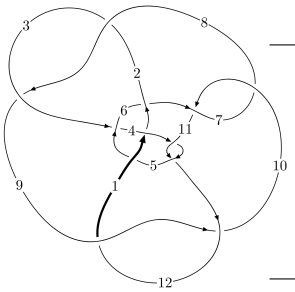
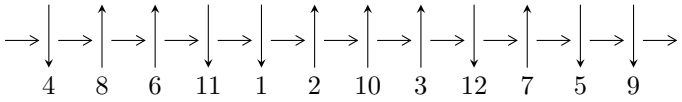
$12a_{1123}$ $(K12a_{1123})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -4.78617 \times 10^{1299} u^{183} + 1.15209 \times 10^{1300} u^{182} + \cdots + 3.43840 \times 10^{1301} b - 4.60238 \times 10^{1305}, \\
&\quad - 3.26625 \times 10^{1304} u^{183} + 4.61565 \times 10^{1304} u^{182} + \cdots + 3.04106 \times 10^{1306} a - 2.55958 \times 10^{1310}, \\
&\quad u^{184} - 3u^{183} + \cdots - 16532u - 707552 \rangle \\
I_2^u &= \langle 1.03964 \times 10^{80} u^{53} - 1.41812 \times 10^{80} u^{52} + \cdots + 1.18952 \times 10^{79} b - 1.18053 \times 10^{81}, \\
&\quad - 2.63097 \times 10^{81} u^{53} + 5.32573 \times 10^{81} u^{52} + \cdots + 7.61290 \times 10^{80} a - 2.25246 \times 10^{82}, \\
&\quad u^{54} - 2u^{53} + \cdots + 8u + 16 \rangle \\
I_3^u &= \langle b,\ a + 1,\ u + 1 \rangle \\
I_4^u &= \langle b - 1,\ a,\ u - 1 \rangle
\end{aligned}$$

$$I_1^v = \langle a,\ b - 1,\ v^2 + v + 1 \rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 242 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. $\boldsymbol{I_1^u = \langle -4.79 \times 10^{1299} u^{183} + 1.15 \times 10^{1300} u^{182} + \cdots + 3.44 \times 10^{1301} b - 4.60 \times 10^{1305},\ -3.27 \times 10^{1304} u^{183} + 4.62 \times 10^{1304} u^{182} + \cdots + 3.04 \times 10^{1306} a - 2.56 \times 10^{1310},\ u^{184} - 3u^{183} + \cdots - 16532u - 707552 \rangle}$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0107405u^{183} - 0.0151777u^{182} + \cdots - 3295.92u + 8416.72 \\ 0.0139197u^{183} - 0.0335067u^{182} + \cdots + 19645.1u + 13385.2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.00156752u^{183} - 0.00663758u^{182} + \cdots + 13051.4u - 4867.01 \\ 0.00828057u^{183} - 0.0193654u^{182} + \cdots - 1932.56u - 1452.62 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.00127922u^{183} + 0.00655393u^{182} + \cdots - 25451.7u - 13831.3 \\ 0.00717971u^{183} - 0.0194907u^{182} + \cdots + 20116.8u + 12169.8 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.00984809u^{183} + 0.0127279u^{182} + \cdots + 14983.9u - 3414.39 \\ 0.00828057u^{183} - 0.0193654u^{182} + \cdots - 1932.56u - 1452.62 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0444811u^{183} - 0.115632u^{182} + \cdots + 48562.7u + 19528.8 \\ -0.0233998u^{183} + 0.0518711u^{182} + \cdots - 23431.8u - 19788.0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0102005u^{183} - 0.0285372u^{182} + \cdots + 26048.7u + 11181.2 \\ -0.00245711u^{183} + 0.0108087u^{182} + \cdots - 15547.1u - 6467.78 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00849164u^{183} - 0.0254342u^{182} + \cdots + 23002.7u + 9454.99 \\ 0.0314455u^{183} - 0.0656827u^{182} + \cdots + 25015.7u + 26410.8 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0115925u^{183} - 0.0268365u^{182} + \cdots + 16092.5u + 9751.18 \\ -0.00723329u^{183} + 0.0240324u^{182} + \cdots - 26585.3u - 12055.8 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.189618u^{183} - 0.434216u^{182} + \cdots + 235912.u + 190543.$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{184} - 24u^{183} + \cdots - 311u + 11$
c_2, c_8	$u^{184} + 3u^{183} + \cdots + 16532u - 707552$
c_3	$u^{184} + 24u^{183} + \cdots + 311u + 11$
c_4, c_{11}	$u^{184} - 3u^{183} + \cdots - 16532u - 707552$
c_5	$u^{184} + 3u^{183} + \cdots - 9319301u - 540938$
c_6	$u^{184} - 3u^{183} + \cdots + 9319301u - 540938$
c_7, c_{10}	$u^{184} + 7u^{183} + \cdots - 35972490u - 2292697$
c_9, c_{12}	$u^{184} - 7u^{183} + \cdots + 35972490u - 2292697$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{184} - 28y^{183} + \cdots - 4453y + 121$
c_2, c_4, c_8 c_{11}	$y^{184} - 123y^{183} + \cdots - 24369037776528y + 500629832704$
c_5, c_6	$y^{184} + y^{183} + \cdots - 44470573435141y + 292613919844$
c_7, c_9, c_{10} c_{12}	$y^{184} + 87y^{183} + \cdots + 234883455129296y + 5256459533809$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.985626$ $a=-0.759031$ $b=-0.0948487$	1.81166	0
$u=-0.489911+0.901223I$ $a=-0.805025+0.681962I$ $b=-1.73608+0.05132I$	$-2.39271+3.21505I$	0
$u=-0.489911-0.901223I$ $a=-0.805025-0.681962I$ $b=-1.73608-0.05132I$	$-2.39271-3.21505I$	0
$u=\ 0.180610+1.011810I$ $a=\ 0.989830+0.658343I$ $b=\ 1.72828-0.03225I$	$-6.36700-8.19408I$	0
