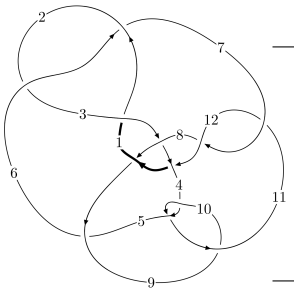
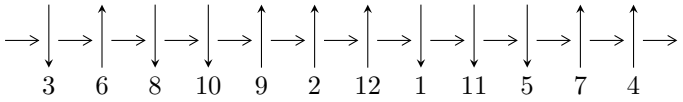
$12a_{0310}$ $(K12a_{0310})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 2.27433 \times 10^{354} u^{137} + 1.24436 \times 10^{355} u^{136} + \cdots + 1.06021 \times 10^{355} b - 9.00762 \times 10^{355}, \\
&\quad 1.69855 \times 10^{354} u^{137} + 8.78430 \times 10^{354} u^{136} + \cdots + 1.06021 \times 10^{355} a - 4.05574 \times 10^{356}, \\
&\quad u^{138} + 7u^{137} + \cdots + 1836u + 216 \rangle \\
I_2^u &= \langle 7u^{29} - 7u^{28} + \cdots + b - 1,\ 6u^{29} - 7u^{28} + \cdots + a - 9,\ u^{30} - u^{29} + \cdots - u + 1 \rangle \\
I_3^u &= \langle -5169a^6 u + 14986a^5 u + \cdots - 286138a + 106454, \\
&\quad a^7 - 2a^6 u - 11a^5 u + 6a^5 + 24a^4 u - 38a^4 + 4a^3 u + 46a^3 - 48a^2 u - 2a^2 + 28au - 25a - u + 6,\ u^2 - u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 182 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. $\boldsymbol{I_1^u = \langle 2.27 \times 10^{354} u^{137} + 1.24 \times 10^{355} u^{136} + \cdots + 1.06 \times 10^{355} b - 9.01 \times 10^{355},\ 1.70 \times 10^{354} u^{137} + 8.78 \times 10^{354} u^{136} + \cdots + 1.06 \times 10^{355} a - 4.06 \times 10^{356},\ u^{138} + 7u^{137} + \cdots + 1836u + 216 \rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -0.160209u^{137} - 0.828543u^{136} + \cdots + 203.274u + 38.2541 \\ -0.214516u^{137} - 1.17370u^{136} + \cdots + 19.3693u + 8.49607 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.380098u^{137} + 2.08238u^{136} + \cdots - 240.204u - 56.1677 \\ 0.0620701u^{137} - 0.0770345u^{136} + \cdots - 794.079u - 113.783 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.205743u^{137} + 1.62270u^{136} + \cdots + 376.900u + 42.9007 \\ 0.407264u^{137} + 2.77702u^{136} + \cdots + 574.740u + 61.4601 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0740279u^{137} - 0.834982u^{136} + \cdots - 801.708u - 118.094 \\ -0.248617u^{137} - 2.06032u^{136} + \cdots - 1061.70u - 139.977 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.249137u^{137} + 2.01530u^{136} + \cdots + 1083.50u + 153.271 \\ 0.207662u^{137} + 1.53167u^{136} + \cdots + 417.061u + 47.7159 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.147415u^{137} - 0.716549u^{136} + \cdots + 255.807u + 45.8145 \\ -0.201723u^{137} - 1.06170u^{136} + \cdots + 71.9021u + 16.0565 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.231859u^{137} - 2.11061u^{136} + \cdots - 1274.80u - 174.147 \\ -0.403432u^{137} - 3.02889u^{136} + \cdots - 1012.28u - 119.100 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.117732u^{137} - 0.757477u^{136} + \cdots - 388.494u - 88.6881$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{138} + 57u^{137} + \cdots + 802224u + 46656$
c_2, c_6	$u^{138} + 7u^{137} + \cdots + 1836u + 216$
c_3	$u^{138} - u^{137} + \cdots - 54398u + 10041$
c_4, c_{10}	$u^{138} - u^{137} + \cdots - 30u + 19$
c_5	$u^{138} - 3u^{137} + \cdots - 5664770u + 21046851$
c_7, c_{11}	$u^{138} - 3u^{137} + \cdots + 378940u + 19571$
c_8	$u^{138} + u^{137} + \cdots - 50u + 1$
c_9	$u^{138} + 71u^{137} + \cdots + 3712u + 361$
c_{12}	$u^{138} + 13u^{137} + \cdots - 310u + 77$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{138} + 57y^{137} + \cdots + 94721944320y + 2176782336$
c_2, c_6	$y^{138} + 57y^{137} + \cdots + 802224y + 46656$
c_3	$y^{138} + 31y^{137} + \cdots + 4830062936y + 100821681$
c_4, c_{10}	$y^{138} - 71y^{137} + \cdots - 3712y + 361$
c_5	$y^{138} + 45y^{137} + \cdots + 9711800845573616y + 442969937016201$
c_7, c_{11}	$y^{138} - 101y^{137} + \cdots - 89234996574y + 383024041$
c_8	$y^{138} - 3y^{137} + \cdots - 576y + 1$
