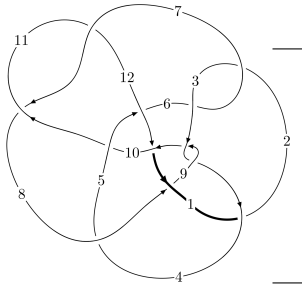
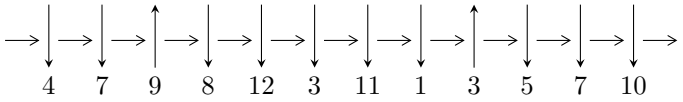
$12n_{0765}$ $(K12n_{0765})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -1.60013 \times 10^{687} u^{108} + 5.32223 \times 10^{687} u^{107} + \cdots + 1.17704 \times 10^{692} b - 5.63654 \times 10^{692}, \\ & - 8.49812 \times 10^{693} u^{108} + 3.39185 \times 10^{694} u^{107} + \cdots + 4.81217 \times 10^{697} a - 3.97557 \times 10^{699}, \\ & u^{109} - 4u^{108} + \cdots + 727773u - 58405 \rangle \\ I_2^u = \langle & 3.87954 \times 10^{45} u^{40} - 3.63289 \times 10^{45} u^{39} + \cdots + 7.89408 \times 10^{44} b + 9.18467 \times 10^{44}, \\ & 7.60703 \times 10^{44} u^{40} + 4.49925 \times 10^{45} u^{39} + \cdots + 7.89408 \times 10^{44} a - 1.27861 \times 10^{46}, \ u^{41} - u^{40} + \cdots + 3u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 150 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. $\boldsymbol{I_1^u = \langle -1.60 \times 10^{687} u^{108} + 5.32 \times 10^{687} u^{107} + \cdots + 1.18 \times 10^{692} b - 5.64 \times 10^{692},\ -8.50 \times 10^{693} u^{108} + 3.39 \times 10^{694} u^{107} + \cdots + 4.81 \times 10^{697} a - 3.98 \times 10^{699},\ u^{109} - 4u^{108} + \cdots + 727773u - 58405 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0.000176596u^{108} - 0.000704848u^{107} + \cdots - 536.559u + 82.6149 \\ 0.0000135945u^{108} - 0.0000452169u^{107} + \cdots - 24.5059u + 4.78872 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00109313u^{108} - 0.00409347u^{107} + \cdots - 2133.44u + 244.622 \\ 0.000218812u^{108} - 0.000804043u^{107} + \cdots - 378.582u + 40.3302 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.000176596u^{108} - 0.000704848u^{107} + \cdots - 536.559u + 82.6149 \\ 0.0000211796u^{108} - 0.0000731613u^{107} + \cdots - 33.7006u + 4.69889 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.00135482u^{108} + 0.00506301u^{107} + \cdots + 2607.30u - 295.218 \\ -0.000168745u^{108} + 0.000622795u^{107} + \cdots + 293.699u - 29.7884 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.000223168u^{108} - 0.000792062u^{107} + \cdots - 244.124u + 12.4619 \\ -0.000137835u^{108} + 0.000517495u^{107} + \cdots + 286.997u - 36.5128 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.00112968u^{108} + 0.00417253u^{107} + \cdots + 1958.79u - 197.708 \\ -0.000171027u^{108} + 0.000635449u^{107} + \cdots + 296.271u - 28.3214 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.000757974u^{108} + 0.00281956u^{107} + \cdots + 1391.84u - 148.178 \\ -0.000213592u^{108} + 0.000799611u^{107} + \cdots + 408.288u - 45.4695 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.000544383u^{108} + 0.00201995u^{107} + \cdots + 983.548u - 102.709 \\ -0.000213592u^{108} + 0.000799611u^{107} + \cdots + 408.288u - 45.4695 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0000966670u^{108} - 0.000299148u^{107} + \cdots + 79.9719u - 45.9238$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{109} - 5u^{108} + \cdots + 2849220u - 293753$
c_2, c_6	$u^{109} + 4u^{108} + \cdots + 727773u + 58405$
c_3, c_9	$u^{109} + u^{108} + \cdots + 18828u + 2079$
c_4	$u^{109} + 4u^{108} + \cdots - 24796u + 1679$
c_5	$u^{109} + u^{108} + \cdots - 1214779937u + 75810647$
c_7, c_{11}	$u^{109} + 3u^{108} + \cdots + 4565u + 4481$
c_8	$u^{109} + 2u^{108} + \cdots - 13u + 1$
c_{10}	$u^{109} + u^{108} + \cdots + 4838u + 2189$
c_{12}	$u^{109} - 8u^{108} + \cdots - 2468184u + 292253$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{109} - 33y^{108} + \cdots + 7391217447958y - 86290825009$
c_2, c_6	$y^{109} - 78y^{108} + \cdots + 176189049349y - 3411144025$
c_3, c_9	$y^{109} + 93y^{108} + \cdots - 38599578y - 4322241$
c_4	$y^{109} + 22y^{108} + \cdots + 390164552y - 2819041$
c_5	$y^{109} - 21y^{108} + \cdots + 602106898292238931y - 5747254198558609$
c_7, c_{11}	$y^{109} + 61y^{108} + \cdots - 397560707y - 20079361$
c_8	$y^{109} + 14y^{108} + \cdots + 9y - 1$
c_{10}	$y^{109} + 45y^{108} + \cdots - 112723288y - 4791721$
c_{12}	$y^{109} - 34y^{108} + \cdots - 684202546700y - 85411816009$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.937174+0.281919I$ $a=-0.230672+0.213488I$ $b=-1.49885-0.38451I$	$-4.58867-4.06930I$	0
$u=-0.937174-0.281919I$ $a=-0.230672-0.213488I$ $b=-1.49885+0.38451I$	$-4.58867+4.06930I$	0
$u=1.080690+0.035625I$ $a=-0.263367-1.153200I$ $b=-1.52630+0.80230I$	$1.60982-2.70191I$	0
$u=1.080690-0.035625I$ $a=-0.263367+1.153200I$ $b=-1.52630-0.80230I$	$1.60982+2.70191I$	0
$u=0.409206+0.822293I$ $a=1.220430+0.422812I$ $b=0.725883-0.641836I$	$2.78846-3.45010I$	0
$u=0.409206-0.822293I$ $a=1.220430-0.422812I$ $b=0.725883+0.641836I$	$2.78846+3.45010I$	0
$u=-0.253662+1.058760I$ $a=0.751003+0.041761I$ $b=1.181380+0.618099I$	$2.83743+3.68107I$	0
$u=-0.253662-1.058760I$ $a=0.751003-0.041761I$ $b=1.181380-0.618099I$	$2.83743-3.68107I$	0
$u=-1.134750+0.112447I$ $a=-1.061230-0.411871I$ $b=-1.71856-0.12374I$	$-3.71782+0.50102I$	0
