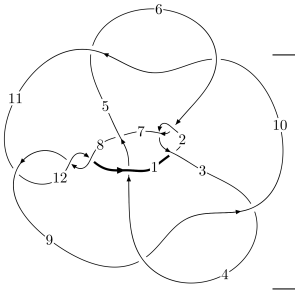
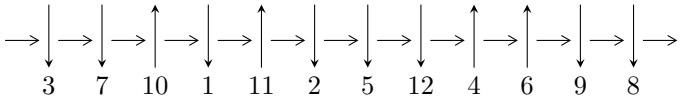
$12a_{0665}$ $(K12a_{0665})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3349u^{42} - 43719u^{41} + \cdots + 64b + 14656,\ -3589u^{42} + 50017u^{41} + \cdots + 128a - 81280,$$
$$u^{43} - 15u^{42} + \cdots - 1216u + 128\rangle$$
$$I_2^u = \langle -4164019282a^5u^5 - 75372960680u^5a^4 + \cdots - 521321653767a - 34419126350,$$
$$-u^5a^4 - 3u^5a^3 + \cdots + 3a + 4,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle$$
$$I_3^u = \langle 2.29399 \times 10^{20}a^7u^5 - 2.53388 \times 10^{20}a^6u^5 + \cdots - 6.52305 \times 10^{21}a - 2.07651 \times 10^{21},$$
$$-a^7u^5 - 3a^6u^5 + \cdots - 26a^2 - 4a,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle$$
$$I_4^u = \langle u^{29} + 6u^{28} + \cdots + b - 21,\ 25u^{29} - 4u^{28} + \cdots + 2a + 57,\ u^{30} - 9u^{28} + \cdots + 5u + 2\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 157 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

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

I. $\boldsymbol{I_1^u = \langle 3349u^{42} - 43719u^{41} + \cdots + 64b + 14656,\ -3589u^{42} + 50017u^{41} + \cdots + 128a - 81280,\ u^{43} - 15u^{42} + \cdots - 1216u + 128\rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 28.0391u^{42} - 390.758u^{41} + \cdots - 1241u + 635 \\ -52.3281u^{42} + 683.109u^{41} + \cdots - 2048.50u - 229 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 7.89844u^{42} - 92.9609u^{41} + \cdots - 4368.25u + 604 \\ 17.3281u^{42} - 251.203u^{41} + \cdots + 19808.5u - 2255 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -24.2891u^{42} + 292.352u^{41} + \cdots - 3289.50u + 406 \\ -52.3281u^{42} + 683.109u^{41} + \cdots - 2048.50u - 229 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -25.2266u^{42} + 344.164u^{41} + \cdots - 15440.3u + 1652 \\ -17.3281u^{42} + 251.203u^{41} + \cdots - 19807.5u + 2255 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 45.3984u^{42} - 584.070u^{41} + \cdots + 5029u - 163 \\ 69.8125u^{42} - 962.781u^{41} + \cdots + 51693.5u - 5699 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 153.563u^{42} - 2048.64u^{41} + \cdots + 62357u - 6237 \\ 40.8281u^{42} - 599.109u^{41} + \cdots + 56436u - 6624 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 125.570u^{42} - 1848.51u^{41} + \cdots + 166307.u - 19206.5 \\ -66.1094u^{42} + 840.391u^{41} + \cdots - 3085u - 203 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{493}{4}u^{42} - \frac{14343}{8}u^{41} + \cdots + 118988u - 12926$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{43} + 21u^{42} + \cdots - 36864u + 16384$
c_2, c_6	$u^{43} - 15u^{42} + \cdots - 1216u + 128$
c_3, c_5, c_9 c_{10}	$u^{43} + 13u^{41} + \cdots + u + 1$
c_4, c_7	$u^{43} - u^{42} + \cdots - 11u + 1$
c_8, c_{11}, c_{12}	$u^{43} - 15u^{42} + \cdots + 1184u - 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{43} + 3y^{42} + \cdots - 352321536y - 268435456$
c_2, c_6	$y^{43} - 21y^{42} + \cdots - 36864y - 16384$
c_3, c_5, c_9 c_{10}	$y^{43} + 26y^{42} + \cdots - 3y - 1$
c_4, c_7	$y^{43} + 27y^{42} + \cdots + 9y - 1$
c_8, c_{11}, c_{12}	$y^{43} + 37y^{42} + \cdots + 37888y - 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.358058 + 0.942581I$ $a = -0.814671 - 0.995400I$ $b = 0.64470 + 1.33116I$	$2.90969 + 12.64310I$	0
$u = 0.358058 - 0.942581I$ $a = -0.814671 + 0.995400I$ $b = 0.64470 - 1.33116I$	$2.90969 - 12.64310I$	0
$u = 0.743017 + 0.654264I$ $a = -1.023650 - 0.133058I$ $b = 0.675954 - 0.243151I$	$2.67794 - 1.15193I$	0
$u = 0.743017 - 0.654264I$ $a = -1.023650 + 0.133058I$ $b = 0.675954 + 0.243151I$	$2.67794 + 1.15193I$	0
$u = -0.999110 + 0.173940I$ $a = 0.351404 - 0.168789I$ $b = 0.603212 - 0.515281I$	$2.90024 + 0.90114I$	0
$u = -0.999110 - 0.173940I$ $a = 0.351404 + 0.168789I$ $b = 0.603212 + 0.515281I$	$2.90024 - 0.90114I$	0
