26\times 10^7u^{26}+\cdots+3.45\times 10^4b+6.74\times 10^7,\ 6.74\times 10^7u^{27}- 8.59\times 10^8u^{26}+\cdots+2.93\times 10^6a-5.20\times 10^9,\ u^{28}-14u^{27}+\cdots-855u+85\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-23.0174u^{27}+293.431u^{26}+\cdots-16206.9u+1776.64\\28.8128u^{27}-366.456u^{26}+\cdots+17903.2u-1956.48\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}15.6733u^{27}-202.020u^{26}+\cdots+10608.3u-1152.25\\-66.8738u^{27}+859.315u^{26}+\cdots-45141.3u+4901.10\end{pmatrix}$$
$$a_8 = \begin{pmatrix}5.79541u^{27}-73.0251u^{26}+\cdots+1696.29u-179.843\\28.8128u^{27}-366.456u^{26}+\cdots+17903.2u-1956.48\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-10.2277u^{27}+130.845u^{26}+\cdots-6911.51u+756.352\\-76.4924u^{27}+982.058u^{26}+\cdots-51779.1u+5632.50\end{pmatrix}$$
$$a_7 = \begin{pmatrix}45.0001u^{27}-576.476u^{26}+\cdots+28129.0u-3053.06\\-140.536u^{27}+1807.65u^{26}+\cdots-95332.1u+10352.0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}54.3698u^{27}-696.998u^{26}+\cdots+37058.1u-4043.28\\-64.1800u^{27}+822.445u^{26}+\cdots-42441.9u+4621.44\end{pmatrix}$$
$$a_6 = \begin{pmatrix}14.5690u^{27}-185.347u^{26}+\cdots+7527.26u-813.539\\57.4557u^{27}-734.448u^{26}+\cdots+38610.4u-4216.93\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-36.9975u^{27}+469.587u^{26}+\cdots-23688.5u+2597.06\\54.5215u^{27}-700.386u^{26}+\cdots+34381.6u-3716.35\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{12799129}{34453}u^{27}-\frac{164577489}{34453}u^{26}+\cdots+\frac{8305113305}{34453}u-\frac{900475230}{34453}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{28} - 14u^{27} + \cdots - 855u + 85$
c_2, c_6, c_8 c_{12}	$u^{28} + 4u^{27} + \cdots - 2u + 1$
c_3, c_9	$(u^{14} + 2u^{13} + \cdots - u + 1)^2$
c_5, c_{11}	$(u^{14} - 9u^{13} + \cdots - 416u + 64)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^{28} + 22y^{27} + \cdots + 79025y + 7225$
c_2, c_6, c_8 c_{12}	$y^{28} + 4y^{27} + \cdots - 10y + 1$
c_3, c_9	$(y^{14} + 4y^{12} + \cdots - 3y + 1)^2$
c_5, c_{11}	$(y^{14} + 15y^{13} + \cdots - 5120y + 4096)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.220870 + 0.964019I$ $a = 0.976311 - 0.269060I$ $b = -0.475016 - 0.881755I$	$3.33157 - 0.04587I$	0
$u = 0.220870 - 0.964019I$ $a = 0.976311 + 0.269060I$ $b = -0.475016 + 0.881755I$	$3.33157 + 0.04587I$	0
$u = 0.122015 + 0.951919I$ $a = -1.22987 + 0.91180I$ $b = 1.01802 + 1.05948I$	$-0.07368 - 3.51148I$	$-8.00000 + 0.I$
$u = 0.122015 - 0.951919I$ $a = -1.22987 - 0.91180I$ $b = 1.01802 - 1.05948I$	$-0.07368 + 3.51148I$	$-8.00000 + 0.I$
$u = -0.244537 + 0.840894I$ $a = -0.869115 - 0.048582I$ $b = -0.253383 + 0.718954I$	$-0.07368 + 3.51148I$	$-8.00000 - 3.11087I$
$u = -0.244537 - 0.840894I$ $a = -0.869115 + 0.048582I$ $b = -0.253383 - 0.718954I$	$-0.07368 - 3.51148I$	$-8.00000 + 3.11087I$
$u = 1.160470 + 0.000299I$ $a = -0.944468 - 0.613736I$ $b = 1.095850 + 0.712507I$	$-5.3108 - 14.1347I$	0
$u = 1.160470 - 0.000299I$ $a = -0.944468 + 0.613736I$ $b = 1.095850 - 0.712507I$	$-5.3108 + 14.1347I$	0
$u = 0.725406 + 0.404321I$ $a = -0.59123 + 1.38586I$ $b = 0.989219 - 0.766265I$	$-3.19044 + 2.69182I$	$-19.3369 - 28.0122I$
$u = 0.725406 - 0.404321I$ $a = -0.59123 - 1.38586I$ $b = 0.989219 + 0.766265I$	$-3.19044 - 2.69182I$	$-19.3369 + 28.0122I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.493746 + 1.144530I$ $a = -1.266750 + 0.472811I$ $b = 1.16660 + 1.21638I$	$-0.82954 - 7.36918I$	0
$u = 0.493746 - 1.144530I$ $a = -1.266750 - 0.472811I$ $b = 1.16660 - 1.21638I$	$-0.82954 + 7.36918I$	0
$u = 0.288974 + 1.259790I$ $a = 0.981923 - 0.455892I$ $b = -0.858078 - 1.105270I$	$8.09763 - 2.64325I$	0
$u = 0.288974 - 1.259790I$ $a = 0.981923 + 0.455892I$ $b = -0.858078 + 1.105270I$	$8.09763 + 2.64325I$	0
$u = 0.601682 + 1.216810I$ $a = -1.019270 + 0.137827I$ $b = 0.780986 + 1.157340I$	$1.26514 - 7.93875I$	0
$u = 0.601682 - 1.216810I$ $a = -1.019270 - 0.137827I$ $b = 0.780986 - 1.157340I$	$1.26514 + 7.93875I$	0
$u = 1.366350 + 0.089976I$ $a = 0.354535 - 0.376999I$ $b = -0.518338 + 0.483212I$	$1.26514 + 7.93875I$	0
$u = 1.366350 - 0.089976I$ $a = 0.354535 + 0.376999I$ $b = -0.518338 - 0.483212I$	$1.26514 - 7.93875I$	0
