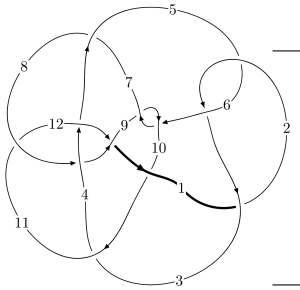
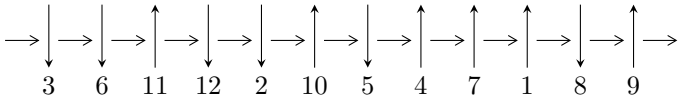
$12a_{0484}$ $(K12a_{0484})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.70177 \times 10^{1756} u^{188} - 8.54670 \times 10^{1756} u^{187} + \cdots + 3.45262 \times 10^{1756} b - 4.00960 \times 10^{1758},$$
$$- 2.84589 \times 10^{1758} u^{188} + 2.22543 \times 10^{1759} u^{187} + \cdots + 5.00630 \times 10^{1757} a + 6.93573 \times 10^{1759},$$
$$u^{189} - 8u^{188} + \cdots - 79u - 29 \rangle$$
$$I_2^u = \langle 2.30944 \times 10^{46} u^{38} + 1.17665 \times 10^{46} u^{37} + \cdots + 3.78715 \times 10^{46} b + 5.05705 \times 10^{46},$$
$$5.02111 \times 10^{46} u^{38} - 2.41670 \times 10^{45} u^{37} + \cdots + 3.78715 \times 10^{46} a + 1.92218 \times 10^{46},\ u^{39} + 2u^{37} + \cdots + u + 1 \rangle$$
$$I_3^u = \langle u^2 + b + u - 1,\ a,\ u^3 - u + 1 \rangle$$
$$I_4^u = \langle b^3 + b^2 - 1,\ a,\ u + 1 \rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 234 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. $\boldsymbol{I_1^u = \langle 1.70 \times 10^{1756} u^{188} - 8.55 \times 10^{1756} u^{187} + \cdots + 3.45 \times 10^{1756} b - 4.01 \times 10^{1758},\ -2.85 \times 10^{1758} u^{188} + 2.23 \times 10^{1759} u^{187} + \cdots + 5.01 \times 10^{1757} a + 6.94 \times 10^{1759},\ u^{189} - 8u^{188} + \cdots - 79u - 29 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 5.68461u^{188} - 44.4526u^{187} + \cdots - 782.014u - 138.540 \\ -0.492894u^{188} + 2.47542u^{187} + \cdots + 328.895u + 116.132 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 5.19172u^{188} - 41.9771u^{187} + \cdots - 453.119u - 22.4081 \\ -0.492894u^{188} + 2.47542u^{187} + \cdots + 328.895u + 116.132 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -3.36772u^{188} + 24.7145u^{187} + \cdots + 813.429u + 190.147 \\ -0.111564u^{188} + 0.839054u^{187} + \cdots + 75.0790u + 16.1404 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 7.22709u^{188} - 58.0830u^{187} + \cdots - 698.897u - 52.1145 \\ -0.907974u^{188} + 6.31775u^{187} + \cdots + 271.671u + 78.7054 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -4.34178u^{188} + 31.5260u^{187} + \cdots + 999.331u + 256.114 \\ 1.08563u^{188} - 7.65047u^{187} + \cdots - 258.981u - 82.1081 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.65724u^{188} - 20.1512u^{187} + \cdots + 1296.54u + 598.469 \\ -2.22531u^{188} + 19.0249u^{187} + \cdots - 28.9240u - 81.4809 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 4.14978u^{188} - 30.7763u^{187} + \cdots - 957.636u - 228.563 \\ -0.462116u^{188} + 3.85116u^{187} + \cdots + 36.8251u - 0.364084 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.72955u^{188} + 30.1501u^{187} + \cdots + 400.274u - 12.8958 \\ 0.450649u^{188} - 3.76241u^{187} + \cdots + 7.56524u + 13.0644 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 11.1729u^{188} - 89.7928u^{187} + \cdots - 927.699u - 30.6737 \\ -1.81023u^{188} + 13.7963u^{187} + \cdots + 331.685u + 69.5307 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 12.0861u^{188} - 100.517u^{187} + \cdots - 741.562u + 82.8947$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{189} + 86u^{188} + \cdots + 12226241u + 339889$
c_2, c_5	$u^{189} - 43u^{187} + \cdots - 6703u + 583$
c_3	$u^{189} + 4u^{188} + \cdots + 60188019890u + 5986213211$
c_4	$u^{189} + 8u^{188} + \cdots - 79u + 29$
c_6, c_9	$u^{189} - 8u^{188} + \cdots + 54826u + 4031$
c_7	$u^{189} - 8u^{188} + \cdots + 204513953u + 32543267$
c_8	$u^{189} - 3u^{188} + \cdots - 26u + 1$
c_{10}	$u^{189} - 6u^{188} + \cdots - 47525u + 32287$
c_{11}	$u^{189} + 10u^{188} + \cdots + 2304u - 704$
c_{12}	$u^{189} + u^{188} + \cdots + 46221377u + 1765261$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{189} + 50y^{188} + \cdots - 10262219485735y - 115524532321$
c_2, c_5	$y^{189} - 86y^{188} + \cdots + 12226241y - 339889$
c_3	$y^{189} - 102y^{188} + \cdots + 3.80 \times 10^{21}y - 3.58 \times 10^{19}$
c_4	$y^{189} + 12y^{188} + \cdots - 80179y - 841$
c_6, c_9	$y^{189} + 124y^{188} + \cdots + 2605740968y - 16248961$
c_7	$y^{189} + 62y^{188} + \cdots - 276984664046356039y - 1059064227033289$
c_8	$y^{189} - 33y^{188} + \cdots - 54y - 1$
c_{10}	$y^{189} - 28y^{188} + \cdots + 280760605113y - 1042450369$
c_{11}	$y^{189} + 40y^{188} + \cdots - 25982976y - 495616$