$u = 0.235936 + 0.987451I$ $a = -0.680042 - 0.624157I$ $b = 0.460174 + 1.075750I$	$-1.43821 + 3.02141I$	0
$u = 0.235936 - 0.987451I$ $a = -0.680042 + 0.624157I$ $b = 0.460174 - 1.075750I$	$-1.43821 - 3.02141I$	0
$u = 0.326612 + 0.969222I$ $a = 0.720618 + 0.864498I$ $b = -0.544872 - 1.244440I$	$-2.99115 + 8.30522I$	0
$u = 0.326612 - 0.969222I$ $a = 0.720618 - 0.864498I$ $b = -0.544872 + 1.244440I$	$-2.99115 - 8.30522I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.651470 + 0.725080I$ $a = 1.233230 - 0.174675I$ $b = -0.890002 + 0.402380I$	$8.73286 + 0.70670I$	0
$u = 0.651470 - 0.725080I$ $a = 1.233230 + 0.174675I$ $b = -0.890002 - 0.402380I$	$8.73286 - 0.70670I$	0
$u = 0.903670 + 0.651098I$ $a = 0.599159 + 0.652153I$ $b = -0.648967 - 0.018284I$	$2.20727 - 3.90000I$	0
$u = 0.903670 - 0.651098I$ $a = 0.599159 - 0.652153I$ $b = -0.648967 + 0.018284I$	$2.20727 + 3.90000I$	0
$u = -0.842879$ $a = -0.225488$ $b = -0.350256$	-1.50335	-5.12250
$u = 0.972657 + 0.671565I$ $a = -0.355935 - 1.042540I$ $b = 0.831839 + 0.271950I$	$7.79870 - 6.02479I$	0
$u = 0.972657 - 0.671565I$ $a = -0.355935 + 1.042540I$ $b = 0.831839 - 0.271950I$	$7.79870 + 6.02479I$	0
$u = 0.751407 + 0.931725I$ $a = -0.609054 + 0.646477I$ $b = 0.339629 - 0.967304I$	$5.45582 - 7.81547I$	0
$u = 0.751407 - 0.931725I$ $a = -0.609054 - 0.646477I$ $b = 0.339629 + 0.967304I$	$5.45582 + 7.81547I$	0
$u = 0.272176 + 0.746094I$ $a = 1.192810 + 0.389893I$ $b = -0.767728 - 0.699776I$	$6.98629 + 1.56790I$	$2.80133 - 2.46354I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.272176 - 0.746094I$ $a = 1.192810 - 0.389893I$ $b = -0.767728 + 0.699776I$	$6.98629 - 1.56790I$	$2.80133 + 2.46354I$
$u = 0.872394 + 0.921013I$ $a = 0.501488 - 0.537298I$ $b = -0.112657 + 0.859584I$	$0.69776 - 3.31768I$	0
$u = 0.872394 - 0.921013I$ $a = 0.501488 + 0.537298I$ $b = -0.112657 - 0.859584I$	$0.69776 + 3.31768I$	0
$u = 1.172660 + 0.517851I$ $a = -1.31313 - 0.88547I$ $b = 0.703150 - 0.856659I$	$4.29326 - 6.36705I$	0
$u = 1.172660 - 0.517851I$ $a = -1.31313 + 0.88547I$ $b = 0.703150 + 0.856659I$	$4.29326 + 6.36705I$	0
$u = 0.997676 + 0.861165I$ $a = -0.505629 + 0.623433I$ $b = -0.158233 - 0.897192I$	$4.73833 + 1.30717I$	0
$u = 0.997676 - 0.861165I$ $a = -0.505629 - 0.623433I$ $b = -0.158233 + 0.897192I$	$4.73833 - 1.30717I$	0
$u = -1.322220 + 0.148081I$ $a = -0.209261 + 0.407512I$ $b = -0.41802 + 1.35525I$	$-2.99573 - 9.16073I$	0
$u = -1.322220 - 0.148081I$ $a = -0.209261 - 0.407512I$ $b = -0.41802 - 1.35525I$	$-2.99573 + 9.16073I$	0
$u = 1.180550 + 0.633598I$ $a = 1.76187 + 0.42869I$ $b = -0.70145 + 1.43870I$	$0.3978 - 18.3824I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.180550 - 0.633598I$ $a = 1.76187 - 0.42869I$ $b = -0.70145 - 1.43870I$	$0.3978 + 18.3824I$	0
$u = 1.197870 + 0.631514I$ $a = -1.61675 - 0.39727I$ $b = 0.61173 - 1.36078I$	$-5.6553 - 14.0973I$	0
$u = 1.197870 - 0.631514I$ $a = -1.61675 + 0.39727I$ $b = 0.61173 + 1.36078I$	$-5.6553 + 14.0973I$	0
$u = 1.227120 + 0.611490I$ $a = 1.40925 + 0.45940I$ $b = -0.542711 + 1.209440I$	$-4.44568 - 8.75769I$	0
$u = 1.227120 - 0.611490I$ $a = 1.40925 - 0.45940I$ $b = -0.542711 - 1.209440I$	$-4.44568 + 8.75769I$	0
$u = 1.359510 + 0.190320I$ $a = 0.488834 + 1.162540I$ $b = -0.159126 + 0.686027I$	$-4.99250 - 3.53030I$	0
$u = 1.359510 - 0.190320I$ $a = 0.488834 - 1.162540I$ $b = -0.159126 - 0.686027I$	$-4.99250 + 3.53030I$	0
$u = -1.376440 + 0.184461I$ $a = 0.171191 - 0.354840I$ $b = 0.308507 - 1.267130I$	$-8.89743 - 4.41324I$	0
$u = -1.376440 - 0.184461I$ $a = 0.171191 + 0.354840I$ $b = 0.308507 + 1.267130I$	$-8.89743 + 4.41324I$	0
$u = -1.41517 + 0.31880I$ $a = -0.175777 + 0.270332I$ $b = -0.252812 + 1.111140I$	$-6.86433 + 1.58891I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.41517-0.31880I$ $a=-0.175777-0.270332I$ $b=-0.252812-1.111140I$	$-6.86433-1.58891I$	0
