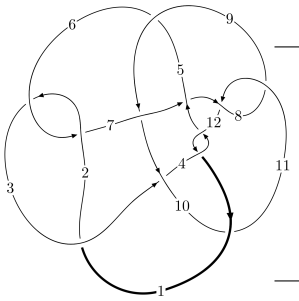
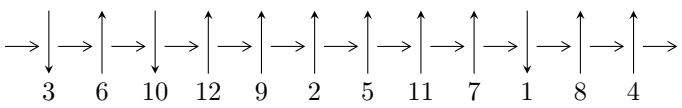
$12a_{0459}$ $(K12a_{0459})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 7.16000 \times 10^{408} u^{158} + 2.81310 \times 10^{409} u^{157} + \cdots + 2.75929 \times 10^{409} b + 1.24491 \times 10^{411}, \\ & - 4.54199 \times 10^{410} u^{158} - 9.85253 \times 10^{410} u^{157} + \cdots + 1.68317 \times 10^{411} a + 9.52712 \times 10^{412}, \\ & u^{159} + 3u^{158} + \cdots + 254u + 61 \rangle \\ I_2^u = \langle & 1.89088 \times 10^{16} u^{37} + 3.81587 \times 10^{16} u^{36} + \cdots + 7.24163 \times 10^{15} b + 3.77832 \times 10^{16}, \\ & 1.80953 \times 10^{15} u^{37} + 7.77114 \times 10^{16} u^{36} + \cdots + 2.17249 \times 10^{16} a + 4.07624 \times 10^{17}, \ u^{38} + 2u^{37} + \cdots + 7u + 3 \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 197 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. $\boldsymbol{I_1^u = \langle 7.16 \times 10^{408} u^{158} + 2.81 \times 10^{409} u^{157} + \cdots + 2.76 \times 10^{409} b + 1.24 \times 10^{411},\ -4.54 \times 10^{410} u^{158} - 9.85 \times 10^{410} u^{157} + \cdots + 1.68 \times 10^{411} a + 9.53 \times 10^{412},\ u^{159} + 3u^{158} + \cdots + 254u + 61 \rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 0.269847u^{158} + 0.585356u^{157} + \cdots - 120.184u - 56.6022 \\ -0.259486u^{158} - 1.01950u^{157} + \cdots - 145.106u - 45.1168 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.65210u^{158} - 10.5481u^{157} + \cdots - 1632.96u - 475.800 \\ -1.25361u^{158} - 8.81070u^{157} + \cdots - 1243.70u - 384.679 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} -0.673257u^{158} - 2.06957u^{157} + \cdots - 302.818u - 99.0191 \\ -1.38391u^{158} - 3.80070u^{157} + \cdots - 335.208u - 87.9624 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.210299u^{158} - 0.627259u^{157} + \cdots - 156.754u - 57.6302 \\ -0.739633u^{158} - 2.23211u^{157} + \cdots - 181.676u - 46.1448 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.251684u^{158} - 5.77397u^{157} + \cdots - 1017.29u - 340.328 \\ -1.18463u^{158} - 7.36524u^{157} + \cdots - 1060.12u - 335.916 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.71551u^{158} + 6.99494u^{157} + \cdots + 531.066u + 141.743 \\ 1.99218u^{158} + 5.00541u^{157} + \cdots + 382.406u + 87.0731 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 3.02859u^{158} + 7.14838u^{157} + \cdots + 521.124u + 129.485 \\ 4.07615u^{158} + 10.0795u^{157} + \cdots + 726.211u + 149.463 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.54355u^{158} + 4.06187u^{157} + \cdots - 159.678u - 151.190$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{159} + 63u^{158} + \cdots - 160940u - 3721$
c_2, c_6	$u^{159} - 3u^{158} + \cdots + 254u - 61$
c_3	$u^{159} + 2u^{158} + \cdots - 6385u - 131$
c_4, c_{12}	$u^{159} + 6u^{158} + \cdots + 329355u - 46602$
c_5	$u^{159} - 3u^{158} + \cdots - 31151u - 5272$
c_7	$u^{159} + 13u^{158} + \cdots - 2559717451u - 258897949$
c_8, c_{11}	$u^{159} - 12u^{158} + \cdots + 5916498u - 656059$
c_9	$u^{159} + 17u^{158} + \cdots - 44446u - 5041$
c_{10}	$u^{159} - 16u^{158} + \cdots + 1503u - 71$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{159} + 63y^{158} + \cdots + 1061374132y - 13845841$
c_2, c_6	$y^{159} + 63y^{158} + \cdots - 160940y - 3721$
c_3	$y^{159} - 8y^{158} + \cdots + 9604635y - 17161$
c_4, c_{12}	$y^{159} + 126y^{158} + \cdots + 236167644573y - 2171746404$
c_5	$y^{159} - 15y^{158} + \cdots - 346128495y - 27793984$
c_7	$y^{159} + 59y^{158} + \cdots - 1286314653118589129y - 67028147996406601$
c_8, c_{11}	$y^{159} + 102y^{158} + \cdots - 6052537066114y - 430413411481$
c_9	$y^{159} - 9y^{158} + \cdots + 268040052y - 25411681$