c_{12}	$y^{189} - 31y^{188} + \cdots + 793233634931023y - 3116146398121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.844132 + 0.532140I$ $a = 1.367490 - 0.140585I$ $b = -0.082072 + 0.219551I$	$-3.27061 - 6.93518I$	0
$u = 0.844132 - 0.532140I$ $a = 1.367490 + 0.140585I$ $b = -0.082072 - 0.219551I$	$-3.27061 + 6.93518I$	0
$u = 0.077394 + 0.992560I$ $a = 0.167460 + 1.027600I$ $b = -0.147882 - 0.006886I$	$1.67076 - 2.02837I$	0
$u = 0.077394 - 0.992560I$ $a = 0.167460 - 1.027600I$ $b = -0.147882 + 0.006886I$	$1.67076 + 2.02837I$	0
$u = 0.524312 + 0.826486I$ $a = 1.75584 - 0.14496I$ $b = -1.24305 + 1.02209I$	$-1.60540 - 7.04570I$	0
$u = 0.524312 - 0.826486I$ $a = 1.75584 + 0.14496I$ $b = -1.24305 - 1.02209I$	$-1.60540 + 7.04570I$	0
$u = -0.441435 + 0.870709I$ $a = -1.86746 - 0.44683I$ $b = 0.618269 + 0.467411I$	$2.98882 + 7.55128I$	0
$u = -0.441435 - 0.870709I$ $a = -1.86746 + 0.44683I$ $b = 0.618269 - 0.467411I$	$2.98882 - 7.55128I$	0
$u = 0.438106 + 0.925981I$ $a = 1.73462 - 0.26957I$ $b = -0.666435 + 0.470472I$	$3.77987 - 2.03293I$	0
$u = 0.438106 - 0.925981I$ $a = 1.73462 + 0.26957I$ $b = -0.666435 - 0.470472I$	$3.77987 + 2.03293I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.972403+0.329413I$ $a=\ \ 0.255873+0.228769I$ $b=-0.797104-1.119670I$	$-2.96973+5.60185I$	0
$u=-0.972403-0.329413I$ $a=\ \ 0.255873-0.228769I$ $b=-0.797104+1.119670I$	$-2.96973-5.60185I$	0
$u=\ \ 0.961003+0.375663I$ $a=-0.383816+0.060999I$ $b=\ \ 0.781064-0.964056I$	$-2.22675-1.38549I$	0
$u=\ \ 0.961003-0.375663I$ $a=-0.383816-0.060999I$ $b=\ \ 0.781064+0.964056I$	$-2.22675+1.38549I$	0
$u=-0.463199+0.846971I$ $a=\ \ 0.454457-0.347296I$ $b=-0.583755+1.177940I$	$2.97669-3.14052I$	0
$u=-0.463199-0.846971I$ $a=\ \ 0.454457+0.347296I$ $b=-0.583755-1.177940I$	$2.97669+3.14052I$	0
$u=\ \ 0.592075+0.857434I$ $a=\ \ 1.48918-0.32631I$ $b=-1.11116+1.04655I$	$-1.96159-2.07286I$	0
$u=\ \ 0.592075-0.857434I$ $a=\ \ 1.48918+0.32631I$ $b=-1.11116-1.04655I$	$-1.96159+2.07286I$	0
$u=-0.935869+0.465004I$ $a=-1.114220+0.027624I$ $b=\ \ 1.44762+0.78090I$	$-1.03319+5.83684I$	0
$u=-0.935869-0.465004I$ $a=-1.114220-0.027624I$ $b=\ \ 1.44762-0.78090I$	$-1.03319-5.83684I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.255882 + 1.027360I$ $a = -0.752980 + 0.237470I$ $b = 1.21569 - 1.14741I$	$2.14568 - 8.64009I$	0
$u = 0.255882 - 1.027360I$ $a = -0.752980 - 0.237470I$ $b = 1.21569 + 1.14741I$	$2.14568 + 8.64009I$	0
$u = -0.909427 + 0.242629I$ $a = -0.092777 + 0.264208I$ $b = -0.603081 - 1.219320I$	$-3.56617 + 0.88904I$	0
$u = -0.909427 - 0.242629I$ $a = -0.092777 - 0.264208I$ $b = -0.603081 + 1.219320I$	$-3.56617 - 0.88904I$	0
$u = -0.760735 + 0.741973I$ $a = -1.269530 - 0.033212I$ $b = 1.20647 + 0.85554I$	$-0.93550 + 5.08812I$	0
$u = -0.760735 - 0.741973I$ $a = -1.269530 + 0.033212I$ $b = 1.20647 - 0.85554I$	$-0.93550 - 5.08812I$	0
$u = 1.024840 + 0.334092I$ $a = 1.061180 - 0.010190I$ $b = -1.55032 + 0.71913I$	$-2.78237 - 10.75200I$	0
$u = 1.024840 - 0.334092I$ $a = 1.061180 + 0.010190I$ $b = -1.55032 - 0.71913I$	$-2.78237 + 10.75200I$	0
$u = -0.481971 + 0.785729I$ $a = -1.78773 + 0.03819I$ $b = 1.24712 + 0.96515I$	$-1.12829 + 3.14613I$	0
$u = -0.481971 - 0.785729I$ $a = -1.78773 - 0.03819I$ $b = 1.24712 - 0.96515I$	$-1.12829 - 3.14613I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.404919 + 0.797425I$ $a = -0.577919 - 0.289557I$ $b = 0.85399 + 1.19964I$	$4.06193 - 2.39062I$	0
$u = 0.404919 - 0.797425I$ $a = -0.577919 + 0.289557I$ $b = 0.85399 - 1.19964I$	$4.06193 + 2.39062I$	0
$u = -0.816150 + 0.344293I$ $a = 1.77048 - 1.32209I$ $b = -0.400733 - 0.862039I$	$-1.93309 + 11.59360I$	0
$u = -0.816150 - 0.344293I$ $a = 1.77048 + 1.32209I$ $b = -0.400733 + 0.862039I$	$-1.93309 - 11.59360I$	0
$u = 0.394173 + 1.050300I$ $a = 0.362217 + 1.161710I$ $b = -0.505060 - 0.119546I$	$2.05531 + 2.16455I$	0
$u = 0.394173 - 1.050300I$ $a = 0.362217 - 1.161710I$ $b = -0.505060 + 0.119546I$	$2.05531 - 2.16455I$	0
$u = 0.852184 + 0.201220I$ $a = -1.26967 - 1.84751I$ $b = 0.267026 - 0.882857I$	$0.21583 - 5.10553I$	0
$u = 0.852184 - 0.201220I$ $a = -1.26967 + 1.84751I$ $b = 0.267026 + 0.882857I$	$0.21583 + 5.10553I$	0
$u = -0.563946 + 0.980423I$ $a = -1.077420 - 0.483235I$ $b = 0.831708 + 0.998947I$	$-1.88915 + 5.05174I$	0
$u = -0.563946 - 0.980423I$ $a = -1.077420 + 0.483235I$ $b = 0.831708 - 0.998947I$	$-1.88915 - 5.05174I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.231199+0.836142I$ $a=\ \ 0.876289+0.187217I$ $b=-1.32730-1.19266I$	$4.62208+3.22300I$	0