c_9	$y^{138} + 13y^{137} + \cdots + 3788760y + 130321$
c_{12}	$y^{138} - 11y^{137} + \cdots - 433668y + 5929$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.323280 + 0.949945I$ $a = 0.483460 + 0.228596I$ $b = 0.108033 - 1.022500I$	$-0.19526 - 4.44594I$	0
$u = 0.323280 - 0.949945I$ $a = 0.483460 - 0.228596I$ $b = 0.108033 + 1.022500I$	$-0.19526 + 4.44594I$	0
$u = 0.760685 + 0.685269I$ $a = -1.33908 - 1.81762I$ $b = -2.12515 - 0.84369I$	$6.65208 + 0.07508I$	0
$u = 0.760685 - 0.685269I$ $a = -1.33908 + 1.81762I$ $b = -2.12515 + 0.84369I$	$6.65208 - 0.07508I$	0
$u = 0.801138 + 0.553328I$ $a = 0.463585 + 0.478130I$ $b = -0.213753 - 0.624818I$	$-1.68579 - 7.34118I$	0
$u = 0.801138 - 0.553328I$ $a = 0.463585 - 0.478130I$ $b = -0.213753 + 0.624818I$	$-1.68579 + 7.34118I$	0
$u = 0.875262 + 0.421574I$ $a = -0.58037 - 1.80626I$ $b = -1.49669 - 0.75441I$	$0.30791 - 5.36080I$	0
$u = 0.875262 - 0.421574I$ $a = -0.58037 + 1.80626I$ $b = -1.49669 + 0.75441I$	$0.30791 + 5.36080I$	0
$u = -0.831916 + 0.626363I$ $a = -1.06965 + 1.74488I$ $b = -1.90743 + 0.75097I$	$7.31279 + 5.38938I$	0
$u = -0.831916 - 0.626363I$ $a = -1.06965 - 1.74488I$ $b = -1.90743 - 0.75097I$	$7.31279 - 5.38938I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.593104+0.751298I$ $a=\ \ 1.06027-2.02579I$ $b=\ \ 1.52125-0.44292I$	$4.36335+0.38616I$	0
$u=-0.593104-0.751298I$ $a=\ \ 1.06027+2.02579I$ $b=\ \ 1.52125+0.44292I$	$4.36335-0.38616I$	0
$u=\ \ 0.330124+0.999756I$ $a=\ \ 0.542401+0.642123I$ $b=\ \ 0.35058+1.43107I$	$-0.419083+1.060100I$	0
$u=\ \ 0.330124-0.999756I$ $a=\ \ 0.542401-0.642123I$ $b=\ \ 0.35058-1.43107I$	$-0.419083-1.060100I$	0
$u=-0.480691+0.939248I$ $a=-2.87238+2.39939I$ $b=-3.46961+1.69138I$	$-4.42962-6.92429I$	0
$u=-0.480691-0.939248I$ $a=-2.87238-2.39939I$ $b=-3.46961-1.69138I$	$-4.42962+6.92429I$	0
$u=-0.439143+0.816060I$ $a=-2.69054+3.08949I$ $b=-3.16623+2.24819I$	$-3.95035+3.15119I$	0
$u=-0.439143-0.816060I$ $a=-2.69054-3.08949I$ $b=-3.16623-2.24819I$	$-3.95035-3.15119I$	0
$u=-0.951536+0.502856I$ $a=-0.70754+1.62353I$ $b=-1.61602+0.61146I$	$5.33287+8.32927I$	0
$u=-0.951536-0.502856I$ $a=-0.70754-1.62353I$ $b=-1.61602-0.61146I$	$5.33287-8.32927I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.399085+1.001540I$ $a=\ \ 0.837137+1.011990I$ $b=\ \ 1.013180+0.120356I$	$-4.66972+1.37466I$	0
$u=-0.399085-1.001540I$ $a=\ \ 0.837137-1.011990I$ $b=\ \ 1.013180-0.120356I$	$-4.66972-1.37466I$	0
$u=-0.090055+1.088100I$ $a=-0.338874+0.955777I$ $b=-1.070320+0.722200I$	$-4.30114+1.33462I$	0
$u=-0.090055-1.088100I$ $a=-0.338874-0.955777I$ $b=-1.070320-0.722200I$	$-4.30114-1.33462I$	0
$u=\ \ 1.030790+0.361032I$ $a=\ \ 0.523241+1.008720I$ $b=\ \ 1.50088+0.65091I$	$5.25592+1.03879I$	0
$u=\ \ 1.030790-0.361032I$ $a=\ \ 0.523241-1.008720I$ $b=\ \ 1.50088-0.65091I$	$5.25592-1.03879I$	0
$u=-0.719777+0.821692I$ $a=\ \ 0.94526-1.71005I$ $b=\ \ 1.76139-0.43491I$	$5.28806-1.39704I$	0
$u=-0.719777-0.821692I$ $a=\ \ 0.94526+1.71005I$ $b=\ \ 1.76139+0.43491I$	$5.28806+1.39704I$	0
$u=-0.619725+0.658570I$ $a=\ \ 0.442655-0.650121I$ $b=-0.329622-0.326393I$	$-1.96482+2.30501I$	0
$u=-0.619725-0.658570I$ $a=\ \ 0.442655+0.650121I$ $b=-0.329622+0.326393I$	$-1.96482-2.30501I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.719423+0.545668I$ $a=\ \ 0.490330-0.445730I$ $b=-0.125810+0.613284I$	$0.70027+2.74370I$	0
$u=-0.719423-0.545668I$ $a=\ \ 0.490330+0.445730I$ $b=-0.125810-0.613284I$	$0.70027-2.74370I$	0
$u=-0.584908+0.928785I$ $a=\ \ 0.854248+0.679562I$ $b=\ \ 1.013770-0.006712I$	$-2.71118-7.05562I$	0
$u=-0.584908-0.928785I$ $a=\ \ 0.854248-0.679562I$ $b=\ \ 1.013770+0.006712I$	$-2.71118+7.05562I$	0
$u=-0.597159+0.921827I$ $a=\ \ 1.14235-1.50319I$ $b=\ \ 2.40530-0.83158I$	$3.82844-5.11364I$	0