$u=-1.134750-0.112447I$ $a=-1.061230+0.411871I$ $b=-1.71856+0.12374I$	$-3.71782-0.50102I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.165462+0.833409I$ $a=-0.255766+0.833211I$ $b=-0.640398-0.315196I$	$-4.30464-3.55844I$	0
$u=-0.165462-0.833409I$ $a=-0.255766-0.833211I$ $b=-0.640398+0.315196I$	$-4.30464+3.55844I$	0
$u=0.015038+0.819293I$ $a=-0.017611+0.689819I$ $b=0.794081-0.256196I$	$2.65946-2.53857I$	0
$u=0.015038-0.819293I$ $a=-0.017611-0.689819I$ $b=0.794081+0.256196I$	$2.65946+2.53857I$	0
$u=1.218700+0.061079I$ $a=-0.327349-0.045298I$ $b=-0.971741-0.281094I$	$-2.01895+0.10579I$	0
$u=1.218700-0.061079I$ $a=-0.327349+0.045298I$ $b=-0.971741+0.281094I$	$-2.01895-0.10579I$	0
$u=1.192660+0.290351I$ $a=-0.282359-0.722232I$ $b=-1.47325-0.75659I$	$-0.360070-0.634714I$	0
$u=1.192660-0.290351I$ $a=-0.282359+0.722232I$ $b=-1.47325+0.75659I$	$-0.360070+0.634714I$	0
$u=1.175000+0.393607I$ $a=-1.397410+0.013308I$ $b=-1.93087+0.00761I$	$-7.33757-1.84736I$	0
$u=1.175000-0.393607I$ $a=-1.397410-0.013308I$ $b=-1.93087-0.00761I$	$-7.33757+1.84736I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.189630 + 0.361967I$ $a = -0.424286 - 0.392824I$ $b = -1.384160 - 0.097087I$	$-1.73331 - 0.64522I$	0
$u = 1.189630 - 0.361967I$ $a = -0.424286 + 0.392824I$ $b = -1.384160 + 0.097087I$	$-1.73331 + 0.64522I$	0
$u = 0.156542 + 0.710487I$ $a = -1.84667 - 0.16232I$ $b = 0.0461817 - 0.1138670I$	$6.82913 - 5.20735I$	$7.39068 + 8.40503I$
$u = 0.156542 - 0.710487I$ $a = -1.84667 + 0.16232I$ $b = 0.0461817 + 0.1138670I$	$6.82913 + 5.20735I$	$7.39068 - 8.40503I$
$u = -0.524309 + 0.479493I$ $a = -1.04314 + 1.55348I$ $b = 0.389923 + 0.440071I$	$4.99089 + 1.89299I$	$-3.93271 - 5.59425I$
$u = -0.524309 - 0.479493I$ $a = -1.04314 - 1.55348I$ $b = 0.389923 - 0.440071I$	$4.99089 - 1.89299I$	$-3.93271 + 5.59425I$
$u = -0.674783 + 0.207559I$ $a = 1.02731 - 1.07769I$ $b = 0.43795 - 1.51100I$	$4.55542 + 0.50960I$	$-3.96864 - 4.23818I$
$u = -0.674783 - 0.207559I$ $a = 1.02731 + 1.07769I$ $b = 0.43795 + 1.51100I$	$4.55542 - 0.50960I$	$-3.96864 + 4.23818I$
$u = 0.406321 + 1.252440I$ $a = -0.405878 - 0.240420I$ $b = -0.391235 - 0.535451I$	$0.41060 - 2.38012I$	0
$u = 0.406321 - 1.252440I$ $a = -0.405878 + 0.240420I$ $b = -0.391235 + 0.535451I$	$0.41060 + 2.38012I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.337270+0.096420I$ $a=\ 0.780139+0.431312I$ $b=\ 1.57724-0.09865I$	$-1.87689+5.25392I$	0
$u=-1.337270-0.096420I$ $a=\ 0.780139-0.431312I$ $b=\ 1.57724+0.09865I$	$-1.87689-5.25392I$	0
$u=\ 1.189590+0.623116I$ $a=\ 0.718724+0.455567I$ $b=\ 1.408480-0.013907I$	$-1.82505-3.69562I$	0
