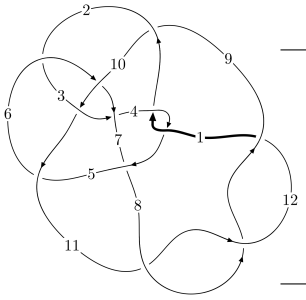
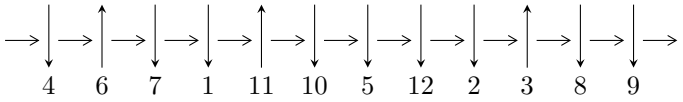
$12a_{0891}$ $(K12a_{0891})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 3.11585 \times 10^{1116} u^{152} + 1.63261 \times 10^{1116} u^{151} + \cdots + 7.00851 \times 10^{1115} b - 6.18169 \times 10^{1116}, \\
&\quad 3.79481 \times 10^{1116} u^{152} + 2.05132 \times 10^{1116} u^{151} + \cdots + 7.00851 \times 10^{1115} a - 9.83526 \times 10^{1116}, \\
&\quad u^{153} + u^{152} + \cdots - 3u - 1 \rangle \\
I_2^u &= \langle -2.36234 \times 10^{27} u^{30} - 5.41386 \times 10^{27} u^{29} + \cdots + 6.33336 \times 10^{27} b - 9.12988 \times 10^{27}, \\
&\quad 2.80253 \times 10^{27} u^{30} + 5.27117 \times 10^{27} u^{29} + \cdots + 6.33336 \times 10^{27} a + 1.02266 \times 10^{28}, \ u^{31} + 3u^{30} + \cdots + u + 1 \rangle \\
I_3^u &= \langle b, \ -u^5 + 2u^4 + 4u^3 - 9u^2 + 4a + 13u - 5, \ u^6 - 3u^5 + 2u^4 - 3u^3 - 2u^2 - 2u - 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 190 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. $\boldsymbol{I_1^u = \langle 3.12 \times 10^{1116} u^{152} + 1.63 \times 10^{1116} u^{151} + \cdots + 7.01 \times 10^{1115} b - 6.18 \times 10^{1116},\ 3.79 \times 10^{1116} u^{152} + 2.05 \times 10^{1116} u^{151} + \cdots + 7.01 \times 10^{1115} a - 9.84 \times 10^{1116},\ u^{153} + u^{152} + \cdots - 3u - 1 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -5.41457u^{152} - 2.92690u^{151} + \cdots - 14.9314u + 14.0333 \\ -4.44582u^{152} - 2.32946u^{151} + \cdots + 5.48619u + 8.82027 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -2.16296u^{152} - 1.21387u^{151} + \cdots - 18.3691u + 7.70073 \\ -3.81062u^{152} - 1.86944u^{151} + \cdots + 4.12205u + 7.28169 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.57210u^{152} + 1.32824u^{151} + \cdots + 44.1822u - 6.53834 \\ -1.94193u^{152} - 0.485705u^{151} + \cdots + 6.20185u + 1.74833 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.968757u^{152} - 0.597437u^{151} + \cdots - 20.4176u + 5.21305 \\ -4.44582u^{152} - 2.32946u^{151} + \cdots + 5.48619u + 8.82027 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.66932u^{152} + 0.497431u^{151} + \cdots - 23.0859u + 2.01272 \\ -2.13293u^{152} - 1.01455u^{151} + \cdots - 1.93762u + 4.02211 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -3.61369u^{152} - 1.21232u^{151} + \cdots - 22.2380u + 11.3427 \\ -3.40152u^{152} - 1.28917u^{151} + \cdots + 1.85705u + 5.98673 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -5.90920u^{152} - 3.75096u^{151} + \cdots - 12.6563u + 14.0426 \\ 4.60273u^{152} + 1.50922u^{151} + \cdots - 11.8883u - 5.78819 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.342166u^{152} + 0.639353u^{151} + \cdots + 48.2398u - 2.78180 \\ 3.85620u^{152} + 1.17459u^{151} + \cdots - 8.25942u - 5.50487 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.29977u^{152} + 1.43257u^{151} + \cdots + 9.44943u - 1.68228 \\ 5.25264u^{152} + 1.44816u^{151} + \cdots - 12.5949u - 7.66935 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.951754u^{152} - 2.70912u^{151} + \cdots - 13.7606u + 0.254180$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{153} + 6u^{152} + \cdots - 839u - 307$
c_2	$u^{153} - 8u^{152} + \cdots - 1344u - 64$
c_3	$u^{153} - u^{152} + \cdots + 615240u - 163556$
c_5	$u^{153} + 42u^{151} + \cdots - 56802438868u - 10797888812$
c_6	$u^{153} + u^{152} + \cdots - 3u - 1$
c_7	$u^{153} + 5u^{152} + \cdots - 2075740u - 194200$
c_8, c_{11}, c_{12}	$u^{153} - 77u^{151} + \cdots + 13u - 1$
c_9	$u^{153} - 33u^{151} + \cdots + 680974452u - 75062943$
c_{10}	$u^{153} + 4u^{152} + \cdots + 17u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{153} + 92y^{152} + \cdots - 3754947y - 94249$
c_2	$y^{153} + 44y^{152} + \cdots + 1161216y - 4096$
c_3	$y^{153} - 21y^{152} + \cdots + 1454894069632y - 26750565136$
c_5	$y^{153} + 84y^{152} + \cdots - 5.53 \times 10^{21}y - 1.17 \times 10^{20}$
c_6	$y^{153} - 21y^{152} + \cdots + 73y - 1$
c_7	$y^{153} - 47y^{152} + \cdots + 2201363212400y - 37713640000$
c_8, c_{11}, c_{12}	$y^{153} - 154y^{152} + \cdots + y - 1$