$u=-0.597159-0.921827I$ $a=\ \ 1.14235+1.50319I$ $b=\ \ 2.40530+0.83158I$	$3.82844+5.11364I$	0
$u=-1.078680+0.229525I$ $a=\ \ 0.482278-0.895697I$ $b=\ \ 1.41770-0.58682I$	$3.27001+3.57478I$	0
$u=-1.078680-0.229525I$ $a=\ \ 0.482278+0.895697I$ $b=\ \ 1.41770+0.58682I$	$3.27001-3.57478I$	0
$u=\ \ 0.996646+0.479594I$ $a=-0.64453-1.55949I$ $b=-1.56709-0.55145I$	$2.91389-13.58860I$	0
$u=\ \ 0.996646-0.479594I$ $a=-0.64453+1.55949I$ $b=-1.56709+0.55145I$	$2.91389+13.58860I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.570025+0.950620I$ $a=-0.389622-0.531561I$ $b=\ \ 0.572161-0.766847I$	$0.86560-6.38011I$	0
$u=-0.570025-0.950620I$ $a=-0.389622+0.531561I$ $b=\ \ 0.572161+0.766847I$	$0.86560+6.38011I$	0
$u=\ \ 0.548997+0.698275I$ $a=\ \ 1.08824+2.19982I$ $b=\ \ 1.42208+0.39958I$	$2.21535-5.27635I$	0
$u=\ \ 0.548997-0.698275I$ $a=\ \ 1.08824-2.19982I$ $b=\ \ 1.42208-0.39958I$	$2.21535+5.27635I$	0
$u=\ \ 0.564026+0.968718I$ $a=\ \ 1.23961+1.45847I$ $b=\ \ 2.53662+0.81384I$	$1.34717+9.77817I$	0
$u=\ \ 0.564026-0.968718I$ $a=\ \ 1.23961-1.45847I$ $b=\ \ 2.53662-0.81384I$	$1.34717-9.77817I$	0
$u=-0.266933+1.089480I$ $a=\ \ 0.411875-0.354237I$ $b=\ \ 0.322519-1.267820I$	$-3.17108+3.91786I$	0
$u=-0.266933-1.089480I$ $a=\ \ 0.411875+0.354237I$ $b=\ \ 0.322519+1.267820I$	$-3.17108-3.91786I$	0
$u=-0.164916+0.860488I$ $a=\ \ 0.599830-0.193590I$ $b=\ \ 0.214859+0.999503I$	$1.38836+0.83662I$	0
$u=-0.164916-0.860488I$ $a=\ \ 0.599830+0.193590I$ $b=\ \ 0.214859-0.999503I$	$1.38836-0.83662I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.520582+0.702605I$ $a=\ 0.478088-0.364264I$ $b=\ 0.037388+0.812572I$	$1.66387+1.91116I$	0
$u=-0.520582-0.702605I$ $a=\ 0.478088+0.364264I$ $b=\ 0.037388-0.812572I$	$1.66387-1.91116I$	0
$u=\ 0.042173+1.126530I$ $a=-0.531546-1.174140I$ $b=-1.24634-0.96390I$	$-7.35847-5.89473I$	0
$u=\ 0.042173-1.126530I$ $a=-0.531546+1.174140I$ $b=-1.24634+0.96390I$	$-7.35847+5.89473I$	0
$u=\ 0.763284+0.408398I$ $a=\ 0.550601+0.516451I$ $b=-0.194341-0.457642I$	$-3.05106+0.17655I$	0
$u=\ 0.763284-0.408398I$ $a=\ 0.550601-0.516451I$ $b=-0.194341+0.457642I$	$-3.05106-0.17655I$	0
$u=-0.407542+1.071160I$ $a=-0.659775-0.129486I$ $b=-1.298270-0.503505I$	$-5.09715-2.91594I$	0
$u=-0.407542-1.071160I$ $a=-0.659775+0.129486I$ $b=-1.298270+0.503505I$	$-5.09715+2.91594I$	0
$u=\ 0.781994+0.841327I$ $a=\ 0.86760+1.57118I$ $b=\ 1.89224+0.39385I$	$3.94008+5.80075I$	0
$u=\ 0.781994-0.841327I$ $a=\ 0.86760-1.57118I$ $b=\ 1.89224-0.39385I$	$3.94008-5.80075I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.511774 + 1.029730I$ $a = -1.36061 + 0.55979I$ $b = -1.96792 + 1.14221I$	$0.75603 + 5.26566I$	0
$u = \quad 0.511774 - 1.029730I$ $a = -1.36061 - 0.55979I$ $b = -1.96792 - 1.14221I$	$0.75603 - 5.26566I$	0
$u = \quad 0.142818 + 1.148110I$ $a = -0.570941 - 0.752056I$ $b = -1.32602 - 0.52170I$	$-8.04836 + 2.50326I$	0
$u = \quad 0.142818 - 1.148110I$ $a = -0.570941 + 0.752056I$ $b = -1.32602 + 0.52170I$	$-8.04836 - 2.50326I$	0
$u = -0.723297 + 0.906738I$ $a = \quad 0.98176 - 1.42393I$ $b = \quad 2.19296 - 0.62674I$	$5.04090 - 4.11717I$	0
$u = -0.723297 - 0.906738I$ $a = \quad 0.98176 + 1.42393I$ $b = \quad 2.19296 + 0.62674I$	$5.04090 + 4.11717I$	0
$u = -0.422900 + 1.101240I$ $a = \quad 0.103900 - 0.497296I$ $b = \quad 0.213509 - 1.160610I$	$-4.99467 - 4.32481I$	0
$u = -0.422900 - 1.101240I$ $a = \quad 0.103900 + 0.497296I$ $b = \quad 0.213509 + 1.160610I$	$-4.99467 + 4.32481I$	0
$u = \quad 0.663826 + 0.980340I$ $a = -1.71885 - 2.03719I$ $b = -2.54130 - 1.27181I$	$5.74476 + 5.32645I$	0