c_{10}	$y^{159} - 18y^{158} + \cdots - 151015y - 5041$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.891606 + 0.451374I$ $a = -0.399037 - 0.880877I$ $b = -1.387810 + 0.079849I$	$-0.10649 - 4.58909I$	0
$u = 0.891606 - 0.451374I$ $a = -0.399037 + 0.880877I$ $b = -1.387810 - 0.079849I$	$-0.10649 + 4.58909I$	0
$u = 0.399869 + 0.927877I$ $a = 0.42775 - 2.20856I$ $b = -0.74809 - 2.12471I$	$-7.49146 + 2.95901I$	0
$u = 0.399869 - 0.927877I$ $a = 0.42775 + 2.20856I$ $b = -0.74809 + 2.12471I$	$-7.49146 - 2.95901I$	0
$u = -0.571758 + 0.834215I$ $a = 1.41778 - 0.73759I$ $b = 2.28792 - 0.39889I$	$1.88865 - 1.06916I$	0
$u = -0.571758 - 0.834215I$ $a = 1.41778 + 0.73759I$ $b = 2.28792 + 0.39889I$	$1.88865 + 1.06916I$	0
$u = 0.683602 + 0.708957I$ $a = 1.32111 - 0.58053I$ $b = 1.167530 - 0.538071I$	$-0.236758 - 1.021390I$	0
$u = 0.683602 - 0.708957I$ $a = 1.32111 + 0.58053I$ $b = 1.167530 + 0.538071I$	$-0.236758 + 1.021390I$	0
$u = 0.613617 + 0.809529I$ $a = -1.24201 - 1.46224I$ $b = -1.43474 + 0.13516I$	$3.28186 + 0.91601I$	0
$u = 0.613617 - 0.809529I$ $a = -1.24201 + 1.46224I$ $b = -1.43474 - 0.13516I$	$3.28186 - 0.91601I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.831614 + 0.498398I$ $a = 0.582103 + 0.698196I$ $b = 1.213780 + 0.049993I$	$0.93629 - 3.11773I$	0
$u = 0.831614 - 0.498398I$ $a = 0.582103 - 0.698196I$ $b = 1.213780 - 0.049993I$	$0.93629 + 3.11773I$	0
$u = -0.603720 + 0.758440I$ $a = -0.18923 + 1.77717I$ $b = -2.36106 + 1.11082I$	$-4.09868 + 4.78610I$	0
$u = -0.603720 - 0.758440I$ $a = -0.18923 - 1.77717I$ $b = -2.36106 - 1.11082I$	$-4.09868 - 4.78610I$	0
$u = -0.815510 + 0.510356I$ $a = -0.055289 - 1.063800I$ $b = 0.429918 - 0.267518I$	$0.470123 - 0.643923I$	0
$u = -0.815510 - 0.510356I$ $a = -0.055289 + 1.063800I$ $b = 0.429918 + 0.267518I$	$0.470123 + 0.643923I$	0
$u = -0.868748 + 0.576297I$ $a = 1.27606 - 0.87395I$ $b = 1.54440 + 0.59450I$	$-0.53884 + 7.54590I$	0
$u = -0.868748 - 0.576297I$ $a = 1.27606 + 0.87395I$ $b = 1.54440 - 0.59450I$	$-0.53884 - 7.54590I$	0
$u = -0.575233 + 0.869697I$ $a = 0.94013 - 2.21673I$ $b = 1.24916 - 1.17661I$	$1.77261 - 3.50082I$	0
$u = -0.575233 - 0.869697I$ $a = 0.94013 + 2.21673I$ $b = 1.24916 + 1.17661I$	$1.77261 + 3.50082I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.627251 + 0.721492I$ $a = 1.08372 + 2.32675I$ $b = 1.27777 + 1.06708I$	$-3.45995 - 5.36968I$	0
$u = 0.627251 - 0.721492I$ $a = 1.08372 - 2.32675I$ $b = 1.27777 - 1.06708I$	$-3.45995 + 5.36968I$	0
$u = 0.872842 + 0.574512I$ $a = -0.880043 - 0.920042I$ $b = -1.231380 + 0.332606I$	$3.92115 - 3.61044I$	0
$u = 0.872842 - 0.574512I$ $a = -0.880043 + 0.920042I$ $b = -1.231380 - 0.332606I$	$3.92115 + 3.61044I$	0
$u = -0.609586 + 0.849892I$ $a = 1.44685 - 2.54477I$ $b = 3.05712 - 0.70431I$	$0.77339 - 2.40140I$	0
$u = -0.609586 - 0.849892I$ $a = 1.44685 + 2.54477I$ $b = 3.05712 + 0.70431I$	$0.77339 + 2.40140I$	0
$u = -0.588733 + 0.750638I$ $a = -0.904183 + 0.740341I$ $b = -1.241650 + 0.556024I$	$1.21651 - 1.58917I$	0
$u = -0.588733 - 0.750638I$ $a = -0.904183 - 0.740341I$ $b = -1.241650 - 0.556024I$	$1.21651 + 1.58917I$	0
$u = -0.553031 + 0.767881I$ $a = -0.57305 + 1.84886I$ $b = -0.208333 + 0.772614I$	$-0.551910 + 1.122070I$	0
$u = -0.553031 - 0.767881I$ $a = -0.57305 - 1.84886I$ $b = -0.208333 - 0.772614I$	$-0.551910 - 1.122070I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.497138 + 0.802103I$ $a = 0.940684 + 0.349089I$ $b = -0.642794 - 0.744683I$	$-6.40496 + 2.25710I$	0
$u = 0.497138 - 0.802103I$ $a = 0.940684 - 0.349089I$ $b = -0.642794 + 0.744683I$	$-6.40496 - 2.25710I$	0
$u = 0.522717 + 0.918136I$ $a = -0.861764 - 0.279437I$ $b = 0.501977 + 0.832439I$	$-6.81443 + 1.89238I$	0
$u = 0.522717 - 0.918136I$ $a = -0.861764 + 0.279437I$ $b = 0.501977 - 0.832439I$	$-6.81443 - 1.89238I$	0
