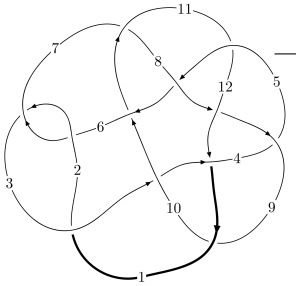
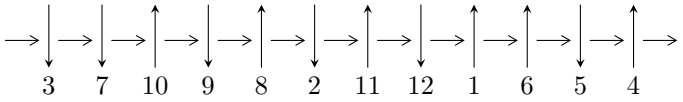
$12a_{0629}$ $(K12a_{0629})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 8556215038u^{35} + 88954311703u^{34} + \cdots + 896216536b + 256623421136, \\
&\quad 7106105223u^{35} + 72031097023u^{34} + \cdots + 1792433072a + 143687532288, \\
&\quad u^{36} + 11u^{35} + \cdots + 272u + 32\rangle \\
I_2^u &= \langle -11687u^{23} + 18829u^{22} + \cdots + 10412b + 20692,\ -10340u^{23} + 11229u^{22} + \cdots + 5206a + 1655, \\
&\quad u^{24} - 2u^{23} + \cdots - 3u + 1\rangle \\
I_3^u &= \langle -8u^{67}a - 1512u^{67} + \cdots + 8a - 1868,\ 511u^{67}a + 3u^{67} + \cdots + 443a + 3488,\ u^{68} - 6u^{67} + \cdots - 11u - 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 196 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. $I_1^u =$
$\langle \mathbf{8.56\times 10^{9}u^{35}+8.90\times 10^{10}u^{34}+\cdots+8.96\times 10^{8}b+2.57\times 10^{11},\ 7.11\times 10^{9}u^{35}+7.20\times 10^{10}u^{34}+\cdots+1.79\times 10^{9}a+1.44\times 10^{11},\ u^{36}+11u^{35}+\cdots+272u+32}\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-3.96450u^{35}-40.1862u^{34}+\cdots-651.842u-80.1634\\-9.54704u^{35}-99.2554u^{34}+\cdots-2249.93u-286.341\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-6.08616u^{35}-59.5811u^{34}+\cdots-971.052u-121.494\\-9.21243u^{35}-90.5844u^{34}+\cdots-1619.60u-203.975\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^4\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}4.05928u^{35}+48.5520u^{34}+\cdots+1754.80u+230.994\\3.45731u^{35}+47.7820u^{34}+\cdots+2476.13u+333.311\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}3.69166u^{35}+29.8903u^{34}+\cdots-157.090u-25.3283\\12.5638u^{35}+116.784u^{34}+\cdots+1115.12u+127.351\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-6.60941u^{35}-60.5115u^{34}+\cdots-194.344u-5.32351\\-12.1919u^{35}-119.581u^{34}+\cdots-1792.43u-211.501\end{pmatrix}$$
$$a_9 = \begin{pmatrix}7.05419u^{35}+69.3065u^{34}+\cdots+1216.08u+157.152\\17.2900u^{35}+178.333u^{34}+\cdots+3753.55u+479.519\end{pmatrix}$$
$$a_4 = \begin{pmatrix}16.4473u^{35}+145.651u^{34}+\cdots-514.224u-124.290\\35.2687u^{35}+346.194u^{34}+\cdots+4598.95u+526.313\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{37524040947}{224054134}u^{35}-\frac{350685729393}{224054134}u^{34}+\cdots-\frac{964109017840}{112027067}u-\frac{73536479818}{112027067}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36}+11u^{35}+\cdots-4352u+1024$
c_2, c_6	$u^{36}-11u^{35}+\cdots-272u+32$
c_3, c_{10}	$u^{36}+6u^{35}+\cdots+2u+2$
c_4, c_{11}	$u^{36}+6u^{35}+\cdots-u+1$
c_5, c_{12}	$u^{36}+2u^{35}+\cdots+8u+1$
c_7, c_9	$u^{36}+2u^{35}+\cdots-u+1$
c_8	$u^{36}+26u^{35}+\cdots+131072u+8192$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} + y^{35} + \cdots - 22740992y + 1048576$
c_2, c_6	$y^{36} - 11y^{35} + \cdots + 4352y + 1024$
c_3, c_{10}	$y^{36} + 36y^{35} + \cdots + 148y + 4$
c_4, c_{11}	$y^{36} + 42y^{35} + \cdots + 9y + 1$
c_5, c_{12}	$y^{36} - 4y^{35} + \cdots + 4y + 1$
c_7, c_9	$y^{36} - 2y^{35} + \cdots - 5y + 1$
c_8	$y^{36} + 10y^{35} + \cdots - 503316480y + 67108864$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.917123 + 0.173555I$ $a = -0.083595 + 0.389036I$ $b = 0.451653 + 1.048310I$	$-1.67998 - 0.65565I$	$-2.95585 + 0.33945I$
$u = 0.917123 - 0.173555I$ $a = -0.083595 - 0.389036I$ $b = 0.451653 - 1.048310I$	$-1.67998 + 0.65565I$	$-2.95585 - 0.33945I$
$u = 1.016890 + 0.362822I$ $a = -0.726079 + 0.908015I$ $b = -0.21078 + 2.05277I$	$-4.79406 - 0.88716I$	$-1.70616 + 0.I$
$u = 1.016890 - 0.362822I$ $a = -0.726079 - 0.908015I$ $b = -0.21078 - 2.05277I$	$-4.79406 + 0.88716I$	$-1.70616 + 0.I$
$u = -0.220844 + 1.083620I$ $a = 0.588519 - 0.803075I$ $b = 0.172175 - 0.323778I$	$0.66875 + 9.32529I$	$0. - 11.11924I$
$u = -0.220844 - 1.083620I$ $a = 0.588519 + 0.803075I$ $b = 0.172175 + 0.323778I$	$0.66875 - 9.32529I$	$0. + 11.11924I$