$u=-0.231199-0.836142I$ $a=\ \ 0.876289-0.187217I$ $b=-1.32730+1.19266I$	$4.62208-3.22300I$	0
$u=-1.010300+0.515302I$ $a=\ \ 0.963300-0.276561I$ $b=-0.538426-0.958597I$	$-8.79744+2.92392I$	0
$u=-1.010300-0.515302I$ $a=\ \ 0.963300+0.276561I$ $b=-0.538426+0.958597I$	$-8.79744-2.92392I$	0
$u=\ \ 0.812549+0.223532I$ $a=\ \ 0.364062+0.113016I$ $b=\ \ 0.451133-1.162430I$	$-3.49480-4.44374I$	0
$u=\ \ 0.812549-0.223532I$ $a=\ \ 0.364062-0.113016I$ $b=\ \ 0.451133+1.162430I$	$-3.49480+4.44374I$	0
$u=\ \ 1.050640+0.485882I$ $a=-0.772908-0.040764I$ $b=\ \ 0.537958-0.866296I$	$-3.95762-0.09851I$	0
$u=\ \ 1.050640-0.485882I$ $a=-0.772908+0.040764I$ $b=\ \ 0.537958+0.866296I$	$-3.95762+0.09851I$	0
$u=-0.483455+0.675596I$ $a=-1.70770-0.53072I$ $b=\ \ 0.538001+0.232331I$	$-0.74435+3.34325I$	0
$u=-0.483455-0.675596I$ $a=-1.70770+0.53072I$ $b=\ \ 0.538001-0.232331I$	$-0.74435-3.34325I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.524063+1.064440I$ $a=-0.402397+1.064550I$ $b=\ \ 0.606440-0.082251I$	$2.32165+1.90131I$	0
$u=-0.524063-1.064440I$ $a=-0.402397-1.064550I$ $b=\ \ 0.606440+0.082251I$	$2.32165-1.90131I$	0
$u=-1.074810+0.523504I$ $a=\ \ 0.874974+0.057224I$ $b=-0.473977-0.886927I$	$-6.14757-4.91011I$	0
$u=-1.074810-0.523504I$ $a=\ \ 0.874974-0.057224I$ $b=-0.473977+0.886927I$	$-6.14757+4.91011I$	0
$u=\ \ 1.243220+0.004215I$ $a=\ \ 0.553465+0.552475I$ $b=\ \ 0.208318+0.147278I$	$-5.02031+1.15207I$	0
$u=\ \ 1.243220-0.004215I$ $a=\ \ 0.553465-0.552475I$ $b=\ \ 0.208318-0.147278I$	$-5.02031-1.15207I$	0
$u=\ \ 0.721507+0.226432I$ $a=\ \ 0.951470+0.153049I$ $b=-1.68227+1.00752I$	$-5.37364-3.67245I$	0
$u=\ \ 0.721507-0.226432I$ $a=\ \ 0.951470-0.153049I$ $b=-1.68227-1.00752I$	$-5.37364+3.67245I$	0
$u=-0.335489+1.198390I$ $a=-0.484398-0.607342I$ $b=\ \ 0.395175+0.966399I$	$-1.82265-1.07337I$	0
$u=-0.335489-1.198390I$ $a=-0.484398+0.607342I$ $b=\ \ 0.395175-0.966399I$	$-1.82265+1.07337I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.266710+0.681834I$ $a=-1.94690+0.63885I$ $b=\ \ 1.050420+0.762270I$	$0.43756+6.91669I$	0
$u=-0.266710-0.681834I$ $a=-1.94690-0.63885I$ $b=\ \ 1.050420-0.762270I$	$0.43756-6.91669I$	0
$u=\ \ 0.489581+0.517741I$ $a=\ \ 0.18796-1.81514I$ $b=\ \ 0.493139-0.510698I$	$-4.38188-5.01571I$	0
$u=\ \ 0.489581-0.517741I$ $a=\ \ 0.18796+1.81514I$ $b=\ \ 0.493139+0.510698I$	$-4.38188+5.01571I$	0
$u=\ \ 0.087711+0.685167I$ $a=\ \ 1.30233-0.56725I$ $b=-0.558581+0.531308I$	$0.39710-1.51746I$	0
$u=\ \ 0.087711-0.685167I$ $a=\ \ 1.30233+0.56725I$ $b=-0.558581-0.531308I$	$0.39710+1.51746I$	0
$u=\ \ 0.317614+0.610850I$ $a=-0.881266-0.165362I$ $b=\ \ 1.25700+1.54157I$	$2.59339-6.52868I$	0
$u=\ \ 0.317614-0.610850I$ $a=-0.881266+0.165362I$ $b=\ \ 1.25700-1.54157I$	$2.59339+6.52868I$	0
$u=-0.167902+0.666517I$ $a=\ \ 0.719032-0.016126I$ $b=-1.52188+1.30767I$	$-3.47856+3.52806I$	0
$u=-0.167902-0.666517I$ $a=\ \ 0.719032+0.016126I$ $b=-1.52188-1.30767I$	$-3.47856-3.52806I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.677043$ $a = -0.424291$ $b = 0.526404$	-1.43580	0
$u = 0.081615 + 0.669299I$ $a = 1.40236 + 1.09125I$ $b = -0.556496 + 0.292055I$	$1.26413 - 1.46648I$	0
$u = 0.081615 - 0.669299I$ $a = 1.40236 - 1.09125I$ $b = -0.556496 - 0.292055I$	$1.26413 + 1.46648I$	0
$u = 0.268361 + 0.615599I$ $a = 1.83616 - 0.81958I$ $b = -1.167780 + 0.418979I$	$-1.25443 - 1.72378I$	0
$u = 0.268361 - 0.615599I$ $a = 1.83616 + 0.81958I$ $b = -1.167780 - 0.418979I$	$-1.25443 + 1.72378I$	0
$u = 0.235481 + 0.621858I$ $a = -1.35110 - 3.06287I$ $b = 0.599894 - 0.147442I$	$0.77199 - 11.89590I$	0
$u = 0.235481 - 0.621858I$ $a = -1.35110 + 3.06287I$ $b = 0.599894 + 0.147442I$	$0.77199 + 11.89590I$	0
$u = -0.235705 + 0.620684I$ $a = -1.51456 - 0.95016I$ $b = 0.847642 + 0.762450I$	$-1.78601 + 4.74239I$	0
$u = -0.235705 - 0.620684I$ $a = -1.51456 + 0.95016I$ $b = 0.847642 - 0.762450I$	$-1.78601 - 4.74239I$	0
$u = -0.630763 + 0.201822I$ $a = -2.31218 + 0.63760I$ $b = -0.0336281 - 0.0569258I$	$-0.59361 + 2.46515I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.630763-0.201822I$ $a=-2.31218-0.63760I$ $b=-0.0336281+0.0569258I$	$-0.59361-2.46515I$	0
$u=-0.322579+0.558684I$ $a=\ \ 0.985372-0.137209I$ $b=-1.29216+1.64277I$	$0.40516+12.26590I$	0
$u=-0.322579-0.558684I$ $a=\ \ 0.985372+0.137209I$ $b=-1.29216-1.64277I$	$0.40516-12.26590I$	0