$u = 0.632740 + 0.847116I$ $a = -1.83466 - 2.13359I$ $b = -2.60512 - 1.20654I$	$1.39791 + 2.47477I$	0
$u = 0.632740 - 0.847116I$ $a = -1.83466 + 2.13359I$ $b = -2.60512 + 1.20654I$	$1.39791 - 2.47477I$	0
$u = 0.607609 + 0.711221I$ $a = -0.035942 + 0.740569I$ $b = 1.23958 + 0.90009I$	$1.44425 - 1.69401I$	0
$u = 0.607609 - 0.711221I$ $a = -0.035942 - 0.740569I$ $b = 1.23958 - 0.90009I$	$1.44425 + 1.69401I$	0
$u = 0.615466 + 0.873663I$ $a = -0.30344 - 1.40309I$ $b = -1.81053 - 1.19041I$	$3.08306 + 3.92462I$	0
$u = 0.615466 - 0.873663I$ $a = -0.30344 + 1.40309I$ $b = -1.81053 + 1.19041I$	$3.08306 - 3.92462I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.934127+0.528231I$ $a=-1.051730+0.882977I$ $b=-1.41419-0.55637I$	$-4.5491+14.0442I$	0
$u=-0.934127-0.528231I$ $a=-1.051730-0.882977I$ $b=-1.41419+0.55637I$	$-4.5491-14.0442I$	0
$u=-0.884763+0.265927I$ $a=-0.065974+0.990621I$ $b=-0.277394+0.133064I$	$0.067585-0.143772I$	0
$u=-0.884763-0.265927I$ $a=-0.065974-0.990621I$ $b=-0.277394-0.133064I$	$0.067585+0.143772I$	0
$u=0.949654+0.508942I$ $a=0.786316+0.857484I$ $b=1.068240-0.317335I$	$1.42546-7.94644I$	0
$u=0.949654-0.508942I$ $a=0.786316-0.857484I$ $b=1.068240+0.317335I$	$1.42546+7.94644I$	0
$u=-0.566757+0.921324I$ $a=-1.008770-0.000430I$ $b=-1.94280+0.18822I$	$-1.05014-5.62239I$	0
$u=-0.566757-0.921324I$ $a=-1.008770+0.000430I$ $b=-1.94280-0.18822I$	$-1.05014+5.62239I$	0
$u=-0.071453+1.082090I$ $a=-0.528626+0.466190I$ $b=0.701369-0.226657I$	$-11.43230+0.10008I$	0
$u=-0.071453-1.082090I$ $a=-0.528626-0.466190I$ $b=0.701369+0.226657I$	$-11.43230-0.10008I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.343598+0.842945I$ $a=\ \ 0.80711-1.83541I$ $b=\ \ 1.18296-1.98287I$	$-2.48699+1.18392I$	0
$u=-0.343598-0.842945I$ $a=\ \ 0.80711+1.83541I$ $b=\ \ 1.18296+1.98287I$	$-2.48699-1.18392I$	0
$u=-0.595995+0.919577I$ $a=-1.83619+1.92879I$ $b=-2.25512-0.32712I$	$-4.60052-9.53462I$	0
$u=-0.595995-0.919577I$ $a=-1.83619-1.92879I$ $b=-2.25512+0.32712I$	$-4.60052+9.53462I$	0
$u=-0.645641+0.628785I$ $a=\ \ 1.010270-0.702753I$ $b=\ \ 0.754803+1.111730I$	$-0.954940+0.088450I$	0
$u=-0.645641-0.628785I$ $a=\ \ 1.010270+0.702753I$ $b=\ \ 0.754803-1.111730I$	$-0.954940-0.088450I$	0
$u=-0.062257+1.101880I$ $a=\ \ 0.774289+0.733403I$ $b=-0.219207+0.885741I$	$-5.90968-1.00227I$	0
$u=-0.062257-1.101880I$ $a=\ \ 0.774289-0.733403I$ $b=-0.219207-0.885741I$	$-5.90968+1.00227I$	0
$u=-0.628272+0.908716I$ $a=-0.42968+1.46683I$ $b=-0.880148+1.051340I$	$0.71583-3.24571I$	0
$u=-0.628272-0.908716I$ $a=-0.42968-1.46683I$ $b=-0.880148-1.051340I$	$0.71583+3.24571I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.839307+0.294161I$		
$a=$	$0.730632-0.193247I$	$-1.96454+3.63147I$	0
$b=$	$0.145461-0.690363I$		
$u=$	$0.839307-0.294161I$		
$a=$	$0.730632+0.193247I$	$-1.96454-3.63147I$	0
$b=$	$0.145461+0.690363I$		
$u=$	$0.749765+0.825354I$		
$a=$	$-0.698807+1.067630I$	$-5.61660+0.32133I$	0
$b=$	$0.31282+1.42365I$		
$u=$	$0.749765-0.825354I$		
$a=$	$-0.698807-1.067630I$	$-5.61660-0.32133I$	0
$b=$	$0.31282-1.42365I$		
$u=$	$-0.902924+0.660808I$		
$a=$	$-0.474272+0.497644I$	$2.26957-2.33577I$	0
$b=$	$-0.933594-0.010397I$		
$u=$	$-0.902924-0.660808I$		
$a=$	$-0.474272-0.497644I$	$2.26957+2.33577I$	0
$b=$	$-0.933594+0.010397I$		
$u=$	$0.614092+0.936059I$		
$a=$	$1.09199+1.04492I$	$0.77023+6.53892I$	0
$b=$	$0.986717-0.242566I$		
$u=$	$0.614092-0.936059I$		
$a=$	$1.09199-1.04492I$	$0.77023-6.53892I$	0
$b=$	$0.986717+0.242566I$		
$u=$	$0.614061+0.939601I$		
$a=$	$1.69890+1.00476I$	$-4.12502+10.25450I$	0
$b=$	$2.67904+0.70566I$		
$u=$	$0.614061-0.939601I$		
$a=$	$1.69890-1.00476I$	$-4.12502-10.25450I$	0
$b=$	$2.67904-0.70566I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.041450 + 0.419189I$ $a = -0.497265 + 0.333522I$ $b = 0.108138 + 0.587378I$	$-5.14019 + 8.67296I$	0