$u = 0.567715 + 1.286990I$ $a = 1.111150 - 0.453605I$ $b = -1.21460 - 1.17252I$	$-5.3108 - 14.1347I$	0
$u = 0.567715 - 1.286990I$ $a = 1.111150 + 0.453605I$ $b = -1.21460 + 1.17252I$	$-5.3108 + 14.1347I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.250099 + 0.518873I$ $a = 1.58195 + 0.00658I$ $b = -0.392229 - 0.822475I$	$3.33157 + 0.04587I$	$-1.17760 + 1.07149I$
$u = 0.250099 - 0.518873I$ $a = 1.58195 - 0.00658I$ $b = -0.392229 + 0.822475I$	$3.33157 - 0.04587I$	$-1.17760 - 1.07149I$
$u = 0.24300 + 1.41025I$ $a = -0.643805 + 0.208891I$ $b = 0.451032 + 0.857168I$	$8.09763 + 2.64325I$	0
$u = 0.24300 - 1.41025I$ $a = -0.643805 - 0.208891I$ $b = 0.451032 - 0.857168I$	$8.09763 - 2.64325I$	0
$u = 0.82492 + 1.56847I$ $a = -0.060677 + 0.273569I$ $b = 0.479139 - 0.130503I$	$-0.82954 + 7.36918I$	0
$u = 0.82492 - 1.56847I$ $a = -0.060677 - 0.273569I$ $b = 0.479139 + 0.130503I$	$-0.82954 - 7.36918I$	0
$u = 0.37929 + 1.83155I$ $a = -0.057146 - 0.158811I$ $b = -0.269196 + 0.164900I$	$-3.19044 + 2.69182I$	0
$u = 0.37929 - 1.83155I$ $a = -0.057146 + 0.158811I$ $b = -0.269196 - 0.164900I$	$-3.19044 - 2.69182I$	0

III. $\boldsymbol{I_3^u = \langle 5.46 \times 10^{11} a^5 u^{11} - 8.12 \times 10^{12} a^4 u^{11} + \cdots - 7.69 \times 10^{12} a + 3.81 \times 10^{13},\ -3u^{11}a^4 + u^{11}a^3 + \cdots + 21a + 95,\ u^{12} + 3u^{11} + \cdots + 4u^2 + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ -0.0661105a^5u^{11} + 0.984027a^4u^{11} + \cdots + 0.931491a - 4.61091 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.141190a^5u^{11} + 0.271994a^4u^{11} + \cdots + 1.47180a - 3.20730 \\ -0.292464a^5u^{11} + 0.0577256a^4u^{11} + \cdots + 0.826930a - 2.94212 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0661105a^5u^{11} + 0.984027a^4u^{11} + \cdots + 1.93149a - 4.61091 \\ -0.0661105a^5u^{11} + 0.984027a^4u^{11} + \cdots + 0.931491a - 4.61091 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.03112a^5u^{11} - 0.0958048a^4u^{11} + \cdots - 3.35664a - 3.06813 \\ -0.807877a^5u^{11} + 0.0734221a^4u^{11} + \cdots - 2.59366a - 0.289458 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.300034a^5u^{11} + 0.348634a^4u^{11} + \cdots + 1.91449a - 1.62119 \\ -0.528393a^5u^{11} + 0.238256a^4u^{11} + \cdots - 0.0490275a + 0.579304 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a^2u \\ -0.619812a^5u^{11} - 0.0748662a^4u^{11} + \cdots - 0.523197a + 1.74280 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.418102a^5u^{11} - 0.227140a^4u^{11} + \cdots - 1.99363a - 0.387884 \\ -0.0626009a^5u^{11} + 0.0471036a^4u^{11} + \cdots - 0.374182a + 2.20004 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.348882a^5u^{11} - 0.0682222a^4u^{11} + \cdots - 0.105524a - 2.43122 \\ 0.557211a^5u^{11} + 0.121970a^4u^{11} + \cdots + 0.149015a - 0.542756 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{18401813591608}{8256215143297}u^{11}a^5 - \frac{4028033611868}{8256215143297}u^{11}a^4 + \cdots - \frac{4921195373544}{8256215143297}a - \frac{130687438596918}{8256215143297}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$(u^{12} + 3u^{11} + \cdots + 4u^2 + 1)^6$
c_2, c_6, c_8 c_{12}	$u^{72} + 3u^{71} + \cdots + 354u + 59$
c_3, c_9	$(u^{36} - 11u^{34} + \cdots + 1120u + 320)^2$
c_5, c_{11}	$(u^3 + u^2 + 2u + 1)^{24}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$(y^{12} + 7y^{11} + \cdots + 8y + 1)^6$
c_2, c_6, c_8 c_{12}	$y^{72} - 23y^{71} + \cdots - 406510y + 3481$
c_3, c_9	$(y^{36} - 22y^{35} + \cdots - 97280y + 102400)^2$
c_5, c_{11}	$(y^3 + 3y^2 + 2y - 1)^{24}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.234552 + 1.002020I$ $a = -0.720810 + 1.054620I$ $b = 0.95349 + 1.51437I$	$-0.94621 - 4.13739I$	$-9.48147 + 7.59495I$
$u = 0.234552 + 1.002020I$ $a = 0.688527 - 0.072860I$ $b = -1.69950 + 0.60321I$	$3.19138 - 6.96551I$	$-2.95220 + 10.57440I$
$u = 0.234552 + 1.002020I$ $a = -1.64398 + 0.56675I$ $b = 1.225820 + 0.474901I$	$-0.94621 - 4.13739I$	$-9.48147 + 7.59495I$
$u = 0.234552 + 1.002020I$ $a = -0.19432 - 1.74157I$ $b = -0.234503 - 0.672828I$	$3.19138 - 6.96551I$	$-2.95220 + 10.57440I$