$u=\ \ 0.170282+0.620992I$ $a=\ \ 1.96068+0.89202I$ $b=-0.819585+0.665835I$	$1.35906-2.11803I$	0
$u=\ \ 0.170282-0.620992I$ $a=\ \ 1.96068-0.89202I$ $b=-0.819585-0.665835I$	$1.35906+2.11803I$	0
$u=-0.454859+1.279230I$ $a=\ \ 0.034885-0.188016I$ $b=\ \ 0.055841+0.840980I$	$0.248250+1.224000I$	0
$u=-0.454859-1.279230I$ $a=\ \ 0.034885+0.188016I$ $b=\ \ 0.055841-0.840980I$	$0.248250-1.224000I$	0
$u=\ \ 0.640619+1.198240I$ $a=\ \ 0.737006-0.192653I$ $b=-0.666276+0.708786I$	$0.61486-2.11598I$	0
$u=\ \ 0.640619-1.198240I$ $a=\ \ 0.737006+0.192653I$ $b=-0.666276-0.708786I$	$0.61486+2.11598I$	0
$u=-1.357670+0.119686I$ $a=-0.049391+1.102370I$ $b=\ \ 0.064585+1.357130I$	$-7.92440-0.51009I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.357670-0.119686I$ $a=-0.049391-1.102370I$ $b=\ \ 0.064585-1.357130I$	$-7.92440+0.51009I$	0
$u=-0.012203+0.636852I$ $a=\ \ 1.230400+0.083673I$ $b=-1.43696-1.28475I$	$6.05486-0.09984I$	0
$u=-0.012203-0.636852I$ $a=\ \ 1.230400-0.083673I$ $b=-1.43696+1.28475I$	$6.05486+0.09984I$	0
$u=\ \ 0.260783+0.571551I$ $a=\ \ 2.02472-0.62077I$ $b=-1.43161-0.03146I$	$-0.08325-6.80285I$	0
$u=\ \ 0.260783-0.571551I$ $a=\ \ 2.02472+0.62077I$ $b=-1.43161+0.03146I$	$-0.08325+6.80285I$	0
$u=-0.756069+1.152430I$ $a=-0.571428+0.697157I$ $b=\ \ 0.762376+0.104978I$	$2.99358-1.74308I$	0
$u=-0.756069-1.152430I$ $a=-0.571428-0.697157I$ $b=\ \ 0.762376-0.104978I$	$2.99358+1.74308I$	0
$u=-0.045483+0.602960I$ $a=\ \ 2.82163+1.88694I$ $b=-0.792733-0.003213I$	$4.82762-5.13173I$	0
$u=-0.045483-0.602960I$ $a=\ \ 2.82163-1.88694I$ $b=-0.792733+0.003213I$	$4.82762+5.13173I$	0
$u=-0.051956+0.602025I$ $a=-1.392710+0.034084I$ $b=\ \ 1.45824-1.24613I$	$4.82118+5.56131I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.051956-0.602025I$ $a=-1.392710-0.034084I$ $b=\ \ 1.45824+1.24613I$	$4.82118-5.56131I$	0
$u=-0.266225+0.540220I$ $a=-1.93487-0.52391I$ $b=\ \ 1.256370-0.286755I$	$0.84603+2.52016I$	0
$u=-0.266225-0.540220I$ $a=-1.93487+0.52391I$ $b=\ \ 1.256370+0.286755I$	$0.84603-2.52016I$	0
$u=-0.886140+1.093620I$ $a=\ \ 0.940552-0.137753I$ $b=-1.20432-0.99862I$	$5.25109+5.60984I$	0
$u=-0.886140-1.093620I$ $a=\ \ 0.940552+0.137753I$ $b=-1.20432+0.99862I$	$5.25109-5.60984I$	0
$u=\ \ 1.063740+0.922828I$ $a=\ \ 1.017150+0.499999I$ $b=-0.854229+0.980501I$	$3.58043-2.85865I$	0
$u=\ \ 1.063740-0.922828I$ $a=\ \ 1.017150-0.499999I$ $b=-0.854229-0.980501I$	$3.58043+2.85865I$	0
$u=\ \ 0.344209+0.479316I$ $a=-0.812054-0.041760I$ $b=\ \ 1.61015-1.12115I$	$-0.479240-0.477571I$	0
$u=\ \ 0.344209-0.479316I$ $a=-0.812054+0.041760I$ $b=\ \ 1.61015+1.12115I$	$-0.479240+0.477571I$	0
$u=\ \ 0.920549+1.073340I$ $a=-0.851118-0.283576I$ $b=\ \ 1.16919-1.02638I$	$2.54489+0.13855I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.920549 - 1.073340I$ $a = -0.851118 + 0.283576I$ $b = 1.16919 + 1.02638I$	$2.54489 - 0.13855I$	0
$u = 1.00372 + 0.99937I$ $a = -0.909124 + 0.061102I$ $b = 1.23895 - 0.87938I$	$0.77026 - 8.53390I$	0
$u = 1.00372 - 0.99937I$ $a = -0.909124 - 0.061102I$ $b = 1.23895 + 0.87938I$	$0.77026 + 8.53390I$	0
$u = -0.219850 + 0.535539I$ $a = 1.05842 - 3.88011I$ $b = -0.494842 - 0.137031I$	$2.30618 + 5.99542I$	0
$u = -0.219850 - 0.535539I$ $a = 1.05842 + 3.88011I$ $b = -0.494842 + 0.137031I$	$2.30618 - 5.99542I$	0
$u = 0.82412 + 1.15851I$ $a = 1.172410 + 0.028885I$ $b = -0.937354 + 0.559992I$	$3.96923 - 2.20695I$	0
$u = 0.82412 - 1.15851I$ $a = 1.172410 - 0.028885I$ $b = -0.937354 - 0.559992I$	$3.96923 + 2.20695I$	0
$u = 0.80867 + 1.18886I$ $a = 0.640034 + 0.502326I$ $b = -0.780551 + 0.232826I$	$3.24777 - 2.86432I$	0
$u = 0.80867 - 1.18886I$ $a = 0.640034 - 0.502326I$ $b = -0.780551 - 0.232826I$	$3.24777 + 2.86432I$	0
$u = -0.89461 + 1.13886I$ $a = 1.089060 + 0.017963I$ $b = -1.18989 - 1.03279I$	$6.60842 + 9.04216I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.89461-1.13886I$ $a=\ \ 1.089060-0.017963I$ $b=-1.18989+1.03279I$	$6.60842-9.04216I$	0
$u=-0.409410+0.352386I$ $a=-1.85448-0.63895I$ $b=\ \ 0.303811-0.552014I$	$-0.41686+2.63883I$	0
$u=-0.409410-0.352386I$ $a=-1.85448+0.63895I$ $b=\ \ 0.303811+0.552014I$	$-0.41686-2.63883I$	0
$u=\ \ 0.89838+1.15540I$ $a=-1.109320+0.071524I$ $b=\ \ 1.17848-1.05927I$	$5.1536-14.5214I$	0
$u=\ \ 0.89838-1.15540I$ $a=-1.109320-0.071524I$ $b=\ \ 1.17848+1.05927I$	$5.1536+14.5214I$	0