$u=-0.188410+0.452205I$ $a=-0.763214+0.333478I$ $b=\ \ 0.192803+0.481657I$	$-0.071939+1.056770I$	$-1.07955-6.08510I$
$u=-0.188410-0.452205I$ $a=-0.763214-0.333478I$ $b=\ \ 0.192803-0.481657I$	$-0.071939-1.056770I$	$-1.07955+6.08510I$

II. $\boldsymbol{I_2^u = \langle -4.16 \times 10^9 a^5 u^5 - 7.54 \times 10^{10} a^4 u^5 + \cdots - 5.21 \times 10^{11} a - 3.44 \times 10^{10},\ -u^5 a^4 - 3u^5 a^3 + \cdots + 3a + 4,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} a \\ 0.0115886 a^5 u^5 + 0.209765 a^4 u^5 + \cdots + 1.45085 a + 0.0957893 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.196344 a^5 u^5 - 0.127790 a^4 u^5 + \cdots + 0.258519 a - 0.540133 \\ 0.0469600 a^5 u^5 + 0.0904674 a^4 u^5 + \cdots - 0.272263 a - 0.624194 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0115886 a^5 u^5 + 0.209765 a^4 u^5 + \cdots + 2.45085 a + 0.0957893 \\ 0.0115886 a^5 u^5 + 0.209765 a^4 u^5 + \cdots + 1.45085 a + 0.0957893 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 0.0392084 a^5 u^5 - 0.139324 a^4 u^5 + \cdots - 0.209846 a - 1.53310 \\ -0.170556 a^5 u^5 - 0.129475 a^4 u^5 + \cdots - 1.69553 a - 2.16257 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0509717 a^5 u^5 + 0.281923 a^4 u^5 + \cdots + 2.38699 a + 0.810462 \\ 0.0585370 a^5 u^5 + 0.228983 a^4 u^5 + \cdots + 2.21950 a + 0.271504 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0352420 a^5 u^5 + 0.0936125 a^4 u^5 + \cdots + 1.34226 a - 0.0657213 \\ -0.0552255 a^5 u^5 + 0.0897440 a^4 u^5 + \cdots + 0.929944 a + 0.941941 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.00266510 a^5 u^5 + 0.138334 a^4 u^5 + \cdots - 1.66833 a + 1.57218 \\ 0.0788189 a^5 u^5 + 0.229555 a^4 u^5 + \cdots + 1.98983 a + 1.26999 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= -\frac{154930048320}{359321316539} a^5 u^5 - \frac{7843205684}{359321316539} u^5 a^4 + \cdots + \frac{1582962992116}{359321316539} a - \frac{1022275344910}{359321316539}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^6$
c_2, c_6	$(u^6+u^5-u^4-2u^3+u+1)^6$
c_3, c_5, c_9 c_{10}	$u^{36}+9u^{34}+\cdots-118u+31$
c_4, c_7	$u^{36}-2u^{35}+\cdots-986u+227$
c_8, c_{11}, c_{12}	$(u^3+2u-1)^{12}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6+y^5+5y^4+6y^2+3y+1)^6$
c_2, c_6	$(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^6$
c_3, c_5, c_9 c_{10}	$y^{36}+18y^{35}+\cdots+92716y+961$
c_4, c_7	$y^{36}+6y^{35}+\cdots-656212y+51529$
c_8, c_{11}, c_{12}	$(y^3+4y^2+4y-1)^{12}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.013507 - 1.079530I$ $b = -0.09167 - 1.43449I$	$-7.61261 - 0.92430I$	$-18.3526 + 0.7942I$
$u = 1.002190 + 0.295542I$ $a = 0.777995 + 0.206131I$ $b = 0.28584 + 1.73579I$	$-7.61261 - 0.92430I$	$-18.3526 + 0.7942I$
$u = 1.002190 + 0.295542I$ $a = 0.77699 + 1.31113I$ $b = -1.262930 - 0.434196I$	$2.61533 + 4.21364I$	$-6.39878 - 2.41479I$
$u = 1.002190 + 0.295542I$ $a = -1.67565 - 0.70869I$ $b = 0.027573 + 0.143090I$	$2.61533 - 6.06225I$	$-6.39878 + 4.00324I$
$u = 1.002190 + 0.295542I$ $a = -1.53392 - 1.32936I$ $b = 0.850685 - 0.922276I$	$2.61533 - 6.06225I$	$-6.39878 + 4.00324I$
$u = 1.002190 + 0.295542I$ $a = 1.66809 + 1.60033I$ $b = 0.190509 + 0.912085I$	$2.61533 + 4.21364I$	$-6.39878 - 2.41479I$
$u = 1.002190 - 0.295542I$ $a = -0.013507 + 1.079530I$ $b = -0.09167 + 1.43449I$	$-7.61261 + 0.92430I$	$-18.3526 - 0.7942I$
$u = 1.002190 - 0.295542I$ $a = 0.777995 - 0.206131I$ $b = 0.28584 - 1.73579I$	$-7.61261 + 0.92430I$	$-18.3526 - 0.7942I$
$u = 1.002190 - 0.295542I$ $a = 0.77699 - 1.31113I$ $b = -1.262930 + 0.434196I$	$2.61533 - 4.21364I$	$-6.39878 + 2.41479I$