$u = 0.234552 + 1.002020I$ $a = -0.064271 + 0.176004I$ $b = 2.12527 - 1.85054I$	$-0.94621 - 9.79363I$	$-9.4815 + 13.5538I$
$u = 0.234552 + 1.002020I$ $a = 1.28018 + 2.42066I$ $b = 0.191434 + 0.023119I$	$-0.94621 - 9.79363I$	$-9.4815 + 13.5538I$
$u = 0.234552 - 1.002020I$ $a = -0.720810 - 1.054620I$ $b = 0.95349 - 1.51437I$	$-0.94621 + 4.13739I$	$-9.48147 - 7.59495I$
$u = 0.234552 - 1.002020I$ $a = 0.688527 + 0.072860I$ $b = -1.69950 - 0.60321I$	$3.19138 + 6.96551I$	$-2.95220 - 10.57440I$
$u = 0.234552 - 1.002020I$ $a = -1.64398 - 0.56675I$ $b = 1.225820 - 0.474901I$	$-0.94621 + 4.13739I$	$-9.48147 - 7.59495I$
$u = 0.234552 - 1.002020I$ $a = -0.19432 + 1.74157I$ $b = -0.234503 + 0.672828I$	$3.19138 + 6.96551I$	$-2.95220 - 10.57440I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.234552 - 1.002020I$ $a = -0.064271 - 0.176004I$ $b = 2.12527 + 1.85054I$	$-0.94621 + 9.79363I$	$-9.4815 - 13.5538I$
$u = 0.234552 - 1.002020I$ $a = 1.28018 - 2.42066I$ $b = 0.191434 - 0.023119I$	$-0.94621 + 9.79363I$	$-9.4815 - 13.5538I$
$u = -1.090290 + 0.140460I$ $a = -1.014270 + 0.266172I$ $b = 1.17507 - 0.87900I$	$-5.72690 + 3.91075I$	$-17.7913 - 8.6071I$
$u = -1.090290 + 0.140460I$ $a = 0.748871 + 0.516780I$ $b = -1.31217 - 0.63591I$	$-5.72690 - 1.74550I$	$-17.7913 - 2.6482I$
$u = -1.090290 + 0.140460I$ $a = 0.702755 + 0.135494I$ $b = -0.649097 + 0.219395I$	$-1.58932 + 1.08263I$	$-11.26202 - 5.62762I$
$u = -1.090290 + 0.140460I$ $a = -1.109950 - 0.726241I$ $b = 0.889075 + 0.458254I$	$-5.72690 - 1.74550I$	$-17.7913 - 2.6482I$
$u = -1.090290 + 0.140460I$ $a = 1.162330 - 0.656465I$ $b = -1.068470 + 0.432670I$	$-5.72690 + 3.91075I$	$-17.7913 - 8.6071I$
$u = -1.090290 + 0.140460I$ $a = -0.611124 + 0.122496I$ $b = 0.785240 + 0.049019I$	$-1.58932 + 1.08263I$	$-11.26202 - 5.62762I$
$u = -1.090290 - 0.140460I$ $a = -1.014270 - 0.266172I$ $b = 1.17507 + 0.87900I$	$-5.72690 - 3.91075I$	$-17.7913 + 8.6071I$
$u = -1.090290 - 0.140460I$ $a = 0.748871 - 0.516780I$ $b = -1.31217 + 0.63591I$	$-5.72690 + 1.74550I$	$-17.7913 + 2.6482I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.090290 - 0.140460I$ $a = 0.702755 - 0.135494I$ $b = -0.649097 - 0.219395I$	$-1.58932 - 1.08263I$	$-11.26202 + 5.62762I$
$u = -1.090290 - 0.140460I$ $a = -1.109950 + 0.726241I$ $b = 0.889075 - 0.458254I$	$-5.72690 + 1.74550I$	$-17.7913 + 2.6482I$
$u = -1.090290 - 0.140460I$ $a = 1.162330 + 0.656465I$ $b = -1.068470 - 0.432670I$	$-5.72690 - 3.91075I$	$-17.7913 + 8.6071I$
$u = -1.090290 - 0.140460I$ $a = -0.611124 - 0.122496I$ $b = 0.785240 - 0.049019I$	$-1.58932 - 1.08263I$	$-11.26202 + 5.62762I$
$u = 0.185688 + 0.817666I$ $a = -0.948598 + 0.343126I$ $b = 1.295990 - 0.229859I$	$-1.58932 - 1.08263I$	$-11.26202 + 5.62762I$
$u = 0.185688 + 0.817666I$ $a = 0.344955 - 1.070660I$ $b = -0.62210 - 2.20652I$	$-5.72690 + 1.74550I$	$-17.7913 + 2.6482I$
$u = 0.185688 + 0.817666I$ $a = -0.07496 + 1.56796I$ $b = 0.456706 + 0.711922I$	$-1.58932 - 1.08263I$	$-11.26202 + 5.62762I$
$u = 0.185688 + 0.817666I$ $a = -0.067503 - 0.291607I$ $b = -2.28703 + 1.05977I$	$-5.72690 - 3.91075I$	$-17.7913 + 8.6071I$
$u = 0.185688 + 0.817666I$ $a = 2.73052 - 0.14073I$ $b = -0.939496 - 0.083249I$	$-5.72690 + 1.74550I$	$-17.7913 + 2.6482I$
$u = 0.185688 + 0.817666I$ $a = -0.62849 - 2.93974I$ $b = -0.225903 + 0.109343I$	$-5.72690 - 3.91075I$	$-17.7913 + 8.6071I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.185688 - 0.817666I$ $a = -0.948598 - 0.343126I$ $b = 1.295990 + 0.229859I$	$-1.58932 + 1.08263I$	$-11.26202 - 5.62762I$
$u = 0.185688 - 0.817666I$ $a = 0.344955 + 1.070660I$ $b = -0.62210 + 2.20652I$	$-5.72690 - 1.74550I$	$-17.7913 - 2.6482I$
$u = 0.185688 - 0.817666I$ $a = -0.07496 - 1.56796I$ $b = 0.456706 - 0.711922I$	$-1.58932 + 1.08263I$	$-11.26202 - 5.62762I$
$u = 0.185688 - 0.817666I$ $a = -0.067503 + 0.291607I$ $b = -2.28703 - 1.05977I$	$-5.72690 + 3.91075I$	$-17.7913 - 8.6071I$
$u = 0.185688 - 0.817666I$ $a = 2.73052 + 0.14073I$ $b = -0.939496 + 0.083249I$	$-5.72690 - 1.74550I$	$-17.7913 - 2.6482I$
$u = 0.185688 - 0.817666I$ $a = -0.62849 + 2.93974I$ $b = -0.225903 - 0.109343I$	$-5.72690 + 3.91075I$	$-17.7913 - 8.6071I$