$u=\ \ 0.060305+0.530113I$ $a=-3.13822+2.42922I$ $b=\ \ 0.706207-0.047934I$	$5.56092-0.10749I$	$15.6493+0.I$
$u=\ \ 0.060305-0.530113I$ $a=-3.13822-2.42922I$ $b=\ \ 0.706207+0.047934I$	$5.56092+0.10749I$	$15.6493+0.I$
$u=\ \ 1.05724+1.02280I$ $a=-0.486663-0.217216I$ $b=\ \ 0.844779+0.215914I$	$3.69257-4.35055I$	0
$u=\ \ 1.05724-1.02280I$ $a=-0.486663+0.217216I$ $b=\ \ 0.844779-0.215914I$	$3.69257+4.35055I$	0
$u=-0.99527+1.09427I$ $a=\ \ 0.684607-0.527663I$ $b=-0.607785-0.084516I$	$3.33722+0.44129I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.99527-1.09427I$ $a=\ \ 0.684607+0.527663I$ $b=-0.607785+0.084516I$	$3.33722-0.44129I$	0
$u=\ \ 0.98759+1.11050I$ $a=-0.925557+0.069268I$ $b=\ \ 1.12483-0.91745I$	$0.70226-8.45051I$	0
$u=\ \ 0.98759-1.11050I$ $a=-0.925557-0.069268I$ $b=\ \ 1.12483+0.91745I$	$0.70226+8.45051I$	0
$u=-0.91970+1.16904I$ $a=-1.168000-0.038053I$ $b=\ \ 1.007010+0.539029I$	$3.61950+7.75366I$	0
$u=-0.91970-1.16904I$ $a=-1.168000+0.038053I$ $b=\ \ 1.007010-0.539029I$	$3.61950-7.75366I$	0
$u=\ \ 1.17443+0.93104I$ $a=\ \ 0.368434+0.248280I$ $b=-1.155530-0.010863I$	$1.76200-7.54938I$	0
$u=\ \ 1.17443-0.93104I$ $a=\ \ 0.368434-0.248280I$ $b=-1.155530+0.010863I$	$1.76200+7.54938I$	0
$u=-0.431476+0.227437I$ $a=\ \ 1.83655+1.60461I$ $b=\ \ 0.560793+0.029467I$	$2.39545+0.04738I$	$8.63975+4.92906I$
$u=-0.431476-0.227437I$ $a=\ \ 1.83655-1.60461I$ $b=\ \ 0.560793-0.029467I$	$2.39545-0.04738I$	$8.63975-4.92906I$
$u=-1.15016+0.98968I$ $a=\ \ 0.975379+0.042846I$ $b=-1.31388-0.74121I$	$0.87643+5.29884I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.15016-0.98968I$ $a=\ \ 0.975379-0.042846I$ $b=-1.31388+0.74121I$	$0.87643-5.29884I$	0
$u=-1.08542+1.06782I$ $a=-0.985784+0.273166I$ $b=\ \ 1.04778+0.98975I$	$4.59730+9.74869I$	0
$u=-1.08542-1.06782I$ $a=-0.985784-0.273166I$ $b=\ \ 1.04778-0.98975I$	$4.59730-9.74869I$	0
$u=-0.171998+0.443641I$ $a=-1.09075-1.20891I$ $b=\ \ 0.373131+0.907529I$	$-2.13646-1.22497I$	$-7.23805+2.29894I$
$u=-0.171998-0.443641I$ $a=-1.09075+1.20891I$ $b=\ \ 0.373131-0.907529I$	$-2.13646+1.22497I$	$-7.23805-2.29894I$
$u=\ \ 0.441227+0.110365I$ $a=\ \ 1.69597-0.01355I$ $b=-0.094581-1.070720I$	$-2.60943+1.09946I$	$-6.23941+0.I$
$u=\ \ 0.441227-0.110365I$ $a=\ \ 1.69597+0.01355I$ $b=-0.094581+1.070720I$	$-2.60943-1.09946I$	$-6.23941+0.I$
$u=-1.08992+1.14226I$ $a=-1.024420+0.065638I$ $b=\ \ 1.19161+1.03466I$	$3.4316+15.3781I$	0
$u=-1.08992-1.14226I$ $a=-1.024420-0.065638I$ $b=\ \ 1.19161-1.03466I$	$3.4316-15.3781I$	0
$u=\ \ 1.09196+1.14849I$ $a=\ \ 1.034270+0.027515I$ $b=-1.21129+1.05153I$	$1.2948-21.3546I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.09196 - 1.14849I$ $a = 1.034270 - 0.027515I$ $b = -1.21129 - 1.05153I$	$1.2948 + 21.3546I$	0
$u = 1.10897 + 1.13709I$ $a = 0.921681 + 0.081543I$ $b = -1.14456 + 1.06672I$	$-3.28380 - 12.38740I$	0
$u = 1.10897 - 1.13709I$ $a = 0.921681 - 0.081543I$ $b = -1.14456 - 1.06672I$	$-3.28380 + 12.38740I$	0
$u = -1.04078 + 1.20250I$ $a = 0.422968 - 0.246165I$ $b = -0.857885 + 0.213462I$	$4.82035 - 1.65233I$	0
$u = -1.04078 - 1.20250I$ $a = 0.422968 + 0.246165I$ $b = -0.857885 - 0.213462I$	$4.82035 + 1.65233I$	0
$u = -1.21538 + 1.05554I$ $a = 0.990572 - 0.044408I$ $b = -1.29939 - 0.58811I$	$1.66886 + 9.76029I$	0
$u = -1.21538 - 1.05554I$ $a = 0.990572 + 0.044408I$ $b = -1.29939 + 0.58811I$	$1.66886 - 9.76029I$	0
$u = -1.28768 + 0.99852I$ $a = -0.278222 + 0.242215I$ $b = 0.949734 - 0.006643I$	$4.10387 + 2.04504I$	0
$u = -1.28768 - 0.99852I$ $a = -0.278222 - 0.242215I$ $b = 0.949734 + 0.006643I$	$4.10387 - 2.04504I$	0
$u = 1.20701 + 1.09782I$ $a = -0.946243 - 0.073432I$ $b = 1.218210 - 0.547323I$	$2.08549 - 5.40614I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.20701 - 1.09782I$ $a = -0.946243 + 0.073432I$ $b = 1.218210 + 0.547323I$	$2.08549 + 5.40614I$	0
$u = -0.189224 + 0.315371I$ $a = -0.54390 + 1.96246I$ $b = -0.02776 + 1.49683I$	$-4.58938 + 1.91623I$	$-4.83464 + 4.01012I$
$u = -0.189224 - 0.315371I$ $a = -0.54390 - 1.96246I$ $b = -0.02776 - 1.49683I$	$-4.58938 - 1.91623I$	$-4.83464 - 4.01012I$
$u = 1.13665 + 1.18350I$ $a = -0.665725 - 0.356787I$ $b = 0.689856 - 0.199206I$	$3.02741 - 6.28281I$	0
$u = 1.13665 - 1.18350I$ $a = -0.665725 + 0.356787I$ $b = 0.689856 + 0.199206I$	$3.02741 + 6.28281I$	0
$u = -1.01710 + 1.34375I$ $a = 0.612881 + 0.256059I$ $b = -0.608287 - 0.946936I$	$-3.35280 + 12.48480I$	0