$u = 1.041450 - 0.419189I$ $a = -0.497265 - 0.333522I$ $b = 0.108138 - 0.587378I$	$-5.14019 - 8.67296I$	0
$u = -0.082693 + 1.123310I$ $a = -0.315749 + 0.112904I$ $b = 0.513951 + 0.319444I$	$-2.69089 - 2.42476I$	0
$u = -0.082693 - 1.123310I$ $a = -0.315749 - 0.112904I$ $b = 0.513951 - 0.319444I$	$-2.69089 + 2.42476I$	0
$u = -0.997319 + 0.525387I$ $a = 0.332017 - 0.391180I$ $b = 0.720221 + 0.183185I$	$2.63643 + 1.45962I$	0
$u = -0.997319 - 0.525387I$ $a = 0.332017 + 0.391180I$ $b = 0.720221 - 0.183185I$	$2.63643 - 1.45962I$	0
$u = 0.203757 + 1.109290I$ $a = 0.698695 + 0.024459I$ $b = -0.118743 - 0.669347I$	$-6.10046 - 0.54998I$	0
$u = 0.203757 - 1.109290I$ $a = 0.698695 - 0.024459I$ $b = -0.118743 + 0.669347I$	$-6.10046 + 0.54998I$	0
$u = -0.692665 + 0.521554I$ $a = -1.48146 + 1.30966I$ $b = -1.67966 - 0.21318I$	$-6.48598 + 1.52980I$	0
$u = -0.692665 - 0.521554I$ $a = -1.48146 - 1.30966I$ $b = -1.67966 + 0.21318I$	$-6.48598 - 1.52980I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.672646 + 0.935903I$ $a = -0.34462 + 1.54924I$ $b = -0.131100 + 1.395650I$	$-0.89825 + 6.26091I$	0
$u = 0.672646 - 0.935903I$ $a = -0.34462 - 1.54924I$ $b = -0.131100 - 1.395650I$	$-0.89825 - 6.26091I$	0
$u = -0.507923 + 1.036030I$ $a = -0.43365 + 2.07432I$ $b = -2.14224 + 1.26606I$	$-7.83347 - 9.11034I$	0
$u = -0.507923 - 1.036030I$ $a = -0.43365 - 2.07432I$ $b = -2.14224 - 1.26606I$	$-7.83347 + 9.11034I$	0
$u = 0.084320 + 1.162100I$ $a = 0.588540 - 0.162711I$ $b = -0.521174 + 0.170155I$	$-7.16691 + 6.22962I$	0
$u = 0.084320 - 1.162100I$ $a = 0.588540 + 0.162711I$ $b = -0.521174 - 0.170155I$	$-7.16691 - 6.22962I$	0
$u = -0.335652 + 0.764370I$ $a = -1.33194 + 2.73398I$ $b = -1.85917 + 0.24047I$	$-6.44396 + 5.52006I$	0
$u = -0.335652 - 0.764370I$ $a = -1.33194 - 2.73398I$ $b = -1.85917 - 0.24047I$	$-6.44396 - 5.52006I$	0
$u = 0.505247 + 1.053240I$ $a = -0.084250 + 1.129650I$ $b = 0.505172 + 1.124770I$	$-4.46368 + 1.07446I$	0
$u = 0.505247 - 1.053240I$ $a = -0.084250 - 1.129650I$ $b = 0.505172 - 1.124770I$	$-4.46368 - 1.07446I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.214743 + 1.149270I$ $a = 0.128211 - 0.777716I$ $b = 1.037460 - 0.532001I$	$-10.79030 - 3.03275I$	0
$u = 0.214743 - 1.149270I$ $a = 0.128211 + 0.777716I$ $b = 1.037460 + 0.532001I$	$-10.79030 + 3.03275I$	0
$u = -0.329478 + 1.125570I$ $a = -1.41147 - 0.19219I$ $b = -0.564611 - 1.189060I$	$-8.97038 + 2.08423I$	0
$u = -0.329478 - 1.125570I$ $a = -1.41147 + 0.19219I$ $b = -0.564611 + 1.189060I$	$-8.97038 - 2.08423I$	0
$u = 0.573234 + 1.034610I$ $a = 0.66515 + 1.81424I$ $b = 2.00514 + 1.32017I$	$-3.73577 + 7.30425I$	0
$u = 0.573234 - 1.034610I$ $a = 0.66515 - 1.81424I$ $b = 2.00514 - 1.32017I$	$-3.73577 - 7.30425I$	0
$u = -0.626228 + 1.010830I$ $a = 0.585336 - 0.050441I$ $b = 1.185370 + 0.011923I$	$-1.08115 - 4.55575I$	0
$u = -0.626228 - 1.010830I$ $a = 0.585336 + 0.050441I$ $b = 1.185370 - 0.011923I$	$-1.08115 + 4.55575I$	0
$u = 0.553152 + 1.052900I$ $a = -0.78032 - 1.85728I$ $b = -1.28934 - 1.88716I$	$-8.64744 + 10.19800I$	0
$u = 0.553152 - 1.052900I$ $a = -0.78032 + 1.85728I$ $b = -1.28934 + 1.88716I$	$-8.64744 - 10.19800I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.670451+0.984890I$ $a=-0.489466-1.085880I$ $b=\ \ 0.92873-1.45141I$	$-1.96691-5.24950I$	0
$u=-0.670451-0.984890I$ $a=-0.489466+1.085880I$ $b=\ \ 0.92873+1.45141I$	$-1.96691+5.24950I$	0
$u=-0.457777+1.104550I$ $a=\ \ 0.929703-0.845257I$ $b=\ \ 1.31324-0.91960I$	$-3.73394-3.95029I$	0
$u=-0.457777-1.104550I$ $a=\ \ 0.929703+0.845257I$ $b=\ \ 1.31324+0.91960I$	$-3.73394+3.95029I$	0
$u=-0.388814+0.700087I$ $a=-0.23567-1.72227I$ $b=-0.116076-0.547040I$	$0.453064+0.029676I$	0