$u = -1.015240 + 0.447562I$ $a = 0.918459 - 0.800426I$ $b = 0.83041 - 1.55499I$	$-4.24268 + 5.45049I$	$-6.68187 - 9.06588I$
$u = -1.015240 - 0.447562I$ $a = 0.918459 + 0.800426I$ $b = 0.83041 + 1.55499I$	$-4.24268 - 5.45049I$	$-6.68187 + 9.06588I$
$u = -0.586727 + 0.959085I$ $a = -1.251040 - 0.590338I$ $b = 0.127432 - 0.327224I$	$2.6827 - 15.0492I$	$0. + 7.70054I$
$u = -0.586727 - 0.959085I$ $a = -1.251040 + 0.590338I$ $b = 0.127432 + 0.327224I$	$2.6827 + 15.0492I$	$0. - 7.70054I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.540156+0.986227I$ $a=\ 1.107750+0.608530I$ $b=\ 0.000323+0.280248I$	$5.32041-6.73104I$	$5.99890+5.64253I$
$u=-0.540156-0.986227I$ $a=\ 1.107750-0.608530I$ $b=\ 0.000323-0.280248I$	$5.32041+6.73104I$	$5.99890-5.64253I$
$u=-0.669576+0.946052I$ $a=\ 0.478928+0.494294I$ $b=-0.273375+0.172093I$	$6.09668+0.13115I$	$8.49502+0.I$
$u=-0.669576-0.946052I$ $a=\ 0.478928-0.494294I$ $b=-0.273375-0.172093I$	$6.09668-0.13115I$	$8.49502+0.I$
$u=-0.890692+0.747997I$ $a=-0.059904-0.192189I$ $b=\ 0.77408-4.24786I$	$1.37552+2.85385I$	$12.812+161.062I$
$u=-0.890692-0.747997I$ $a=-0.059904+0.192189I$ $b=\ 0.77408+4.24786I$	$1.37552-2.85385I$	$12.812-161.062I$
$u=-1.112050+0.514367I$ $a=\ 0.015186-1.076150I$ $b=-0.29518-1.69743I$	$-0.65310+4.94429I$	0
$u=-1.112050-0.514367I$ $a=\ 0.015186+1.076150I$ $b=-0.29518+1.69743I$	$-0.65310-4.94429I$	0
$u=-1.216240+0.371675I$ $a=-0.517817+0.720739I$ $b=-0.584631+1.037250I$	$-3.26684-3.99030I$	0
$u=-1.216240-0.371675I$ $a=-0.517817-0.720739I$ $b=-0.584631-1.037250I$	$-3.26684+3.99030I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.268260 + 0.156911I$ $a = 0.706035 - 0.924357I$ $b = 0.98202 - 1.83484I$	$-4.9583 - 13.2608I$	0
$u = 1.268260 - 0.156911I$ $a = 0.706035 + 0.924357I$ $b = 0.98202 + 1.83484I$	$-4.9583 + 13.2608I$	0
$u = -1.060410 + 0.751628I$ $a = 0.367953 + 0.546420I$ $b = 0.55402 + 1.44324I$	$4.85132 + 6.07493I$	0
$u = -1.060410 - 0.751628I$ $a = 0.367953 - 0.546420I$ $b = 0.55402 - 1.44324I$	$4.85132 - 6.07493I$	0
$u = -0.388492 + 0.565688I$ $a = -1.133240 - 0.428031I$ $b = -0.305857 + 0.275432I$	$1.49079 - 0.59945I$	$4.04927 + 1.08778I$
$u = -0.388492 - 0.565688I$ $a = -1.133240 + 0.428031I$ $b = -0.305857 - 0.275432I$	$1.49079 + 0.59945I$	$4.04927 - 1.08778I$
$u = -1.110850 + 0.731998I$ $a = -0.493770 - 1.155180I$ $b = -0.61517 - 2.47736I$	$1.0454 + 21.2340I$	0
$u = -1.110850 - 0.731998I$ $a = -0.493770 + 1.155180I$ $b = -0.61517 + 2.47736I$	$1.0454 - 21.2340I$	0
$u = -0.001988 + 1.332010I$ $a = -0.522658 + 0.118069I$ $b = -0.277634 + 0.117341I$	$3.58239 - 0.69751I$	0
$u = -0.001988 - 1.332010I$ $a = -0.522658 - 0.118069I$ $b = -0.277634 - 0.117341I$	$3.58239 + 0.69751I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.134270+0.722619I$ $a=\ \ 0.486117+1.083920I$ $b=\ \ 0.63427+2.19811I$	$3.46949+12.94040I$	0
$u=-1.134270-0.722619I$ $a=\ \ 0.486117-1.083920I$ $b=\ \ 0.63427-2.19811I$	$3.46949-12.94040I$	0
$u=\ \ 1.341160+0.144697I$ $a=-0.452211+0.835333I$ $b=-0.58485+1.49371I$	$-2.36708-4.28180I$	0
$u=\ \ 1.341160-0.144697I$ $a=-0.452211-0.835333I$ $b=-0.58485-1.49371I$	$-2.36708+4.28180I$	0
$u=-0.095893+0.460209I$ $a=-1.42864+1.29930I$ $b=\ \ 0.121094+0.611898I$	$-2.04162-1.95837I$	$-1.88152+1.81563I$
$u=-0.095893-0.460209I$ $a=-1.42864-1.29930I$ $b=\ \ 0.121094-0.611898I$	$-2.04162+1.95837I$	$-1.88152-1.81563I$