$u = -0.529049 + 1.245360I$ $a = 0.890029 + 0.495100I$ $b = -1.31752 + 1.32168I$	$-2.39928 + 7.38625I$	$-13.25651 - 4.74994I$
$u = -0.529049 + 1.245360I$ $a = 0.870453 + 0.208440I$ $b = -0.806758 + 0.638494I$	$1.73831 + 4.55813I$	$-6.72725 - 1.77049I$
$u = -0.529049 + 1.245360I$ $a = -0.667447 - 0.364270I$ $b = 0.720095 - 0.973752I$	$1.73831 + 4.55813I$	$-6.72725 - 1.77049I$
$u = -0.529049 + 1.245360I$ $a = 0.056263 + 0.623747I$ $b = -0.375011 + 0.044252I$	$-2.39928 + 1.73000I$	$-13.25651 + 1.20895I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.529049 + 1.245360I$ $a = -1.279760 - 0.514283I$ $b = 1.087450 - 0.846474I$	$-2.39928 + 7.38625I$	$-13.25651 - 4.74994I$
$u = -0.529049 + 1.245360I$ $a = -0.138468 - 0.242303I$ $b = 0.806554 + 0.259924I$	$-2.39928 + 1.73000I$	$-13.25651 + 1.20895I$
$u = -0.529049 - 1.245360I$ $a = 0.890029 - 0.495100I$ $b = -1.31752 - 1.32168I$	$-2.39928 - 7.38625I$	$-13.25651 + 4.74994I$
$u = -0.529049 - 1.245360I$ $a = 0.870453 - 0.208440I$ $b = -0.806758 - 0.638494I$	$1.73831 - 4.55813I$	$-6.72725 + 1.77049I$
$u = -0.529049 - 1.245360I$ $a = -0.667447 + 0.364270I$ $b = 0.720095 + 0.973752I$	$1.73831 - 4.55813I$	$-6.72725 + 1.77049I$
$u = -0.529049 - 1.245360I$ $a = 0.056263 - 0.623747I$ $b = -0.375011 - 0.044252I$	$-2.39928 - 1.73000I$	$-13.25651 - 1.20895I$
$u = -0.529049 - 1.245360I$ $a = -1.279760 + 0.514283I$ $b = 1.087450 + 0.846474I$	$-2.39928 - 7.38625I$	$-13.25651 + 4.74994I$
$u = -0.529049 - 1.245360I$ $a = -0.138468 + 0.242303I$ $b = 0.806554 - 0.259924I$	$-2.39928 - 1.73000I$	$-13.25651 - 1.20895I$
$u = 0.251512 + 0.449740I$ $a = 0.157220 + 1.333380I$ $b = 1.273440 - 0.607533I$	$-2.39928 + 1.73000I$	$-13.25651 + 1.20895I$
$u = 0.251512 + 0.449740I$ $a = 1.78243 - 0.04706I$ $b = -0.877545 + 0.518333I$	$1.73831 + 4.55813I$	$-6.72725 - 1.77049I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.251512 + 0.449740I$ $a = -0.04671 - 1.97735I$ $b = -0.469465 - 0.789793I$	$1.73831 + 4.55813I$	$-6.72725 - 1.77049I$
$u = 0.251512 + 0.449740I$ $a = -0.78901 + 1.82839I$ $b = 0.27710 + 1.74968I$	$-2.39928 + 7.38625I$	$-13.25651 - 4.74994I$
$u = 0.251512 + 0.449740I$ $a = -0.17720 + 2.73239I$ $b = 0.560132 - 0.406069I$	$-2.39928 + 1.73000I$	$-13.25651 + 1.20895I$
$u = 0.251512 + 0.449740I$ $a = -3.22606 - 1.18799I$ $b = 1.020750 - 0.105012I$	$-2.39928 + 7.38625I$	$-13.25651 - 4.74994I$
$u = 0.251512 - 0.449740I$ $a = 0.157220 - 1.333380I$ $b = 1.273440 + 0.607533I$	$-2.39928 - 1.73000I$	$-13.25651 - 1.20895I$
$u = 0.251512 - 0.449740I$ $a = 1.78243 + 0.04706I$ $b = -0.877545 - 0.518333I$	$1.73831 - 4.55813I$	$-6.72725 + 1.77049I$
$u = 0.251512 - 0.449740I$ $a = -0.04671 + 1.97735I$ $b = -0.469465 + 0.789793I$	$1.73831 - 4.55813I$	$-6.72725 + 1.77049I$
$u = 0.251512 - 0.449740I$ $a = -0.78901 - 1.82839I$ $b = 0.27710 - 1.74968I$	$-2.39928 - 7.38625I$	$-13.25651 + 4.74994I$
$u = 0.251512 - 0.449740I$ $a = -0.17720 - 2.73239I$ $b = 0.560132 + 0.406069I$	$-2.39928 - 1.73000I$	$-13.25651 - 1.20895I$
$u = 0.251512 - 0.449740I$ $a = -3.22606 + 1.18799I$ $b = 1.020750 + 0.105012I$	$-2.39928 - 7.38625I$	$-13.25651 + 4.74994I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.55241+1.40748I$ $a=-0.848748-0.631916I$ $b=\ 1.07565-1.32900I$	$-0.94621+9.79363I$	$-9.4815-13.5538I$
$u=-0.55241+1.40748I$ $a=\ 1.078110+0.341098I$ $b=-1.35827+0.84552I$	$-0.94621+9.79363I$	$-9.4815-13.5538I$
$u=-0.55241+1.40748I$ $a=\ 0.717143+0.435072I$ $b=-0.661991+0.890809I$	$3.19138+6.96551I$	$-2.95220-10.57440I$
$u=-0.55241+1.40748I$ $a=-0.708387-0.192308I$ $b=\ 1.008510-0.769026I$	$3.19138+6.96551I$	$-2.95220-10.57440I$
$u=-0.55241+1.40748I$ $a=-0.352995-0.502106I$ $b=\ 0.378753-0.019095I$	$-0.94621+4.13739I$	$-9.48147-7.59495I$
$u=-0.55241+1.40748I$ $a=\ 0.103275+0.228566I$ $b=-0.901704+0.219465I$	$-0.94621+4.13739I$	$-9.48147-7.59495I$
$u=-0.55241-1.40748I$ $a=-0.848748+0.631916I$ $b=\ 1.07565+1.32900I$	$-0.94621-9.79363I$	$-9.4815+13.5538I$
$u=-0.55241-1.40748I$ $a=\ 1.078110-0.341098I$ $b=-1.35827-0.84552I$	$-0.94621-9.79363I$	$-9.4815+13.5538I$
$u=-0.55241-1.40748I$ $a=\ 0.717143-0.435072I$ $b=-0.661991-0.890809I$	$3.19138-6.96551I$	$-2.95220+10.57440I$