$u = -1.01710 - 1.34375I$ $a = 0.612881 - 0.256059I$ $b = -0.608287 + 0.946936I$	$-3.35280 - 12.48480I$	0
$u = 1.09068 + 1.31294I$ $a = -0.625960 + 0.126929I$ $b = 0.667058 - 0.793365I$	$-0.91527 - 7.71323I$	0
$u = 1.09068 - 1.31294I$ $a = -0.625960 - 0.126929I$ $b = 0.667058 + 0.793365I$	$-0.91527 + 7.71323I$	0
$u = 0.089240 + 0.248168I$ $a = 0.90202 + 5.40734I$ $b = 0.407742 + 0.739257I$	$0.913950 + 0.611380I$	$-2.16199 - 2.04306I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.089240 - 0.248168I$ $a = 0.90202 - 5.40734I$ $b = 0.407742 - 0.739257I$	$0.913950 - 0.611380I$	$-2.16199 + 2.04306I$
$u = -0.141934 + 0.218701I$ $a = 1.32176 + 4.57008I$ $b = -0.711751 + 0.888034I$	$-1.21513 - 6.07843I$	$-3.61863 + 5.41778I$
$u = -0.141934 - 0.218701I$ $a = 1.32176 - 4.57008I$ $b = -0.711751 - 0.888034I$	$-1.21513 + 6.07843I$	$-3.61863 - 5.41778I$
$u = 1.56191 + 0.79811I$ $a = -0.005232 + 0.364813I$ $b = -0.511964 - 0.346712I$	$3.50403 + 6.66593I$	0
$u = 1.56191 - 0.79811I$ $a = -0.005232 - 0.364813I$ $b = -0.511964 + 0.346712I$	$3.50403 - 6.66593I$	0
$u = -1.54075 + 0.87352I$ $a = -0.065815 + 0.329882I$ $b = 0.599698 - 0.258205I$	$5.05216 - 1.23467I$	0
$u = -1.54075 - 0.87352I$ $a = -0.065815 - 0.329882I$ $b = 0.599698 + 0.258205I$	$5.05216 + 1.23467I$	0
$u = 1.13226 + 1.36266I$ $a = 0.243292 - 0.004502I$ $b = -0.693355 + 0.520331I$	$-0.638419 + 0.898448I$	0
$u = 1.13226 - 1.36266I$ $a = 0.243292 + 0.004502I$ $b = -0.693355 - 0.520331I$	$-0.638419 - 0.898448I$	0
$u = -1.18472 + 1.45371I$ $a = 0.420243 + 0.092969I$ $b = -0.428362 - 0.690253I$	$-5.31434 + 4.48868I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.18472-1.45371I$ $a=\ \ 0.420243-0.092969I$ $b=-0.428362+0.690253I$	$-5.31434-4.48868I$	0
$u=-1.23792+1.41110I$ $a=\ \ 0.242347-0.340813I$ $b=-0.738701+0.237052I$	$3.36655-6.57377I$	0
$u=-1.23792-1.41110I$ $a=\ \ 0.242347+0.340813I$ $b=-0.738701-0.237052I$	$3.36655+6.57377I$	0
$u=\ \ 1.29565+1.40339I$ $a=-0.193302-0.376045I$ $b=\ \ 0.700814+0.268880I$	$1.16105+12.49650I$	0
$u=\ \ 1.29565-1.40339I$ $a=-0.193302+0.376045I$ $b=\ \ 0.700814-0.268880I$	$1.16105-12.49650I$	0
$u=\ \ 1.10470+1.59096I$ $a=-0.236825-0.203760I$ $b=\ \ 0.745074+0.103470I$	$-3.04817+3.40575I$	0
$u=\ \ 1.10470-1.59096I$ $a=-0.236825+0.203760I$ $b=\ \ 0.745074-0.103470I$	$-3.04817-3.40575I$	0
$u=\ \ 2.19128+1.20639I$ $a=-0.0016608+0.0959812I$ $b=-0.293028+0.031794I$	$-0.520981+0.110241I$	0
$u=\ \ 2.19128-1.20639I$ $a=-0.0016608-0.0959812I$ $b=-0.293028-0.031794I$	$-0.520981-0.110241I$	0

II.

$\boldsymbol{I_2^u = \langle 2.31\times 10^{46}u^{38}+1.18\times 10^{46}u^{37}+\cdots+3.79\times 10^{46}b+5.06\times 10^{46},\ 5.02\times 10^{46}u^{38}-2.42\times 10^{45}u^{37}+\cdots+3.79\times 10^{46}a+1.92\times 10^{46},\ u^{39}+2u^{37}+\cdots+u+1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_5 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-1.32583u^{38}+0.0638133u^{37}+\cdots-3.59675u-0.507553\\-0.609808u^{38}-0.310696u^{37}+\cdots-1.89669u-1.33532\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-1.93564u^{38}-0.246883u^{37}+\cdots-5.49344u-1.84287\\-0.609808u^{38}-0.310696u^{37}+\cdots-1.89669u-1.33532\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-1.30654u^{38}-0.479842u^{37}+\cdots-0.101594u-1.79624\\-0.407134u^{38}-0.614302u^{37}+\cdots+1.07923u-0.934345\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-2.19818u^{38}-0.522051u^{37}+\cdots-6.75545u-1.77906\\-0.382665u^{38}-0.230865u^{37}+\cdots-0.438478u-0.749454\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.773935u^{38}+1.00293u^{37}+\cdots-0.643403u-0.0927210\\-0.125477u^{38}-0.868469u^{37}+\cdots+1.46258u-0.769170\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-3.03765u^{38}+1.33565u^{37}+\cdots-3.65311u+1.95457\\-0.672762u^{38}+0.689076u^{37}+\cdots-1.05557u+0.901577\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.233760u^{38}+0.988533u^{37}+\cdots+3.85465u+2.78755\\0.435567u^{38}+0.343185u^{37}+\cdots+1.01782u+1.42206\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-2.82373u^{38}+1.55593u^{37}+\cdots-12.7088u-2.83904\\-0.797239u^{38}-0.0473541u^{37}+\cdots-3.39914u-0.743487\end{pmatrix}$$

$$a_6 = \begin{pmatrix}1.65783u^{38}-0.710846u^{37}+\cdots+6.91783u+1.66060\\0.842722u^{38}+0.287640u^{37}+\cdots+3.17925u+2.11782\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 7.16520u^{38}-4.54277u^{37}+\cdots+12.4880u-0.378773$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{39} - 21u^{38} + \cdots + 19u - 1$