$u=\ 0.180610-1.011810I$ $a=\ 0.989830-0.658343I$ $b=\ 1.72828+0.03225I$	$-6.36700+8.19408I$	0
$u=-1.005260+0.230771I$ $a=-0.518244+0.930244I$ $b=-2.43905+0.47542I$	$-4.85131-2.59645I$	0
$u=-1.005260-0.230771I$ $a=-0.518244-0.930244I$ $b=-2.43905-0.47542I$	$-4.85131+2.59645I$	0
$u=-0.735384+0.613585I$ $a=-1.040240+0.411539I$ $b=-1.046980-0.525483I$	$0.92484-2.06260I$	0
$u=-0.735384-0.613585I$ $a=-1.040240-0.411539I$ $b=-1.046980+0.525483I$	$0.92484+2.06260I$	0
$u=-0.695315+0.782126I$ $a=-0.842301+0.964060I$ $b=-1.54098+0.12296I$	$-2.59109+2.11654I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.695315-0.782126I$ $a=-0.842301-0.964060I$ $b=-1.54098-0.12296I$	$-2.59109-2.11654I$	0
$u=0.798329+0.499550I$ $a=0.765281+0.620111I$ $b=0.84266-1.52141I$	$-1.93610+3.47025I$	0
$u=0.798329-0.499550I$ $a=0.765281-0.620111I$ $b=0.84266+1.52141I$	$-1.93610-3.47025I$	0
$u=0.704438+0.615542I$ $a=1.27157+1.33467I$ $b=1.034560-0.424468I$	$-5.60582+8.27968I$	0
$u=0.704438-0.615542I$ $a=1.27157-1.33467I$ $b=1.034560+0.424468I$	$-5.60582-8.27968I$	0
$u=-0.804895+0.702904I$ $a=0.560383-0.038561I$ $b=1.54722+1.16442I$	$2.92723-2.77066I$	0
$u=-0.804895-0.702904I$ $a=0.560383+0.038561I$ $b=1.54722-1.16442I$	$2.92723+2.77066I$	0
$u=0.926286+0.014329I$ $a=-0.821084+0.987438I$ $b=-1.53496-0.43276I$	$2.26240-3.62583I$	0
$u=0.926286-0.014329I$ $a=-0.821084-0.987438I$ $b=-1.53496+0.43276I$	$2.26240+3.62583I$	0
$u=-0.902918+0.206522I$ $a=0.60340+1.46916I$ $b=0.662486-0.622978I$	$1.38239-3.23354I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.902918-0.206522I$ $a=\ \ 0.60340-1.46916I$ $b=\ \ 0.662486+0.622978I$	$1.38239+3.23354I$	0
$u=\ \ 0.892620+0.236399I$ $a=-0.92437-1.07973I$ $b=-1.385630-0.021065I$	$-6.00362-0.84358I$	0
$u=\ \ 0.892620-0.236399I$ $a=-0.92437+1.07973I$ $b=-1.385630+0.021065I$	$-6.00362+0.84358I$	0
$u=\ \ 1.022330+0.356426I$ $a=-1.111570+0.780898I$ $b=-0.606798+0.620247I$	$4.85131+2.59645I$	0
$u=\ \ 1.022330-0.356426I$ $a=-1.111570-0.780898I$ $b=-0.606798-0.620247I$	$4.85131-2.59645I$	0
$u=-1.074620+0.166743I$ $a=\ \ 1.93510+0.18775I$ $b=\ \ 0.413987-0.051585I$	$2.01208-2.54820I$	0
$u=-1.074620-0.166743I$ $a=\ \ 1.93510-0.18775I$ $b=\ \ 0.413987+0.051585I$	$2.01208+2.54820I$	0
$u=\ \ 0.802134+0.421950I$ $a=\ \ 0.789056+0.986182I$ $b=\ \ 1.21198-1.39302I$	$-1.97744+2.96340I$	0
$u=\ \ 0.802134-0.421950I$ $a=\ \ 0.789056-0.986182I$ $b=\ \ 1.21198+1.39302I$	$-1.97744-2.96340I$	0
$u=-0.048778+0.901957I$ $a=\ \ 0.250954-0.600412I$ $b=\ \ 1.087460+0.094327I$	$2.39271-3.21505I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.048778-0.901957I$ $a=\ \ 0.250954+0.600412I$ $b=\ \ 1.087460-0.094327I$	$2.39271+3.21505I$	0
$u=-0.026037+0.902429I$ $a=-1.093070-0.695436I$ $b=-1.302130+0.025427I$	$0.85382-2.87397I$	0
$u=-0.026037-0.902429I$ $a=-1.093070+0.695436I$ $b=-1.302130-0.025427I$	$0.85382+2.87397I$	0
$u=-0.276070+0.858657I$ $a=-0.413887-1.076220I$ $b=-0.933141-0.154161I$	$0.12293+8.60047I$	0
$u=-0.276070-0.858657I$ $a=-0.413887+1.076220I$ $b=-0.933141+0.154161I$	$0.12293-8.60047I$	0
$u=-0.845699+0.295331I$ $a=-1.354790+0.269684I$ $b=-0.437180+0.241808I$	$1.39201+0.99343I$	0
$u=-0.845699-0.295331I$ $a=-1.354790-0.269684I$ $b=-0.437180-0.241808I$	$1.39201-0.99343I$	0
$u=\ \ 1.087200+0.302579I$ $a=-0.679623-0.666667I$ $b=-1.87872-0.32585I$	$1.43596+5.96515I$	0
$u=\ \ 1.087200-0.302579I$ $a=-0.679623+0.666667I$ $b=-1.87872+0.32585I$	$1.43596-5.96515I$	0
$u=-0.678508+0.913644I$ $a=-0.704081+0.788464I$ $b=-0.845690-0.370506I$	$-2.26240-3.62583I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.678508-0.913644I$ $a=-0.704081-0.788464I$ $b=-0.845690+0.370506I$	$-2.26240+3.62583I$	0
$u=0.685478+0.514961I$ $a=0.574553+0.851611I$ $b=1.73144-0.28433I$	$-2.36266+1.01498I$	0
$u=0.685478-0.514961I$ $a=0.574553-0.851611I$ $b=1.73144+0.28433I$	$-2.36266-1.01498I$	0
$u=-0.825897+0.198082I$ $a=-2.10285-0.24188I$ $b=-0.373539+0.076539I$	$1.37257+1.21094I$	0
$u=-0.825897-0.198082I$ $a=-2.10285+0.24188I$ $b=-0.373539-0.076539I$	$1.37257-1.21094I$	0
$u=0.804476+0.269267I$ $a=-0.36857-1.72115I$ $b=-0.620916+0.712355I$	$-6.16249+3.26145I$	0
$u=0.804476-0.269267I$ $a=-0.36857+1.72115I$ $b=-0.620916-0.712355I$	$-6.16249-3.26145I$	0
$u=0.840768+0.080079I$ $a=0.371275+0.852191I$ $b=3.02870-0.28547I$	$-3.64266-0.21557I$	0