II. $I_2^u = \langle -11687u^{23} + 18829u^{22} + \cdots + 10412b + 20692,\ -10340u^{23} + 11229u^{22} + \cdots + 5206a + 1655,\ u^{24} - 2u^{23} + \cdots - 3u + 1 \rangle$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} 1.98617u^{23} - 2.15693u^{22} + \cdots + 6.85133u - 0.317902 \\ 1.12245u^{23} - 1.80839u^{22} + \cdots + 5.12889u - 1.98732 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 5.18402u^{23} - 6.75912u^{22} + \cdots + 13.2282u - 5.25624 \\ 2.97484u^{23} - 4.94526u^{22} + \cdots + 9.60449u - 4.75202 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -8.20515u^{23} + 10.2555u^{22} + \cdots - 17.7053u + 8.70111 \\ -7.73108u^{23} + 10.7737u^{22} + \cdots - 20.1091u + 10.7925 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.837591u^{23} + 0.660584u^{22} + \cdots - 1.55839u + 2.59672 \\ 2.96984u^{23} - 2.43248u^{22} + \cdots + 5.80081u - 1.26959 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 3.36621u^{23} - 4.22993u^{22} + \cdots + 10.1243u - 1.69679 \\ 2.50250u^{23} - 3.88139u^{22} + \cdots + 8.40184u - 3.36621 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.62265u^{23} - 2.29927u^{22} + \cdots + 6.00595u - 0.823185 \\ 1.77891u^{23} - 3.00182u^{22} + \cdots + 6.99827u - 2.92230 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -3.17979u^{23} + 2.95985u^{22} + \cdots - 6.68277u + 2.11727 \\ -3.39973u^{23} + 4.01277u^{22} + \cdots - 8.42211u + 3.17979 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{37151}{2603}u^{23} + \frac{6867}{274}u^{22} + \cdots - \frac{384495}{10412}u + \frac{390481}{10412}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 8u^{23} + \cdots - 5u + 1$
c_2	$u^{24} - 2u^{23} + \cdots - 3u + 1$
c_3, c_{10}	$8(8u^{24} + 24u^{22} + \cdots - 6u + 2)$
c_4, c_{11}	$8(8u^{24} + 48u^{22} + \cdots - 3u + 1)$
c_5, c_{12}	$u^{24} + 2u^{23} + \cdots + 16u + 8$
c_6	$u^{24} + 2u^{23} + \cdots + 3u + 1$
c_7, c_9	$u^{24} + 4u^{23} + \cdots - 16u + 8$
c_8	$u^{24} + 7u^{23} + \cdots - 16u + 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} - 12y^{22} + \cdots + 7y + 1$
c_2, c_6	$y^{24} - 8y^{23} + \cdots - 5y + 1$
c_3, c_{10}	$64(64y^{24} + 384y^{23} + \cdots + 56y + 4)$
c_4, c_{11}	$64(64y^{24} + 768y^{23} + \cdots + 35y + 1)$
c_5, c_{12}	$y^{24} + 6y^{23} + \cdots + 512y + 64$
c_7, c_9	$y^{24} - 12y^{23} + \cdots + 704y + 64$
c_8	$y^{24} + 5y^{23} + \cdots - 204y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.860065+0.565709I$ $a=-1.34241-0.99239I$ $b=-0.38539-2.12630I$	$0.44061+2.25492I$	$1.75964-3.06662I$
$u=-0.860065-0.565709I$ $a=-1.34241+0.99239I$ $b=-0.38539+2.12630I$	$0.44061-2.25492I$	$1.75964+3.06662I$
$u=-0.883469+0.377040I$ $a=\ \ 0.957994+0.730874I$ $b=\ \ 0.23436+2.09805I$	$-5.42486+1.58176I$	$-6.29167-6.08937I$
$u=-0.883469-0.377040I$ $a=\ \ 0.957994-0.730874I$ $b=\ \ 0.23436-2.09805I$	$-5.42486-1.58176I$	$-6.29167+6.08937I$
$u=\ \ 0.815109+0.377010I$ $a=\ \ 1.39131-0.38326I$ $b=\ \ 1.33421+0.51019I$	$-0.60000-1.52156I$	$3.37855+4.24608I$
$u=\ \ 0.815109-0.377010I$ $a=\ \ 1.39131+0.38326I$ $b=\ \ 1.33421-0.51019I$	$-0.60000+1.52156I$	$3.37855-4.24608I$
$u=\ \ 0.540524+0.667194I$ $a=-1.43542+0.23924I$ $b=-0.019679-0.531376I$	$2.05081+8.00632I$	$2.81129-7.21454I$
$u=\ \ 0.540524-0.667194I$ $a=-1.43542-0.23924I$ $b=-0.019679+0.531376I$	$2.05081-8.00632I$	$2.81129+7.21454I$
$u=\ \ 0.925587+0.670732I$ $a=-0.240368-0.117171I$ $b=-0.519293-0.863337I$	$-3.62915-2.67044I$	$-7.90181+5.61446I$
$u=\ \ 0.925587-0.670732I$ $a=-0.240368+0.117171I$ $b=-0.519293+0.863337I$	$-3.62915+2.67044I$	$-7.90181-5.61446I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.875479+0.770703I$ $a=-0.764629-0.719022I$ $b=-0.223407-1.116630I$	$6.02038+2.90528I$	$8.41742-2.65430I$
$u=-0.875479-0.770703I$ $a=-0.764629+0.719022I$ $b=-0.223407+1.116630I$	$6.02038-2.90528I$	$8.41742+2.65430I$
$u=1.066150+0.645953I$ $a=-0.229528+1.092320I$ $b=-0.69690+2.25633I$	$0.48213-13.21490I$	$0.16852+11.73368I$
$u=1.066150-0.645953I$ $a=-0.229528-1.092320I$ $b=-0.69690-2.25633I$	$0.48213+13.21490I$	$0.16852-11.73368I$
$u=1.172970+0.510194I$ $a=0.118804-1.128680I$ $b=0.37669-1.70359I$	$-0.35177-4.64835I$	$10.29109-0.46131I$
$u=1.172970-0.510194I$ $a=0.118804+1.128680I$ $b=0.37669+1.70359I$	$-0.35177+4.64835I$	$10.29109+0.46131I$
$u=0.078763+1.315650I$ $a=0.551983-0.131397I$ $b=0.301322-0.031826I$	$3.62833-0.58201I$	$10.5704-27.1081I$