c_2	$u^{39} + 7u^{38} + \cdots + u - 1$
c_3	$u^{39} + 2u^{38} + \cdots + 8u + 7$
c_4	$u^{39} + 2u^{37} + \cdots + u + 1$
c_5	$u^{39} - 7u^{38} + \cdots + u + 1$
c_6	$u^{39} + 9u^{38} + \cdots + 10u + 1$
c_7	$u^{39} + 3u^{38} + \cdots + 23u + 1$
c_8	$u^{39} - 8u^{37} + \cdots - 13u^2 + 1$
c_9	$u^{39} - 9u^{38} + \cdots + 10u - 1$
c_{10}	$u^{39} + 7u^{38} + \cdots + 69u + 7$
c_{11}	$u^{39} + 3u^{38} + \cdots + 330u + 1$
c_{12}	$u^{39} + 2u^{38} + \cdots + 69u - 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{39}+3y^{38}+\cdots-69y-1$
c_2, c_5	$y^{39}-21y^{38}+\cdots+19y-1$
c_3	$y^{39}-30y^{38}+\cdots+1380y-49$
c_4	$y^{39}+4y^{38}+\cdots-11y-1$
c_6, c_9	$y^{39}+37y^{38}+\cdots-20y-1$
c_7	$y^{39}+11y^{38}+\cdots+149y-1$
c_8	$y^{39}-16y^{38}+\cdots+26y-1$
c_{10}	$y^{39}-19y^{38}+\cdots-783y-49$
c_{11}	$y^{39}+19y^{38}+\cdots+103570y-1$
c_{12}	$y^{39}+14y^{38}+\cdots+771y-49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.531143+0.806981I$ $a=-1.42266-0.18670I$ $b=\ \ 1.21551+1.13299I$	$-1.72136+6.16609I$	$-4.14414-8.46608I$
$u=-0.531143-0.806981I$ $a=-1.42266+0.18670I$ $b=\ \ 1.21551-1.13299I$	$-1.72136-6.16609I$	$-4.14414+8.46608I$
$u=\ \ 0.507570+0.739754I$ $a=\ \ 1.65333-0.14758I$ $b=-1.36306+1.03195I$	$-1.70725-2.71592I$	$-5.60070+6.55732I$
$u=\ \ 0.507570-0.739754I$ $a=\ \ 1.65333+0.14758I$ $b=-1.36306-1.03195I$	$-1.70725+2.71592I$	$-5.60070-6.55732I$
$u=-1.15149$ $a=-0.00269849$ $b=\ \ 0.656794$	-0.531433	4.41640
$u=-0.811690+0.241092I$ $a=-0.186934+1.033520I$ $b=\ \ 0.709042-0.281126I$	$3.61711+5.49515I$	$3.89036-5.52728I$
$u=-0.811690-0.241092I$ $a=-0.186934-1.033520I$ $b=\ \ 0.709042+0.281126I$	$3.61711-5.49515I$	$3.89036+5.52728I$
$u=\ \ 0.526867+0.648133I$ $a=\ \ 1.82698+0.14509I$ $b=-1.35185+0.65915I$	$-0.78220-7.34774I$	$-0.85784+13.75341I$
$u=\ \ 0.526867-0.648133I$ $a=\ \ 1.82698-0.14509I$ $b=-1.35185-0.65915I$	$-0.78220+7.34774I$	$-0.85784-13.75341I$
$u=\ \ 0.469852+0.676908I$ $a=-0.02206+1.58742I$ $b=-0.506688+0.001589I$	$2.09622-0.47205I$	$1.50678+4.54055I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.469852 - 0.676908I$ $a = -0.02206 - 1.58742I$ $b = -0.506688 - 0.001589I$	$2.09622 + 0.47205I$	$1.50678 - 4.54055I$
$u = -0.103227 + 0.783072I$ $a = -0.050647 - 0.538230I$ $b = -0.905834 - 0.403482I$	$-4.11775 - 3.30168I$	$-5.14630 + 3.91055I$
$u = -0.103227 - 0.783072I$ $a = -0.050647 + 0.538230I$ $b = -0.905834 + 0.403482I$	$-4.11775 + 3.30168I$	$-5.14630 - 3.91055I$
$u = -0.527989 + 0.584237I$ $a = -1.88211 + 0.23484I$ $b = 1.043260 + 0.430012I$	$0.04676 + 2.90975I$	$1.79628 - 5.76190I$
$u = -0.527989 - 0.584237I$ $a = -1.88211 - 0.23484I$ $b = 1.043260 - 0.430012I$	$0.04676 - 2.90975I$	$1.79628 + 5.76190I$
$u = 0.727714 + 0.099222I$ $a = -0.410675 + 1.252410I$ $b = -0.576467 - 0.283374I$	$4.67788 - 0.11121I$	$5.35843 - 1.09350I$
$u = 0.727714 - 0.099222I$ $a = -0.410675 - 1.252410I$ $b = -0.576467 + 0.283374I$	$4.67788 + 0.11121I$	$5.35843 + 1.09350I$
$u = 1.330420 + 0.071389I$ $a = -0.012166 - 1.114600I$ $b = -0.027125 - 1.326110I$	$-7.99177 + 0.29640I$	$-8.1378 + 11.9378I$
$u = 1.330420 - 0.071389I$ $a = -0.012166 + 1.114600I$ $b = -0.027125 + 1.326110I$	$-7.99177 - 0.29640I$	$-8.1378 - 11.9378I$
$u = -0.765373 + 1.094340I$ $a = -0.760932 + 0.289502I$ $b = 0.889317 + 0.009667I$	$3.28578 + 5.30870I$	$4.14906 - 4.41507I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.765373-1.094340I$ $a=-0.760932-0.289502I$ $b=\ \ 0.889317-0.009667I$	$3.28578-5.30870I$	$4.14906+4.41507I$
$u=-0.436129+0.483391I$ $a=-2.50297-0.04831I$ $b=\ \ 0.743569+0.297041I$	$-0.02509+2.96563I$	$4.27823-6.33781I$
$u=-0.436129-0.483391I$ $a=-2.50297+0.04831I$ $b=\ \ 0.743569-0.297041I$	$-0.02509-2.96563I$	$4.27823+6.33781I$
$u=\ \ 0.700378+1.206680I$ $a=\ \ 0.703693+0.406575I$ $b=-0.800414+0.019999I$	$4.02925+0.14224I$	$8.62253+0.I$
$u=\ \ 0.700378-1.206680I$ $a=\ \ 0.703693-0.406575I$ $b=-0.800414-0.019999I$	$4.02925-0.14224I$	$8.62253+0.I$
$u=-1.00089+1.00821I$ $a=\ \ 1.113670-0.349783I$ $b=-0.851070-0.761087I$	$2.91445+2.52109I$	$-2.91514-2.33604I$
$u=-1.00089-1.00821I$ $a=\ \ 1.113670+0.349783I$ $b=-0.851070+0.761087I$	$2.91445-2.52109I$	$-2.91514+2.33604I$
$u=-0.246680+0.511758I$ $a=-1.68091-0.03749I$ $b=-0.520980-0.636636I$	$-0.01683-11.28970I$	$-1.13499+6.81178I$