$u=0.840768-0.080079I$ $a=0.371275-0.852191I$ $b=3.02870+0.28547I$	$-3.64266+0.21557I$	0
$u=1.070720+0.458245I$ $a=-0.446676-0.312714I$ $b=-1.79888-0.47416I$	$1.19256+6.47923I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.070720 - 0.458245I$ $a = -0.446676 + 0.312714I$ $b = -1.79888 + 0.47416I$	$1.19256 - 6.47923I$	0
$u = 1.072110 + 0.475562I$ $a = 0.983675 + 0.735838I$ $b = 1.31882 - 0.65322I$	$-2.17391 + 6.57641I$	0
$u = 1.072110 - 0.475562I$ $a = 0.983675 - 0.735838I$ $b = 1.31882 + 0.65322I$	$-2.17391 - 6.57641I$	0
$u = 1.149500 + 0.237840I$ $a = 0.791790 - 0.107984I$ $b = 0.091517 - 0.162488I$	$3.92123 + 3.79257I$	0
$u = 1.149500 - 0.237840I$ $a = 0.791790 + 0.107984I$ $b = 0.091517 + 0.162488I$	$3.92123 - 3.79257I$	0
$u = -0.042621 + 0.824732I$ $a = -1.359300 + 0.185818I$ $b = -1.70822 - 0.28360I$	$-8.32646 - 1.63543I$	0
$u = -0.042621 - 0.824732I$ $a = -1.359300 - 0.185818I$ $b = -1.70822 + 0.28360I$	$-8.32646 + 1.63543I$	0
$u = -0.924643 + 0.730244I$ $a = -0.504614 + 0.805299I$ $b = -1.61874 + 0.10520I$	$-2.92723 + 2.77066I$	0
$u = -0.924643 - 0.730244I$ $a = -0.504614 - 0.805299I$ $b = -1.61874 - 0.10520I$	$-2.92723 - 2.77066I$	0
$u = 0.921134 + 0.736510I$ $a = 1.031950 + 0.808342I$ $b = 1.51095 + 0.03229I$	$-5.01958 - 3.02663I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.921134 - 0.736510I$ $a = 1.031950 - 0.808342I$ $b = 1.51095 - 0.03229I$	$-5.01958 + 3.02663I$	0
$u = -1.165720 + 0.181056I$ $a = 1.007540 - 0.684382I$ $b = 0.767129 - 0.055654I$	$2.34591 - 2.81285I$	0
$u = -1.165720 - 0.181056I$ $a = 1.007540 + 0.684382I$ $b = 0.767129 + 0.055654I$	$2.34591 + 2.81285I$	0
$u = 0.643907 + 0.991431I$ $a = -0.204606 - 0.802795I$ $b = -0.404066 + 0.728819I$	$-0.33746 - 1.88661I$	0
$u = 0.643907 - 0.991431I$ $a = -0.204606 + 0.802795I$ $b = -0.404066 - 0.728819I$	$-0.33746 + 1.88661I$	0
$u = 0.621279 + 0.529397I$ $a = 1.60176 + 0.65665I$ $b = 1.41036 - 0.66133I$	$-1.19256 + 6.47923I$	0
$u = 0.621279 - 0.529397I$ $a = 1.60176 - 0.65665I$ $b = 1.41036 + 0.66133I$	$-1.19256 - 6.47923I$	0
$u = -0.784895 + 0.200538I$ $a = -0.25570 + 1.53212I$ $b = -1.34200 - 1.82242I$	$-5.62429 + 0.58912I$	0
$u = -0.784895 - 0.200538I$ $a = -0.25570 - 1.53212I$ $b = -1.34200 + 1.82242I$	$-5.62429 - 0.58912I$	0
$u = -0.968502 + 0.692552I$ $a = -1.124240 + 0.794564I$ $b = -1.56155 - 0.91365I$	$-1.79220 - 7.65639I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.968502-0.692552I$ $a=-1.124240-0.794564I$ $b=-1.56155+0.91365I$	$-1.79220+7.65639I$	0
$u=-1.185070+0.256522I$ $a=\ \ 0.408279-0.757112I$ $b=\ \ 1.85872+1.73919I$	$5.01958-3.02663I$	0
$u=-1.185070-0.256522I$ $a=\ \ 0.408279+0.757112I$ $b=\ \ 1.85872-1.73919I$	$5.01958+3.02663I$	0
$u=-0.778837+0.096749I$ $a=\ \ 0.304418+0.830487I$ $b=\ \ 2.26561+0.08753I$	$2.59109-2.11654I$	0
$u=-0.778837-0.096749I$ $a=\ \ 0.304418-0.830487I$ $b=\ \ 2.26561-0.08753I$	$2.59109+2.11654I$	0
$u=\ \ 0.762096+0.147835I$ $a=\ \ 1.04721-0.96385I$ $b=-0.484359+0.173774I$	$1.93610-3.47025I$	0
$u=\ \ 0.762096-0.147835I$ $a=\ \ 1.04721+0.96385I$ $b=-0.484359-0.173774I$	$1.93610+3.47025I$	0
$u=\ \ 0.088281+0.769342I$ $a=\ \ 0.257711+0.884805I$ $b=\ \ 0.502611+0.230620I$	$-3.92123+3.79257I$	0
$u=\ \ 0.088281-0.769342I$ $a=\ \ 0.257711-0.884805I$ $b=\ \ 0.502611-0.230620I$	$-3.92123-3.79257I$	0
$u=-0.749260+0.188813I$ $a=\ \ 1.36145-0.76811I$ $b=\ \ 1.43287-0.08567I$	$-4.48506-6.68699I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.749260-0.188813I$ $a=\ 1.36145+0.76811I$ $b=\ 1.43287+0.08567I$	$-4.48506+6.68699I$	0
$u=-1.189610+0.310866I$ $a=\ 0.557553-0.902645I$ $b=\ 1.99711-0.61768I$	$-1.42220-10.12460I$	0
$u=-1.189610-0.310866I$ $a=\ 0.557553+0.902645I$ $b=\ 1.99711+0.61768I$	$-1.42220+10.12460I$	0
$u=\ 0.717969+0.275469I$ $a=\ 1.85236-0.79530I$ $b=\ 0.289215-0.504753I$	$3.64266+0.21557I$	0
$u=\ 0.717969-0.275469I$ $a=\ 1.85236+0.79530I$ $b=\ 0.289215+0.504753I$	$3.64266-0.21557I$	0
$u=-1.176010+0.385573I$ $a=\ 0.781375+0.845819I$ $b=\ 0.315439+0.698136I$	$5.62429-0.58912I$	0
$u=-1.176010-0.385573I$ $a=\ 0.781375-0.845819I$ $b=\ 0.315439-0.698136I$	$5.62429+0.58912I$	0
$u=\ 0.737580+0.170365I$ $a=\ 0.034747+0.642731I$ $b=-3.02888-1.21694I$	$1.79220+7.65639I$	0
$u=\ 0.737580-0.170365I$ $a=\ 0.034747-0.642731I$ $b=-3.02888+1.21694I$	$1.79220-7.65639I$	0