$u=-0.55241-1.40748I$ $a=-0.708387+0.192308I$ $b=\ 1.008510+0.769026I$	$3.19138-6.96551I$	$-2.95220+10.57440I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.55241 - 1.40748I$ $a = -0.352995 + 0.502106I$ $b = 0.378753 + 0.019095I$	$-0.94621 - 4.13739I$	$-9.48147 + 7.59495I$
$u = -0.55241 - 1.40748I$ $a = 0.103275 - 0.228566I$ $b = -0.901704 - 0.219465I$	$-0.94621 - 4.13739I$	$-9.48147 + 7.59495I$

IV.

$\boldsymbol{I_4^u = \langle -1.54\times 10^4 u^{25} - 3.06\times 10^4 u^{24} + \cdots + 1.43\times 10^5 b + 1.61\times 10^6,\ -2.30\times 10^5 u^{25} - 1.85\times 10^6 u^{24} + \cdots + 1.43\times 10^5 a - 4.79\times 10^5,\ u^{26} + 8u^{25} + \cdots + 62u + 7\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.60574u^{25} + 12.9535u^{24} + \cdots + 63.1609u + 3.34819 \\ 0.107575u^{25} + 0.214093u^{24} + \cdots - 96.2076u - 11.2402 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2.07086u^{25} + 16.3907u^{24} + \cdots + 10.9392u - 3.39093 \\ 0.398428u^{25} + 2.68665u^{24} + \cdots - 58.3252u - 6.48759 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.71331u^{25} + 13.1676u^{24} + \cdots - 33.0468u - 7.89198 \\ 0.107575u^{25} + 0.214093u^{24} + \cdots - 96.2076u - 11.2402 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.145276u^{25} + 1.23548u^{24} + \cdots + 3.71046u + 2.78149 \\ 0.555451u^{25} + 3.96142u^{24} + \cdots + 24.3411u + 2.87123 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1.44082u^{25} + 10.9124u^{24} + \cdots + 70.0376u + 8.96126 \\ -1.20267u^{25} - 9.48464u^{24} + \cdots - 131.319u - 16.8348 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.548480u^{25} + 3.60536u^{24} + \cdots + 10.5103u - 0.548263 \\ -0.782480u^{25} - 5.61567u^{24} + \cdots - 33.5540u - 3.83936 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1.07562u^{25} + 8.70837u^{24} + \cdots + 161.903u + 22.9308 \\ -0.540768u^{25} - 4.59087u^{24} + \cdots - 89.4320u - 13.0067 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -2.51044u^{25} - 18.3829u^{24} + \cdots - 187.442u - 25.5075 \\ 2.60958u^{25} + 19.0437u^{24} + \cdots + 155.294u + 19.2651 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{1001674}{143017}u^{25} + \frac{7560050}{143017}u^{24} + \cdots + \frac{64577203}{143017}u + \frac{731282}{20431}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{26} - 8u^{25} + \cdots - 62u + 7$
c_2, c_6, c_8 c_{12}	$u^{26} + 2u^{25} + \cdots - 3u + 1$
c_3, c_9	$(u^{13} - 3u^{11} + \cdots + 7u - 2)^2$
c_4, c_{10}	$u^{26} + 8u^{25} + \cdots + 62u + 7$
c_5, c_{11}	$u^{26} + 17u^{24} + \cdots + 127u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^{26} + 20y^{25} + \cdots + 160y + 49$
c_2, c_6, c_8 c_{12}	$y^{26} - 8y^{25} + \cdots - 21y + 1$
c_3, c_9	$(y^{13} - 6y^{12} + \cdots + 25y - 4)^2$
c_5, c_{11}	$(y^{13} + 17y^{12} + \cdots + 127y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.126752 + 0.966195I$ $a = -0.91926 - 1.23027I$ $b = 1.07216 - 1.04412I$	$-0.80008 - 8.71139I$	$-7.24650 + 3.93807I$
$u = 0.126752 - 0.966195I$ $a = -0.91926 + 1.23027I$ $b = 1.07216 + 1.04412I$	$-0.80008 + 8.71139I$	$-7.24650 - 3.93807I$
$u = -1.104360 + 0.054100I$ $a = 1.029820 - 0.483545I$ $b = -1.111120 + 0.589718I$	$-5.20764 + 2.92822I$	$-11.13108 - 2.29409I$
$u = -1.104360 - 0.054100I$ $a = 1.029820 + 0.483545I$ $b = -1.111120 - 0.589718I$	$-5.20764 - 2.92822I$	$-11.13108 + 2.29409I$
$u = -0.249520 + 0.858731I$ $a = -1.26530 - 0.94200I$ $b = 1.124640 - 0.851506I$	$-1.63936 + 3.42007I$	$-15.9102 - 3.3285I$
$u = -0.249520 - 0.858731I$ $a = -1.26530 + 0.94200I$ $b = 1.124640 + 0.851506I$	$-1.63936 - 3.42007I$	$-15.9102 + 3.3285I$
$u = 0.311736 + 0.833354I$ $a = 0.122888 + 0.916019I$ $b = -0.725060 + 0.387965I$	$2.45972 - 6.02995I$	$-7.20901 + 5.92270I$
$u = 0.311736 - 0.833354I$ $a = 0.122888 - 0.916019I$ $b = -0.725060 - 0.387965I$	$2.45972 + 6.02995I$	$-7.20901 - 5.92270I$
$u = 0.027785 + 0.872149I$ $a = 1.09086 + 1.27146I$ $b = -1.07859 + 0.98672I$	$-5.20764 - 2.92822I$	$-11.13108 + 2.29409I$
$u = 0.027785 - 0.872149I$ $a = 1.09086 - 1.27146I$ $b = -1.07859 - 0.98672I$	$-5.20764 + 2.92822I$	$-11.13108 - 2.29409I$