$u = \quad 0.663826 - 0.980340I$ $a = -1.71885 + 2.03719I$ $b = -2.54130 + 1.27181I$	$5.74476 - 5.32645I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.777023 + 0.911427I$ $a = 0.92311 + 1.40843I$ $b = 2.12712 + 0.48932I$	$3.73479 + 0.06546I$	0
$u = 0.777023 - 0.911427I$ $a = 0.92311 - 1.40843I$ $b = 2.12712 - 0.48932I$	$3.73479 - 0.06546I$	0
$u = -0.538027 + 1.072180I$ $a = -1.363050 - 0.168615I$ $b = -2.04684 - 0.74021I$	$-1.44300 - 11.00510I$	0
$u = -0.538027 - 1.072180I$ $a = -1.363050 + 0.168615I$ $b = -2.04684 + 0.74021I$	$-1.44300 + 11.00510I$	0
$u = -0.087234 + 0.792376I$ $a = 0.748133 + 0.385415I$ $b = -0.155133 + 0.214003I$	$-1.50983 + 1.66829I$	0
$u = -0.087234 - 0.792376I$ $a = 0.748133 - 0.385415I$ $b = -0.155133 - 0.214003I$	$-1.50983 - 1.66829I$	0
$u = 0.553269 + 1.075870I$ $a = 0.042987 + 0.687902I$ $b = 0.017960 + 0.385961I$	$0.44272 + 3.44736I$	0
$u = 0.553269 - 1.075870I$ $a = 0.042987 - 0.687902I$ $b = 0.017960 - 0.385961I$	$0.44272 - 3.44736I$	0
$u = 0.631032 + 0.468979I$ $a = 0.573629 - 0.179992I$ $b = 0.688767 - 0.226916I$	$2.24325 + 1.22888I$	0
$u = 0.631032 - 0.468979I$ $a = 0.573629 + 0.179992I$ $b = 0.688767 + 0.226916I$	$2.24325 - 1.22888I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.636133+1.047580I$ $a=-0.282943-0.363157I$ $b=\ \ 0.565230-0.933050I$	$-0.77613-7.96761I$	0
$u=-0.636133-1.047580I$ $a=-0.282943+0.363157I$ $b=\ \ 0.565230+0.933050I$	$-0.77613+7.96761I$	0
$u=-0.688707+1.031180I$ $a=-1.67633+1.76406I$ $b=-2.54328+1.03588I$	$6.07304-11.06380I$	0
$u=-0.688707-1.031180I$ $a=-1.67633-1.76406I$ $b=-2.54328-1.03588I$	$6.07304+11.06380I$	0
$u=\ \ 1.075570+0.620271I$ $a=\ \ 0.745044+1.085970I$ $b=\ \ 1.68617+0.62259I$	$5.62213+2.48282I$	0
$u=\ \ 1.075570-0.620271I$ $a=\ \ 0.745044-1.085970I$ $b=\ \ 1.68617-0.62259I$	$5.62213-2.48282I$	0
$u=\ \ 0.597712+1.096410I$ $a=-0.192094+0.367419I$ $b=\ \ 0.493155+0.982708I$	$-5.07060+4.96676I$	0
$u=\ \ 0.597712-1.096410I$ $a=-0.192094-0.367419I$ $b=\ \ 0.493155-0.982708I$	$-5.07060-4.96676I$	0
$u=\ \ 0.664444+1.069000I$ $a=-0.276412+0.314716I$ $b=\ \ 0.588337+0.971677I$	$-3.23471+12.86910I$	0
$u=\ \ 0.664444-1.069000I$ $a=-0.276412-0.314716I$ $b=\ \ 0.588337-0.971677I$	$-3.23471-12.86910I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.302296 + 1.246920I$ $a = 0.094735 + 0.895059I$ $b = 0.425561 + 0.194124I$	$-0.16648 + 5.11992I$	0
$u = 0.302296 - 1.246920I$ $a = 0.094735 - 0.895059I$ $b = 0.425561 - 0.194124I$	$-0.16648 - 5.11992I$	0
$u = 0.074324 + 1.293770I$ $a = 0.338939 - 0.984478I$ $b = 0.696779 - 0.093011I$	$-5.68762 - 2.51487I$	0
$u = 0.074324 - 1.293770I$ $a = 0.338939 + 0.984478I$ $b = 0.696779 + 0.093011I$	$-5.68762 + 2.51487I$	0
$u = 0.645555 + 1.129550I$ $a = -1.88462 - 1.37420I$ $b = -2.76464 - 0.75003I$	$-1.80938 + 10.97010I$	0
$u = 0.645555 - 1.129550I$ $a = -1.88462 + 1.37420I$ $b = -2.76464 + 0.75003I$	$-1.80938 - 10.97010I$	0
$u = 0.244494 + 0.643770I$ $a = 0.76207 - 2.36619I$ $b = 0.706778 - 0.673471I$	$2.39370 - 1.40141I$	$0. + 5.49402I$
$u = 0.244494 - 0.643770I$ $a = 0.76207 + 2.36619I$ $b = 0.706778 + 0.673471I$	$2.39370 + 1.40141I$	$0. - 5.49402I$
$u = -0.580109 + 1.178520I$ $a = 0.077039 - 0.742938I$ $b = 0.090919 - 0.226102I$	$-1.17695 - 7.64881I$	0
$u = -0.580109 - 1.178520I$ $a = 0.077039 + 0.742938I$ $b = 0.090919 + 0.226102I$	$-1.17695 + 7.64881I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.647351+0.209309I$ $a=0.120385+0.295507I$ $b=0.820360+0.611365I$	$1.62706+2.70564I$	$5.17311-4.72189I$
$u=-0.647351-0.209309I$ $a=0.120385-0.295507I$ $b=0.820360-0.611365I$	$1.62706-2.70564I$	$5.17311+4.72189I$
$u=0.054137+1.320230I$ $a=0.251919+0.956170I$ $b=0.608280+0.099273I$	$-1.69042+5.78135I$	0