$u=-1.168710+0.469901I$ $a=\ 0.951405-0.803807I$ $b=\ 2.06525+0.87580I$	$1.42220-10.12460I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.168710-0.469901I$ $a=\ \ 0.951405+0.803807I$ $b=\ \ 2.06525-0.87580I$	$1.42220+10.12460I$	0
$u=-0.721684+0.046606I$ $a=-1.19431+1.73762I$ $b=-0.500365-0.556419I$	$0.33746-1.88661I$	0
$u=-0.721684-0.046606I$ $a=-1.19431-1.73762I$ $b=-0.500365+0.556419I$	$0.33746+1.88661I$	0
$u=-1.226210+0.402234I$ $a=-0.697110-0.456871I$ $b=-0.187976-0.345164I$	$-7.92691I$	0
$u=-1.226210-0.402234I$ $a=-0.697110+0.456871I$ $b=-0.187976+0.345164I$	$7.92691I$	0
$u=-1.162010+0.566310I$ $a=-0.745071+0.716572I$ $b=-1.70951-1.28188I$	$-0.12293-8.60047I$	0
$u=-1.162010-0.566310I$ $a=-0.745071-0.716572I$ $b=-1.70951+1.28188I$	$-0.12293+8.60047I$	0
$u=-1.225820+0.422841I$ $a=\ \ 0.124919-0.619537I$ $b=\ \ 1.45694-0.36010I$	$-1.01899-1.60810I$	0
$u=-1.225820-0.422841I$ $a=\ \ 0.124919+0.619537I$ $b=\ \ 1.45694+0.36010I$	$-1.01899+1.60810I$	0
$u=-0.332867+0.597578I$ $a=-2.06363+0.44611I$ $b=-0.929860-0.890913I$	$-4.26869-7.87376I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.332867-0.597578I$ $a=-2.06363-0.44611I$ $b=-0.929860+0.890913I$	$-4.26869+7.87376I$	0
$u=0.110455+0.672101I$ $a=1.60907+0.72067I$ $b=0.875021+0.469568I$	$-4.78758-2.34370I$	0
$u=0.110455-0.672101I$ $a=1.60907-0.72067I$ $b=0.875021-0.469568I$	$-4.78758+2.34370I$	0
$u=1.019410+0.843827I$ $a=0.609046+0.245167I$ $b=1.90886-0.46068I$	$-1.39201+0.99343I$	0
$u=1.019410-0.843827I$ $a=0.609046-0.245167I$ $b=1.90886+0.46068I$	$-1.39201-0.99343I$	0
$u=1.214970+0.528259I$ $a=-0.896657-0.451155I$ $b=-2.14826+1.05482I$	$4.41467+7.92340I$	0
$u=1.214970-0.528259I$ $a=-0.896657+0.451155I$ $b=-2.14826-1.05482I$	$4.41467-7.92340I$	0
$u=0.303671+0.596367I$ $a=-0.529378-0.399748I$ $b=0.048285+1.169730I$	$-0.92484-2.06260I$	0
$u=0.303671-0.596367I$ $a=-0.529378+0.399748I$ $b=0.048285-1.169730I$	$-0.92484+2.06260I$	0
$u=-1.205970+0.576400I$ $a=0.755148+0.705491I$ $b=0.205528+0.255237I$	$2.9528-13.9457I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.205970-0.576400I$ $a=\ \ 0.755148-0.705491I$ $b=\ \ 0.205528-0.255237I$	$2.9528+13.9457I$	0
$u=\ \ 1.276910+0.401103I$ $a=-0.896426-0.738491I$ $b=-1.290990+0.537911I$	$0.04513+11.62910I$	0
$u=\ \ 1.276910-0.401103I$ $a=-0.896426+0.738491I$ $b=-1.290990-0.537911I$	$0.04513-11.62910I$	0
$u=\ \ 1.293280+0.358506I$ $a=-0.392146-0.430180I$ $b=-1.32471+1.86447I$	$4.58252-4.71009I$	0
$u=\ \ 1.293280-0.358506I$ $a=-0.392146+0.430180I$ $b=-1.32471-1.86447I$	$4.58252+4.71009I$	0
$u=\ \ 0.247436+1.321120I$ $a=-0.856364-0.582965I$ $b=-1.67985+0.01873I$	$-3.5583-14.1692I$	0
$u=\ \ 0.247436-1.321120I$ $a=-0.856364+0.582965I$ $b=-1.67985-0.01873I$	$-3.5583+14.1692I$	0
$u=\ \ 1.232570+0.547116I$ $a=-0.077680+0.881790I$ $b=\ \ 0.714028-0.014031I$	$1.01899-1.60810I$	0
$u=\ \ 1.232570-0.547116I$ $a=-0.077680-0.881790I$ $b=\ \ 0.714028+0.014031I$	$1.01899+1.60810I$	0
$u=\ \ 1.305230+0.342954I$ $a=-0.599497-0.574301I$ $b=-2.33437+1.24797I$	$5.60582+8.27968I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.305230 - 0.342954I$ $a = -0.599497 + 0.574301I$ $b = -2.33437 - 1.24797I$	$5.60582 - 8.27968I$	0
$u = 0.564909 + 1.229550I$ $a = 0.845427 + 0.432384I$ $b = 1.68044 - 0.00757I$	$-6.47782 + 2.22599I$	0
$u = 0.564909 - 1.229550I$ $a = 0.845427 - 0.432384I$ $b = 1.68044 + 0.00757I$	$-6.47782 - 2.22599I$	0
$u = 1.192540 + 0.639402I$ $a = -0.786838 - 0.315808I$ $b = -2.00506 + 1.05260I$	$4.26869 + 7.87376I$	0
$u = 1.192540 - 0.639402I$ $a = -0.786838 + 0.315808I$ $b = -2.00506 - 1.05260I$	$4.26869 - 7.87376I$	0
$u = -0.265433 + 1.341990I$ $a = 0.729497 - 0.482148I$ $b = 1.76018 + 0.07687I$	$7.20039I$	0
$u = -0.265433 - 1.341990I$ $a = 0.729497 + 0.482148I$ $b = 1.76018 - 0.07687I$	$-7.20039I$	0
$u = 1.283650 + 0.482655I$ $a = -0.602770 + 0.484206I$ $b = -0.1249520 + 0.0618999I$	$6.36700 + 8.19408I$	0
$u = 1.283650 - 0.482655I$ $a = -0.602770 - 0.484206I$ $b = -0.1249520 - 0.0618999I$	$6.36700 - 8.19408I$	0
$u = 1.258750 + 0.554398I$ $a = -0.374423 + 0.464179I$ $b = -0.487833 - 0.467183I$	$2.17391 + 6.57641I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.258750 - 0.554398I$ $a = -0.374423 - 0.464179I$ $b = -0.487833 + 0.467183I$	$2.17391 - 6.57641I$	0
$u = 1.135340 + 0.784131I$ $a = 0.850473 + 0.691097I$ $b = 1.49489 - 0.84698I$	$-4.58252 + 4.71009I$	0