$u=0.078763-1.315650I$ $a=0.551983+0.131397I$ $b=0.301322+0.031826I$	$3.62833+0.58201I$	$10.5704+27.1081I$
$u=-1.337980+0.020898I$ $a=0.306593-0.778635I$ $b=0.55628-1.33934I$	$-3.35094-5.24005I$	$-6.46504+10.35614I$
$u=-1.337980-0.020898I$ $a=0.306593+0.778635I$ $b=0.55628+1.33934I$	$-3.35094+5.24005I$	$-6.46504-10.35614I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.588050 + 0.216276I$ $a = 2.13802 + 0.26864I$ $b = 0.977455 + 0.640000I$	$2.36212 + 1.31776I$	$12.78138 - 4.44329I$
$u = 0.588050 - 0.216276I$ $a = 2.13802 - 0.26864I$ $b = 0.977455 - 0.640000I$	$2.36212 - 1.31776I$	$12.78138 + 4.44329I$
$u = -0.230155 + 0.508581I$ $a = -0.45235 + 1.78409I$ $b = -0.935642 + 0.081469I$	$1.66221 + 8.35232I$	$3.98025 - 7.75217I$
$u = -0.230155 - 0.508581I$ $a = -0.45235 - 1.78409I$ $b = -0.935642 - 0.081469I$	$1.66221 - 8.35232I$	$3.98025 + 7.75217I$

III. $I_3^u = \langle -8u^{67}a - 1512u^{67} + \cdots + 8a - 1868,\ 511u^{67}a + 3u^{67} + \cdots + 443a + 3488,\ u^{68} - 6u^{67} + \cdots - 11u - 1\rangle$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} a \\ \frac{1}{2}u^{67}a + \frac{189}{2}u^{67} + \cdots - \frac{1}{2}a + \frac{467}{4} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -49.7500au^{67} - 11.5000u^{67} + \cdots - 31.9375a - 0.187500 \\ -69.9375au^{67} + 22.4375u^{67} + \cdots - 110.188a + 15.5625 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -\frac{1615}{16}u^{67}a + \frac{481}{4}u^{67} + \cdots - \frac{2435}{16}a + 85 \\ -\frac{2747}{16}u^{67}a + 116u^{67} + \cdots - \frac{2783}{16}a + \frac{383}{4} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -82.7500au^{67} + 18.1875u^{67} + \cdots - 68.3125a + 25.0625 \\ -113.500au^{67} - 6.81250u^{67} + \cdots - 130.563a + 32.0625 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{67}a + \frac{337}{4}u^{67} + \cdots + a - \frac{365}{16} \\ 178.750u^{67} - 877.500u^{66} + \cdots - 0.500000a + 93.9375 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{2}u^{67}a + \frac{553}{16}u^{67} + \cdots + a - 14 \\ 71.0625u^{67} - 350.563u^{66} + \cdots - 0.500000a + 36.7500 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -\frac{365}{16}u^{67}a + \frac{93}{16}u^{67} + \cdots - \frac{189}{2}a - 10 \\ -22.8125au^{67} + 20.3125u^{67} + \cdots - 94.5000a + 2.31250 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 57u^{67} - \frac{525}{2}u^{66} + \cdots + \frac{61}{4}u + \frac{23}{4}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{68}+26u^{67}+\cdots+205u+1)^2$
c_2	$(u^{68}+6u^{67}+\cdots+11u-1)^2$
c_3	$8u^{136}+8u^{135}+\cdots+4470u+839$
c_4	$8u^{136}+24u^{135}+\cdots-26342u+6133$
c_5	$u^{136}+9u^{135}+\cdots+685520u+42152$
c_6	$(u^{68}-6u^{67}+\cdots-11u-1)^2$
c_7	$u^{136}+7u^{135}+\cdots+79519456u+8899096$
c_8	$(u^{68}-16u^{67}+\cdots-14u+1)^2$
c_9	$u^{136}-7u^{135}+\cdots-79519456u+8899096$
c_{10}	$8u^{136}-8u^{135}+\cdots-4470u+839$
c_{11}	$8u^{136}-24u^{135}+\cdots+26342u+6133$
c_{12}	$u^{136}-9u^{135}+\cdots-685520u+42152$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{68}+38y^{67}+\cdots-36005y+1)^2$
c_2, c_6	$(y^{68}-26y^{67}+\cdots-205y+1)^2$
c_3, c_{10}	$64y^{136}-192y^{135}+\cdots+93218658y+703921$
c_4, c_{11}	$64y^{136}+1088y^{135}+\cdots+4629371312y+37613689$
c_5, c_{12}	$y^{136}+35y^{135}+\cdots+174484803328y+1776791104$
c_7, c_9	$y^{136}-45y^{135}+\cdots-5223710283802688y+79193909617216$
c_8	$(y^{68}-16y^{67}+\cdots-46y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.771226 + 0.647144I$ $a = 0.629168 - 0.566368I$ $b = 0.55239 - 1.94820I$	$4.79606 + 0.05468I$	0
$u = 0.771226 + 0.647144I$ $a = 1.49131 - 0.53739I$ $b = 0.241294 - 0.590191I$	$4.79606 + 0.05468I$	0
$u = 0.771226 - 0.647144I$ $a = 0.629168 + 0.566368I$ $b = 0.55239 + 1.94820I$	$4.79606 - 0.05468I$	0
$u = 0.771226 - 0.647144I$ $a = 1.49131 + 0.53739I$ $b = 0.241294 + 0.590191I$	$4.79606 - 0.05468I$	0