c_9	$y^{153} - 66y^{152} + \cdots + 487511585631586602y - 5634445411821249$
c_{10}	$y^{153} + 24y^{152} + \cdots - 555y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.973353 + 0.148533I$ $a = -1.04719 + 1.41780I$ $b = -0.417717 + 0.750536I$	$-8.58768 - 7.55812I$	0
$u = 0.973353 - 0.148533I$ $a = -1.04719 - 1.41780I$ $b = -0.417717 - 0.750536I$	$-8.58768 + 7.55812I$	0
$u = 0.867373 + 0.453722I$ $a = 0.149660 - 0.797153I$ $b = 1.20531 - 1.58661I$	$-9.06733 - 5.39501I$	0
$u = 0.867373 - 0.453722I$ $a = 0.149660 + 0.797153I$ $b = 1.20531 + 1.58661I$	$-9.06733 + 5.39501I$	0
$u = -0.972730$ $a = 0.518545$ $b = -0.217110$	-1.29206	0
$u = 0.781124 + 0.577758I$ $a = 0.08294 - 1.58923I$ $b = 0.95531 - 1.16559I$	$1.27140 - 4.48962I$	0
$u = 0.781124 - 0.577758I$ $a = 0.08294 + 1.58923I$ $b = 0.95531 + 1.16559I$	$1.27140 + 4.48962I$	0
$u = -0.826284 + 0.494731I$ $a = 0.21183 + 1.66604I$ $b = 0.97788 + 1.47738I$	$-3.47461 + 5.28528I$	0
$u = -0.826284 - 0.494731I$ $a = 0.21183 - 1.66604I$ $b = 0.97788 - 1.47738I$	$-3.47461 - 5.28528I$	0
$u = 0.619722 + 0.736392I$ $a = 0.004500 - 0.337299I$ $b = 1.30690 - 0.66973I$	$-2.45600 - 5.85568I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.619722 - 0.736392I$ $a = 0.004500 + 0.337299I$ $b = 1.30690 + 0.66973I$	$-2.45600 + 5.85568I$	0
$u = -0.329800 + 0.898354I$ $a = 0.249134 - 1.285850I$ $b = -0.0813293 + 0.0031954I$	$2.99162 + 2.89965I$	0
$u = -0.329800 - 0.898354I$ $a = 0.249134 + 1.285850I$ $b = -0.0813293 - 0.0031954I$	$2.99162 - 2.89965I$	0
$u = 0.356418 + 0.985409I$ $a = 0.434742 + 1.241200I$ $b = -0.443127 - 0.087929I$	$-2.26925 - 3.85824I$	0
$u = 0.356418 - 0.985409I$ $a = 0.434742 - 1.241200I$ $b = -0.443127 + 0.087929I$	$-2.26925 + 3.85824I$	0
$u = 1.05005$ $a = -0.0880587$ $b = -1.15611$	-6.56914	0
$u = -0.393235 + 0.857642I$ $a = -1.06688 + 1.48421I$ $b = 0.901301 + 0.488346I$	$2.61679 + 6.43034I$	0
$u = -0.393235 - 0.857642I$ $a = -1.06688 - 1.48421I$ $b = 0.901301 - 0.488346I$	$2.61679 - 6.43034I$	0
$u = -0.895296 + 0.589714I$ $a = 0.310160 + 1.325900I$ $b = 1.19061 + 0.94394I$	$-2.74813 + 3.64489I$	0
$u = -0.895296 - 0.589714I$ $a = 0.310160 - 1.325900I$ $b = 1.19061 - 0.94394I$	$-2.74813 - 3.64489I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.795571 + 0.473574I$ $a = 1.59964 - 0.10837I$ $b = 0.066361 + 0.614898I$	$-9.04738 + 1.18227I$	0
$u = 0.795571 - 0.473574I$ $a = 1.59964 + 0.10837I$ $b = 0.066361 - 0.614898I$	$-9.04738 - 1.18227I$	0
$u = -0.812516 + 0.439182I$ $a = -0.245879 + 0.500905I$ $b = -0.893866 + 0.708689I$	$-2.09655 + 0.26711I$	0
$u = -0.812516 - 0.439182I$ $a = -0.245879 - 0.500905I$ $b = -0.893866 - 0.708689I$	$-2.09655 - 0.26711I$	0
$u = -0.421496 + 0.992141I$ $a = 0.068442 + 0.960075I$ $b = 0.23495 + 1.81386I$	$0.86232 + 2.51923I$	0
$u = -0.421496 - 0.992141I$ $a = 0.068442 - 0.960075I$ $b = 0.23495 - 1.81386I$	$0.86232 - 2.51923I$	0
$u = -0.061438 + 0.902325I$ $a = 0.075783 - 1.027940I$ $b = -0.44341 - 1.89241I$	$2.02051 + 4.84345I$	0
$u = -0.061438 - 0.902325I$ $a = 0.075783 + 1.027940I$ $b = -0.44341 + 1.89241I$	$2.02051 - 4.84345I$	0
$u = -0.833519 + 0.344884I$ $a = 0.143031 + 0.852046I$ $b = 0.97507 + 1.20612I$	$-1.60976 + 3.75013I$	0
$u = -0.833519 - 0.344884I$ $a = 0.143031 - 0.852046I$ $b = 0.97507 - 1.20612I$	$-1.60976 - 3.75013I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.201392 + 0.878936I$ $a = 0.25333 + 1.48149I$ $b = 0.156786 - 0.309665I$	$-1.19863 - 2.66458I$	0
$u = 0.201392 - 0.878936I$ $a = 0.25333 - 1.48149I$ $b = 0.156786 + 0.309665I$	$-1.19863 + 2.66458I$	0
$u = -0.527832 + 0.993727I$ $a = 0.082403 - 1.023070I$ $b = -0.468349 - 0.777321I$	$3.84410 + 4.00937I$	0
$u = -0.527832 - 0.993727I$ $a = 0.082403 + 1.023070I$ $b = -0.468349 + 0.777321I$	$3.84410 - 4.00937I$	0
$u = 0.497291 + 1.036640I$ $a = 0.088921 + 0.906155I$ $b = -0.791615 + 0.502372I$	$5.64479 + 0.25144I$	0
$u = 0.497291 - 1.036640I$ $a = 0.088921 - 0.906155I$ $b = -0.791615 - 0.502372I$	$5.64479 - 0.25144I$	0
$u = 0.405116 + 1.080960I$ $a = -1.01082 - 1.00751I$ $b = 1.188840 - 0.415562I$	$-3.17421 - 9.26039I$	0
$u = 0.405116 - 1.080960I$ $a = -1.01082 + 1.00751I$ $b = 1.188840 + 0.415562I$	$-3.17421 + 9.26039I$	0