$u=-0.388814-0.700087I$ $a=-0.23567+1.72227I$ $b=-0.116076+0.547040I$	$0.453064-0.029676I$	0
$u=-0.623240+1.038110I$ $a=-0.73855+2.19114I$ $b=-2.03884+1.84794I$	$-7.97107-6.62345I$	0
$u=-0.623240-1.038110I$ $a=-0.73855-2.19114I$ $b=-2.03884-1.84794I$	$-7.97107+6.62345I$	0
$u=\ \ 0.114628+1.238640I$ $a=-0.772355-0.165121I$ $b=-0.463441+0.435036I$	$-6.04736-1.91666I$	0
$u=\ \ 0.114628-1.238640I$ $a=-0.772355+0.165121I$ $b=-0.463441-0.435036I$	$-6.04736+1.91666I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.708136+1.032670I$ $a=-0.388373+1.181580I$ $b=-1.082470+0.876189I$	$1.09638-3.58717I$	0
$u=-0.708136-1.032670I$ $a=-0.388373-1.181580I$ $b=-1.082470-0.876189I$	$1.09638+3.58717I$	0
$u=0.219256+0.706031I$ $a=-1.73960-0.66953I$ $b=-1.51753-1.35320I$	$-6.65955-6.15096I$	0
$u=0.219256-0.706031I$ $a=-1.73960+0.66953I$ $b=-1.51753+1.35320I$	$-6.65955+6.15096I$	0
$u=0.777772+0.994883I$ $a=0.796367-0.675047I$ $b=0.218636-1.334040I$	$-6.09025+5.57926I$	0
$u=0.777772-0.994883I$ $a=0.796367+0.675047I$ $b=0.218636+1.334040I$	$-6.09025-5.57926I$	0
$u=-1.247940+0.246837I$ $a=0.042339-0.161157I$ $b=0.075085+0.245060I$	$1.02894-1.15088I$	0
$u=-1.247940-0.246837I$ $a=0.042339+0.161157I$ $b=0.075085-0.245060I$	$1.02894+1.15088I$	0
$u=0.076094+1.271130I$ $a=0.560911+0.294765I$ $b=0.122577+0.139020I$	$-4.97447-0.78694I$	0
$u=0.076094-1.271130I$ $a=0.560911-0.294765I$ $b=0.122577-0.139020I$	$-4.97447+0.78694I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.066043 + 1.273770I$ $a = -0.451108 + 0.114589I$ $b = 0.453927 - 0.297525I$	$-11.5403 + 11.8535I$	0
$u = 0.066043 - 1.273770I$ $a = -0.451108 - 0.114589I$ $b = 0.453927 + 0.297525I$	$-11.5403 - 11.8535I$	0
$u = 0.662213 + 1.093830I$ $a = 0.65581 + 1.44233I$ $b = 1.41474 + 0.96411I$	$-0.84101 + 8.70296I$	0
$u = 0.662213 - 1.093830I$ $a = 0.65581 - 1.44233I$ $b = 1.41474 - 0.96411I$	$-0.84101 - 8.70296I$	0
$u = 0.693099 + 1.078350I$ $a = -0.51511 - 1.54099I$ $b = -1.71907 - 1.32929I$	$2.37709 + 9.41632I$	0
$u = 0.693099 - 1.078350I$ $a = -0.51511 + 1.54099I$ $b = -1.71907 + 1.32929I$	$2.37709 - 9.41632I$	0
$u = -0.695608 + 1.077510I$ $a = 0.44958 - 1.96324I$ $b = 1.82591 - 1.76850I$	$-2.06941 - 13.35370I$	0
$u = -0.695608 - 1.077510I$ $a = 0.44958 + 1.96324I$ $b = 1.82591 + 1.76850I$	$-2.06941 + 13.35370I$	0
$u = 0.660840 + 1.135020I$ $a = -0.79320 - 1.45488I$ $b = -1.78706 - 0.78397I$	$-2.17517 + 10.31870I$	0
$u = 0.660840 - 1.135020I$ $a = -0.79320 + 1.45488I$ $b = -1.78706 + 0.78397I$	$-2.17517 - 10.31870I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.699736+1.120050I$ $a=-0.52746+1.79089I$ $b=-1.86336+1.59857I$	$-6.3731-20.0336I$	0
$u=-0.699736-1.120050I$ $a=-0.52746-1.79089I$ $b=-1.86336-1.59857I$	$-6.3731+20.0336I$	0
$u=-0.082018+1.320590I$ $a=\ \ 0.0961673+0.0711012I$ $b=-0.621161-0.145846I$	$-5.70638-5.46309I$	0
$u=-0.082018-1.320590I$ $a=\ \ 0.0961673-0.0711012I$ $b=-0.621161+0.145846I$	$-5.70638+5.46309I$	0
$u=\ \ 0.698089+1.129470I$ $a=\ \ 0.56404+1.41401I$ $b=\ \ 1.67719+1.30711I$	$-0.48522+13.96210I$	0
$u=\ \ 0.698089-1.129470I$ $a=\ \ 0.56404-1.41401I$ $b=\ \ 1.67719-1.30711I$	$-0.48522-13.96210I$	0
$u=-0.716426+1.132810I$ $a=\ \ 0.320924-1.047460I$ $b=\ \ 1.090520-0.822092I$	$0.74553-7.64812I$	0
$u=-0.716426-1.132810I$ $a=\ \ 0.320924+1.047460I$ $b=\ \ 1.090520+0.822092I$	$0.74553+7.64812I$	0
$u=-0.737999+1.123130I$ $a=\ \ 0.099504-0.680268I$ $b=\ \ 1.002420-0.822822I$	$-1.62771-5.11952I$	0
$u=-0.737999-1.123130I$ $a=\ \ 0.099504+0.680268I$ $b=\ \ 1.002420+0.822822I$	$-1.62771+5.11952I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.498926 + 0.404048I$ $a = 0.57619 + 1.82941I$ $b = 1.200400 - 0.049494I$	$-2.11405 - 2.75941I$	$3.06383 + 4.92986I$
$u = 0.498926 - 0.404048I$ $a = 0.57619 - 1.82941I$ $b = 1.200400 + 0.049494I$	$-2.11405 + 2.75941I$	$3.06383 - 4.92986I$