$u=\ 1.189590-0.623116I$ $a=\ 0.718724-0.455567I$ $b=\ 1.408480+0.013907I$	$-1.82505+3.69562I$	0
$u=\ 1.341710+0.078743I$ $a=\ 0.156215+1.349690I$ $b=\ 0.344551+0.035975I$	$-0.22447+4.16339I$	0
$u=\ 1.341710-0.078743I$ $a=\ 0.156215-1.349690I$ $b=\ 0.344551-0.035975I$	$-0.22447-4.16339I$	0
$u=-1.278060+0.462387I$ $a=-0.762034+0.734670I$ $b=-1.66970+0.93674I$	$-0.48833+7.00109I$	0
$u=-1.278060-0.462387I$ $a=-0.762034-0.734670I$ $b=-1.66970-0.93674I$	$-0.48833-7.00109I$	0
$u=\ 0.352130+0.512930I$ $a=\ 0.724990-0.800184I$ $b=-0.109651-0.352445I$	$-1.54116-1.08486I$	$-13.13256+3.91208I$
$u=\ 0.352130-0.512930I$ $a=\ 0.724990+0.800184I$ $b=-0.109651+0.352445I$	$-1.54116+1.08486I$	$-13.13256-3.91208I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.357060+0.289480I$ $a=-0.542508+0.846957I$ $b=-1.52610+0.94254I$	$-0.66014+7.54621I$	0
$u=-1.357060-0.289480I$ $a=-0.542508-0.846957I$ $b=-1.52610-0.94254I$	$-0.66014-7.54621I$	0
$u=-1.376720+0.267957I$ $a=-0.845102+0.485644I$ $b=-1.77518+0.33114I$	$-6.44692+3.80582I$	0
$u=-1.376720-0.267957I$ $a=-0.845102-0.485644I$ $b=-1.77518-0.33114I$	$-6.44692-3.80582I$	0
$u=-0.559578+0.198192I$ $a=-1.22023+1.28236I$ $b=-0.35442+2.58430I$	$2.52276+7.95086I$	$-9.5091-11.5695I$
$u=-0.559578-0.198192I$ $a=-1.22023-1.28236I$ $b=-0.35442-2.58430I$	$2.52276-7.95086I$	$-9.5091+11.5695I$
$u=-1.398260+0.151811I$ $a=0.496418-0.584354I$ $b=1.67339+0.17878I$	$-7.33133-3.59033I$	0
$u=-1.398260-0.151811I$ $a=0.496418+0.584354I$ $b=1.67339-0.17878I$	$-7.33133+3.59033I$	0
$u=0.452974+1.335320I$ $a=0.644020+0.629180I$ $b=0.369458-0.468319I$	$-2.07029+1.11942I$	0
$u=0.452974-1.335320I$ $a=0.644020-0.629180I$ $b=0.369458+0.468319I$	$-2.07029-1.11942I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.187385+0.556680I$ $a=1.83950-1.14234I$ $b=0.098192-0.307884I$	$2.65011-2.82680I$	$-3.87963+2.53461I$
$u=-0.187385-0.556680I$ $a=1.83950+1.14234I$ $b=0.098192+0.307884I$	$2.65011+2.82680I$	$-3.87963-2.53461I$
$u=1.42705+0.10899I$ $a=-0.692128-0.933953I$ $b=-1.32045-0.69634I$	$-4.12477-6.75342I$	0
$u=1.42705-0.10899I$ $a=-0.692128+0.933953I$ $b=-1.32045+0.69634I$	$-4.12477+6.75342I$	0
$u=0.21991+1.44095I$ $a=0.661564+0.133231I$ $b=0.646671+0.016763I$	$5.71970-3.02646I$	0
$u=0.21991-1.44095I$ $a=0.661564-0.133231I$ $b=0.646671-0.016763I$	$5.71970+3.02646I$	0
$u=0.514423+0.169978I$ $a=-0.93648-1.06633I$ $b=1.04253-1.61461I$	$3.58991-2.77762I$	$-8.20669+3.30808I$
$u=0.514423-0.169978I$ $a=-0.93648+1.06633I$ $b=1.04253+1.61461I$	$3.58991+2.77762I$	$-8.20669-3.30808I$