$u = 1.002190 - 0.295542I$ $a = -1.67565 + 0.70869I$ $b = 0.027573 - 0.143090I$	$2.61533 + 6.06225I$	$-6.39878 - 4.00324I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 - 0.295542I$ $a = -1.53392 + 1.32936I$ $b = 0.850685 + 0.922276I$	$2.61533 + 6.06225I$	$-6.39878 - 4.00324I$
$u = 1.002190 - 0.295542I$ $a = 1.66809 - 1.60033I$ $b = 0.190509 - 0.912085I$	$2.61533 - 4.21364I$	$-6.39878 + 2.41479I$
$u = -0.428243 + 0.664531I$ $a = 0.864083 - 0.103468I$ $b = -0.578826 + 1.138480I$	$6.39654 - 6.06225I$	$1.03465 + 4.00324I$
$u = -0.428243 + 0.664531I$ $a = -0.343617 - 0.544568I$ $b = 0.580767 - 0.599442I$	$6.39654 + 4.21364I$	$1.03465 - 2.41479I$
$u = -0.428243 + 0.664531I$ $a = 1.54434 + 0.21164I$ $b = -0.787341 - 0.938487I$	$6.39654 + 4.21364I$	$1.03465 - 2.41479I$
$u = -0.428243 + 0.664531I$ $a = -0.69400 + 1.41167I$ $b = 0.044354 - 1.079790I$	$-3.83140 - 0.92430I$	$-10.91915 + 0.79423I$
$u = -0.428243 + 0.664531I$ $a = 0.53759 - 1.75844I$ $b = -0.498746 + 1.213790I$	$-3.83140 - 0.92430I$	$-10.91915 + 0.79423I$
$u = -0.428243 + 0.664531I$ $a = -1.90839 + 0.78316I$ $b = 1.239790 + 0.265446I$	$6.39654 - 6.06225I$	$1.03465 + 4.00324I$
$u = -0.428243 - 0.664531I$ $a = 0.864083 + 0.103468I$ $b = -0.578826 - 1.138480I$	$6.39654 + 6.06225I$	$1.03465 - 4.00324I$
$u = -0.428243 - 0.664531I$ $a = -0.343617 + 0.544568I$ $b = 0.580767 + 0.599442I$	$6.39654 - 4.21364I$	$1.03465 + 2.41479I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.428243-0.664531I$ $a=\ \ 1.54434-0.21164I$ $b=-0.787341+0.938487I$	$6.39654-4.21364I$	$1.03465+2.41479I$
$u=-0.428243-0.664531I$ $a=-0.69400-1.41167I$ $b=\ \ 0.044354+1.079790I$	$-3.83140+0.92430I$	$-10.91915-0.79423I$
$u=-0.428243-0.664531I$ $a=\ \ 0.53759+1.75844I$ $b=-0.498746-1.213790I$	$-3.83140+0.92430I$	$-10.91915-0.79423I$
$u=-0.428243-0.664531I$ $a=-1.90839-0.78316I$ $b=\ \ 1.239790-0.265446I$	$6.39654+6.06225I$	$1.03465-4.00324I$
$u=-1.073950+0.558752I$ $a=\ \ 0.633332-0.905497I$ $b=-0.262746-0.891123I$	$4.50593+0.55508I$	$-2.68207-2.30155I$
$u=-1.073950+0.558752I$ $a=\ \ 0.914818-1.037650I$ $b=-1.53217+0.17763I$	$4.50593+10.83100I$	$-2.68207-8.71959I$
$u=-1.073950+0.558752I$ $a=-0.027013+0.573159I$ $b=\ \ 0.839369-0.811794I$	$4.50593+0.55508I$	$-2.68207-2.30155I$
$u=-1.073950+0.558752I$ $a=-1.94384+0.16468I$ $b=\ \ 0.74634+1.38128I$	$-5.72200+5.69302I$	$-14.6359-5.5106I$
$u=-1.073950+0.558752I$ $a=-1.59315+1.17157I$ $b=\ \ 0.468622+1.271950I$	$4.50593+10.83100I$	$-2.68207-8.71959I$
$u=-1.073950+0.558752I$ $a=\ \ 2.01585+0.03374I$ $b=-0.259409-1.127950I$	$-5.72200+5.69302I$	$-14.6359-5.5106I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.073950-0.558752I$ $a=\ \ 0.633332+0.905497I$ $b=-0.262746+0.891123I$	$4.50593-0.55508I$	$-2.68207+2.30155I$
$u=-1.073950-0.558752I$ $a=\ \ 0.914818+1.037650I$ $b=-1.53217-0.17763I$	$4.50593-10.83100I$	$-2.68207+8.71959I$
$u=-1.073950-0.558752I$ $a=-0.027013-0.573159I$ $b=\ \ 0.839369+0.811794I$	$4.50593-0.55508I$	$-2.68207+2.30155I$
$u=-1.073950-0.558752I$ $a=-1.94384-0.16468I$ $b=\ \ 0.74634-1.38128I$	$-5.72200-5.69302I$	$-14.6359+5.5106I$
$u=-1.073950-0.558752I$ $a=-1.59315-1.17157I$ $b=\ \ 0.468622-1.271950I$	$4.50593-10.83100I$	$-2.68207+8.71959I$
$u=-1.073950-0.558752I$ $a=\ \ 2.01585-0.03374I$ $b=-0.259409+1.127950I$	$-5.72200-5.69302I$	$-14.6359+5.5106I$

III. $I_3^u = \langle 2.29 \times 10^{20} a^7 u^5 - 2.53 \times 10^{20} a^6 u^5 + \cdots - 6.52 \times 10^{21} a - 2.08 \times 10^{21},\ -a^7 u^5 - 3a^6 u^5 + \cdots - 26a^2 - 4a,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} a \\ -0.0876714a^7u^5 + 0.0968394a^6u^5 + \cdots + 2.49297a + 0.793595 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.00979694a^7u^5 + 0.0892583a^6u^5 + \cdots + 0.236224a - 1.71364 \\ -0.0205307a^7u^5 + 0.0739253a^6u^5 + \cdots - 0.187546a - 0.432373 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0876714a^7u^5 + 0.0968394a^6u^5 + \cdots + 3.49297a + 