$u = 0.353254 + 0.524132I$ $a = -1.98450 + 0.75608I$ $b = -0.65495 + 1.30072I$	$-6.43990 + 0.21273I$	$2.10466 - 2.88222I$
$u = 0.353254 - 0.524132I$ $a = -1.98450 - 0.75608I$ $b = -0.65495 - 1.30072I$	$-6.43990 - 0.21273I$	$2.10466 + 2.88222I$
$u = 0.579950 + 0.243442I$ $a = -1.64163 - 1.20353I$ $b = -0.869948 - 0.299649I$	$-6.67361 - 5.76857I$	$1.19700 + 3.98730I$
$u = 0.579950 - 0.243442I$ $a = -1.64163 + 1.20353I$ $b = -0.869948 + 0.299649I$	$-6.67361 + 5.76857I$	$1.19700 - 3.98730I$
$u = 0.574453 + 1.262280I$ $a = 0.031831 - 0.594807I$ $b = -0.204980 - 0.761417I$	$-8.02830 - 2.54868I$	0
$u = 0.574453 - 1.262280I$ $a = 0.031831 + 0.594807I$ $b = -0.204980 + 0.761417I$	$-8.02830 + 2.54868I$	0
$u = -0.673803 + 1.220830I$ $a = -0.428510 + 0.652156I$ $b = -1.22811 + 0.78321I$	$-2.75965 - 5.66705I$	0
$u = -0.673803 - 1.220830I$ $a = -0.428510 - 0.652156I$ $b = -1.22811 - 0.78321I$	$-2.75965 + 5.66705I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.148298 + 0.538013I$ $a = 1.18272 + 2.36230I$ $b = 1.001110 + 0.458544I$	$-2.03542 - 2.73997I$	$1.46092 + 6.56987I$
$u = 0.148298 - 0.538013I$ $a = 1.18272 - 2.36230I$ $b = 1.001110 - 0.458544I$	$-2.03542 + 2.73997I$	$1.46092 - 6.56987I$
$u = -0.528592 + 0.033707I$ $a = 1.07746 + 1.02503I$ $b = -1.050220 - 0.728367I$	$-5.67142 + 5.34232I$	$1.94062 - 3.00311I$
$u = -0.528592 - 0.033707I$ $a = 1.07746 - 1.02503I$ $b = -1.050220 + 0.728367I$	$-5.67142 - 5.34232I$	$1.94062 + 3.00311I$
$u = -0.105801 + 0.462126I$ $a = 1.21181 - 1.85711I$ $b = 0.806452 + 0.797118I$	$-1.237960 - 0.251521I$	$2.04267 - 1.76475I$
$u = -0.105801 - 0.462126I$ $a = 1.21181 + 1.85711I$ $b = 0.806452 - 0.797118I$	$-1.237960 + 0.251521I$	$2.04267 + 1.76475I$
$u = -0.411659$ $a = -1.64181$ $b = -0.0904021$	1.01780	9.02240
$u = -0.098178 + 0.385659I$ $a = -0.750766 + 0.834728I$ $b = 0.155455 + 0.915784I$	$0.53987 - 1.41440I$	$3.09127 + 6.46715I$
$u = -0.098178 - 0.385659I$ $a = -0.750766 - 0.834728I$ $b = 0.155455 - 0.915784I$	$0.53987 + 1.41440I$	$3.09127 - 6.46715I$

II.

$\boldsymbol{I_2^u = \langle 1.89\times 10^{16}u^{37}+3.82\times 10^{16}u^{36}+\cdots+7.24\times 10^{15}b+3.78\times 10^{16},\ 1.81\times 10^{15}u^{37}+7.77\times 10^{16}u^{36}+\cdots+2.17\times 10^{16}a+4.08\times 10^{17},\ u^{38}+2u^{37}+\cdots+7u+3\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix}-0.0832929u^{37}-3.57707u^{36}+\cdots-35.1519u-18.7630\\-2.61112u^{37}-5.26936u^{36}+\cdots-13.8591u-5.21751\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-1.46042u^{37}-4.41875u^{36}+\cdots-30.7239u-10.2685\\-1.24772u^{37}-2.76294u^{36}+\cdots-20.5806u-7.40635\end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix}-0.898685u^{37}-4.45538u^{36}+\cdots-28.6677u-13.7937\\-5.67118u^{37}-11.2912u^{36}+\cdots-25.4961u-6.24631\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-1.15463u^{37}-3.68950u^{36}+\cdots-19.1918u-8.67288\\-3.68245u^{37}-5.38179u^{36}+\cdots+2.10103u+4.87260\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.224924u^{37}-2.18109u^{36}+\cdots-19.6681u-12.6508\\-0.852294u^{37}-4.02176u^{36}+\cdots-18.1714u-10.7044\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-0.448661u^{37}-2.86350u^{36}+\cdots-10.0284u-4.39321\\-2.39818u^{37}-4.07696u^{36}+\cdots-13.3099u-1.91194\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0.259530u^{37}+0.218585u^{36}+\cdots+2.96981u+2.40111\\-0.998844u^{37}-3.13413u^{36}+\cdots-3.69804u-0.263339\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{46300284051209689}{7241625314466997}u^{37}+\frac{98055403875030441}{7241625314466997}u^{36}+\cdots-\frac{39251467631931458}{7241625314466997}u-\frac{44415212386419324}{7241625314466997}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{38} - 16u^{37} + \cdots - 89u + 9$