$u = -0.816810 + 0.592425I$ $a = -0.856749 - 0.266899I$ $b = 1.146880 + 0.657118I$	$0.85175 + 1.32895I$	0
$u = -0.816810 + 0.592425I$ $a = -0.59934 + 1.41605I$ $b = -0.08326 + 2.32920I$	$0.85175 + 1.32895I$	0
$u = -0.816810 - 0.592425I$ $a = -0.856749 + 0.266899I$ $b = 1.146880 - 0.657118I$	$0.85175 - 1.32895I$	0
$u = -0.816810 - 0.592425I$ $a = -0.59934 - 1.41605I$ $b = -0.08326 - 2.32920I$	$0.85175 - 1.32895I$	0
$u = -0.866878 + 0.546435I$ $a = -0.895805 - 0.645635I$ $b = 1.11858 - 4.43564I$	$0.22362 + 2.18520I$	0
$u = -0.866878 + 0.546435I$ $a = 3.66906 + 1.80640I$ $b = 3.28578 + 2.10851I$	$0.22362 + 2.18520I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.866878-0.546435I$ $a=-0.895805+0.645635I$ $b=\ \ 1.11858+4.43564I$	$0.22362-2.18520I$	0
$u=-0.866878-0.546435I$ $a=\ \ 3.66906-1.80640I$ $b=\ \ 3.28578-2.10851I$	$0.22362-2.18520I$	0
$u=\ \ 0.781559+0.671000I$ $a=-0.452014+0.357104I$ $b=-1.03850+1.91294I$	$3.73569+6.37722I$	0
$u=\ \ 0.781559+0.671000I$ $a=-1.53172+0.23469I$ $b=-0.0956080+0.0585280I$	$3.73569+6.37722I$	0
$u=\ \ 0.781559-0.671000I$ $a=-0.452014-0.357104I$ $b=-1.03850-1.91294I$	$3.73569-6.37722I$	0
$u=\ \ 0.781559-0.671000I$ $a=-1.53172-0.23469I$ $b=-0.0956080-0.0585280I$	$3.73569-6.37722I$	0
$u=\ \ 0.597067+0.841668I$ $a=\ \ 1.176330-0.086367I$ $b=-0.185680+0.122266I$	$-0.21257+6.72524I$	0
$u=\ \ 0.597067+0.841668I$ $a=-1.200460+0.470265I$ $b=\ \ 0.380782+0.134623I$	$-0.21257+6.72524I$	0
$u=\ \ 0.597067-0.841668I$ $a=\ \ 1.176330+0.086367I$ $b=-0.185680-0.122266I$	$-0.21257-6.72524I$	0
$u=\ \ 0.597067-0.841668I$ $a=-1.200460-0.470265I$ $b=\ \ 0.380782-0.134623I$	$-0.21257-6.72524I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.960987+0.099955I$ $a=\ \ 0.612751-0.476034I$ $b=\ \ 0.85200-1.92449I$	$-6.38836+0.12505I$	$-9.95193+0.I$
$u=-0.960987+0.099955I$ $a=\ \ 1.001250+0.732056I$ $b=\ \ 0.73872+1.99719I$	$-6.38836+0.12505I$	$-9.95193+0.I$
$u=-0.960987-0.099955I$ $a=\ \ 0.612751+0.476034I$ $b=\ \ 0.85200+1.92449I$	$-6.38836-0.12505I$	$-9.95193+0.I$
$u=-0.960987-0.099955I$ $a=\ \ 1.001250-0.732056I$ $b=\ \ 0.73872-1.99719I$	$-6.38836-0.12505I$	$-9.95193+0.I$
$u=\ \ 0.892071+0.315336I$ $a=\ \ 0.841674-0.177264I$ $b=\ \ 2.08526+0.69340I$	$-0.69864-2.11200I$	$0.+11.57797I$
$u=\ \ 0.892071+0.315336I$ $a=-1.04620+1.52727I$ $b=-0.44186+1.49119I$	$-0.69864-2.11200I$	$0.+11.57797I$
$u=\ \ 0.892071-0.315336I$ $a=\ \ 0.841674+0.177264I$ $b=\ \ 2.08526-0.69340I$	$-0.69864+2.11200I$	$0.-11.57797I$
$u=\ \ 0.892071-0.315336I$ $a=-1.04620-1.52727I$ $b=-0.44186-1.49119I$	$-0.69864+2.11200I$	$0.-11.57797I$
$u=-0.883650+0.607662I$ $a=\ \ 0.996969-0.544762I$ $b=-0.131833-1.004210I$	$0.63148+3.42068I$	0
$u=-0.883650+0.607662I$ $a=-0.236957-0.718877I$ $b=-1.16814-2.17116I$	$0.63148+3.42068I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.883650-0.607662I$ $a=\ \ 0.996969+0.544762I$ $b=-0.131833+1.004210I$	$0.63148-3.42068I$	0
$u=-0.883650-0.607662I$ $a=-0.236957+0.718877I$ $b=-1.16814+2.17116I$	$0.63148-3.42068I$	0
$u=-0.808185+0.713445I$ $a=-0.892675-0.540085I$ $b=-0.0087349-0.0354248I$	$5.05562+0.30074I$	0
$u=-0.808185+0.713445I$ $a=\ \ 0.423661+0.314839I$ $b=\ \ 0.47768+1.59358I$	$5.05562+0.30074I$	0
$u=-0.808185-0.713445I$ $a=-0.892675+0.540085I$ $b=-0.0087349+0.0354248I$	$5.05562-0.30074I$	0
$u=-0.808185-0.713445I$ $a=\ \ 0.423661-0.314839I$ $b=\ \ 0.47768-1.59358I$	$5.05562-0.30074I$	0
$u=\ \ 0.571656+0.915375I$ $a=-0.519660+0.628230I$ $b=\ \ 0.427899-0.059412I$	$5.04149+6.70792I$	0
$u=\ \ 0.571656+0.915375I$ $a=\ \ 1.36463-0.58109I$ $b=\ \ 0.134012-0.321037I$	$5.04149+6.70792I$	0
$u=\ \ 0.571656-0.915375I$ $a=-0.519660-0.628230I$ $b=\ \ 0.427899+0.059412I$	$5.04149-6.70792I$	0
$u=\ \ 0.571656-0.915375I$ $a=\ \ 1.36463+0.58109I$ $b=\ \ 0.134012+0.321037I$	$5.04149-6.70792I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.769800 + 0.490237I$ $a = 0.968177 - 0.475759I$ $b = -1.98011 + 0.69753I$	$0.25812 - 1.55035I$	$-8.76425 + 9.95450I$