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.456886 + 1.136290I$ $a = 0.398294 - 0.124934I$ $b = 0.323935 + 0.395494I$	$-0.37057 + 6.99005I$	$-6.13816 - 3.85066I$
$u = 0.456886 - 1.136290I$ $a = 0.398294 + 0.124934I$ $b = 0.323935 - 0.395494I$	$-0.37057 - 6.99005I$	$-6.13816 + 3.85066I$
$u = -0.673860 + 0.329753I$ $a = -0.79797 - 1.42231I$ $b = 1.006730 + 0.695309I$	$-3.19822 - 2.47147I$	$-18.8522 - 7.6031I$
$u = -0.673860 - 0.329753I$ $a = -0.79797 + 1.42231I$ $b = 1.006730 - 0.695309I$	$-3.19822 + 2.47147I$	$-18.8522 + 7.6031I$
$u = -0.475346 + 1.203380I$ $a = -1.135870 - 0.510890I$ $b = 1.15472 - 1.12403I$	$-0.37057 + 6.99005I$	$-6.13816 - 3.85066I$
$u = -0.475346 - 1.203380I$ $a = -1.135870 + 0.510890I$ $b = 1.15472 + 1.12403I$	$-0.37057 - 6.99005I$	$-6.13816 + 3.85066I$
$u = -0.781203 + 1.177850I$ $a = 0.326732 + 0.382643I$ $b = -0.705942 + 0.085920I$	$-1.63936 + 3.42007I$	$-15.9102 - 3.3285I$
$u = -0.781203 - 1.177850I$ $a = 0.326732 - 0.382643I$ $b = -0.705942 - 0.085920I$	$-1.63936 - 3.42007I$	$-15.9102 + 3.3285I$
$u = -0.570925 + 0.073702I$ $a = -1.299550 - 0.186223I$ $b = 0.755669 + 0.010539I$	-2.22694	$-18.0258 + 0.I$
$u = -0.570925 - 0.073702I$ $a = -1.299550 + 0.186223I$ $b = 0.755669 - 0.010539I$	-2.22694	$-18.0258 + 0.I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.53769+1.36875I$ $a=\ \ 0.986018+0.509889I$ $b=-1.22809+1.07545I$	$-0.80008+8.71139I$	$-8.00000-3.93807I$
$u=-0.53769-1.36875I$ $a=\ \ 0.986018-0.509889I$ $b=-1.22809-1.07545I$	$-0.80008-8.71139I$	$-8.00000+3.93807I$
$u=-0.59852+1.38494I$ $a=-0.661103-0.232284I$ $b=\ \ 0.717382-0.776563I$	$2.45972+6.02995I$	$-8.00000-5.92270I$
$u=-0.59852-1.38494I$ $a=-0.661103+0.232284I$ $b=\ \ 0.717382+0.776563I$	$2.45972-6.02995I$	$-8.00000+5.92270I$
$u=\ \ 0.06826+1.64669I$ $a=-0.089846+0.182370I$ $b=-0.306439-0.135500I$	$-3.19822+2.47147I$	$-18.8522+0.I$
$u=\ \ 0.06826-1.64669I$ $a=-0.089846-0.182370I$ $b=-0.306439+0.135500I$	$-3.19822-2.47147I$	$-18.8522+0.I$

V.

$$\boldsymbol{I_5^u = \langle -a^3u^2 - a^2u^2 + \cdots - 2a + 2,\ a^3u^2 + 3u^2a + \cdots + 5a + 17,\ u^3 + u^2 + 2u + 1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4a^3u - 2a^2u^2 + 2a^3 - 2a^2u - 4u^2a - 4au - 10u^2 - 10u - 20$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_7, c_{10}, c_{11}	$(u^3+u^2+2u+1)^4$
c_2, c_6, c_8 c_{12}	$u^{12}-2u^{10}+\cdots+18u^2+23$
c_3, c_9	$u^{12}-u^{11}+\cdots-112u+64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_7, c_{10}, c_{11}	$(y^3 + 3y^2 + 2y - 1)^4$
c_2, c_6, c_8 c_{12}	$y^{12} - 4y^{11} + \cdots + 828y + 529$
c_3, c_9	$y^{12} + 25y^{11} + \cdots + 7936y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = -0.854517 - 0.303520I$ $b = 1.90525 - 1.05169I$	$3.02413 + 8.48437I$	$-2.49024 - 8.93834I$
$u = -0.215080 + 1.307140I$ $a = -1.061910 - 0.672209I$ $b = 0.444709 - 0.681213I$	$7.16171 + 5.65624I$	$4.03902 - 5.95889I$
$u = -0.215080 + 1.307140I$ $a = 0.561914 + 0.247756I$ $b = -1.10707 + 1.24349I$	$7.16171 + 5.65624I$	$4.03902 - 5.95889I$
$u = -0.215080 + 1.307140I$ $a = 1.01688 + 1.29025I$ $b = -0.580533 + 1.051690I$	$3.02413 + 8.48437I$	$-2.49024 - 8.93834I$
$u = -0.215080 - 1.307140I$ $a = -0.854517 + 0.303520I$ $b = 1.90525 + 1.05169I$	$3.02413 - 8.48437I$	$-2.49024 + 8.93834I$
$u = -0.215080 - 1.307140I$ $a = -1.061910 + 0.672209I$ $b = 0.444709 + 0.681213I$	$7.16171 - 5.65624I$	$4.03902 + 5.95889I$
$u = -0.215080 - 1.307140I$ $a = 0.561914 - 0.247756I$ $b = -1.10707 - 1.24349I$	$7.16171 - 5.65624I$	$4.03902 + 5.95889I$
$u = -0.215080 - 1.307140I$ $a = 1.01688 - 1.29025I$ $b = -0.580533 - 1.051690I$	$3.02413 - 8.48437I$	$-2.49024 + 8.93834I$
$u = -0.569840$ $a = 0.97401 + 1.60320I$ $b = -1.217390 - 0.351288I$	$-5.25104 - 2.82812I$	$-15.5488 + 2.9794I$
$u = -0.569840$ $a = 0.97401 - 1.60320I$ $b = -1.217390 + 0.351288I$	$-5.25104 + 2.82812I$	$-15.5488 - 2.9794I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.569840$ $a = -2.13637 + 0.61647I$ $b = \quad 0.555029 - 0.913568I$	$-5.25104 + 2.82812I$	$-15.5488 - 2.9794I$
$u = -0.569840$ $a = -2.13637 - 0.61647I$ $b = \quad 0.555029 + 0.913568I$	$-5.25104 - 2.82812I$	$-15.5488 + 2.9794I$

VI.