$u = -0.781644 + 0.300193I$ $a = 1.77937 - 0.79388I$ $b = -0.060681 - 0.552079I$	$-1.49841 + 1.51843I$	0
$u = -0.781644 - 0.300193I$ $a = 1.77937 + 0.79388I$ $b = -0.060681 + 0.552079I$	$-1.49841 - 1.51843I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.554491+1.042730I$ $a=\ \ 0.239454-0.192604I$ $b=\ \ 0.335302-1.053270I$	$-0.18119+2.07511I$	0
$u=-0.554491-1.042730I$ $a=\ \ 0.239454+0.192604I$ $b=\ \ 0.335302+1.053270I$	$-0.18119-2.07511I$	0
$u=-0.773515+0.268831I$ $a=-0.80494-2.04805I$ $b=-0.341865-0.645055I$	$-2.80427+3.49940I$	0
$u=-0.773515-0.268831I$ $a=-0.80494+2.04805I$ $b=-0.341865+0.645055I$	$-2.80427-3.49940I$	0
$u=\ \ 1.100940+0.450679I$ $a=-0.293571-0.397214I$ $b=-1.07149-0.97058I$	$-7.11145+0.23787I$	0
$u=\ \ 1.100940-0.450679I$ $a=-0.293571+0.397214I$ $b=-1.07149+0.97058I$	$-7.11145-0.23787I$	0
$u=\ \ 0.318683+0.730046I$ $a=\ \ 0.055493+1.093020I$ $b=-1.07179+1.87224I$	$-5.05861-10.12750I$	0
$u=\ \ 0.318683-0.730046I$ $a=\ \ 0.055493-1.093020I$ $b=-1.07179-1.87224I$	$-5.05861+10.12750I$	0
$u=-0.504370+1.100750I$ $a=\ \ 0.055033-0.790183I$ $b=-0.930533-0.292260I$	$0.11426-3.67355I$	0
$u=-0.504370-1.100750I$ $a=\ \ 0.055033+0.790183I$ $b=-0.930533+0.292260I$	$0.11426+3.67355I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.683605+0.383090I$ $a=\ \ 0.835310-0.266566I$ $b=-0.083301-0.373260I$	$-1.220670+0.364289I$	0
$u=-0.683605-0.383090I$ $a=\ \ 0.835310+0.266566I$ $b=-0.083301+0.373260I$	$-1.220670-0.364289I$	0
$u=-0.186368+0.743142I$ $a=\ \ 0.0714649-0.0048705I$ $b=\ \ 1.17367+0.86749I$	$2.17358+2.56779I$	0
$u=-0.186368-0.743142I$ $a=\ \ 0.0714649+0.0048705I$ $b=\ \ 1.17367-0.86749I$	$2.17358-2.56779I$	0
$u=-0.702889+0.206928I$ $a=\ \ 0.43730+1.59440I$ $b=-0.08565+1.60880I$	$-6.00659+5.00728I$	0
$u=-0.702889-0.206928I$ $a=\ \ 0.43730-1.59440I$ $b=-0.08565-1.60880I$	$-6.00659-5.00728I$	0
$u=\ \ 1.157010+0.567669I$ $a=\ \ 0.348684-0.730841I$ $b=\ \ 0.820526-0.685310I$	$0.56887-2.07115I$	0
$u=\ \ 1.157010-0.567669I$ $a=\ \ 0.348684+0.730841I$ $b=\ \ 0.820526+0.685310I$	$0.56887+2.07115I$	0
$u=\ \ 0.631950+0.294444I$ $a=\ \ 2.70218+0.77459I$ $b=-0.157887+0.567601I$	$-0.58566-6.76292I$	0
$u=\ \ 0.631950-0.294444I$ $a=\ \ 2.70218-0.77459I$ $b=-0.157887-0.567601I$	$-0.58566+6.76292I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.626657+0.252019I$ $a=\ 0.33296+1.82587I$ $b=\ 1.020000+0.826234I$	$-3.12725+3.37507I$	0
$u=-0.626657-0.252019I$ $a=\ 0.33296-1.82587I$ $b=\ 1.020000-0.826234I$	$-3.12725-3.37507I$	0
$u=-0.571915+0.353443I$ $a=\ 3.04284-0.26347I$ $b=-0.224004-0.635965I$	$-6.93504+10.92390I$	0
$u=-0.571915-0.353443I$ $a=\ 3.04284+0.26347I$ $b=-0.224004+0.635965I$	$-6.93504-10.92390I$	0
$u=-1.065600+0.804520I$ $a=-0.032315+0.873196I$ $b=\ 0.94789+1.10004I$	$-1.78649+4.39191I$	0
$u=-1.065600-0.804520I$ $a=-0.032315-0.873196I$ $b=\ 0.94789-1.10004I$	$-1.78649-4.39191I$	0
$u=-0.647944+0.052897I$ $a=-2.15693+2.10454I$ $b=-0.026201+0.892423I$	$-10.90870+3.66614I$	$-22.9081+0.I$
$u=-0.647944-0.052897I$ $a=-2.15693-2.10454I$ $b=-0.026201-0.892423I$	$-10.90870-3.66614I$	$-22.9081+0.I$
$u=\ 0.576304+0.297865I$ $a=-0.74284-1.53036I$ $b=\ 0.924640-0.897404I$	$0.05784-3.70712I$	0
$u=\ 0.576304-0.297865I$ $a=-0.74284+1.53036I$ $b=\ 0.924640+0.897404I$	$0.05784+3.70712I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.618264+0.173096I$ $a=\ 0.135414-0.910542I$ $b=\ 1.70579-1.69790I$	$-7.29185+10.11150I$	$-18.4720-11.8238I$
$u=-0.618264-0.173096I$ $a=\ 0.135414+0.910542I$ $b=\ 1.70579+1.69790I$	$-7.29185-10.11150I$	$-18.4720+11.8238I$
$u=-1.36448$ $a=\ 0.660395$ $b=\ 0.785262$	-2.86005	0
$u=\ 0.614991+0.133702I$ $a=\ 0.818152-1.102080I$ $b=\ 0.633098-0.666609I$	$0.75866-1.62813I$	$0.+3.46469I$
$u=\ 0.614991-0.133702I$ $a=\ 0.818152+1.102080I$ $b=\ 0.633098+0.666609I$	$0.75866+1.62813I$	$0.-3.46469I$
$u=\ 0.358121+0.510471I$ $a=-0.61433-2.94445I$ $b=\ 0.383855-0.598168I$	$0.98655-3.25875I$	$-6.00000+8.72783I$
$u=\ 0.358121-0.510471I$ $a=-0.61433+2.94445I$ $b=\ 0.383855+0.598168I$	$0.98655+3.25875I$	$-6.00000-8.72783I$
$u=\ 1.067710+0.878468I$ $a=-0.007537+1.111750I$ $b=-0.555437+1.288330I$	$-9.31337-0.97833I$	0