$u = 0.769800 + 0.490237I$ $a = -1.40562 - 2.49578I$ $b = -1.55177 - 2.59005I$	$0.25812 - 1.55035I$	$-8.76425 + 9.95450I$
$u = 0.769800 - 0.490237I$ $a = 0.968177 + 0.475759I$ $b = -1.98011 - 0.69753I$	$0.25812 + 1.55035I$	$-8.76425 - 9.95450I$
$u = 0.769800 - 0.490237I$ $a = -1.40562 + 2.49578I$ $b = -1.55177 + 2.59005I$	$0.25812 + 1.55035I$	$-8.76425 - 9.95450I$
$u = 0.916903 + 0.632889I$ $a = 0.809736 - 0.555766I$ $b = -0.581118 - 0.629466I$	$4.34586 - 5.05330I$	0
$u = 0.916903 + 0.632889I$ $a = 0.73493 - 1.31435I$ $b = 0.67841 - 2.38123I$	$4.34586 - 5.05330I$	0
$u = 0.916903 - 0.632889I$ $a = 0.809736 + 0.555766I$ $b = -0.581118 + 0.629466I$	$4.34586 + 5.05330I$	0
$u = 0.916903 - 0.632889I$ $a = 0.73493 + 1.31435I$ $b = 0.67841 + 2.38123I$	$4.34586 + 5.05330I$	0
$u = 0.990204 + 0.516851I$ $a = 0.532023 - 0.439380I$ $b = 1.91145 - 1.73936I$	$-0.49449 - 2.50857I$	0
$u = 0.990204 + 0.516851I$ $a = 1.03049 + 1.81539I$ $b = 1.07680 + 2.05365I$	$-0.49449 - 2.50857I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.990204 - 0.516851I$ $a = 0.532023 + 0.439380I$ $b = 1.91145 + 1.73936I$	$-0.49449 + 2.50857I$	0
$u = 0.990204 - 0.516851I$ $a = 1.03049 - 1.81539I$ $b = 1.07680 - 2.05365I$	$-0.49449 + 2.50857I$	0
$u = 0.912924 + 0.648788I$ $a = -0.598553 + 0.445636I$ $b = 1.079260 - 0.060449I$	$3.32933 - 11.49430I$	0
$u = 0.912924 + 0.648788I$ $a = -0.43410 + 1.43935I$ $b = -0.67928 + 2.65395I$	$3.32933 - 11.49430I$	0
$u = 0.912924 - 0.648788I$ $a = -0.598553 - 0.445636I$ $b = 1.079260 + 0.060449I$	$3.32933 + 11.49430I$	0
$u = 0.912924 - 0.648788I$ $a = -0.43410 - 1.43935I$ $b = -0.67928 - 2.65395I$	$3.32933 + 11.49430I$	0
$u = -0.889097 + 0.711209I$ $a = -0.519438 - 0.727905I$ $b = -0.82446 - 1.44547I$	$4.81751 + 5.13561I$	0
$u = -0.889097 + 0.711209I$ $a = 0.501624 + 0.502302I$ $b = -0.732031 + 0.378716I$	$4.81751 + 5.13561I$	0
$u = -0.889097 - 0.711209I$ $a = -0.519438 + 0.727905I$ $b = -0.82446 + 1.44547I$	$4.81751 - 5.13561I$	0
$u = -0.889097 - 0.711209I$ $a = 0.501624 - 0.502302I$ $b = -0.732031 - 0.378716I$	$4.81751 - 5.13561I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.583330 + 0.630270I$ $a = -1.032240 + 0.198269I$ $b = 0.615041 + 0.272853I$	$-1.94777 + 0.65282I$	$-3.40956 - 2.01137I$
$u = 0.583330 + 0.630270I$ $a = 0.393238 + 1.174200I$ $b = 0.078598 + 0.927979I$	$-1.94777 + 0.65282I$	$-3.40956 - 2.01137I$
$u = 0.583330 - 0.630270I$ $a = -1.032240 - 0.198269I$ $b = 0.615041 - 0.272853I$	$-1.94777 - 0.65282I$	$-3.40956 + 2.01137I$
$u = 0.583330 - 0.630270I$ $a = 0.393238 - 1.174200I$ $b = 0.078598 - 0.927979I$	$-1.94777 - 0.65282I$	$-3.40956 + 2.01137I$
$u = 0.429738 + 1.062260I$ $a = -1.153260 + 0.601615I$ $b = -0.448930 + 0.436452I$	$3.84142 - 1.49131I$	0
$u = 0.429738 + 1.062260I$ $a = -0.074079 - 0.577017I$ $b = -0.280866 + 0.015756I$	$3.84142 - 1.49131I$	0
$u = 0.429738 - 1.062260I$ $a = -1.153260 - 0.601615I$ $b = -0.448930 - 0.436452I$	$3.84142 + 1.49131I$	0
$u = 0.429738 - 1.062260I$ $a = -0.074079 + 0.577017I$ $b = -0.280866 - 0.015756I$	$3.84142 + 1.49131I$	0
$u = -1.147040 + 0.070859I$ $a = -0.300263 - 0.938028I$ $b = -0.65798 - 2.03865I$	$-6.64772 + 5.59976I$	0
$u = -1.147040 + 0.070859I$ $a = 0.727414 + 0.749823I$ $b = 1.13141 + 1.80597I$	$-6.64772 + 5.59976I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.147040-0.070859I$ $a=-0.300263+0.938028I$ $b=-0.65798+2.03865I$	$-6.64772-5.59976I$	0
$u=-1.147040-0.070859I$ $a=0.727414-0.749823I$ $b=1.13141-1.80597I$	$-6.64772-5.59976I$	0
$u=0.394464+0.748684I$ $a=0.079109+1.149570I$ $b=-0.089208+0.339738I$	$-1.43552-3.46348I$	$-1.95919+6.98569I$
$u=0.394464+0.748684I$ $a=-0.446135-0.636292I$ $b=0.193948+0.076169I$	$-1.43552-3.46348I$	$-1.95919+6.98569I$
$u=0.394464-0.748684I$ $a=0.079109-1.149570I$ $b=-0.089208-0.339738I$	$-1.43552+3.46348I$	$-1.95919-6.98569I$