$$\boldsymbol{I^u_6 = \langle -9a^5u + 14a^4u + \cdots - 15a - 33,\ -a^5u - 2a^4u + \cdots + a + 1,\ u^2 + u + 1\rangle}$$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} a \\ 0.209302a^5u - 0.325581a^4u + \cdots + 0.348837a + 0.767442 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.465116a^5u + 0.720930a^4u + \cdots + 0.441860a + 0.372093 \\ au \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.209302a^5u - 0.325581a^4u + \cdots + 1.34884a + 0.767442 \\ 0.209302a^5u - 0.325581a^4u + \cdots + 0.348837a + 0.767442 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.139535a^5u + 1.11628a^4u + \cdots + 0.232558a + 0.511628 \\ -0.441860a^5u + 0.465116a^4u + \cdots + 0.930233a + 0.0465116 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2au + a \\ 0.209302a^5u - 0.325581a^4u + \cdots - 0.651163a + 0.767442 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a^2u \\ 0.581395a^5u + 0.651163a^4u + \cdots - 0.697674a + 0.465116 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.279070a^5u + 0.232558a^4u + \cdots - 0.534884a + 1.02326 \\ 0.325581a^5u - 0.395349a^4u + \cdots + 0.209302a + 1.86047 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.465116a^5u - 0.720930a^4u + \cdots + 1.55814a - 0.372093 \\ -0.255814a^5u - 1.04651a^4u + \cdots + 0.906977a + 0.395349 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= \tfrac{44}{43}a^5u - \tfrac{36}{43}a^5 + \tfrac{180}{43}a^4u + \tfrac{56}{43}a^4 + \tfrac{140}{43}a^3u + \tfrac{292}{43}a^3 - \tfrac{256}{43}a^2u - \tfrac{72}{43}a^2 - \tfrac{96}{43}au - \tfrac{156}{43}a - \tfrac{280}{43}u - \tfrac{670}{43}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$(u^2+u+1)^6$
c_2, c_6, c_8 c_{12}	$u^{12}+u^{11}+5u^9+12u^8+5u^7-5u^6-9u^5+8u^3+4u^2-4u+1$
c_3, c_9	$(u^3+u^2-1)^4$
c_5, c_{11}	$(u^3+u^2+2u+1)^4$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = \quad 1.045930 - 0.181543I$ $b = -0.743183 + 0.342830I$	$1.11345 + 4.05977I$	$-6.98049 - 6.92820I$
$u = -0.500000 + 0.866025I$ $a = \quad 0.921971 + 0.577427I$ $b = -1.16740 + 1.64205I$	$-3.02413 + 6.88789I$	$-13.5098 - 9.9077I$
$u = -0.500000 + 0.866025I$ $a = -0.668492 - 0.472201I$ $b = \quad 0.365745 - 0.996574I$	$1.11345 + 4.05977I$	$-6.98049 - 6.92820I$
$u = -0.500000 + 0.866025I$ $a = \quad 0.18118 + 1.48292I$ $b = -0.291045 - 0.197103I$	$-3.02413 + 1.23164I$	$-13.50976 - 3.94876I$
$u = -0.500000 + 0.866025I$ $a = \quad 0.025174 - 0.350604I$ $b = \quad 1.37483 + 0.58456I$	$-3.02413 + 1.23164I$	$-13.50976 - 3.94876I$
$u = -0.500000 + 0.866025I$ $a = -2.00576 - 0.18997I$ $b = \quad 0.961053 - 0.509737I$	$-3.02413 + 6.88789I$	$-13.5098 - 9.9077I$
$u = -0.500000 - 0.866025I$ $a = \quad 1.045930 + 0.181543I$ $b = -0.743183 - 0.342830I$	$1.11345 - 4.05977I$	$-6.98049 + 6.92820I$
$u = -0.500000 - 0.866025I$ $a = \quad 0.921971 - 0.577427I$ $b = -1.16740 - 1.64205I$	$-3.02413 - 6.88789I$	$-13.5098 + 9.9077I$
$u = -0.500000 - 0.866025I$ $a = -0.668492 + 0.472201I$ $b = \quad 0.365745 + 0.996574I$	$1.11345 - 4.05977I$	$-6.98049 + 6.92820I$
$u = -0.500000 - 0.866025I$ $a = \quad 0.18118 - 1.48292I$ $b = -0.291045 + 0.197103I$	$-3.02413 - 1.23164I$	$-13.50976 + 3.94876I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 - 0.866025I$ $a = 0.025174 + 0.350604I$ $b = 1.37483 - 0.58456I$	$-3.02413 - 1.23164I$	$-13.50976 + 3.94876I$
$u = -0.500000 - 0.866025I$ $a = -2.00576 + 0.18997I$ $b = 0.961053 + 0.509737I$	$-3.02413 - 6.88789I$	$-13.5098 + 9.9077I$