0.793595 \\ -0.0876714a^7u^5 + 0.0968394a^6u^5 + \cdots + 2.49297a + 0.793595 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 0.0778071a^7u^5 - 0.0824931a^6u^5 + \cdots - 2.81597a - 0.435778 \\ 0.0745886a^7u^5 + 0.0901752a^6u^5 + \cdots - 0.377816a - 1.90604 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0901512a^7u^5 + 0.0564587a^6u^5 + \cdots + 0.205725a + 0.247001 \\ 0.0204009a^7u^5 - 0.284621a^6u^5 + \cdots - 0.854018a + 0.155365 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0453767a^7u^5 + 0.0806940a^6u^5 + \cdots - 1.12856a - 1.58783 \\ 0.00277812a^7u^5 + 0.0567067a^6u^5 + \cdots + 0.609646a - 1.08214 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.264406a^7u^5 - 0.106883a^6u^5 + \cdots + 5.27344a + 1.47780 \\ 0.0400965a^7u^5 - 0.227368a^6u^5 + \cdots + 3.33193a + 1.68322 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= \frac{12869602086720}{31969293098417}a^7u^5 + \frac{7770591958420}{31969293098417}a^6u^5 + \cdots - \frac{105347813841252}{31969293098417}a - \frac{216568031551418}{31969293098417}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^8$
c_2, c_6	$(u^6+u^5-u^4-2u^3+u+1)^8$
c_3, c_5, c_9 c_{10}	$u^{48}+u^{47}+\cdots+2816u+1429$
c_4, c_7	$u^{48}-5u^{47}+\cdots+20u+31$
c_8, c_{11}, c_{12}	$(u^4+u^3+2u^2+2u+1)^{12}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6+y^5+5y^4+6y^2+3y+1)^8$
c_2, c_6	$(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^8$
c_3, c_5, c_9 c_{10}	$y^{48}+45y^{47}+\cdots+29429920y+2042041$
c_4, c_7	$y^{48}-15y^{47}+\cdots-8212y+961$
c_8, c_{11}, c_{12}	$(y^4+3y^3+2y^2+1)^{12}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.630240 + 0.910708I$ $b = 0.017438 + 1.293140I$	$-3.53554 - 2.95419I$	$-9.71672 + 4.25833I$
$u = 1.002190 + 0.295542I$ $a = -0.817208 - 0.972776I$ $b = 0.891703 + 0.533613I$	$-3.53554 + 1.10558I$	$-9.71672 - 2.66988I$
$u = 1.002190 + 0.295542I$ $a = -0.574575 + 0.362328I$ $b = -0.65090 - 1.70065I$	$-3.53554 + 1.10558I$	$-9.71672 - 2.66988I$
$u = 1.002190 + 0.295542I$ $a = -1.266850 - 0.455916I$ $b = 0.00909 - 1.89499I$	$-3.53554 - 2.95419I$	$-9.71672 + 4.25833I$
$u = 1.002190 + 0.295542I$ $a = 1.223620 + 0.678825I$ $b = -0.400778 - 0.388180I$	$-3.53554 - 2.95419I$	$-9.71672 + 4.25833I$
$u = 1.002190 + 0.295542I$ $a = 0.37497 + 1.57827I$ $b = 0.09185 + 1.47616I$	$-3.53554 + 1.10558I$	$-9.71672 - 2.66988I$
$u = 1.002190 + 0.295542I$ $a = 1.49867 + 1.28979I$ $b = -0.415377 + 1.028640I$	$-3.53554 - 2.95419I$	$-9.71672 + 4.25833I$
$u = 1.002190 + 0.295542I$ $a = -1.49452 - 1.46488I$ $b = 0.028724 - 1.012260I$	$-3.53554 + 1.10558I$	$-9.71672 - 2.66988I$
$u = 1.002190 - 0.295542I$ $a = -0.630240 - 0.910708I$ $b = 0.017438 - 1.293140I$	$-3.53554 + 2.95419I$	$-9.71672 - 4.25833I$
$u = 1.002190 - 0.295542I$ $a = -0.817208 + 0.972776I$ $b = 0.891703 - 0.533613I$	$-3.53554 - 1.10558I$	$-9.71672 + 2.66988I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 - 0.295542I$ $a = -0.574575 - 0.362328I$ $b = -0.65090 + 1.70065I$	$-3.53554 - 1.10558I$	$-9.71672 + 2.66988I$
$u = 1.002190 - 0.295542I$ $a = -1.266850 + 0.455916I$ $b = 0.00909 + 1.89499I$	$-3.53554 + 2.95419I$	$-9.71672 - 4.25833I$
$u = 1.002190 - 0.295542I$ $a = 1.223620 - 0.678825I$ $b = -0.400778 + 0.388180I$	$-3.53554 + 2.95419I$	$-9.71672 - 4.25833I$
$u = 1.002190 - 0.295542I$ $a = 0.37497 - 1.57827I$ $b = 0.09185 - 1.47616I$	$-3.53554 - 1.10558I$	$-9.71672 + 2.66988I$
$u = 1.002190 - 0.295542I$ $a = 1.49867 - 1.28979I$ $b = -0.415377 - 1.028640I$	$-3.53554 + 2.95419I$	$-9.71672 - 4.25833I$
$u = 1.002190 - 0.295542I$ $a = -1.49452 + 1.46488I$ $b = 0.028724 + 1.012260I$	$-3.53554 - 1.10558I$	$-9.71672 + 2.66988I$
$u = -0.428243 + 0.664531I$ $a = -1.160570 + 0.252579I$ $b = 0.564310 + 0.561072I$	$0.245672 + 1.105580I$	$-2.28328 - 2.66988I$