$u=\ 1.067710-0.878468I$ $a=-0.007537-1.111750I$ $b=-0.555437-1.288330I$	$-9.31337+0.97833I$	0
$u=-0.561932+0.251908I$ $a=-1.26889+2.08348I$ $b=\ 0.818448+1.013020I$	$-5.29787+5.09826I$	$-17.0685-4.6385I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.561932-0.251908I$ $a=-1.26889-2.08348I$ $b=\ 0.818448-1.013020I$	$-5.29787-5.09826I$	$-17.0685+4.6385I$
$u=\ 0.591740+0.092087I$ $a=-1.74551+2.70376I$ $b=-0.093513+0.651902I$	$-3.81956+1.02043I$	$-21.3279+0.I$
$u=\ 0.591740-0.092087I$ $a=-1.74551-2.70376I$ $b=-0.093513-0.651902I$	$-3.81956-1.02043I$	$-21.3279+0.I$
$u=-0.589450+0.094016I$ $a=\ 0.083379-1.326010I$ $b=-1.39304-1.69778I$	$-10.65620-3.00835I$	$-21.4885+0.I$
$u=-0.589450-0.094016I$ $a=\ 0.083379+1.326010I$ $b=-1.39304+1.69778I$	$-10.65620+3.00835I$	$-21.4885+0.I$
$u=-1.092710+0.888260I$ $a=-0.007131-1.110860I$ $b=-0.727077-1.100620I$	$-3.44388+5.41506I$	0
$u=-1.092710-0.888260I$ $a=-0.007131+1.110860I$ $b=-0.727077+1.100620I$	$-3.44388-5.41506I$	0
$u=\ 1.19233+0.77344I$ $a=-0.228171-0.547479I$ $b=-0.232851-1.309320I$	$-8.26908-0.39568I$	0
$u=\ 1.19233-0.77344I$ $a=-0.228171+0.547479I$ $b=-0.232851+1.309320I$	$-8.26908+0.39568I$	0
$u=\ 0.476415+0.302223I$ $a=\ 0.045115+0.855413I$ $b=\ 1.79211+0.99841I$	$0.16950-6.61987I$	$-9.2353+17.8026I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.476415 - 0.302223I$ $a = 0.045115 - 0.855413I$ $b = 1.79211 - 0.99841I$	$0.16950 + 6.61987I$	$-9.2353 - 17.8026I$
$u = -0.316116 + 0.461533I$ $a = -0.681920 - 0.916688I$ $b = 1.013040 + 0.132992I$	$1.73851 + 2.42009I$	$0. - 4.60534I$
$u = -0.316116 - 0.461533I$ $a = -0.681920 + 0.916688I$ $b = 1.013040 - 0.132992I$	$1.73851 - 2.42009I$	$0. + 4.60534I$
$u = -1.06891 + 0.97466I$ $a = -0.174523 + 0.372134I$ $b = -0.245761 + 0.682455I$	$-2.25355 + 0.65421I$	0
$u = -1.06891 - 0.97466I$ $a = -0.174523 - 0.372134I$ $b = -0.245761 - 0.682455I$	$-2.25355 - 0.65421I$	0
$u = 1.12825 + 0.90766I$ $a = -0.036226 + 1.071980I$ $b = -0.96360 + 1.15229I$	$-4.46458 - 9.83926I$	0
$u = 1.12825 - 0.90766I$ $a = -0.036226 - 1.071980I$ $b = -0.96360 - 1.15229I$	$-4.46458 + 9.83926I$	0
$u = -1.15321 + 0.88708I$ $a = -0.073268 - 1.097130I$ $b = -1.06186 - 1.27564I$	$-11.3463 + 12.7687I$	0
$u = -1.15321 - 0.88708I$ $a = -0.073268 + 1.097130I$ $b = -1.06186 + 1.27564I$	$-11.3463 - 12.7687I$	0
$u = 1.05683 + 1.00112I$ $a = -0.049387 - 0.910129I$ $b = 0.77650 - 1.48829I$	$-10.39940 - 5.61779I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.05683 - 1.00112I$ $a = -0.049387 + 0.910129I$ $b = 0.77650 + 1.48829I$	$-10.39940 + 5.61779I$	0
$u = 0.95068 + 1.10742I$ $a = 0.323524 + 1.009420I$ $b = -1.133040 + 0.823103I$	$-5.46544 - 7.07487I$	0
$u = 0.95068 - 1.10742I$ $a = 0.323524 - 1.009420I$ $b = -1.133040 - 0.823103I$	$-5.46544 + 7.07487I$	0
$u = 0.536184 + 0.052296I$ $a = -0.007625 - 1.229430I$ $b = -1.26962 - 1.20723I$	$-3.63573 - 1.60579I$	$-22.7303 + 5.1459I$
$u = 0.536184 - 0.052296I$ $a = -0.007625 + 1.229430I$ $b = -1.26962 + 1.20723I$	$-3.63573 + 1.60579I$	$-22.7303 - 5.1459I$
$u = 0.478861 + 0.215780I$ $a = 1.25793 - 1.91727I$ $b = -0.191534 - 1.031660I$	$0.37950 - 3.31559I$	$-10.26010 + 5.38518I$
$u = 0.478861 - 0.215780I$ $a = 1.25793 + 1.91727I$ $b = -0.191534 + 1.031660I$	$0.37950 + 3.31559I$	$-10.26010 - 5.38518I$
$u = 1.25844 + 0.86415I$ $a = -0.091391 - 0.703587I$ $b = 1.09013 - 1.47933I$	$-9.53310 - 5.23260I$	0
$u = 1.25844 - 0.86415I$ $a = -0.091391 + 0.703587I$ $b = 1.09013 + 1.47933I$	$-9.53310 + 5.23260I$	0
$u = 0.89120 + 1.24075I$ $a = -0.630088 - 0.355012I$ $b = 0.161487 - 0.678566I$	$-8.21739 - 6.33398I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.89120 - 1.24075I$ $a = -0.630088 + 0.355012I$ $b = 0.161487 + 0.678566I$	$-8.21739 + 6.33398I$	0
$u = -1.10869 + 1.09769I$ $a = -0.036521 + 0.965954I$ $b = 0.86176 + 1.26947I$	$-1.81927 + 9.63095I$	0
$u = -1.10869 - 1.09769I$ $a = -0.036521 - 0.965954I$ $b = 0.86176 - 1.26947I$	$-1.81927 - 9.63095I$	0
$u = -1.06175 + 1.15974I$ $a = 0.290403 - 0.840480I$ $b = -1.08709 - 1.01208I$	$-1.49054 + 7.19197I$	0