$u=0.394464-0.748684I$ $a=-0.446135+0.636292I$ $b=0.193948-0.076169I$	$-1.43552+3.46348I$	$-1.95919-6.98569I$
$u=-0.343410+0.747420I$ $a=1.31165+0.87995I$ $b=-0.270471+0.135447I$	$-0.20924-7.51418I$	$-0.91018+5.58459I$
$u=-0.343410+0.747420I$ $a=1.27162-0.95759I$ $b=0.606431-0.634974I$	$-0.20924-7.51418I$	$-0.91018+5.58459I$
$u=-0.343410-0.747420I$ $a=1.31165-0.87995I$ $b=-0.270471-0.135447I$	$-0.20924+7.51418I$	$-0.91018-5.58459I$
$u=-0.343410-0.747420I$ $a=1.27162+0.95759I$ $b=0.606431+0.634974I$	$-0.20924+7.51418I$	$-0.91018-5.58459I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002490 + 0.618261I$ $a = -0.276729 + 0.848168I$ $b = -0.25866 + 2.35131I$	$-3.14926 - 5.59368I$	0
$u = 1.002490 + 0.618261I$ $a = -0.991688 - 0.494804I$ $b = -0.866908 - 1.061780I$	$-3.14926 - 5.59368I$	0
$u = 1.002490 - 0.618261I$ $a = -0.276729 - 0.848168I$ $b = -0.25866 - 2.35131I$	$-3.14926 + 5.59368I$	0
$u = 1.002490 - 0.618261I$ $a = -0.991688 + 0.494804I$ $b = -0.866908 + 1.061780I$	$-3.14926 + 5.59368I$	0
$u = 1.064180 + 0.597265I$ $a = -0.585862 - 0.191724I$ $b = -0.695961 - 0.488190I$	$-3.33657 - 1.55685I$	0
$u = 1.064180 + 0.597265I$ $a = 0.154689 + 0.554374I$ $b = 0.441720 + 1.200230I$	$-3.33657 - 1.55685I$	0
$u = 1.064180 - 0.597265I$ $a = -0.585862 + 0.191724I$ $b = -0.695961 + 0.488190I$	$-3.33657 + 1.55685I$	0
$u = 1.064180 - 0.597265I$ $a = 0.154689 - 0.554374I$ $b = 0.441720 - 1.200230I$	$-3.33657 + 1.55685I$	0
$u = -1.231370 + 0.133780I$ $a = -0.550559 - 1.129810I$ $b = -0.78783 - 1.82293I$	$-2.14467 + 5.06597I$	0
$u = -1.231370 + 0.133780I$ $a = 0.235367 - 0.000609I$ $b = 0.342219 + 0.496387I$	$-2.14467 + 5.06597I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.231370-0.133780I$ $a=-0.550559+1.129810I$ $b=-0.78783+1.82293I$	$-2.14467-5.06597I$	0
$u=-1.231370-0.133780I$ $a=\ \ 0.235367+0.000609I$ $b=\ \ 0.342219-0.496387I$	$-2.14467-5.06597I$	0
$u=\ \ 1.233890+0.109777I$ $a=-0.720753-0.574991I$ $b=-1.12279-1.33656I$	$-5.43865+4.78524I$	0
$u=\ \ 1.233890+0.109777I$ $a=\ \ 0.632451-1.259020I$ $b=\ \ 0.51621-2.07871I$	$-5.43865+4.78524I$	0
$u=\ \ 1.233890-0.109777I$ $a=-0.720753+0.574991I$ $b=-1.12279+1.33656I$	$-5.43865-4.78524I$	0
$u=\ \ 1.233890-0.109777I$ $a=\ \ 0.632451+1.259020I$ $b=\ \ 0.51621+2.07871I$	$-5.43865-4.78524I$	0
$u=-1.083630+0.601568I$ $a=\ \ 0.529460+1.039990I$ $b=\ \ 0.82598+2.46200I$	$-2.24526+12.55640I$	0
$u=-1.083630+0.601568I$ $a=-0.836228+1.101970I$ $b=-0.81105+1.64006I$	$-2.24526+12.55640I$	0
$u=-1.083630-0.601568I$ $a=\ \ 0.529460-1.039990I$ $b=\ \ 0.82598-2.46200I$	$-2.24526-12.55640I$	0
$u=-1.083630-0.601568I$ $a=-0.836228-1.101970I$ $b=-0.81105-1.64006I$	$-2.24526-12.55640I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.134470+0.538793I$ $a=-0.041849-0.778026I$ $b=-0.503712-1.291620I$	$-0.71708+4.95220I$	0
$u=-1.134470+0.538793I$ $a=-0.163471-1.332450I$ $b=-0.30362-2.07143I$	$-0.71708+4.95220I$	0
$u=-1.134470-0.538793I$ $a=-0.041849+0.778026I$ $b=-0.503712+1.291620I$	$-0.71708-4.95220I$	0
$u=-1.134470-0.538793I$ $a=-0.163471+1.332450I$ $b=-0.30362+2.07143I$	$-0.71708-4.95220I$	0
$u=-0.710706+0.216866I$ $a=-1.70985+0.16838I$ $b=-0.235683+0.524978I$	$1.75336-1.28214I$	$-3.71827+2.93694I$
$u=-0.710706+0.216866I$ $a=-1.58521+0.76141I$ $b=-1.62422+0.97960I$	$1.75336-1.28214I$	$-3.71827+2.93694I$
$u=-0.710706-0.216866I$ $a=-1.70985-0.16838I$ $b=-0.235683-0.524978I$	$1.75336+1.28214I$	$-3.71827-2.93694I$
$u=-0.710706-0.216866I$ $a=-1.58521-0.76141I$ $b=-1.62422-0.97960I$	$1.75336+1.28214I$	$-3.71827-2.93694I$
$u=1.062150+0.697966I$ $a=0.080039-1.061900I$ $b=0.26392-2.34393I$	$-1.62127-12.47790I$	0
$u=1.062150+0.697966I$ $a=-0.405031+1.029800I$ $b=-0.63309+2.50563I$	$-1.62127-12.47790I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.062150 - 0.697966I$ $a = 0.080039 + 1.061900I$ $b = 0.26392 + 2.34393I$	$-1.62127 + 12.47790I$	0