$u = -0.428243 + 0.664531I$ $a = -0.573726 + 0.214251I$ $b = 0.421958 - 1.070860I$	$0.24567 - 2.95419I$	$-2.28328 + 4.25833I$
$u = -0.428243 + 0.664531I$ $a = 0.81080 - 1.25860I$ $b = -0.072000 + 1.291420I$	$0.24567 - 2.95419I$	$-2.28328 + 4.25833I$
$u = -0.428243 + 0.664531I$ $a = 0.62738 - 1.46301I$ $b = 0.160009 + 0.836205I$	$0.245672 + 1.105580I$	$-2.28328 - 2.66988I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.428243+0.664531I$ $a=\ \ 1.53104-0.75811I$ $b=-0.930131-0.202650I$	$0.24567-2.95419I$	$-2.28328+4.25833I$
$u=-0.428243+0.664531I$ $a=-0.07592+1.78653I$ $b=\ \ 0.33288-1.46152I$	$0.245672+1.105580I$	$-2.28328-2.66988I$
$u=-0.428243+0.664531I$ $a=\ \ 0.119257+0.105054I$ $b=-0.300160+0.784396I$	$0.245672+1.105580I$	$-2.28328-2.66988I$
$u=-0.428243+0.664531I$ $a=-0.93329+1.88611I$ $b=\ \ 0.825323-1.033610I$	$0.24567-2.95419I$	$-2.28328+4.25833I$
$u=-0.428243-0.664531I$ $a=-1.160570-0.252579I$ $b=\ \ 0.564310-0.561072I$	$0.245672-1.105580I$	$-2.28328+2.66988I$
$u=-0.428243-0.664531I$ $a=-0.573726-0.214251I$ $b=\ \ 0.421958+1.070860I$	$0.24567+2.95419I$	$-2.28328-4.25833I$
$u=-0.428243-0.664531I$ $a=\ \ 0.81080+1.25860I$ $b=-0.072000-1.291420I$	$0.24567+2.95419I$	$-2.28328-4.25833I$
$u=-0.428243-0.664531I$ $a=\ \ 0.62738+1.46301I$ $b=\ \ 0.160009-0.836205I$	$0.245672-1.105580I$	$-2.28328+2.66988I$
$u=-0.428243-0.664531I$ $a=\ \ 1.53104+0.75811I$ $b=-0.930131+0.202650I$	$0.24567+2.95419I$	$-2.28328-4.25833I$
$u=-0.428243-0.664531I$ $a=-0.07592-1.78653I$ $b=\ \ 0.33288+1.46152I$	$0.245672-1.105580I$	$-2.28328+2.66988I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.428243-0.664531I$ $a=\ \ 0.119257-0.105054I$ $b=-0.300160-0.784396I$	$0.245672-1.105580I$	$-2.28328+2.66988I$
$u=-0.428243-0.664531I$ $a=-0.93329-1.88611I$ $b=\ \ 0.825323+1.033610I$	$0.24567+2.95419I$	$-2.28328-4.25833I$
$u=-1.073950+0.558752I$ $a=-0.920921+0.716645I$ $b=\ \ 1.222720-0.072136I$	$-1.64493+7.72290I$	$-6.00000-8.97467I$
$u=-1.073950+0.558752I$ $a=-1.123580+0.626202I$ $b=\ \ 0.215578+1.163690I$	$-1.64493+3.66314I$	$-6.00000-2.04647I$
$u=-1.073950+0.558752I$ $a=\ \ 0.571084-0.365384I$ $b=-0.814908+0.307580I$	$-1.64493+3.66314I$	$-6.00000-2.04647I$
$u=-1.073950+0.558752I$ $a=\ \ 1.51209-0.87090I$ $b=-0.361891-1.263090I$	$-1.64493+7.72290I$	$-6.00000-8.97467I$
$u=-1.073950+0.558752I$ $a=-1.85013-0.34826I$ $b=\ \ 0.117199+0.847786I$	$-1.64493+3.66314I$	$-6.00000-2.04647I$
$u=-1.073950+0.558752I$ $a=\ \ 1.94420+0.00617I$ $b=-0.53874-1.66837I$	$-1.64493+3.66314I$	$-6.00000-2.04647I$
$u=-1.073950+0.558752I$ $a=\ \ 1.92851-0.39187I$ $b=-1.12635-1.19985I$	$-1.64493+7.72290I$	$-6.00000-8.97467I$
$u=-1.073950+0.558752I$ $a=-2.22009+0.18976I$ $b=\ \ 0.212442+1.325630I$	$-1.64493+7.72290I$	$-6.00000-8.97467I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.073950-0.558752I$ $a=-0.920921-0.716645I$ $b=\ \ 1.222720+0.072136I$	$-1.64493-7.72290I$	$-6.00000+8.97467I$
$u=-1.073950-0.558752I$ $a=-1.123580-0.626202I$ $b=\ \ 0.215578-1.163690I$	$-1.64493-3.66314I$	$-6.00000+2.04647I$
$u=-1.073950-0.558752I$ $a=\ \ 0.571084+0.365384I$ $b=-0.814908-0.307580I$	$-1.64493-3.66314I$	$-6.00000+2.04647I$
$u=-1.073950-0.558752I$ $a=\ \ 1.51209+0.87090I$ $b=-0.361891+1.263090I$	$-1.64493-7.72290I$	$-6.00000+8.97467I$
$u=-1.073950-0.558752I$ $a=-1.85013+0.34826I$ $b=\ \ 0.117199-0.847786I$	$-1.64493-3.66314I$	$-6.00000+2.04647I$
$u=-1.073950-0.558752I$ $a=\ \ 1.94420-0.00617I$ $b=-0.53874+1.66837I$	$-1.64493-3.66314I$	$-6.00000+2.04647I$
$u=-1.073950-0.558752I$ $a=\ \ 1.92851+0.39187I$ $b=-1.12635+1.19985I$	$-1.64493-7.72290I$	$-6.00000+8.97467I$
$u=-1.073950-0.558752I$ $a=-2.22009-0.18976I$ $b=\ \ 0.212442-1.325630I$	$-1.64493-7.72290I$	$-6.00000+8.97467I$

IV. $I_4^u =$