$u = -1.06175 - 1.15974I$ $a = 0.290403 + 0.840480I$ $b = -1.08709 + 1.01208I$	$-1.49054 - 7.19197I$	0
$u = 1.13779 + 1.09225I$ $a = -0.042477 - 0.992088I$ $b = 1.00425 - 1.23198I$	$-1.2912 - 15.5289I$	0
$u = 1.13779 - 1.09225I$ $a = -0.042477 + 0.992088I$ $b = 1.00425 + 1.23198I$	$-1.2912 + 15.5289I$	0
$u = -1.14942 + 1.08768I$ $a = -0.055049 + 1.009640I$ $b = 1.10393 + 1.26113I$	$-7.9772 + 19.9447I$	0
$u = -1.14942 - 1.08768I$ $a = -0.055049 - 1.009640I$ $b = 1.10393 - 1.26113I$	$-7.9772 - 19.9447I$	0
$u = 1.11113 + 1.14601I$ $a = 0.479886 + 0.280342I$ $b = -0.259706 + 0.850399I$	$-10.09360 - 2.21771I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.11113 - 1.14601I$ $a = 0.479886 - 0.280342I$ $b = -0.259706 - 0.850399I$	$-10.09360 + 2.21771I$	0
$u = 1.24925 + 1.04928I$ $a = 0.239713 + 0.375516I$ $b = -0.286619 + 1.375030I$	$-9.02603 - 3.61548I$	0
$u = 1.24925 - 1.04928I$ $a = 0.239713 - 0.375516I$ $b = -0.286619 - 1.375030I$	$-9.02603 + 3.61548I$	0
$u = 1.07701 + 1.23112I$ $a = 0.377474 + 0.763941I$ $b = -1.13228 + 1.15916I$	$-6.91946 - 7.80523I$	0
$u = 1.07701 - 1.23112I$ $a = 0.377474 - 0.763941I$ $b = -1.13228 - 1.15916I$	$-6.91946 + 7.80523I$	0
$u = -1.30125 + 1.00999I$ $a = -0.202491 - 0.697920I$ $b = -1.024790 - 0.646544I$	$-2.56372 + 11.41290I$	0
$u = -1.30125 - 1.00999I$ $a = -0.202491 + 0.697920I$ $b = -1.024790 + 0.646544I$	$-2.56372 - 11.41290I$	0
$u = 1.45511 + 0.80587I$ $a = 0.292213 - 0.411474I$ $b = 0.330378 - 0.065657I$	$-4.17694 + 0.30246I$	0
$u = 1.45511 - 0.80587I$ $a = 0.292213 + 0.411474I$ $b = 0.330378 + 0.065657I$	$-4.17694 - 0.30246I$	0
$u = -1.06587 + 1.30478I$ $a = -0.379495 + 0.362333I$ $b = 0.114193 + 0.535816I$	$-2.26278 + 2.34342I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.06587-1.30478I$ $a=-0.379495-0.362333I$ $b=\ \ 0.114193-0.535816I$	$-2.26278-2.34342I$	0
$u=-0.289524+0.100770I$ $a=\ \ 2.96083+0.20418I$ $b=-1.001940+0.804715I$	$1.025480-0.968502I$	$-2.36472+3.34628I$
$u=-0.289524-0.100770I$ $a=\ \ 2.96083-0.20418I$ $b=-1.001940-0.804715I$	$1.025480+0.968502I$	$-2.36472-3.34628I$
$u=-1.36120+1.02781I$ $a=\ \ 0.379701-0.329178I$ $b=-0.035259-0.715957I$	$-2.09831-1.10294I$	0
$u=-1.36120-1.02781I$ $a=\ \ 0.379701+0.329178I$ $b=-0.035259+0.715957I$	$-2.09831+1.10294I$	0
$u=-0.80929+1.51889I$ $a=-0.405060-0.031931I$ $b=-0.266928+0.636597I$	$-9.69135-4.97953I$	0
$u=-0.80929-1.51889I$ $a=-0.405060+0.031931I$ $b=-0.266928-0.636597I$	$-9.69135+4.97953I$	0
$u=\ \ 1.34044+1.10344I$ $a=-0.122135+0.555960I$ $b=-0.807948+0.639284I$	$2.50722-7.96117I$	0
$u=\ \ 1.34044-1.10344I$ $a=-0.122135-0.555960I$ $b=-0.807948-0.639284I$	$2.50722+7.96117I$	0
$u=\ \ 0.187746+0.122088I$ $a=\ \ 4.43901+1.18428I$ $b=-1.356580-0.326759I$	$-5.10483+4.76476I$	$-7.44455-4.46642I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.187746 - 0.122088I$ $a = 4.43901 - 1.18428I$ $b = -1.356580 + 0.326759I$	$-5.10483 - 4.76476I$	$-7.44455 + 4.46642I$
$u = -1.29587 + 1.27074I$ $a = 0.008655 - 0.407001I$ $b = -0.496314 - 0.725702I$	$0.24511 + 3.81066I$	0
$u = -1.29587 - 1.27074I$ $a = 0.008655 + 0.407001I$ $b = -0.496314 + 0.725702I$	$0.24511 - 3.81066I$	0
$u = 0.056866 + 0.150925I$ $a = -3.83042 + 6.90509I$ $b = 0.628596 - 0.105902I$	$-2.39803 - 0.01397I$	$-2.00851 + 2.65727I$
$u = 0.056866 - 0.150925I$ $a = -3.83042 - 6.90509I$ $b = 0.628596 + 0.105902I$	$-2.39803 + 0.01397I$	$-2.00851 - 2.65727I$
$u = -0.149088$ $a = 7.52486$ $b = 0.665030$	-2.39363	-2.62210
$u = 0.94658 + 1.59540I$ $a = -0.300283 - 0.083545I$ $b = -0.145120 - 0.478624I$	$-2.99299 + 1.96639I$	0
$u = 0.94658 - 1.59540I$ $a = -0.300283 + 0.083545I$ $b = -0.145120 + 0.478624I$	$-2.99299 - 1.96639I$	0
$u = 1.43162 + 1.20495I$ $a = 0.343652 + 0.233077I$ $b = 0.138295 + 0.734497I$	$-1.29300 + 6.73093I$	0
$u = 1.43162 - 1.20495I$ $a = 0.343652 - 0.233077I$ $b = 0.138295 - 0.734497I$	$-1.29300 - 6.73093I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.37369+1.27851I$ $a=\ \ 0.376751-0.181168I$ $b=\ \ 0.260544-0.826280I$	$-7.82294-11.13260I$	0
$u=-1.37369-1.27851I$ $a=\ \ 0.376751+0.181168I$ $b=\ \ 0.260544+0.826280I$	$-7.82294+11.13260I$	0
$u=-2.48372$ $a=\ \ 0.154048$ $b=\ \ 0.248855$	-2.71118	0

II.