$u = 1.135340 - 0.784131I$ $a = 0.850473 - 0.691097I$ $b = 1.49489 + 0.84698I$	$-4.58252 - 4.71009I$	0
$u = 0.185347 + 0.585554I$ $a = -0.35003 - 1.79468I$ $b = -0.688670 - 0.144827I$	$1.97744 - 2.96340I$	0
$u = 0.185347 - 0.585554I$ $a = -0.35003 + 1.79468I$ $b = -0.688670 + 0.144827I$	$1.97744 + 2.96340I$	0
$u = -1.297830 + 0.489430I$ $a = 0.324259 + 0.674699I$ $b = 0.0257068 - 0.0494961I$	$4.78758 - 2.34370I$	0
$u = -1.297830 - 0.489430I$ $a = 0.324259 - 0.674699I$ $b = 0.0257068 + 0.0494961I$	$4.78758 + 2.34370I$	0
$u = 1.279320 + 0.584434I$ $a = 0.781205 + 0.614295I$ $b = 2.02209 - 1.10313I$	$-2.9528 + 13.9457I$	0
$u = 1.279320 - 0.584434I$ $a = 0.781205 - 0.614295I$ $b = 2.02209 + 1.10313I$	$-2.9528 - 13.9457I$	0
$u = 1.408300 + 0.045166I$ $a = -0.499432 + 0.266541I$ $b = -0.378586 - 0.321891I$	$8.32646 - 1.63543I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.408300 - 0.045166I$ $a = -0.499432 - 0.266541I$ $b = -0.378586 + 0.321891I$	$8.32646 + 1.63543I$	0
$u = -0.435451 + 0.389003I$ $a = -1.12747 - 0.96153I$ $b = 0.137413 - 0.325683I$	$2.36266 - 1.01498I$	0
$u = -0.435451 - 0.389003I$ $a = -1.12747 + 0.96153I$ $b = 0.137413 + 0.325683I$	$2.36266 + 1.01498I$	0
$u = 1.40535 + 0.22304I$ $a = -0.171529 - 0.437971I$ $b = -0.226019 - 0.506573I$	$4.48506 + 6.68699I$	0
$u = 1.40535 - 0.22304I$ $a = -0.171529 + 0.437971I$ $b = -0.226019 + 0.506573I$	$4.48506 - 6.68699I$	0
$u = -1.36242 + 0.44184I$ $a = 0.494290 - 0.534959I$ $b = 1.38003 + 1.39517I$	$6.47782 - 2.22599I$	0
$u = -1.36242 - 0.44184I$ $a = 0.494290 + 0.534959I$ $b = 1.38003 - 1.39517I$	$6.47782 + 2.22599I$	0
$u = -0.216830 + 0.523691I$ $a = 1.74332 - 1.73010I$ $b = 1.292480 - 0.111831I$	$-1.43596 + 5.96515I$	$0. - 8.10373I$
$u = -0.216830 - 0.523691I$ $a = 1.74332 + 1.73010I$ $b = 1.292480 + 0.111831I$	$-1.43596 - 5.96515I$	$0. + 8.10373I$
$u = -0.178547 + 0.516411I$ $a = -0.122218 + 0.416421I$ $b = -0.330619 + 0.491536I$	$- 1.34469I$	$0. + 4.61499I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.178547-0.516411I$ $a=-0.122218-0.416421I$ $b=-0.330619-0.491536I$	$1.34469I$	$0.-4.61499I$
$u=-1.03479+1.03710I$ $a=0.263570-0.720501I$ $b=0.747172+0.765685I$	$-2.34591+2.81285I$	0
$u=-1.03479-1.03710I$ $a=0.263570+0.720501I$ $b=0.747172-0.765685I$	$-2.34591-2.81285I$	0
$u=1.35388+0.61965I$ $a=-0.605314-0.641962I$ $b=-1.54757+1.14558I$	$-3.54069+7.65202I$	0
$u=1.35388-0.61965I$ $a=-0.605314+0.641962I$ $b=-1.54757-1.14558I$	$-3.54069-7.65202I$	0
$u=-1.35301+0.67822I$ $a=0.742175-0.537418I$ $b=1.90996+1.10951I$	$3.5583-14.1692I$	0
$u=-1.35301-0.67822I$ $a=0.742175+0.537418I$ $b=1.90996-1.10951I$	$3.5583+14.1692I$	0
$u=1.50744+0.13798I$ $a=-0.070154+0.527546I$ $b=-0.317443+0.319089I$	$6.00362+0.84358I$	0
$u=1.50744-0.13798I$ $a=-0.070154-0.527546I$ $b=-0.317443-0.319089I$	$6.00362-0.84358I$	0
$u=-1.47863+0.32450I$ $a=0.344112+0.607007I$ $b=0.378046+0.301510I$	$6.16249-3.26145I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.47863-0.32450I$ $a=\ \ 0.344112-0.607007I$ $b=\ \ 0.378046-0.301510I$	$6.16249+3.26145I$	0
$u=\ \ 1.35762+0.69093I$ $a=-0.828696-0.546432I$ $b=-1.99103+0.95291I$	$21.1497I$	0
$u=\ \ 1.35762-0.69093I$ $a=-0.828696+0.546432I$ $b=-1.99103-0.95291I$	$-21.1497I$	0
$u=\ \ 0.207532+0.427350I$ $a=-1.92186-1.50100I$ $b=-0.517076+0.759095I$	$-0.85382-2.87397I$	$-2.88628-0.20260I$
$u=\ \ 0.207532-0.427350I$ $a=-1.92186+1.50100I$ $b=-0.517076-0.759095I$	$-0.85382+2.87397I$	$-2.88628+0.20260I$
$u=\ \ 0.20891+1.51897I$ $a=-0.606405-0.203780I$ $b=-1.96445+0.10305I$	$-7.65630-0.75131I$	0
$u=\ \ 0.20891-1.51897I$ $a=-0.606405+0.203780I$ $b=-1.96445-0.10305I$	$-7.65630+0.75131I$	0
$u=-1.10477+1.07377I$ $a=-0.760658+0.210826I$ $b=-1.79442-0.33101I$	$-1.38239-3.23354I$	0
$u=-1.10477-1.07377I$ $a=-0.760658-0.210826I$ $b=-1.79442+0.33101I$	$-1.38239+3.23354I$	0
$u=\ \ 0.450798$ $a=-0.595776$ $b=\ \ 0.766839$	-1.81166	-4.55920

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.57152+0.18410I$ $a=-0.056831+0.352019I$ $b=\ \ 0.079005-0.532336I$	$-5.43194I$	0
$u=-1.57152-0.18410I$ $a=-0.056831-0.352019I$ $b=\ \ 0.079005+0.532336I$	$5.43194I$	0
$u=-0.397901+0.046446I$ $a=-1.39115+3.54377I$ $b=-0.008730-1.280940I$	$-4.41467-7.92340I$	$-12.51366+1.15649I$
$u=-0.397901-0.046446I$ $a=-1.39115-3.54377I$ $b=-0.008730+1.280940I$	$-4.41467+7.92340I$	$-12.51366-1.15649I$