$u=0.054137-1.320230I$ $a=0.251919-0.956170I$ $b=0.608280-0.099273I$	$-1.69042-5.78135I$	0
$u=-0.695481+1.134280I$ $a=-1.70206+1.36644I$ $b=-2.62301+0.71926I$	$3.3860-14.3434I$	0
$u=-0.695481-1.134280I$ $a=-1.70206-1.36644I$ $b=-2.62301-0.71926I$	$3.3860+14.3434I$	0
$u=-0.619380+1.183680I$ $a=1.58907-1.42556I$ $b=1.99060-0.80542I$	$-1.19854-2.10164I$	0
$u=-0.619380-1.183680I$ $a=1.58907+1.42556I$ $b=1.99060+0.80542I$	$-1.19854+2.10164I$	0
$u=0.701357+1.160260I$ $a=-1.68050-1.28153I$ $b=-2.61901-0.65046I$	$0.8019+19.7424I$	0
$u=0.701357-1.160260I$ $a=-1.68050+1.28153I$ $b=-2.61901+0.65046I$	$0.8019-19.7424I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.574856+0.287518I$ $a=\ 1.12078+1.79794I$ $b=-0.173756+0.449467I$	$0.62289+6.55260I$	$0.79569-7.07313I$
$u=-0.574856-0.287518I$ $a=\ 1.12078-1.79794I$ $b=-0.173756-0.449467I$	$0.62289-6.55260I$	$0.79569+7.07313I$
$u=-0.442515+1.283870I$ $a=\ 0.092832-0.814295I$ $b=\ 0.285363-0.158752I$	$-1.52461-1.39344I$	0
$u=-0.442515-1.283870I$ $a=\ 0.092832+0.814295I$ $b=\ 0.285363+0.158752I$	$-1.52461+1.39344I$	0
$u=-0.563604+0.302408I$ $a=\ 0.91457-1.10856I$ $b=-0.386020-0.626067I$	$-2.58798-4.97396I$	$-2.18896+7.74445I$
$u=-0.563604-0.302408I$ $a=\ 0.91457+1.10856I$ $b=-0.386020+0.626067I$	$-2.58798+4.97396I$	$-2.18896-7.74445I$
$u=-0.546115+0.328530I$ $a=-0.10339-1.55128I$ $b=\ 1.30860-1.18613I$	$1.48239-2.88351I$	$2.73068+5.61362I$
$u=-0.546115-0.328530I$ $a=-0.10339+1.55128I$ $b=\ 1.30860+1.18613I$	$1.48239+2.88351I$	$2.73068-5.61362I$
$u=\ 0.883684+1.041040I$ $a=\ 1.18787+1.24925I$ $b=\ 1.90647+0.61101I$	$4.36936+4.46912I$	0
$u=\ 0.883684-1.041040I$ $a=\ 1.18787-1.24925I$ $b=\ 1.90647-0.61101I$	$4.36936-4.46912I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.151560+0.735245I$ $a=\ 0.849959-1.041800I$ $b=\ 1.74133-0.56464I$	$3.91734-6.85724I$	0
$u=-1.151560-0.735245I$ $a=\ 0.849959+1.041800I$ $b=\ 1.74133+0.56464I$	$3.91734+6.85724I$	0
$u=-0.029802+1.394970I$ $a=\ 0.276490-0.915696I$ $b=\ 0.613593-0.046230I$	$-4.27820-10.49320I$	0
$u=-0.029802-1.394970I$ $a=\ 0.276490+0.915696I$ $b=\ 0.613593+0.046230I$	$-4.27820+10.49320I$	0
$u=\ 0.735140+1.193730I$ $a=\ 1.46803+1.28863I$ $b=\ 1.99005+0.69111I$	$2.76805+5.32381I$	0
$u=\ 0.735140-1.193730I$ $a=\ 1.46803-1.28863I$ $b=\ 1.99005-0.69111I$	$2.76805-5.32381I$	0
$u=-1.031340+0.956100I$ $a=\ 1.04746-1.12963I$ $b=\ 1.85943-0.57530I$	$3.25250-0.71774I$	0
$u=-1.031340-0.956100I$ $a=\ 1.04746+1.12963I$ $b=\ 1.85943+0.57530I$	$3.25250+0.71774I$	0
$u=-0.588927+0.058338I$ $a=\ 1.085960-0.704558I$ $b=-0.148590+0.015823I$	$-2.13555+0.53348I$	$-3.53125-0.22076I$
$u=-0.588927-0.058338I$ $a=\ 1.085960+0.704558I$ $b=-0.148590-0.015823I$	$-2.13555-0.53348I$	$-3.53125+0.22076I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.044817 + 0.580301I$ $a = -0.41087 + 2.39638I$ $b = 0.676277 + 0.437953I$	$1.01732 + 6.59615I$	$-2.16258 - 10.02140I$
$u = 0.044817 - 0.580301I$ $a = -0.41087 - 2.39638I$ $b = 0.676277 - 0.437953I$	$1.01732 - 6.59615I$	$-2.16258 + 10.02140I$
$u = 0.333160 + 0.470791I$ $a = 1.127810 + 0.272185I$ $b = 0.055086 + 0.521780I$	$0.35597 + 1.41844I$	$2.31505 - 4.91320I$
$u = 0.333160 - 0.470791I$ $a = 1.127810 - 0.272185I$ $b = 0.055086 - 0.521780I$	$0.35597 - 1.41844I$	$2.31505 + 4.91320I$
$u = -0.72726 + 1.26387I$ $a = 1.54171 - 1.22111I$ $b = 2.04652 - 0.68346I$	$0.19175 - 10.04230I$	0
$u = -0.72726 - 1.26387I$ $a = 1.54171 + 1.22111I$ $b = 2.04652 + 0.68346I$	$0.19175 + 10.04230I$	0
$u = 0.374966 + 0.203972I$ $a = 2.14400 - 2.07476I$ $b = 0.137055 - 0.292627I$	$2.52190 - 1.32522I$	$1.69570 + 2.54164I$
$u = 0.374966 - 0.203972I$ $a = 2.14400 + 2.07476I$ $b = 0.137055 + 0.292627I$	$2.52190 + 1.32522I$	$1.69570 - 2.54164I$

II.