$\langle u^{29}+6u^{28}+\cdots+b-21,\ 25u^{29}-4u^{28}+\cdots+2a+57,\ u^{30}-9u^{28}+\cdots+5u+2\rangle$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -\frac{25}{2}u^{29}+2u^{28}+\cdots-18u-\frac{57}{2} \\ -u^{29}-6u^{28}+\cdots+49u+21 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{1}{2}u^{29}-u^{28}+\cdots-3u+\frac{5}{2} \\ u^{26}-8u^{24}+\cdots+5u+1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{27}{2}u^{29}-4u^{28}+\cdots+31u-\frac{15}{2} \\ -u^{29}-6u^{28}+\cdots+49u+21 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} \frac{1}{2}u^{29}-u^{28}+\cdots+2u+\frac{9}{2} \\ u^{26}-8u^{24}+\cdots+4u+1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{7}{2}u^{29}+3u^{28}+\cdots+4u+\frac{1}{2} \\ u^{29}+4u^{28}+\cdots-14u-5 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 3u^{29}+6u^{28}+\cdots-69u-37 \\ 5u^{29}+3u^{28}+\cdots-30u-4 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{11}{2}u^{29}-17u^{28}+\cdots+91u+\frac{59}{2} \\ -9u^{29}-8u^{28}+\cdots+63u+21 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $=$

$$21u^{29}-12u^{28}-177u^{27}+124u^{26}+747u^{25}-603u^{24}-2073u^{23}+1827u^{22}+4215u^{21}-3835u^{20}-6692u^{19}+5859u^{18}+8734u^{17}-6614u^{16}-9721u^{15}+5392u^{14}+9405u^{13}-2806u^{12}-7806u^{11}+246u^{10}+5402u^9+1198u^8-2968u^7-1360u^6+1236u^5+809u^4-337u^3-276u^2+49u+42$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} - 18u^{29} + \cdots - 57u + 4$
c_2	$u^{30} - 9u^{28} + \cdots - 5u + 2$
c_3, c_{10}	$u^{30} + 15u^{28} + \cdots + 12u^2 + 1$
c_4, c_7	$u^{30} + u^{29} + \cdots - 8u + 1$
c_5, c_9	$u^{30} + 15u^{28} + \cdots + 12u^2 + 1$
c_6	$u^{30} - 9u^{28} + \cdots + 5u + 2$
c_8	$u^{30} - 4u^{29} + \cdots + 3u^2 + 1$
c_{11}, c_{12}	$u^{30} + 4u^{29} + \cdots + 3u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30}+2y^{29}+\cdots+31y+16$
c_2, c_6	$y^{30}-18y^{29}+\cdots-57y+4$
c_3, c_5, c_9 c_{10}	$y^{30}+30y^{29}+\cdots+24y+1$
c_4, c_7	$y^{30}-y^{29}+\cdots-28y+1$
c_8, c_{11}, c_{12}	$y^{30}+30y^{29}+\cdots+6y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.952145 + 0.286252I$ $a = 0.398837 + 0.697047I$ $b = 0.12915 + 1.57008I$	$-7.01292 - 1.14021I$	$-3.38655 + 6.37988I$
$u = 0.952145 - 0.286252I$ $a = 0.398837 - 0.697047I$ $b = 0.12915 - 1.57008I$	$-7.01292 + 1.14021I$	$-3.38655 - 6.37988I$
$u = 0.965248 + 0.373546I$ $a = -0.553231 - 0.601657I$ $b = -0.31364 - 1.66297I$	$-2.92587 + 0.16877I$	$-3.75310 + 4.51294I$
$u = 0.965248 - 0.373546I$ $a = -0.553231 + 0.601657I$ $b = -0.31364 + 1.66297I$	$-2.92587 - 0.16877I$	$-3.75310 - 4.51294I$
$u = 0.798652 + 0.725690I$ $a = -0.099222 - 0.283628I$ $b = 0.444314 - 0.445083I$	$6.25118 - 6.66463I$	$-1.05506 + 5.08784I$
$u = 0.798652 - 0.725690I$ $a = -0.099222 + 0.283628I$ $b = 0.444314 + 0.445083I$	$6.25118 + 6.66463I$	$-1.05506 - 5.08784I$
$u = -0.604930 + 0.647300I$ $a = -0.15994 + 1.85503I$ $b = 0.357229 - 1.198860I$	$-0.164048 - 1.136400I$	$-3.89887 - 0.20909I$
$u = -0.604930 - 0.647300I$ $a = -0.15994 - 1.85503I$ $b = 0.357229 + 1.198860I$	$-0.164048 + 1.136400I$	$-3.89887 + 0.20909I$
$u = -1.057750 + 0.371785I$ $a = 1.93959 - 1.25031I$ $b = -0.668159 - 0.707939I$	$2.86251 + 7.19350I$	$-4.55086 - 11.56979I$
$u = -1.057750 - 0.371785I$ $a = 1.93959 + 1.25031I$ $b = -0.668159 + 0.707939I$	$2.86251 - 7.19350I$	$-4.55086 + 11.56979I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.825694 + 0.282075I$ $a = -0.419225 - 0.902735I$ $b = 0.07654 - 1.60255I$	$-2.28876 - 2.99583I$	$-1.16764 + 5.09061I$
$u = 0.825694 - 0.282075I$ $a = -0.419225 + 0.902735I$ $b = 0.07654 + 1.60255I$	$-2.28876 + 2.99583I$	$-1.16764 - 5.09061I$
$u = -1.021850 + 0.570454I$ $a = 2.15586 + 0.17936I$ $b = -0.54662 - 1.33793I$	$-1.45873 + 5.91291I$	$-4.59524 - 4.83976I$
$u = -1.021850 - 0.570454I$ $a = 2.15586 - 0.17936I$ $b = -0.54662 + 1.33793I$	$-1.45873 - 5.91291I$	$-4.59524 + 4.83976I$