$\boldsymbol{I_2^u = \langle -2.36\times 10^{27}u^{30} - 5.41\times 10^{27}u^{29} + \cdots + 6.33\times 10^{27}b - 9.13\times 10^{27},\ 2.80\times 10^{27}u^{30} + 5.27\times 10^{27}u^{29} + \cdots + 6.33\times 10^{27}a + 1.02\times 10^{28},\ u^{31} + 3u^{30} + \cdots + u + 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.442503u^{30} - 0.832287u^{29} + \cdots + 0.854181u - 1.61472 \\ 0.373000u^{30} + 0.854816u^{29} + \cdots - 0.819135u + 1.44155 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -1.00947u^{30} - 2.01249u^{29} + \cdots + 1.62060u - 3.55149 \\ 0.264498u^{30} + 0.550822u^{29} + \cdots - 0.772876u + 0.920843 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.665272u^{30} - 1.64435u^{29} + \cdots - 0.422080u - 0.519358 \\ 0.262068u^{30} + 0.732446u^{29} + \cdots + 0.700639u + 0.579730 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.815504u^{30} - 1.68710u^{29} + \cdots + 1.67332u - 3.05627 \\ 0.373000u^{30} + 0.854816u^{29} + \cdots - 0.819135u + 1.44155 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.635054u^{30} + 1.36529u^{29} + \cdots - 1.34272u - 1.41463 \\ -0.00560930u^{30} - 0.192096u^{29} + \cdots + 1.03985u + 1.19647 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.147229u^{30} - 0.752163u^{29} + \cdots + 0.100229u + 1.63891 \\ -0.183834u^{30} - 0.354776u^{29} + \cdots + 0.629452u - 1.61687 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.948483u^{30} - 1.68044u^{29} + \cdots - 0.0391048u - 2.54698 \\ 0.183506u^{30} - 0.178960u^{29} + \cdots - 1.10173u + 0.791313 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.73143u^{30} - 4.64811u^{29} + \cdots + 0.453351u - 2.58303 \\ 0.804088u^{30} + 2.27132u^{29} + \cdots + 0.423930u + 1.48394 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.605226u^{30} + 2.13079u^{29} + \cdots + 0.857480u - 0.859614 \\ -0.184452u^{30} - 0.894715u^{29} + \cdots - 1.17730u + 0.569531 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2.87355u^{30} + 5.85554u^{29} + \cdots - 6.06330u - 2.88256$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{31} - 7u^{30} + \cdots - 7u + 1$
c_2	$u^{31} + 3u^{30} + \cdots + 615u + 161$
c_3	$u^{31} + 2u^{30} + \cdots + 20u - 4$
c_4	$u^{31} + 7u^{30} + \cdots - 7u - 1$
c_5	$u^{31} + 12u^{29} + \cdots - 16u + 4$
c_6	$u^{31} + 3u^{30} + \cdots + u + 1$
c_7	$u^{31} + 6u^{30} + \cdots + 84u + 8$
c_8	$u^{31} + 7u^{30} + \cdots - 9u - 1$
c_9	$u^{31} - u^{30} + \cdots + 20u - 1$
c_{10}	$u^{31} - u^{30} + \cdots + u - 1$
c_{11}, c_{12}	$u^{31} - 7u^{30} + \cdots - 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{31} + 29y^{30} + \cdots - 13y - 1$
c_2	$y^{31} + 23y^{30} + \cdots - 51001y - 25921$
c_3	$y^{31} + 16y^{30} + \cdots + 144y - 16$
c_5	$y^{31} + 24y^{30} + \cdots - 288y - 16$
c_6	$y^{31} - 5y^{30} + \cdots + 7y - 1$
c_7	$y^{31} - 14y^{30} + \cdots + 1168y - 64$
c_8, c_{11}, c_{12}	$y^{31} - 33y^{30} + \cdots + 41y - 1$
c_9	$y^{31} - 13y^{30} + \cdots + 204y - 1$
c_{10}	$y^{31} + 13y^{30} + \cdots - 13y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.435850 + 0.889653I$ $a = -0.122174 + 0.893643I$ $b = -0.25983 + 1.84756I$	$1.31548 - 2.73347I$	$2.62255 + 7.17529I$
$u = 0.435850 - 0.889653I$ $a = -0.122174 - 0.893643I$ $b = -0.25983 - 1.84756I$	$1.31548 + 2.73347I$	$2.62255 - 7.17529I$
$u = 0.717549 + 0.581853I$ $a = -0.03702 - 1.62500I$ $b = 0.84656 - 1.16725I$	$1.06721 - 4.54532I$	$-17.8905 + 15.7633I$