$\boldsymbol{I_2^u = \langle 7u^{29}-7u^{28}+\cdots+b-1,\ 6u^{29}-7u^{28}+\cdots+a-9,\ u^{30}-u^{29}+\cdots-u+1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -6u^{29}+7u^{28}+\cdots-6u+9 \\ -7u^{29}+7u^{28}+\cdots-8u+1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 8u^{29}-8u^{28}+\cdots+37u-9 \\ u^{29}+6u^{27}+\cdots+2u^2+8u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -5u^{28}+4u^{27}+\cdots-2u-7 \\ u^{29}-4u^{28}+\cdots-u+1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2+1 \\ -u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 7u^{29}-7u^{28}+\cdots+28u-8 \\ u^{29}+u^{28}+\cdots+7u+1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 13u^{29}-14u^{28}+\cdots+15u-16 \\ 10u^{29}+69u^{27}+\cdots+23u+4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -6u^{29}+7u^{28}+\cdots-6u+8 \\ -7u^{29}+7u^{28}+\cdots+8u^2-8u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{29}+15u^{28}+\cdots+7u+15 \\ 8u^{29}+6u^{28}+\cdots+25u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12u^{29}+4u^{28}-94u^{27}+48u^{26}-424u^{25}+244u^{24}-1334u^{23}+804u^{22}-3245u^{21}+1948u^{20}-6322u^{19}+3720u^{18}-10102u^{17}+5737u^{16}-13335u^{15}+7243u^{14}-14591u^{13}+7495u^{12}-13069u^{11}+6355u^{10}-9358u^9+4294u^8-5129u^7+2181u^6-2033u^5+759u^4-519u^3+166u^2-67u+14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} - 15u^{29} + \cdots - 19u + 1$
c_2	$u^{30} - u^{29} + \cdots - u + 1$
c_3	$u^{30} + 7u^{28} + \cdots + 8u^2 + 1$
c_4	$u^{30} - 8u^{28} + \cdots - 6u^2 + 1$
c_5	$u^{30} + 8u^{28} + \cdots - 10u^2 + 1$
c_6	$u^{30} + u^{29} + \cdots + u + 1$
c_7	$u^{30} - 2u^{29} + \cdots - 2u + 1$
c_8	$u^{30} + 4u^{28} + \cdots - 4u^4 + 1$
c_9	$u^{30} - 16u^{29} + \cdots - 12u + 1$
c_{10}	$u^{30} - 8u^{28} + \cdots - 6u^2 + 1$
c_{11}	$u^{30} + 2u^{29} + \cdots + 2u + 1$
c_{12}	$u^{30} - 2u^{28} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} + 15y^{29} + \cdots + 7y + 1$
c_2, c_6	$y^{30} + 15y^{29} + \cdots + 19y + 1$
c_3	$y^{30} + 14y^{29} + \cdots + 16y + 1$
c_4, c_{10}	$y^{30} - 16y^{29} + \cdots - 12y + 1$
c_5	$y^{30} + 16y^{29} + \cdots - 20y + 1$
c_7, c_{11}	$y^{30} - 26y^{29} + \cdots - 26y + 1$
c_8	$y^{30} + 8y^{29} + \cdots - 8y^2 + 1$
c_9	$y^{30} + 32y^{28} + \cdots + 4y + 1$
c_{12}	$y^{30} - 4y^{29} + \cdots - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.345063+0.914149I$ $a=-1.90094+0.72069I$ $b=-1.68710+1.41281I$	$-0.97174-1.42424I$	$-10.12133+1.84484I$
$u=-0.345063-0.914149I$ $a=-1.90094-0.72069I$ $b=-1.68710-1.41281I$	$-0.97174+1.42424I$	$-10.12133-1.84484I$
$u=\ \ 0.306226+0.980203I$ $a=-2.08739+0.07130I$ $b=-1.86700-0.46851I$	$-5.12999+5.93076I$	$-6.39070-5.17366I$
$u=\ \ 0.306226-0.980203I$ $a=-2.08739-0.07130I$ $b=-1.86700+0.46851I$	$-5.12999-5.93076I$	$-6.39070+5.17366I$
$u=\ \ 0.280242+0.887089I$ $a=-2.00150-1.07382I$ $b=-1.94725-1.73761I$	$-4.75004-3.51185I$	$-9.23609+4.40207I$
$u=\ \ 0.280242-0.887089I$ $a=-2.00150+1.07382I$ $b=-1.94725+1.73761I$	$-4.75004+3.51185I$	$-9.23609-4.40207I$
$u=-0.804256+0.760321I$ $a=\ \ 0.69802-1.56126I$ $b=\ \ 1.74383-0.74616I$	$4.62612-2.32795I$	$3.70373+4.50516I$
$u=-0.804256-0.760321I$ $a=\ \ 0.69802+1.56126I$ $b=\ \ 1.74383+0.74616I$	$4.62612+2.32795I$	$3.70373-4.50516I$
$u=-0.356741+1.111360I$ $a=-0.158986-1.258650I$ $b=\ \ 0.244135-0.831443I$	$-1.08944-4.59780I$	$-4.21797+5.14485I$
$u=-0.356741-1.111360I$ $a=-0.158986+1.258650I$ $b=\ \ 0.244135+0.831443I$	$-1.08944+4.59780I$	$-4.21797-5.14485I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.900131 + 0.752158I$ $a = 0.59983 + 1.28493I$ $b = 1.72897 + 0.56974I$	$3.21175 + 6.43302I$	$-1.14120 - 8.06438I$
$u = 0.900131 - 0.752158I$ $a = 0.59983 - 1.28493I$ $b = 1.72897 - 0.56974I$	$3.21175 - 6.43302I$	$-1.14120 + 8.06438I$
$u = -0.516050 + 1.071810I$ $a = 0.953436 - 0.248629I$ $b = 1.51274 + 0.30380I$	$1.21080 - 4.66119I$	$4.12489 + 3.62621I$