$u=-1.42963+0.81345I$ $a=\ \ 0.646336-0.419822I$ $b=\ \ 1.91014+0.78945I$	$-0.04513-11.62910I$	0
$u=-1.42963-0.81345I$ $a=\ \ 0.646336+0.419822I$ $b=\ \ 1.91014-0.78945I$	$-0.04513+11.62910I$	0
$u=\ \ 1.59015+0.45995I$ $a=\ \ 0.372061+0.375587I$ $b=\ \ 2.01029-1.11665I$	$-1.37257+1.21094I$	0
$u=\ \ 1.59015-0.45995I$ $a=\ \ 0.372061-0.375587I$ $b=\ \ 2.01029+1.11665I$	$-1.37257-1.21094I$	0
$u=-1.76980+0.21632I$ $a=\ \ 0.117312+0.584556I$ $b=-0.000799-0.451724I$	$3.54069+7.65202I$	0
$u=-1.76980-0.21632I$ $a=\ \ 0.117312-0.584556I$ $b=-0.000799+0.451724I$	$3.54069-7.65202I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.81959 + 0.14514I$ $a = -0.072752 + 0.427904I$ $b = -0.080946 - 0.709949I$	$7.65630 - 0.75131I$	0
$u = \quad 1.81959 - 0.14514I$ $a = -0.072752 - 0.427904I$ $b = -0.080946 + 0.709949I$	$7.65630 + 0.75131I$	0
$u = -2.21009 + 0.32775I$ $a = -0.148774 - 0.448289I$ $b = -0.78827 + 1.41209I$	$-2.01208 + 2.54820I$	0
$u = -2.21009 - 0.32775I$ $a = -0.148774 + 0.448289I$ $b = -0.78827 - 1.41209I$	$-2.01208 - 2.54820I$	0

II. $\boldsymbol{I_2^u = \langle 1.04 \times 10^{80} u^{53} - 1.42 \times 10^{80} u^{52} + \cdots + 1.19 \times 10^{79} b - 1.18 \times 10^{81},\ -2.63 \times 10^{81} u^{53} + 5.33 \times 10^{81} u^{52} + \cdots + 7.61 \times 10^{80} a - 2.25 \times 10^{82},\ u^{54} - 2u^{53} + \cdots + 8u + 16 \rangle}$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 3.45594u^{53} - 6.99566u^{52} + \cdots - 105.460u + 29.5874 \\ -8.74000u^{53} + 11.9219u^{52} + \cdots + 309.795u + 99.2446 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.18260u^{53} + 0.738447u^{52} + \cdots - 70.6763u - 81.9620 \\ 10.4780u^{53} - 9.74024u^{52} + \cdots - 542.436u - 361.137 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -15.2977u^{53} + 26.6534u^{52} + \cdots + 1147.55u + 571.163 \\ -0.392320u^{53} + 1.98589u^{52} + \cdots - 74.5250u - 68.0580 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -12.6606u^{53} + 10.4787u^{52} + \cdots + 471.760u + 279.175 \\ 10.4780u^{53} - 9.74024u^{52} + \cdots - 542.436u - 361.137 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -14.6078u^{53} + 30.2782u^{52} + \cdots + 142.768u - 4.93338 \\ 1.30067u^{53} - 2.19886u^{52} + \cdots - 97.0900u - 27.9589 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 11.1379u^{53} - 19.0066u^{52} + \cdots - 300.626u - 131.086 \\ 3.46250u^{53} - 3.58174u^{52} + \cdots - 36.4876u - 85.2563 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 18.1237u^{53} - 28.2933u^{52} + \cdots - 1440.51u - 663.019 \\ 7.22123u^{53} - 7.33122u^{52} + \cdots - 318.632u - 171.770 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 10.8029u^{53} - 17.2672u^{52} + \cdots - 257.701u - 139.433 \\ 2.14444u^{53} - 0.974179u^{52} + \cdots + 9.63126u - 76.4954 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5.15262u^{53} - 12.5496u^{52} + \cdots + 3377.14u + 1169.84$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{54}+7u^{53}+\cdots-21u+1$
c_2, c_4	$u^{54}-2u^{53}+\cdots+8u+16$
c_3	$u^{54}-7u^{53}+\cdots+21u+1$
c_5	$u^{54}-3u^{53}+\cdots+138u+9$
c_6	$u^{54}+3u^{53}+\cdots-138u+9$
c_7, c_{12}	$u^{54}+4u^{53}+\cdots-4u+1$
c_8, c_{11}	$u^{54}+2u^{53}+\cdots-8u+16$
c_9, c_{10}	$u^{54}-4u^{53}+\cdots+4u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{54} - 27y^{53} + \cdots - 73y + 1$
c_2, c_4, c_8 c_{11}	$y^{54} - 50y^{53} + \cdots - 7840y + 256$
c_5, c_6	$y^{54} + 13y^{53} + \cdots - 2340y + 81$
c_7, c_9, c_{10} c_{12}	$y^{54} + 16y^{53} + \cdots + 52y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.869429+0.218773I$ $a=-2.03773+0.04753I$ $b=-0.336670+0.075855I$	$1.45049+1.21986I$	$57.0854-40.2070I$
$u=-0.869429-0.218773I$ $a=-2.03773-0.04753I$ $b=-0.336670-0.075855I$	$1.45049-1.21986I$	$57.0854+40.2070I$
$u=-1.090900+0.169112I$ $a=1.80456+0.02727I$ $b=0.410823-0.046557I$	$2.04183-2.54486I$	0
$u=-1.090900-0.169112I$ $a=1.80456-0.02727I$ $b=0.410823+0.046557I$	$2.04183+2.54486I$	0
$u=-0.828028+0.321734I$ $a=0.480110-0.379435I$ $b=3.24172-0.66003I$	$1.87188-8.11534I$	$0.+16.9837I$
$u=-0.828028-0.321734I$ $a=0.480110+0.379435I$ $b=3.24172+0.66003I$	$1.87188+8.11534I$	$0.-16.9837I$
$u=-0.904047+0.659497I$ $a=-1.17089+0.84461I$ $b=-1.49057-0.98524I$	$-1.87188-8.11534I$	0