$u = 0.717549 - 0.581853I$ $a = -0.03702 + 1.62500I$ $b = 0.84656 + 1.16725I$	$1.06721 + 4.54532I$	$-17.8905 - 15.7633I$
$u = -0.775605 + 0.493053I$ $a = 0.27102 + 1.89032I$ $b = 0.97150 + 1.08876I$	$-2.96200 + 4.47410I$	$-6.22995 - 7.87974I$
$u = -0.775605 - 0.493053I$ $a = 0.27102 - 1.89032I$ $b = 0.97150 - 1.08876I$	$-2.96200 - 4.47410I$	$-6.22995 + 7.87974I$
$u = -0.046189 + 0.898752I$ $a = -0.630400 + 0.203952I$ $b = -0.406193 - 0.425088I$	$-2.62871 - 1.35120I$	$-12.31193 + 1.21875I$
$u = -0.046189 - 0.898752I$ $a = -0.630400 - 0.203952I$ $b = -0.406193 + 0.425088I$	$-2.62871 + 1.35120I$	$-12.31193 - 1.21875I$
$u = 0.873346 + 0.207088I$ $a = -0.376535 - 1.035570I$ $b = 0.555658 - 0.526320I$	$-0.30275 - 1.96468I$	$-7.79171 + 3.88920I$
$u = 0.873346 - 0.207088I$ $a = -0.376535 + 1.035570I$ $b = 0.555658 + 0.526320I$	$-0.30275 + 1.96468I$	$-7.79171 - 3.88920I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.280256 + 0.843804I$ $a = -0.172257 - 1.089940I$ $b = 0.54886 - 1.60421I$	$2.10850 - 3.89705I$	$-2.69296 + 4.84858I$
$u = 0.280256 - 0.843804I$ $a = -0.172257 + 1.089940I$ $b = 0.54886 + 1.60421I$	$2.10850 + 3.89705I$	$-2.69296 - 4.84858I$
$u = -0.624294 + 0.520327I$ $a = -0.60319 + 1.66211I$ $b = 0.83238 + 1.27903I$	$-4.59216 + 5.54035I$	$-9.32097 - 9.86500I$
$u = -0.624294 - 0.520327I$ $a = -0.60319 - 1.66211I$ $b = 0.83238 - 1.27903I$	$-4.59216 - 5.54035I$	$-9.32097 + 9.86500I$
$u = -0.235809 + 0.703779I$ $a = -1.014930 - 0.196430I$ $b = -0.200096 + 1.060140I$	$-9.64770 + 3.50955I$	$-12.88121 - 2.67575I$
$u = -0.235809 - 0.703779I$ $a = -1.014930 + 0.196430I$ $b = -0.200096 - 1.060140I$	$-9.64770 - 3.50955I$	$-12.88121 + 2.67575I$
$u = 1.156780 + 0.759666I$ $a = -0.180295 - 0.494447I$ $b = -0.108064 - 0.740346I$	$-2.14392 - 1.28172I$	$-11.74862 + 4.27913I$
$u = 1.156780 - 0.759666I$ $a = -0.180295 + 0.494447I$ $b = -0.108064 + 0.740346I$	$-2.14392 + 1.28172I$	$-11.74862 - 4.27913I$
$u = -0.539178 + 0.083354I$ $a = -0.511789 - 1.183050I$ $b = 0.927039 + 0.447466I$	$0.28797 - 5.93567I$	$-6.16337 + 5.12675I$
$u = -0.539178 - 0.083354I$ $a = -0.511789 + 1.183050I$ $b = 0.927039 - 0.447466I$	$0.28797 + 5.93567I$	$-6.16337 - 5.12675I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.21600+0.82992I$ $a=-0.335850+0.468428I$ $b=\ \ 0.227613+1.232470I$	$-9.28423+3.03654I$	$-14.3326+1.1980I$
$u=-1.21600-0.82992I$ $a=-0.335850-0.468428I$ $b=\ \ 0.227613-1.232470I$	$-9.28423-3.03654I$	$-14.3326-1.1980I$
$u=\ \ 0.454238+0.253472I$ $a=-0.68706+1.27199I$ $b=\ \ 0.466669-1.082130I$	$-6.52285+9.77818I$	$-8.78752-5.56489I$
$u=\ \ 0.454238-0.253472I$ $a=-0.68706-1.27199I$ $b=\ \ 0.466669+1.082130I$	$-6.52285-9.77818I$	$-8.78752+5.56489I$
$u=-0.97971+1.11771I$ $a=\ \ 0.356501-0.939296I$ $b=-1.102100-0.750132I$	$-5.14619+8.57314I$	$-9.16347-9.22741I$
$u=-0.97971-1.11771I$ $a=\ \ 0.356501+0.939296I$ $b=-1.102100+0.750132I$	$-5.14619-8.57314I$	$-9.16347+9.22741I$
$u=-1.20054+0.97745I$ $a=\ \ 0.091162-0.704143I$ $b=-1.02028-1.53716I$	$-9.06090+5.57309I$	$-5.52526-8.61845I$
$u=-1.20054-0.97745I$ $a=\ \ 0.091162+0.704143I$ $b=-1.02028+1.53716I$	$-9.06090-5.57309I$	$-5.52526+8.61845I$
$u=\ \ 1.07667+1.12485I$ $a=\ \ 0.225814+0.863721I$ $b=-0.98634+1.03639I$	$-1.44404-6.76467I$	$-6.69848-0.75343I$
$u=\ \ 1.07667-1.12485I$ $a=\ \ 0.225814-0.863721I$ $b=-0.98634-1.03639I$	$-1.44404+6.76467I$	$-6.69848+0.75343I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.75473$		
$a = \quad 0.453988$	-4.07334	8.83190
$b = \quad 0.413212$		

III.