$u = -0.516050 - 1.071810I$ $a = 0.953436 + 0.248629I$ $b = 1.51274 - 0.30380I$	$1.21080 + 4.66119I$	$4.12489 - 3.62621I$
$u = -0.830917 + 0.913416I$ $a = 1.05487 - 1.20814I$ $b = 1.99297 - 0.55523I$	$4.16562 - 3.82370I$	$2.08014 - 0.21144I$
$u = -0.830917 - 0.913416I$ $a = 1.05487 + 1.20814I$ $b = 1.99297 + 0.55523I$	$4.16562 + 3.82370I$	$2.08014 + 0.21144I$
$u = 0.420339 + 1.169090I$ $a = 0.626849 + 1.054400I$ $b = 1.127280 + 0.641830I$	$-2.64347 + 2.39344I$	$-5.42924 - 3.84771I$
$u = 0.420339 - 1.169090I$ $a = 0.626849 - 1.054400I$ $b = 1.127280 - 0.641830I$	$-2.64347 - 2.39344I$	$-5.42924 + 3.84771I$
$u = -0.379573 + 0.645839I$ $a = -0.13105 - 1.59939I$ $b = 0.0019793 - 0.0425655I$	$2.85714 + 0.84296I$	$6.58098 + 2.34755I$
$u = -0.379573 - 0.645839I$ $a = -0.13105 + 1.59939I$ $b = 0.0019793 + 0.0425655I$	$2.85714 - 0.84296I$	$6.58098 - 2.34755I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.215247 + 0.703613I$ $a = 0.983053 + 0.263577I$ $b = 0.452124 + 1.296960I$	$0.60960 + 2.10521I$	$-3.42504 - 2.77058I$
$u = -0.215247 - 0.703613I$ $a = 0.983053 - 0.263577I$ $b = 0.452124 - 1.296960I$	$0.60960 - 2.10521I$	$-3.42504 + 2.77058I$
$u = 0.916579 + 0.881827I$ $a = 0.857564 + 1.123430I$ $b = 1.88144 + 0.50574I$	$2.84562 + 0.25418I$	$-3.03858 + 3.40185I$
$u = 0.916579 - 0.881827I$ $a = 0.857564 - 1.123430I$ $b = 1.88144 - 0.50574I$	$2.84562 - 0.25418I$	$-3.03858 - 3.40185I$
$u = 0.550027 + 1.148230I$ $a = 1.054910 + 0.647364I$ $b = 1.66827 + 0.16664I$	$-0.98713 + 9.64890I$	$-1.52998 - 8.02093I$
$u = 0.550027 - 1.148230I$ $a = 1.054910 - 0.647364I$ $b = 1.66827 - 0.16664I$	$-0.98713 - 9.64890I$	$-1.52998 + 8.02093I$
$u = 0.351699 + 0.565930I$ $a = 0.45105 + 1.98461I$ $b = 0.453714 - 0.034964I$	$1.30086 - 5.71256I$	$0.37883 + 4.07751I$
$u = 0.351699 - 0.565930I$ $a = 0.45105 - 1.98461I$ $b = 0.453714 + 0.034964I$	$1.30086 + 5.71256I$	$0.37883 - 4.07751I$
$u = 0.222604 + 0.612148I$ $a = 1.50028 + 0.90502I$ $b = 0.693885 - 0.608955I$	$-0.320875 + 0.454733I$	$-1.33845 + 1.30280I$
$u = 0.222604 - 0.612148I$ $a = 1.50028 - 0.90502I$ $b = 0.693885 + 0.608955I$	$-0.320875 - 0.454733I$	$-1.33845 - 1.30280I$

III. $I_3^u = \langle -5169a^6u + 1.50\times 10^4 a^5u + \cdots - 2.86\times 10^5 a + 1.06\times 10^5,\ -2a^6u - 11a^5u + \cdots - 25a + 6,\ u^2 - u + 1\rangle$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 1 \\ -u+1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} a \\ 0.159257a^6u - 0.461719a^5u + \cdots + 8.81591a - 3.27985 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.00277290a^6u - 0.0362634a^5u + \cdots - 0.970484a - 0.775549 \\ 0.363065a^6u + 0.370305a^5u + \cdots + 5.64649a + 2.38968 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.190283a^6u + 0.430046a^5u + \cdots - 7.53751a + 3.10602 \\ -0.424315a^6u + 1.10275a^5u + \cdots - 14.6464a + 7.38300 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.397264a^6u - 0.293558a^5u + \cdots + 12.7269a - 2.26743 \\ 0.763102a^6u + 0.113011a^5u + \cdots + 19.3439a + 0.897803 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00388206a^6u - 0.682565a^5u + \cdots + 1.22534a - 5.31423 \\ 0.237915a^6u - 1.35527a^5u + \cdots + 8.33420a - 9.59121 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0207351a^6u - 0.423021a^5u + \cdots - 0.282990a - 3.19198 \\ 0.138522a^6u - 0.884740a^5u + \cdots + 7.53292a - 6.47182 \end{pmatrix}$$

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^2+u+1)^7$
c_2, c_6	$(u^2-u+1)^7$
c_3, c_5	$u^{14}+6u^{12}+\cdots+3u+3$
c_4, c_{10}, c_{12}	$u^{14}-2u^{12}+u^{10}+2u^8+u^7-2u^6-u^5+u^2+u+1$
c_7, c_9, c_{11}	$u^{14}+4u^{13}+\cdots-u+1$
c_8	$u^{14}+4u^{13}+\cdots-u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	$(y^2+y+1)^7$
c_3, c_5	$y^{14}+12y^{13}+\cdots+81y+9$
c_4, c_{10}, c_{12}	$y^{14}-4y^{13}+\cdots+y+1$
c_7, c_9, c_{11}	$y^{14}-4y^{13}+\cdots+y+1$