$u=-0.246680-0.511758I$ $a=-1.68091+0.03749I$ $b=-0.520980+0.636636I$	$-0.01683+11.28970I$	$-1.13499-6.81178I$
$u=-1.07439+1.02287I$ $a=\ \ 0.823388+0.066702I$ $b=-1.30228-0.75565I$	$-0.21176+9.61421I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.07439-1.02287I$ $a=\ \ 0.823388-0.066702I$ $b=-1.30228+0.75565I$	$-0.21176-9.61421I$	0
$u=\ \ 0.156548+0.479251I$ $a=\ \ 2.07799-1.04930I$ $b=\ \ 0.485430-0.468803I$	$1.88287+5.49828I$	$0.76705-2.50716I$
$u=\ \ 0.156548-0.479251I$ $a=\ \ 2.07799+1.04930I$ $b=\ \ 0.485430+0.468803I$	$1.88287-5.49828I$	$0.76705+2.50716I$
$u=\ \ 1.16489+1.02778I$ $a=-0.945606+0.055937I$ $b=\ \ 1.26096-0.66228I$	$1.24137-6.23843I$	0
$u=\ \ 1.16489-1.02778I$ $a=-0.945606-0.055937I$ $b=\ \ 1.26096+0.66228I$	$1.24137+6.23843I$	0
$u=\ \ 1.09448+1.14203I$ $a=-1.055770-0.101016I$ $b=\ \ 1.048340-0.648935I$	$3.21297-8.51800I$	0
$u=\ \ 1.09448-1.14203I$ $a=-1.055770+0.101016I$ $b=\ \ 1.048340+0.648935I$	$3.21297+8.51800I$	0
$u=-0.60546+1.57221I$ $a=-0.264251-0.091183I$ $b=\ \ 0.481940+0.663790I$	$-0.295321-0.911637I$	0
$u=-0.60546-1.57221I$ $a=-0.264251+0.091183I$ $b=\ \ 0.481940-0.663790I$	$-0.295321+0.911637I$	0

III. $I_3^u = \langle u^2 + b + u - 1,\ a,\ u^3 - u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 7u^2 - u - 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.662359 + 0.562280I$ $a = 0$ $b = 0.215080 - 1.307140I$	$-4.66906 - 2.82812I$	$-6.80443 + 4.65175I$
$u = 0.662359 - 0.562280I$ $a = 0$ $b = 0.215080 + 1.307140I$	$-4.66906 + 2.82812I$	$-6.80443 - 4.65175I$
$u = -1.32472$ $a = 0$ $b = 0.569840$	-0.531480	6.60890

IV. $I_4^u = \langle b^3 + b^2 - 1,\ a,\ u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= b^2 + 5b - 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=\quad 0$ $b=-0.877439+0.744862I$	$-4.66906-2.82812I$	$-5.17211+2.41717I$
$u=-1.00000$ $a=\quad 0$ $b=-0.877439-0.744862I$	$-4.66906+2.82812I$	$-5.17211-2.41717I$
$u=-1.00000$ $a=\quad 0$ $b=\quad 0.754878$	-0.531480	3.34420

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{39}-21u^{38}+\cdots+19u-1)$ $\cdot(u^{189}+86u^{188}+\cdots+12226241u+339889)$
c_2	$((u-1)^6)(u^{39}+7u^{38}+\cdots+u-1)(u^{189}-43u^{187}+\cdots-6703u+583)$
c_3	$((u+1)^3)(u^3-u+1)(u^{39}+2u^{38}+\cdots+8u+7)$ $\cdot(u^{189}+4u^{188}+\cdots+60188019890u+5986213211)$
c_4	$((u+1)^3)(u^3-u+1)(u^{39}+2u^{37}+\cdots+u+1)$ $\cdot(u^{189}+8u^{188}+\cdots-79u+29)$
c_5	$((u+1)^6)(u^{39}-7u^{38}+\cdots+u+1)(u^{189}-43u^{187}+\cdots-6703u+583)$
c_6	$((u^3+u^2+2u+1)^2)(u^{39}+9u^{38}+\cdots+10u+1)$ $\cdot(u^{189}-8u^{188}+\cdots+54826u+4031)$
c_7	$(u^3-u^2+1)(u^3+u^2+2u+1)(u^{39}+3u^{38}+\cdots+23u+1)$ $\cdot(u^{189}-8u^{188}+\cdots+204513953u+32543267)$
c_8	$(u^3-u^2+1)(u^3+u^2+2u+1)(u^{39}-8u^{37}+\cdots-13u^2+1)$ $\cdot(u^{189}-3u^{188}+\cdots-26u+1)$
c_9	$((u^3-u^2+2u-1)^2)(u^{39}-9u^{38}+\cdots+10u-1)$ $\cdot(u^{189}-8u^{188}+\cdots+54826u+4031)$
c_{10}	$((u^3+u^2+2u+1)^2)(u^{39}+7u^{38}+\cdots+69u+7)$ $\cdot(u^{189}-6u^{188}+\cdots-47525u+32287)$
c_{11}	$u^6(u^{39}+3u^{38}+\cdots+330u+1)(u^{189}+10u^{188}+\cdots+2304u-704)$
c_{12}	$((u^3+u^2-1)^2)(u^{39}+2u^{38}+\cdots+69u-7)$ $\cdot(u^{189}+u^{188}+\cdots+46221377u+1765261)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^{39}+3y^{38}+\cdots-69y-1)$ $\cdot(y^{189}+50y^{188}+\cdots-10262219485735y-115524532321)$
c_2, c_5	$((y-1)^6)(y^{39}-21y^{38}+\cdots+19y-1)$ $\cdot(y^{189}-86y^{188}+\cdots+12226241y-339889)$
c_3	$((y-1)^3)(y^3-2y^2+y-1)(y^{39}-30y^{38}+\cdots+1380y-49)$ $\cdot(y^{189}-102y^{188}+\cdots+3.80\times10^{21}y-3.58\times10^{19})$
c_4	$((y-1)^3)(y^3-2y^2+y-1)(y^{39}+4y^{38}+\cdots-11y-1)$ $\cdot(y^{189}+12y^{188}+\cdots-80179y-841)$
c_6, c_9	$((y^3+3y^2+2y-1)^2)(y^{39}+37y^{38}+\cdots-20y-1)$ $\cdot(y^{189}+124y^{188}+\cdots+2605740968y-16248961)$
c_7	$(y^3-y^2+2y-1)(y^3+3y^2+2y-1)(y^{39}+11y^{38}+\cdots+149y-1)$ $\cdot(y^{189}+62y^{188}+\cdots-276984664046356039y-1059064227033289)$
c_8	$(y^3-y^2+2y-1)(y^3+3y^2+2y-1)(y^{39}-16y^{38}+\cdots+26y-1)$ $\cdot(y^{189}-33y^{188}+\cdots-54y-1)$
c_{10}	$((y^3+3y^2+2y-1)^2)(y^{39}-19y^{38}+\cdots-783y-49)$ $\cdot(y^{189}-28y^{188}+\cdots+280760605113y-1042450369)$
c_{11}	$y^6(y^{39}+19y^{38}+\cdots+103570y-1)$ $\cdot(y^{189}+40y^{188}+\cdots-25982976y-495616)$
c_{12}	$((y^3-y^2+2y-1)^2)(y^{39}+14y^{38}+\cdots+771y-49)$ $\cdot(y^{189}-31y^{188}+\cdots+793233634931023y-3116146398121)$