$u = 1.062150 - 0.697966I$ $a = -0.405031 - 1.029800I$ $b = -0.63309 - 2.50563I$	$-1.62127 + 12.47790I$	0
$u = -0.685270 + 0.156647I$ $a = 1.20550 - 1.20300I$ $b = 2.06900 - 1.20717I$	$0.46654 - 7.92697I$	$-4.45028 + 5.61309I$
$u = -0.685270 + 0.156647I$ $a = 1.66843 - 0.37101I$ $b = -0.588258 - 0.315776I$	$0.46654 - 7.92697I$	$-4.45028 + 5.61309I$
$u = -0.685270 - 0.156647I$ $a = 1.20550 + 1.20300I$ $b = 2.06900 + 1.20717I$	$0.46654 + 7.92697I$	$-4.45028 - 5.61309I$
$u = -0.685270 - 0.156647I$ $a = 1.66843 + 0.37101I$ $b = -0.588258 + 0.315776I$	$0.46654 + 7.92697I$	$-4.45028 - 5.61309I$
$u = 1.095740 + 0.711506I$ $a = -0.423788 + 0.539478I$ $b = -0.93395 + 1.57669I$	$3.42736 - 12.69380I$	0
$u = 1.095740 + 0.711506I$ $a = 0.500288 - 1.274430I$ $b = 0.59641 - 2.42128I$	$3.42736 - 12.69380I$	0
$u = 1.095740 - 0.711506I$ $a = -0.423788 - 0.539478I$ $b = -0.93395 - 1.57669I$	$3.42736 + 12.69380I$	0
$u = 1.095740 - 0.711506I$ $a = 0.500288 + 1.274430I$ $b = 0.59641 + 2.42128I$	$3.42736 + 12.69380I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.874928+0.995808I$ $a=-1.014950-0.756816I$ $b=-0.309139-1.293450I$	$3.17525+3.55255I$	0
$u=-0.874928+0.995808I$ $a=0.295632+0.513642I$ $b=0.219712+0.388832I$	$3.17525+3.55255I$	0
$u=-0.874928-0.995808I$ $a=-1.014950+0.756816I$ $b=-0.309139+1.293450I$	$3.17525-3.55255I$	0
$u=-0.874928-0.995808I$ $a=0.295632-0.513642I$ $b=0.219712-0.388832I$	$3.17525-3.55255I$	0
$u=0.654472$ $a=-0.253177+0.679046I$ $b=1.184610+0.403660I$	-1.93924	-9.56870
$u=0.654472$ $a=-0.253177-0.679046I$ $b=1.184610-0.403660I$	-1.93924	-9.56870
$u=1.18098+0.78281I$ $a=-0.697257+1.220410I$ $b=-0.51205+2.06727I$	$1.59157-5.13808I$	0
$u=1.18098+0.78281I$ $a=0.274968-0.214464I$ $b=0.538270-0.765139I$	$1.59157-5.13808I$	0
$u=1.18098-0.78281I$ $a=-0.697257-1.220410I$ $b=-0.51205-2.06727I$	$1.59157+5.13808I$	0
$u=1.18098-0.78281I$ $a=0.274968+0.214464I$ $b=0.538270+0.765139I$	$1.59157+5.13808I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.104877+0.560446I$ $a=-0.87505-1.45621I$ $b=-0.127553+0.265826I$	$1.92498-0.68275I$	$2.93828+2.96732I$
$u=-0.104877+0.560446I$ $a=-1.80637-0.09699I$ $b=-0.827049+0.186943I$	$1.92498-0.68275I$	$2.93828+2.96732I$
$u=-0.104877-0.560446I$ $a=-0.87505+1.45621I$ $b=-0.127553-0.265826I$	$1.92498+0.68275I$	$2.93828-2.96732I$
$u=-0.104877-0.560446I$ $a=-1.80637+0.09699I$ $b=-0.827049-0.186943I$	$1.92498+0.68275I$	$2.93828-2.96732I$
$u=-0.0725988$ $a=-13.5105+7.4460I$ $b=-0.919304-0.585980I$	-0.191567	-0.848680
$u=-0.0725988$ $a=-13.5105-7.4460I$ $b=-0.919304+0.585980I$	-0.191567	-0.848680

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{24}-8u^{23}+\cdots-5u+1)(u^{36}+11u^{35}+\cdots-4352u+1024)$
c_2	$(u^{24}-2u^{23}+\cdots-3u+1)(u^{36}-11u^{35}+\cdots-272u+32)$
c_3, c_{10}	$8(8u^{24}+24u^{22}+\cdots-6u+2)(u^{36}+6u^{35}+\cdots+2u+2)$
c_4, c_{11}	$8(8u^{24}+48u^{22}+\cdots-3u+1)(u^{36}+6u^{35}+\cdots-u+1)$
c_5, c_{12}	$(u^{24}+2u^{23}+\cdots+16u+8)(u^{36}+2u^{35}+\cdots+8u+1)$
c_6	$(u^{24}+2u^{23}+\cdots+3u+1)(u^{36}-11u^{35}+\cdots-272u+32)$
c_7, c_9	$(u^{24}+4u^{23}+\cdots-16u+8)(u^{36}+2u^{35}+\cdots-u+1)$
c_8	$(u^{24}+7u^{23}+\cdots-16u+2)(u^{36}+26u^{35}+\cdots+131072u+8192)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{24} - 12y^{22} + \cdots + 7y + 1)(y^{36} + y^{35} + \cdots - 2.27410 \times 10^7 y + 1048576)$
c_2, c_6	$(y^{24} - 8y^{23} + \cdots - 5y + 1)(y^{36} - 11y^{35} + \cdots + 4352y + 1024)$
c_3, c_{10}	$64(64y^{24} + 384y^{23} + \cdots + 56y + 4)(y^{36} + 36y^{35} + \cdots + 148y + 4)$
c_4, c_{11}	$64(64y^{24} + 768y^{23} + \cdots + 35y + 1)(y^{36} + 42y^{35} + \cdots + 9y + 1)$
c_5, c_{12}	$(y^{24} + 6y^{23} + \cdots + 512y + 64)(y^{36} - 4y^{35} + \cdots + 4y + 1)$
c_7, c_9	$(y^{24} - 12y^{23} + \cdots + 704y + 64)(y^{36} - 2y^{35} + \cdots - 5y + 1)$
c_8	$(y^{24} + 5y^{23} + \cdots - 204y + 4)$ $\cdot (y^{36} + 10y^{35} + \cdots - 503316480y + 67108864)$