c_2	$u^{38} + 2u^{37} + \cdots + 7u + 3$
c_3	$u^{38} - u^{37} + \cdots + 2u + 1$
c_4	$u^{38} - u^{37} + \cdots - 7u + 1$
c_5	$u^{38} - 2u^{37} + \cdots + 3u + 5$
c_6	$u^{38} - 2u^{37} + \cdots - 7u + 3$
c_7	$u^{38} + 4u^{37} + \cdots - 6u + 1$
c_8	$u^{38} + 15u^{37} + \cdots + 23u + 3$
c_9	$u^{38} - 4u^{37} + \cdots - 5u + 1$
c_{10}	$u^{38} - 3u^{37} + \cdots + 2u^2 + 1$
c_{11}	$u^{38} - 15u^{37} + \cdots - 23u + 3$
c_{12}	$u^{38} + u^{37} + \cdots + 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{38} + 8y^{37} + \cdots + 89y + 81$
c_2, c_6	$y^{38} + 16y^{37} + \cdots + 89y + 9$
c_3	$y^{38} + 9y^{37} + \cdots + 26y + 1$
c_4, c_{12}	$y^{38} + 27y^{37} + \cdots + 45y + 1$
c_5	$y^{38} - 6y^{37} + \cdots - 89y + 25$
c_7	$y^{38} + 14y^{36} + \cdots + 62y + 1$
c_8, c_{11}	$y^{38} + 19y^{37} + \cdots + 263y + 9$
c_9	$y^{38} - 20y^{37} + \cdots + 5y + 1$
c_{10}	$y^{38} - 13y^{37} + \cdots + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.892906 + 0.474049I$ $a = -0.543881 - 0.754852I$ $b = -1.211700 + 0.139841I$	$1.51389 - 3.94078I$	$9.03028 + 5.34855I$
$u = 0.892906 - 0.474049I$ $a = -0.543881 + 0.754852I$ $b = -1.211700 - 0.139841I$	$1.51389 + 3.94078I$	$9.03028 - 5.34855I$
$u = 0.594004 + 0.855655I$ $a = -1.70673 - 2.46179I$ $b = -3.00537 - 0.91058I$	$0.29199 + 2.34920I$	$-3.64744 - 2.59669I$
$u = 0.594004 - 0.855655I$ $a = -1.70673 + 2.46179I$ $b = -3.00537 + 0.91058I$	$0.29199 - 2.34920I$	$-3.64744 + 2.59669I$
$u = -0.119660 + 0.946619I$ $a = 1.57419 + 1.05120I$ $b = 0.134517 + 1.228940I$	$-8.11737 + 0.14389I$	$-4.00888 + 0.23512I$
$u = -0.119660 - 0.946619I$ $a = 1.57419 - 1.05120I$ $b = 0.134517 - 1.228940I$	$-8.11737 - 0.14389I$	$-4.00888 - 0.23512I$
$u = -0.624743 + 0.841573I$ $a = 1.30803 - 1.81899I$ $b = 2.06260 - 1.00524I$	$2.57134 - 2.45339I$	$14.6281 + 3.3793I$
$u = -0.624743 - 0.841573I$ $a = 1.30803 + 1.81899I$ $b = 2.06260 + 1.00524I$	$2.57134 + 2.45339I$	$14.6281 - 3.3793I$
$u = -0.152880 + 0.924198I$ $a = -0.73458 - 1.22703I$ $b = 0.77812 - 1.45989I$	$-8.06363 - 1.33130I$	$-4.51062 + 0.49670I$
$u = -0.152880 - 0.924198I$ $a = -0.73458 + 1.22703I$ $b = 0.77812 + 1.45989I$	$-8.06363 + 1.33130I$	$-4.51062 - 0.49670I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.580802+0.693592I$ $a=-0.725906-0.644062I$ $b=-0.844091-0.101811I$	$1.48155+0.28672I$	$10.92559-1.39869I$
$u=-0.580802-0.693592I$ $a=-0.725906+0.644062I$ $b=-0.844091+0.101811I$	$1.48155-0.28672I$	$10.92559+1.39869I$
$u=0.643598+0.624322I$ $a=-0.259225+0.432239I$ $b=0.375454-0.477948I$	$-4.98757+7.33702I$	$3.08491-6.50003I$
$u=0.643598-0.624322I$ $a=-0.259225-0.432239I$ $b=0.375454+0.477948I$	$-4.98757-7.33702I$	$3.08491+6.50003I$
$u=0.500653+0.724800I$ $a=1.39874+2.51032I$ $b=2.46978+0.90492I$	$-5.37163-5.24450I$	$3.16629+2.91544I$
$u=0.500653-0.724800I$ $a=1.39874-2.51032I$ $b=2.46978-0.90492I$	$-5.37163+5.24450I$	$3.16629-2.91544I$
$u=0.542387+0.988587I$ $a=1.52845+1.99838I$ $b=2.59015+0.89227I$	$-6.28791+9.50561I$	$0.93292-9.18715I$
$u=0.542387-0.988587I$ $a=1.52845-1.99838I$ $b=2.59015-0.89227I$	$-6.28791-9.50561I$	$0.93292+9.18715I$
$u=-0.628677+0.944378I$ $a=0.198398+0.992384I$ $b=0.361585+0.689020I$	$0.69924-5.16158I$	$8.52929+6.13893I$
$u=-0.628677-0.944378I$ $a=0.198398-0.992384I$ $b=0.361585-0.689020I$	$0.69924+5.16158I$	$8.52929-6.13893I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.297291 + 0.732873I$ $a = -0.088129 - 0.980585I$ $b = -0.196403 + 0.660965I$	$-1.29463 + 1.05866I$	$0.63753 - 7.22194I$
$u = 0.297291 - 0.732873I$ $a = -0.088129 + 0.980585I$ $b = -0.196403 - 0.660965I$	$-1.29463 - 1.05866I$	$0.63753 + 7.22194I$
$u = -0.348261 + 0.700215I$ $a = -0.98924 + 2.42809I$ $b = -0.89331 + 1.33268I$	$-1.79345 + 1.77230I$	$3.95525 - 1.93058I$