$u=-0.904047-0.659497I$ $a=-1.17089-0.84461I$ $b=-1.49057+0.98524I$	$-1.87188+8.11534I$	0
$u=-0.849906+0.793198I$ $a=-0.692288+0.843980I$ $b=-1.54118+0.13913I$	$-2.03266+2.65663I$	0
$u=-0.849906-0.793198I$ $a=-0.692288-0.843980I$ $b=-1.54118-0.13913I$	$-2.03266-2.65663I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.792156+0.196707I$ $a=-0.240645+0.864813I$ $b=-2.94724-0.41781I$	$-3.84897-1.00517I$	$-9.22982+6.44169I$
$u=-0.792156-0.196707I$ $a=-0.240645-0.864813I$ $b=-2.94724+0.41781I$	$-3.84897+1.00517I$	$-9.22982-6.44169I$
$u=1.145360+0.319558I$ $a=-0.880961+0.690527I$ $b=-0.500746+0.740234I$	$5.73971+1.07035I$	0
$u=1.145360-0.319558I$ $a=-0.880961-0.690527I$ $b=-0.500746-0.740234I$	$5.73971-1.07035I$	0
$u=0.653245+0.470715I$ $a=-0.543907-0.621686I$ $b=-2.57317+0.79320I$	$2.03266+2.65663I$	$-4.46574-5.33633I$
$u=0.653245-0.470715I$ $a=-0.543907+0.621686I$ $b=-2.57317-0.79320I$	$2.03266-2.65663I$	$-4.46574+5.33633I$
$u=0.638262+0.374208I$ $a=1.28511+1.18854I$ $b=1.376700+0.019793I$	$-6.73589-1.26667I$	$-6.69405+2.04677I$
$u=0.638262-0.374208I$ $a=1.28511-1.18854I$ $b=1.376700-0.019793I$	$-6.73589+1.26667I$	$-6.69405-2.04677I$
$u=-0.588634+0.447552I$ $a=-0.04576-1.54096I$ $b=0.026188+0.251132I$	$1.32246I$	$0.+3.36133I$
$u=-0.588634-0.447552I$ $a=-0.04576+1.54096I$ $b=0.026188-0.251132I$	$-1.32246I$	$0.-3.36133I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.724648 + 0.139347I$ $a = 0.24894 + 1.60970I$ $b = 1.79453 - 1.24227I$	$-5.73971 - 1.07035I$	$-8.63938 + 5.91837I$
$u = 0.724648 - 0.139347I$ $a = 0.24894 - 1.60970I$ $b = 1.79453 + 1.24227I$	$-5.73971 + 1.07035I$	$-8.63938 - 5.91837I$
$u = 0.707807 + 0.170342I$ $a = 1.97699 - 0.45379I$ $b = 0.209015 - 0.584203I$	$3.84897 + 1.00517I$	$9.22982 - 6.44169I$
$u = 0.707807 - 0.170342I$ $a = 1.97699 + 0.45379I$ $b = 0.209015 + 0.584203I$	$3.84897 - 1.00517I$	$9.22982 + 6.44169I$
$u = -0.369756 + 0.613034I$ $a = -1.27882 + 0.60745I$ $b = -0.383031 - 0.141566I$	$-0.22459 - 3.69992I$	$2.04886 + 6.32993I$
$u = -0.369756 - 0.613034I$ $a = -1.27882 - 0.60745I$ $b = -0.383031 + 0.141566I$	$-0.22459 + 3.69992I$	$2.04886 - 6.32993I$
$u = 1.107490 + 0.655149I$ $a = 0.778596 + 0.847301I$ $b = 1.28273 - 0.86800I$	$-4.65093 + 5.75657I$	0
$u = 1.107490 - 0.655149I$ $a = 0.778596 - 0.847301I$ $b = 1.28273 + 0.86800I$	$-4.65093 - 5.75657I$	0
$u = -1.226340 + 0.494532I$ $a = 0.884596 - 0.489187I$ $b = 2.26321 + 1.04304I$	$4.13811 - 8.07694I$	0
$u = -1.226340 - 0.494532I$ $a = 0.884596 + 0.489187I$ $b = 2.26321 - 1.04304I$	$4.13811 + 8.07694I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.046322 + 0.663496I$ $a = 1.33334 - 0.81608I$ $b = 1.45790 + 0.23377I$	$0.22459 + 3.69992I$	$-2.04886 - 6.32993I$
$u = 0.046322 - 0.663496I$ $a = 1.33334 + 0.81608I$ $b = 1.45790 - 0.23377I$	$0.22459 - 3.69992I$	$-2.04886 + 6.32993I$
$u = 1.263890 + 0.460405I$ $a = -0.732833 - 0.712498I$ $b = -1.74408 + 0.39189I$	$9.86076I$	0
$u = 1.263890 - 0.460405I$ $a = -0.732833 + 0.712498I$ $b = -1.74408 - 0.39189I$	$-9.86076I$	0
$u = 1.360680 + 0.258856I$ $a = -0.143229 - 0.233676I$ $b = -0.235206 - 0.662799I$	$4.82258 + 6.51202I$	0
$u = 1.360680 - 0.258856I$ $a = -0.143229 + 0.233676I$ $b = -0.235206 + 0.662799I$	$4.82258 - 6.51202I$	0
$u = 0.598526 + 0.076271I$ $a = 0.92579 + 2.46269I$ $b = -0.143188 - 1.288240I$	$-4.13811 + 8.07694I$	$9.5233 - 12.7436I$
$u = 0.598526 - 0.076271I$ $a = 0.92579 - 2.46269I$ $b = -0.143188 + 1.288240I$	$-4.13811 - 8.07694I$	$9.5233 + 12.7436I$
$u = 1.393970 + 0.114501I$ $a = -0.209829 + 0.242319I$ $b = -0.667313 + 0.586542I$	$6.73589 + 1.26667I$	0
$u = 1.393970 - 0.114501I$ $a = -0.209829 - 0.242319I$ $b = -0.667313 - 0.586542I$	$6.73589 - 1.26667I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.17200 + 1.42074I$ $a = 0.684095 + 0.073883I$ $b = 1.91332 + 0.14007I$	$-7.81742 + 0.04226I$	0
$u = 0.17200 - 1.42074I$ $a = 0.684095 - 0.073883I$ $b = 1.91332 - 0.14007I$	$-7.81742 - 0.04226I$	0
$u = -0.523455 + 0.211539I$ $a = -1.88340 + 0.80243I$ $b = -1.388660 + 0.116315I$	$-4.82258 - 6.51202I$	$-11.46021 + 0.58064I$
$u = -0.523455 - 0.211539I$ $a = -1.88340 - 0.80243I$ $b = -1.388660 - 0.116315I$	$-4.82258 + 6.51202I$	$-11.46021 - 0.58064I$
$u = -1.45793 + 0.06535I$ $a = 0.038356 - 0.286282I$ $b = 1.35584 + 0.99894I$	$4.65093 + 5.75657I$	0