VII. $I^u_7 = \langle -u^2 + b - u - 1,\ u^2 + a + 1,\ u^3 + u^2 + 2u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u^2 - 8u - 20$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = 0.662359 + 0.562280I$ $b = -0.877439 + 0.744862I$	$6.04826 + 5.65624I$	$-4.98049 - 5.95889I$
$u = -0.215080 - 1.307140I$ $a = 0.662359 - 0.562280I$ $b = -0.877439 - 0.744862I$	$6.04826 - 5.65624I$	$-4.98049 + 5.95889I$
$u = -0.569840$ $a = -1.32472$ $b = 0.754878$	-2.22691	-18.0390

VIII. $\boldsymbol{I_8^u = \langle b,\ a-1,\ u^3+u^2+2u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^2 - 4u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = 1.00000$ $b = 0$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = -0.215080 - 1.307140I$ $a = 1.00000$ $b = 0$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$
$u = -0.569840$ $a = 1.00000$ $b = 0$	-1.11345	-9.01950

IX. $I_9^u = \langle b+u,\ a,\ u^3+u^2+2u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^2-4u-10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = 0$ $b = 0.215080 - 1.307140I$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = -0.215080 - 1.307140I$ $a = 0$ $b = 0.215080 + 1.307140I$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$
$u = -0.569840$ $a = 0$ $b = 0.569840$	-1.11345	-9.01950

X. $I^u_{10} = \langle b + u,\ a - 1,\ u^2 - u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_{10}^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = 1.00000$ $b = -0.500000 - 0.866025I$	3.28987	−3.00000
$u = 0.500000 - 0.866025I$ $a = 1.00000$ $b = -0.500000 + 0.866025I$	3.28987	−3.00000

XI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^2-u+1)(u^2+u+1)^6(u^3-u^2+2u-1)(u^3+u^2+2u+1)^6$ $\cdot((u^{12}+3u^{11}+\cdots+4u^2+1)^6)(u^{19}-7u^{18}+\cdots-36u+8)$ $\cdot(u^{26}-8u^{25}+\cdots-62u+7)(u^{28}-14u^{27}+\cdots-855u+85)$
c_2, c_6, c_8 c_{12}	$u^3(u^2-u+1)(u^3-u^2+1)(u^3+u^2+2u+1)(u^{12}-2u^{10}+\cdots+18u^2+23)$ $\cdot(u^{12}+u^{11}+5u^9+12u^8+5u^7-5u^6-9u^5+8u^3+4u^2-4u+1)$ $\cdot(u^{19}+2u^{17}+\cdots+5u+1)(u^{26}+2u^{25}+\cdots-3u+1)$ $\cdot(u^{28}+4u^{27}+\cdots-2u+1)(u^{72}+3u^{71}+\cdots+354u+59)$
c_3, c_9	$u^2(u^3-3u^2+2u+1)(u^3-u^2+1)(u^3-u^2+2u-1)(u^3+u^2-1)^4$ $\cdot(u^{12}-u^{11}+\cdots-112u+64)(u^{13}-3u^{11}+\cdots+7u-2)^2$ $\cdot((u^{14}+2u^{13}+\cdots-u+1)^2)(u^{19}-5u^{18}+\cdots+22u+12)$ $\cdot(u^{36}-11u^{34}+\cdots+1120u+320)^2$
c_4, c_{10}	$(u^2-u+1)(u^2+u+1)^6(u^3+u^2+2u+1)^7$ $\cdot((u^{12}+3u^{11}+\cdots+4u^2+1)^6)(u^{19}-7u^{18}+\cdots-36u+8)$ $\cdot(u^{26}+8u^{25}+\cdots+62u+7)(u^{28}-14u^{27}+\cdots-855u+85)$
c_5, c_{11}	$u^3(u-1)^2(u^3+u^2+2u+1)^{34}(u^{14}-9u^{13}+\cdots-416u+64)^2$ $\cdot(u^{19}-11u^{18}+\cdots-224u+32)(u^{26}+17u^{24}+\cdots+127u^2+1)$

XII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$((y^2+y+1)^7)(y^3+3y^2+2y-1)^7(y^{12}+7y^{11}+\cdots+8y+1)^6$ $\cdot(y^{19}+11y^{18}+\cdots-304y-64)(y^{26}+20y^{25}+\cdots+160y+49)$ $\cdot(y^{28}+22y^{27}+\cdots+79025y+7225)$
c_2, c_6, c_8 c_{12}	$y^3(y^2+y+1)(y^3-y^2+2y-1)(y^3+3y^2+2y-1)$ $\cdot(y^{12}-4y^{11}+\cdots+828y+529)(y^{12}-y^{11}+\cdots-8y+1)$ $\cdot(y^{19}+4y^{18}+\cdots+5y-1)(y^{26}-8y^{25}+\cdots-21y+1)$ $\cdot(y^{28}+4y^{27}+\cdots-10y+1)(y^{72}-23y^{71}+\cdots-406510y+3481)$
c_3, c_9	$y^2(y^3-5y^2+10y-1)(y^3-y^2+2y-1)^5(y^3+3y^2+2y-1)$ $\cdot(y^{12}+25y^{11}+\cdots+7936y+4096)(y^{13}-6y^{12}+\cdots+25y-4)^2$ $\cdot((y^{14}+4y^{12}+\cdots-3y+1)^2)(y^{19}-15y^{18}+\cdots-164y-144)$ $\cdot(y^{36}-22y^{35}+\cdots-97280y+102400)^2$
c_5, c_{11}	$y^3(y-1)^2(y^3+3y^2+2y-1)^{34}(y^{13}+17y^{12}+\cdots+127y+1)^2$ $\cdot(y^{14}+15y^{13}+\cdots-5120y+4096)^2$ $\cdot(y^{19}+9y^{18}+\cdots+512y-1024)$