$u = -0.348261 - 0.700215I$ $a = -0.98924 - 2.42809I$ $b = -0.89331 - 1.33268I$	$-1.79345 - 1.77230I$	$3.95525 + 1.93058I$
$u = 0.377097 + 1.182640I$ $a = 0.383258 + 0.289944I$ $b = 0.199954 - 0.383260I$	$-7.24176 - 2.91426I$	$0.78308 + 5.40592I$
$u = 0.377097 - 1.182640I$ $a = 0.383258 - 0.289944I$ $b = 0.199954 + 0.383260I$	$-7.24176 + 2.91426I$	$0.78308 - 5.40592I$
$u = -0.530908 + 1.123200I$ $a = -0.749838 + 0.752634I$ $b = -1.61677 + 0.68323I$	$-3.58531 - 5.37909I$	$-1.78970 + 6.74335I$
$u = -0.530908 - 1.123200I$ $a = -0.749838 - 0.752634I$ $b = -1.61677 - 0.68323I$	$-3.58531 + 5.37909I$	$-1.78970 - 6.74335I$
$u = -1.218330 + 0.278173I$ $a = 0.079762 - 0.277717I$ $b = 0.112906 + 0.134719I$	$1.11970 - 1.13806I$	$45.7821 - 6.0056I$
$u = -1.218330 - 0.278173I$ $a = 0.079762 + 0.277717I$ $b = 0.112906 - 0.134719I$	$1.11970 + 1.13806I$	$45.7821 + 6.0056I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.088229 + 1.297410I$ $a = -0.622292 - 0.095446I$ $b = -0.233029 + 0.274389I$	$-4.69779 - 1.19929I$	$7.65236 + 7.47488I$
$u = 0.088229 - 1.297410I$ $a = -0.622292 + 0.095446I$ $b = -0.233029 - 0.274389I$	$-4.69779 + 1.19929I$	$7.65236 - 7.47488I$
$u = 0.677260 + 1.123800I$ $a = -0.59471 - 1.42221I$ $b = -1.52209 - 0.99311I$	$-0.44006 + 9.73419I$	$6.00000 - 9.56062I$
$u = 0.677260 - 1.123800I$ $a = -0.59471 + 1.42221I$ $b = -1.52209 + 0.99311I$	$-0.44006 - 9.73419I$	$6.00000 + 9.56062I$
$u = -0.658609 + 0.095756I$ $a = -0.798335 - 0.688297I$ $b = -0.003401 - 0.370089I$	$1.46725 - 0.92059I$	$11.98362 + 5.55999I$
$u = -0.658609 - 0.095756I$ $a = -0.798335 + 0.688297I$ $b = -0.003401 + 0.370089I$	$1.46725 + 0.92059I$	$11.98362 - 5.55999I$
$u = -0.75055 + 1.20429I$ $a = 0.175357 - 0.630231I$ $b = 0.941091 - 0.747378I$	$-1.67704 - 5.47366I$	$0. + 18.3178I$
$u = -0.75055 - 1.20429I$ $a = 0.175357 + 0.630231I$ $b = 0.941091 + 0.747378I$	$-1.67704 + 5.47366I$	$0. - 18.3178I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{38}-16u^{37}+\cdots-89u+9)(u^{159}+63u^{158}+\cdots-160940u-3721)$
c_2	$(u^{38}+2u^{37}+\cdots+7u+3)(u^{159}-3u^{158}+\cdots+254u-61)$
c_3	$(u^{38}-u^{37}+\cdots+2u+1)(u^{159}+2u^{158}+\cdots-6385u-131)$
c_4	$(u^{38}-u^{37}+\cdots-7u+1)(u^{159}+6u^{158}+\cdots+329355u-46602)$
c_5	$(u^{38}-2u^{37}+\cdots+3u+5)(u^{159}-3u^{158}+\cdots-31151u-5272)$
c_6	$(u^{38}-2u^{37}+\cdots-7u+3)(u^{159}-3u^{158}+\cdots+254u-61)$
c_7	$(u^{38}+4u^{37}+\cdots-6u+1)$ $\cdot(u^{159}+13u^{158}+\cdots-2559717451u-258897949)$
c_8	$(u^{38}+15u^{37}+\cdots+23u+3)$ $\cdot(u^{159}-12u^{158}+\cdots+5916498u-656059)$
c_9	$(u^{38}-4u^{37}+\cdots-5u+1)(u^{159}+17u^{158}+\cdots-44446u-5041)$
c_{10}	$(u^{38}-3u^{37}+\cdots+2u^2+1)(u^{159}-16u^{158}+\cdots+1503u-71)$
c_{11}	$(u^{38}-15u^{37}+\cdots-23u+3)$ $\cdot(u^{159}-12u^{158}+\cdots+5916498u-656059)$
c_{12}	$(u^{38}+u^{37}+\cdots+7u+1)(u^{159}+6u^{158}+\cdots+329355u-46602)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{38}+8y^{37}+\cdots+89y+81)$ $\cdot(y^{159}+63y^{158}+\cdots+1061374132y-13845841)$
c_2, c_6	$(y^{38}+16y^{37}+\cdots+89y+9)(y^{159}+63y^{158}+\cdots-160940y-3721)$
c_3	$(y^{38}+9y^{37}+\cdots+26y+1)(y^{159}-8y^{158}+\cdots+9604635y-17161)$
c_4, c_{12}	$(y^{38}+27y^{37}+\cdots+45y+1)$ $\cdot(y^{159}+126y^{158}+\cdots+236167644573y-2171746404)$
c_5	$(y^{38}-6y^{37}+\cdots-89y+25)$ $\cdot(y^{159}-15y^{158}+\cdots-346128495y-27793984)$
c_7	$(y^{38}+14y^{36}+\cdots+62y+1)$ $\cdot(y^{159}+59y^{158}+\cdots-1286314653118589129y-67028147996406601)$
c_8, c_{11}	$(y^{38}+19y^{37}+\cdots+263y+9)$ $\cdot(y^{159}+102y^{158}+\cdots-6052537066114y-430413411481)$
c_9	$(y^{38}-20y^{37}+\cdots+5y+1)$ $\cdot(y^{159}-9y^{158}+\cdots+268040052y-25411681)$
c_{10}	$(y^{38}-13y^{37}+\cdots+4y+1)(y^{159}-18y^{158}+\cdots-151015y-5041)$