c_8	$y^{14}+12y^{13}+\cdots+y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.522412 + 0.711568I$ $b = 0.622426 + 0.640601I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 1.053670 - 0.668061I$ $b = 1.080820 + 0.054574I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 0.450802 + 0.313764I$ $b = 0.012202 - 0.936669I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 0.184382 + 0.444857I$ $b = -0.347082 + 0.354812I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 1.22636 + 1.72455I$ $b = 2.45507 + 1.10576I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 1.33467 + 1.92713I$ $b = 1.47858 + 0.69636I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -2.72748 - 2.72175I$ $b = -3.30202 - 1.91544I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.522412 - 0.711568I$ $b = 0.622426 - 0.640601I$	$-2.02988I$	$0. + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 1.053670 + 0.668061I$ $b = 1.080820 - 0.054574I$	$-2.02988I$	$0. + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 0.450802 - 0.313764I$ $b = 0.012202 + 0.936669I$	$-2.02988I$	$0. + 3.46410I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 - 0.866025I$ $a = 0.184382 - 0.444857I$ $b = -0.347082 - 0.354812I$	$-2.02988I$	$0. + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 1.22636 - 1.72455I$ $b = 2.45507 - 1.10576I$	$-2.02988I$	$0. + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 1.33467 - 1.92713I$ $b = 1.47858 - 0.69636I$	$-2.02988I$	$0. + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -2.72748 + 2.72175I$ $b = -3.30202 + 1.91544I$	$-2.02988I$	$0. + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^7)(u^{30}-15u^{29}+\cdots-19u+1)$ $\cdot(u^{138}+57u^{137}+\cdots+802224u+46656)$
c_2	$((u^2-u+1)^7)(u^{30}-u^{29}+\cdots-u+1)(u^{138}+7u^{137}+\cdots+1836u+216)$
c_3	$(u^{14}+6u^{12}+\cdots+3u+3)(u^{30}+7u^{28}+\cdots+8u^2+1)$ $\cdot(u^{138}-u^{137}+\cdots-54398u+10041)$
c_4	$(u^{14}-2u^{12}+u^{10}+2u^8+u^7-2u^6-u^5+u^2+u+1)$ $\cdot(u^{30}-8u^{28}+\cdots-6u^2+1)(u^{138}-u^{137}+\cdots-30u+19)$
c_5	$(u^{14}+6u^{12}+\cdots+3u+3)(u^{30}+8u^{28}+\cdots-10u^2+1)$ $\cdot(u^{138}-3u^{137}+\cdots-5664770u+21046851)$
c_6	$((u^2-u+1)^7)(u^{30}+u^{29}+\cdots+u+1)(u^{138}+7u^{137}+\cdots+1836u+216)$
c_7	$(u^{14}+4u^{13}+\cdots-u+1)(u^{30}-2u^{29}+\cdots-2u+1)$ $\cdot(u^{138}-3u^{137}+\cdots+378940u+19571)$
c_8	$(u^{14}+4u^{13}+\cdots-u+1)(u^{30}+4u^{28}+\cdots-4u^4+1)$ $\cdot(u^{138}+u^{137}+\cdots-50u+1)$
c_9	$(u^{14}+4u^{13}+\cdots-u+1)(u^{30}-16u^{29}+\cdots-12u+1)$ $\cdot(u^{138}+71u^{137}+\cdots+3712u+361)$
c_{10}	$(u^{14}-2u^{12}+u^{10}+2u^8+u^7-2u^6-u^5+u^2+u+1)$ $\cdot(u^{30}-8u^{28}+\cdots-6u^2+1)(u^{138}-u^{137}+\cdots-30u+19)$
c_{11}	$(u^{14}+4u^{13}+\cdots-u+1)(u^{30}+2u^{29}+\cdots+2u+1)$ $\cdot(u^{138}-3u^{137}+\cdots+378940u+19571)$
c_{12}	$(u^{14}-2u^{12}+u^{10}+2u^8+u^7-2u^6-u^5+u^2+u+1)$ $\cdot(u^{30}-2u^{28}+\cdots+4u+1)(u^{138}+13u^{137}+\cdots-310u+77)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^7)(y^{30}+15y^{29}+\cdots+7y+1)$ $\cdot(y^{138}+57y^{137}+\cdots+94721944320y+2176782336)$
c_2, c_6	$((y^2+y+1)^7)(y^{30}+15y^{29}+\cdots+19y+1)$ $\cdot(y^{138}+57y^{137}+\cdots+802224y+46656)$
c_3	$(y^{14}+12y^{13}+\cdots+81y+9)(y^{30}+14y^{29}+\cdots+16y+1)$ $\cdot(y^{138}+31y^{137}+\cdots+4830062936y+100821681)$
c_4, c_{10}	$(y^{14}-4y^{13}+\cdots+y+1)(y^{30}-16y^{29}+\cdots-12y+1)$ $\cdot(y^{138}-71y^{137}+\cdots-3712y+361)$
c_5	$(y^{14}+12y^{13}+\cdots+81y+9)(y^{30}+16y^{29}+\cdots-20y+1)$ $\cdot(y^{138}+45y^{137}+\cdots+9711800845573616y+442969937016201)$
c_7, c_{11}	$(y^{14}-4y^{13}+\cdots+y+1)(y^{30}-26y^{29}+\cdots-26y+1)$ $\cdot(y^{138}-101y^{137}+\cdots-89234996574y+383024041)$
c_8	$(y^{14}+12y^{13}+\cdots+y+1)(y^{30}+8y^{29}+\cdots-8y^2+1)$ $\cdot(y^{138}-3y^{137}+\cdots-576y+1)$
c_9	$(y^{14}-4y^{13}+\cdots+y+1)(y^{30}+32y^{28}+\cdots+4y+1)$ $\cdot(y^{138}+13y^{137}+\cdots+3788760y+130321)$
c_{12}	$(y^{14}-4y^{13}+\cdots+y+1)(y^{30}-4y^{29}+\cdots-4y+1)$ $\cdot(y^{138}-11y^{137}+\cdots-433668y+5929)$