$u = -1.45793 - 0.06535I$ $a = 0.038356 + 0.286282I$ $b = 1.35584 - 0.99894I$	$4.65093 - 5.75657I$	0
$u = -1.54454 + 0.14591I$ $a = 0.171532 - 0.369423I$ $b = 0.146795 + 0.438806I$	$-5.74893I$	0
$u = -1.54454 - 0.14591I$ $a = 0.171532 + 0.369423I$ $b = 0.146795 - 0.438806I$	$5.74893I$	0
$u = 1.74883 + 0.00308I$ $a = -0.085924 + 0.367182I$ $b = -0.373437 - 0.739605I$	$7.81742 - 0.04226I$	0
$u = 1.74883 - 0.00308I$ $a = -0.085924 - 0.367182I$ $b = -0.373437 + 0.739605I$	$7.81742 + 0.04226I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.59107+0.73804I$ $a=-0.408454+0.300159I$ $b=-2.19524-1.05528I$	$-1.45049-1.21986I$	0
$u=-1.59107-0.73804I$ $a=-0.408454-0.300159I$ $b=-2.19524+1.05528I$	$-1.45049+1.21986I$	0
$u=\ \ 2.07517+0.48100I$ $a=\ \ 0.117649-0.480080I$ $b=\ \ 0.54096+1.33376I$	$-2.04183-2.54486I$	0
$u=\ \ 2.07517-0.48100I$ $a=\ \ 0.117649+0.480080I$ $b=\ \ 0.54096-1.33376I$	$-2.04183+2.54486I$	0

III. $I_3^u = \langle b,\ a+1,\ u+1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_9, c_{12}	u
c_2, c_4, c_5 c_6, c_7, c_8 c_{10}, c_{11}	$u-1$
c_3	$u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_9, c_{12}	y
c_2, c_3, c_4 c_5, c_6, c_7 c_8, c_{10}, c_{11}	$y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$		
$a = -1.00000$	1.64493	6.00000
$b = 0$		

IV. $I_4^u = \langle b-1,\ a,\ u-1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u-1$
c_2, c_4, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$u+1$
c_3, c_7, c_{10}	u

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_8 c_9, c_{11}, c_{12}	$y-1$
c_3, c_7, c_{10}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u =$ 1.00000		
$a =$ 0	-1.64493	-6.00000
$b =$ 1.00000		

V. $I_1^v = \langle a,\ b-1,\ v^2+v+1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} v \\ v \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -v-1 \\ -v \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ v \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ v+1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -v \\ -v \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ v+1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -v-1 \\ -v \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8v + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_6, c_7, c_9 c_{10}, c_{12}	$y^2 + y + 1$
c_2, c_4, c_8 c_{11}	y^2

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.500000 + 0.866025I$ $a = 0$ $b = 1.00000$	$-4.05977I$	$0. + 6.92820I$
$v = -0.500000 - 0.866025I$ $a = 0$ $b = 1.00000$	$4.05977I$	$0. - 6.92820I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u-1)(u^2-u+1)(u^{54}+7u^{53}+\cdots-21u+1)$ $\cdot(u^{184}-24u^{183}+\cdots-311u+11)$
c_2	$u^2(u-1)(u+1)(u^{54}-2u^{53}+\cdots+8u+16)$ $\cdot(u^{184}+3u^{183}+\cdots+16532u-707552)$
c_3	$u(u+1)(u^2+u+1)(u^{54}-7u^{53}+\cdots+21u+1)$ $\cdot(u^{184}+24u^{183}+\cdots+311u+11)$
c_4	$u^2(u-1)(u+1)(u^{54}-2u^{53}+\cdots+8u+16)$ $\cdot(u^{184}-3u^{183}+\cdots-16532u-707552)$
c_5	$(u-1)(u+1)(u^2+u+1)(u^{54}-3u^{53}+\cdots+138u+9)$ $\cdot(u^{184}+3u^{183}+\cdots-9319301u-540938)$
c_6	$(u-1)(u+1)(u^2-u+1)(u^{54}+3u^{53}+\cdots-138u+9)$ $\cdot(u^{184}-3u^{183}+\cdots+9319301u-540938)$
c_7	$u(u-1)(u^2+u+1)(u^{54}+4u^{53}+\cdots-4u+1)$ $\cdot(u^{184}+7u^{183}+\cdots-35972490u-2292697)$
c_8	$u^2(u-1)(u+1)(u^{54}+2u^{53}+\cdots-8u+16)$ $\cdot(u^{184}+3u^{183}+\cdots+16532u-707552)$
c_9	$u(u+1)(u^2-u+1)(u^{54}-4u^{53}+\cdots+4u+1)$ $\cdot(u^{184}-7u^{183}+\cdots+35972490u-2292697)$
c_{10}	$u(u-1)(u^2-u+1)(u^{54}-4u^{53}+\cdots+4u+1)$ $\cdot(u^{184}+7u^{183}+\cdots-35972490u-2292697)$
c_{11}	$u^2(u-1)(u+1)(u^{54}+2u^{53}+\cdots-8u+16)$ $\cdot(u^{184}-3u^{183}+\cdots-16532u-707552)$
c_{12}	$u(u+1)(u^2+u+1)(u^{54}+4u^{53}+\cdots-4u+1)$ $\cdot(u^{184}-7u^{183}+\cdots+35972490u-2292697)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y(y-1)(y^2+y+1)(y^{54}-27y^{53}+\cdots-73y+1)$ $\cdot(y^{184}-28y^{183}+\cdots-4453y+121)$
c_2, c_4, c_8 c_{11}	$y^2(y-1)^2(y^{54}-50y^{53}+\cdots-7840y+256)$ $\cdot(y^{184}-123y^{183}+\cdots-24369037776528y+500629832704)$
c_5, c_6	$((y-1)^2)(y^2+y+1)(y^{54}+13y^{53}+\cdots-2340y+81)$ $\cdot(y^{184}+y^{183}+\cdots-44470573435141y+292613919844)$
c_7, c_9, c_{10} c_{12}	$y(y-1)(y^2+y+1)(y^{54}+16y^{53}+\cdots+52y+1)$ $\cdot(y^{184}+87y^{183}+\cdots+234883455129296y+5256459533809)$