$u = 0.868569 + 0.797714I$ $a = 0.162609 + 0.097391I$ $b = -0.052215 + 0.451138I$	$1.38771 - 2.98700I$	$0.28532 + 1.40240I$
$u = 0.868569 - 0.797714I$ $a = 0.162609 - 0.097391I$ $b = -0.052215 - 0.451138I$	$1.38771 + 2.98700I$	$0.28532 - 1.40240I$
$u = -0.272134 + 0.763114I$ $a = 0.727677 - 1.024560I$ $b = -0.211575 + 1.052660I$	$-2.28671 - 0.83827I$	$-4.66791 + 0.25545I$
$u = -0.272134 - 0.763114I$ $a = 0.727677 + 1.024560I$ $b = -0.211575 - 1.052660I$	$-2.28671 + 0.83827I$	$-4.66791 - 0.25545I$
$u = -0.729439 + 0.315278I$ $a = -1.28485 + 2.32663I$ $b = 0.717893 - 0.504562I$	$4.11744 - 4.24974I$	$1.06780 + 2.13757I$
$u = -0.729439 - 0.315278I$ $a = -1.28485 - 2.32663I$ $b = 0.717893 + 0.504562I$	$4.11744 + 4.24974I$	$1.06780 - 2.13757I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.968187 + 0.738073I$ $a = -0.248401 + 0.007066I$ $b = -0.353343 - 0.528734I$	$5.73348 + 1.07614I$	$2.38900 - 0.71413I$
$u = 0.968187 - 0.738073I$ $a = -0.248401 - 0.007066I$ $b = -0.353343 + 0.528734I$	$5.73348 - 1.07614I$	$2.38900 + 0.71413I$
$u = -1.101080 + 0.549507I$ $a = -1.77107 + 0.21633I$ $b = 0.480587 + 1.128710I$	$-4.64868 + 5.65428I$	$-5.65639 - 4.94967I$
$u = -1.101080 - 0.549507I$ $a = -1.77107 - 0.21633I$ $b = 0.480587 - 1.128710I$	$-4.64868 - 5.65428I$	$-5.65639 + 4.94967I$
$u = 1.312340 + 0.224482I$ $a = 0.140510 + 0.376788I$ $b = 0.112726 + 1.238740I$	$-7.27992 - 2.38540I$	$-10.03555 + 4.49833I$
$u = 1.312340 - 0.224482I$ $a = 0.140510 - 0.376788I$ $b = 0.112726 - 1.238740I$	$-7.27992 + 2.38540I$	$-10.03555 - 4.49833I$
$u = -1.325000 + 0.188356I$ $a = -0.61712 + 1.30300I$ $b = 0.161101 + 0.706679I$	$-5.13377 + 3.52632I$	$-36.8849 - 5.6431I$
$u = -1.325000 - 0.188356I$ $a = -0.61712 - 1.30300I$ $b = 0.161101 - 0.706679I$	$-5.13377 - 3.52632I$	$-36.8849 + 5.6431I$
$u = -0.578657 + 0.221126I$ $a = 0.87799 - 2.21332I$ $b = -0.333989 + 0.617317I$	$-1.95731 - 1.64325I$	$-4.09003 + 4.22173I$
$u = -0.578657 - 0.221126I$ $a = 0.87799 + 2.21332I$ $b = -0.333989 - 0.617317I$	$-1.95731 + 1.64325I$	$-4.09003 - 4.22173I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^6+3u^5+5u^4+4u^3+2u^2+u+1)^{14})(u^{30}-18u^{29}+\cdots-57u+4)$ $\cdot(u^{43}+21u^{42}+\cdots-36864u+16384)$
c_2	$((u^6+u^5-u^4-2u^3+u+1)^{14})(u^{30}-9u^{28}+\cdots-5u+2)$ $\cdot(u^{43}-15u^{42}+\cdots-1216u+128)$
c_3, c_{10}	$(u^{30}+15u^{28}+\cdots+12u^2+1)(u^{36}+9u^{34}+\cdots-118u+31)$ $\cdot(u^{43}+13u^{41}+\cdots+u+1)(u^{48}+u^{47}+\cdots+2816u+1429)$
c_4, c_7	$(u^{30}+u^{29}+\cdots-8u+1)(u^{36}-2u^{35}+\cdots-986u+227)$ $\cdot(u^{43}-u^{42}+\cdots-11u+1)(u^{48}-5u^{47}+\cdots+20u+31)$
c_5, c_9	$(u^{30}+15u^{28}+\cdots+12u^2+1)(u^{36}+9u^{34}+\cdots-118u+31)$ $\cdot(u^{43}+13u^{41}+\cdots+u+1)(u^{48}+u^{47}+\cdots+2816u+1429)$
c_6	$((u^6+u^5-u^4-2u^3+u+1)^{14})(u^{30}-9u^{28}+\cdots+5u+2)$ $\cdot(u^{43}-15u^{42}+\cdots-1216u+128)$
c_8	$((u^3+2u-1)^{12})(u^4+u^3+2u^2+2u+1)^{12}(u^{30}-4u^{29}+\cdots+3u^2+1)$ $\cdot(u^{43}-15u^{42}+\cdots+1184u-64)$
c_{11}, c_{12}	$((u^3+2u-1)^{12})(u^4+u^3+2u^2+2u+1)^{12}(u^{30}+4u^{29}+\cdots+3u^2+1)$ $\cdot(u^{43}-15u^{42}+\cdots+1184u-64)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^6+y^5+5y^4+6y^2+3y+1)^{14})(y^{30}+2y^{29}+\cdots+31y+16)$ $\cdot(y^{43}+3y^{42}+\cdots-352321536y-268435456)$
c_2, c_6	$((y^6-3y^5+5y^4-4y^3+2y^2-y+1)^{14})(y^{30}-18y^{29}+\cdots-57y+4)$ $\cdot(y^{43}-21y^{42}+\cdots-36864y-16384)$
c_3, c_5, c_9 c_{10}	$(y^{30}+30y^{29}+\cdots+24y+1)(y^{36}+18y^{35}+\cdots+92716y+961)$ $\cdot(y^{43}+26y^{42}+\cdots-3y-1)$ $\cdot(y^{48}+45y^{47}+\cdots+29429920y+2042041)$
c_4, c_7	$(y^{30}-y^{29}+\cdots-28y+1)(y^{36}+6y^{35}+\cdots-656212y+51529)$ $\cdot(y^{43}+27y^{42}+\cdots+9y-1)(y^{48}-15y^{47}+\cdots-8212y+961)$
c_8, c_{11}, c_{12}	$(y^3+4y^2+4y-1)^{12}(y^4+3y^3+2y^2+1)^{12}$ $\cdot(y^{30}+30y^{29}+\cdots+6y+1)(y^{43}+37y^{42}+\cdots+37888y-4096)$