$\boldsymbol{I_3^u = \langle b,\ -u^5+2u^4+4u^3-9u^2+4a+13u-5,\ u^6-3u^5+2u^4-3u^3-2u^2-2u-1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{4}u^5 - \frac{1}{2}u^4 + \cdots - \frac{13}{4}u + \frac{5}{4} \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -\frac{1}{2}u^5 + 2u^4 + \cdots - \frac{5}{2}u + \frac{3}{2} \\ \frac{1}{4}u^5 - \frac{1}{2}u^4 + \cdots - \frac{1}{4}u + \frac{1}{4} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3u^5 - \frac{21}{2}u^4 + \cdots - 3u - \frac{5}{2} \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{4}u^5 - \frac{1}{2}u^4 + \cdots - \frac{13}{4}u + \frac{5}{4} \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{5}{4}u^5 - \frac{9}{2}u^4 + \cdots - \frac{9}{4}u + \frac{5}{4} \\ -\frac{1}{2}u^5 + \frac{3}{2}u^4 - \frac{1}{2}u^3 + \frac{1}{2}u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{3}{2}u^5 + \frac{9}{2}u^4 + \cdots + \frac{7}{2}u + 4 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{5}{4}u^5 + \frac{9}{2}u^4 + \cdots + \frac{9}{4}u - \frac{5}{4} \\ \frac{1}{2}u^5 - \frac{3}{2}u^4 + \frac{1}{2}u^3 - \frac{1}{2}u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 3u^5 - \frac{21}{2}u^4 + \cdots - 3u - \frac{5}{2} \\ u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{17}{4}u^5 - 15u^4 + \cdots - \frac{21}{4}u - \frac{5}{4} \\ -\frac{1}{2}u^5 + \frac{3}{2}u^4 - \frac{1}{2}u^3 + \frac{3}{2}u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{21}{4}u^5 - 21u^4 + \frac{45}{2}u^3 - \frac{113}{4}u^2 + \frac{11}{4}u - \frac{53}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7	$(y^3+3y^2+2y-1)^2$
c_2	y^6
c_3	$(y^3-y^2+2y-1)^2$
c_5, c_6	$y^6-5y^5-18y^4-31y^3-12y^2+1$
c_8, c_{11}, c_{12}	$(y-1)^6$
c_9, c_{10}	$y^6-6y^5+21y^4-42y^3+34y^2-16y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.527087 + 1.198340I$ $a = 0.025633 + 0.671082I$ $b = 0$	$1.37919 - 2.82812I$	$-3.82976 + 3.11418I$
$u = 0.527087 - 1.198340I$ $a = 0.025633 - 0.671082I$ $b = 0$	$1.37919 + 2.82812I$	$-3.82976 - 3.11418I$
$u = -0.189446 + 0.636059I$ $a = 0.74217 - 2.50548I$ $b = 0$	$1.37919 + 2.82812I$	$-0.640805 + 0.659759I$
$u = -0.189446 - 0.636059I$ $a = 0.74217 + 2.50548I$ $b = 0$	$1.37919 - 2.82812I$	$-0.640805 - 0.659759I$
$u = -0.473427$ $a = 3.36799$ $b = 0$	-2.75839	-24.4510
$u = 2.79815$ $a = 0.0964131$ $b = 0$	-2.75839	-120.610

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3-u^2+2u-1)^2)(u^{31}-7u^{30}+\cdots-7u+1)$ $\cdot(u^{153}+6u^{152}+\cdots-839u-307)$
c_2	$u^6(u^{31}+3u^{30}+\cdots+615u+161)(u^{153}-8u^{152}+\cdots-1344u-64)$
c_3	$((u^3+u^2-1)^2)(u^{31}+2u^{30}+\cdots+20u-4)$ $\cdot(u^{153}-u^{152}+\cdots+615240u-163556)$
c_4	$((u^3+u^2+2u+1)^2)(u^{31}+7u^{30}+\cdots-7u-1)$ $\cdot(u^{153}+6u^{152}+\cdots-839u-307)$
c_5	$(u^6-3u^5+\cdots-2u-1)(u^{31}+12u^{29}+\cdots-16u+4)$ $\cdot(u^{153}+42u^{151}+\cdots-56802438868u-10797888812)$
c_6	$(u^6-3u^5+\cdots-2u-1)(u^{31}+3u^{30}+\cdots+u+1)$ $\cdot(u^{153}+u^{152}+\cdots-3u-1)$
c_7	$((u^3+u^2+2u+1)^2)(u^{31}+6u^{30}+\cdots+84u+8)$ $\cdot(u^{153}+5u^{152}+\cdots-2075740u-194200)$
c_8	$((u-1)^6)(u^{31}+7u^{30}+\cdots-9u-1)(u^{153}-77u^{151}+\cdots+13u-1)$
c_9	$(u^6-3u^4-2u^3+6u^2-2u-1)(u^{31}-u^{30}+\cdots+20u-1)$ $\cdot(u^{153}-33u^{151}+\cdots+680974452u-75062943)$
c_{10}	$(u^6-3u^4-2u^3+6u^2-2u-1)(u^{31}-u^{30}+\cdots+u-1)$ $\cdot(u^{153}+4u^{152}+\cdots+17u+1)$
c_{11}, c_{12}	$((u+1)^6)(u^{31}-7u^{30}+\cdots-9u+1)(u^{153}-77u^{151}+\cdots+13u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^3+3y^2+2y-1)^2)(y^{31}+29y^{30}+\cdots-13y-1)$ $\cdot(y^{153}+92y^{152}+\cdots-3754947y-94249)$
c_2	$y^6(y^{31}+23y^{30}+\cdots-51001y-25921)$ $\cdot(y^{153}+44y^{152}+\cdots+1161216y-4096)$
c_3	$((y^3-y^2+2y-1)^2)(y^{31}+16y^{30}+\cdots+144y-16)$ $\cdot(y^{153}-21y^{152}+\cdots+1454894069632y-26750565136)$
c_5	$(y^6-5y^5-18y^4-31y^3-12y^2+1)(y^{31}+24y^{30}+\cdots-288y-16)$ $\cdot(y^{153}+84y^{152}+\cdots-5.53\times10^{21}y-1.17\times10^{20})$
c_6	$(y^6-5y^5-18y^4-31y^3-12y^2+1)(y^{31}-5y^{30}+\cdots+7y-1)$ $\cdot(y^{153}-21y^{152}+\cdots+73y-1)$
c_7	$((y^3+3y^2+2y-1)^2)(y^{31}-14y^{30}+\cdots+1168y-64)$ $\cdot(y^{153}-47y^{152}+\cdots+2201363212400y-37713640000)$
c_8, c_{11}, c_{12}	$((y-1)^6)(y^{31}-33y^{30}+\cdots+41y-1)(y^{153}-154y^{152}+\cdots+y-1)$
c_9	$(y^6-6y^5+21y^4-42y^3+34y^2-16y+1)$ $\cdot(y^{31}-13y^{30}+\cdots+204y-1)$ $\cdot(y^{153}-66y^{152}+\cdots+487511585631586602y-5634445411821249)$
c_{10}	$(y^6-6y^5+\cdots-16y+1)(y^{31}+13y^{30}+\cdots-13y-1)$ $\cdot(y^{153}+24y^{152}+\cdots-555y-1)$