$u=0.524647+0.037159I$ $a=0.75002+1.84238I$ $b=-0.77378+2.20253I$	$2.68546+4.66613I$	$-10.91912-1.69700I$
$u=0.524647-0.037159I$ $a=0.75002-1.84238I$ $b=-0.77378-2.20253I$	$2.68546-4.66613I$	$-10.91912+1.69700I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.41447+0.57889I$ $a=-0.715649+0.423665I$ $b=-1.69115+0.21932I$	$-6.68545+4.08833I$	0
$u=-1.41447-0.57889I$ $a=-0.715649-0.423665I$ $b=-1.69115-0.21932I$	$-6.68545-4.08833I$	0
$u=-0.14362+1.52726I$ $a=-0.540609+0.275968I$ $b=-0.355021-0.067337I$	$5.37904-4.69106I$	0
$u=-0.14362-1.52726I$ $a=-0.540609-0.275968I$ $b=-0.355021+0.067337I$	$5.37904+4.69106I$	0
$u=1.54337+0.10690I$ $a=0.257980-0.420750I$ $b=0.779436-0.674871I$	$-3.07896+0.61761I$	0
$u=1.54337-0.10690I$ $a=0.257980+0.420750I$ $b=0.779436+0.674871I$	$-3.07896-0.61761I$	0
$u=1.54678+0.17407I$ $a=-0.384794-0.630950I$ $b=-1.210880-0.658366I$	$-0.26332-3.09618I$	0
$u=1.54678-0.17407I$ $a=-0.384794+0.630950I$ $b=-1.210880+0.658366I$	$-0.26332+3.09618I$	0
$u=-0.158026+0.411664I$ $a=2.88876-1.73873I$ $b=0.531342-0.090450I$	$3.79386-4.83112I$	$-10.98344-3.75502I$
$u=-0.158026-0.411664I$ $a=2.88876+1.73873I$ $b=0.531342+0.090450I$	$3.79386+4.83112I$	$-10.98344+3.75502I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.55527+0.16816I$ $a=-0.039347-0.948769I$ $b=-0.619397+1.178490I$	$-1.01007-5.69221I$	0
$u=-1.55527-0.16816I$ $a=-0.039347+0.948769I$ $b=-0.619397-1.178490I$	$-1.01007+5.69221I$	0
$u=1.50449+0.46131I$ $a=0.837670+0.417346I$ $b=1.381910+0.237508I$	$-4.44221-4.06401I$	0
$u=1.50449-0.46131I$ $a=0.837670-0.417346I$ $b=1.381910-0.237508I$	$-4.44221+4.06401I$	0
$u=-1.56004+0.23230I$ $a=-0.297932+0.558155I$ $b=-1.75199+0.30606I$	$-2.53673+1.36112I$	0
$u=-1.56004-0.23230I$ $a=-0.297932-0.558155I$ $b=-1.75199-0.30606I$	$-2.53673-1.36112I$	0
$u=0.240074+0.345112I$ $a=1.052540-0.125492I$ $b=0.070492-0.493744I$	$-0.626116-1.232790I$	$-6.62259+5.91727I$
$u=0.240074-0.345112I$ $a=1.052540+0.125492I$ $b=0.070492+0.493744I$	$-0.626116+1.232790I$	$-6.62259-5.91727I$
$u=-1.34419+0.86246I$ $a=0.655259-0.415772I$ $b=1.55924-0.19368I$	$-6.71000+10.17030I$	0
$u=-1.34419-0.86246I$ $a=0.655259+0.415772I$ $b=1.55924+0.19368I$	$-6.71000-10.17030I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.02650+1.61959I$		
$a=$	$1.024640+0.051399I$	$8.60811-0.02263I$	0
$b=$	$2.83396-0.11121I$		
$u=$	$0.02650-1.61959I$		
$a=$	$1.024640-0.051399I$	$8.60811+0.02263I$	0
$b=$	$2.83396+0.11121I$		
$u=$	$1.60260+0.25274I$		
$a=$	$0.690712+0.500312I$	$-4.45307-3.43240I$	0
$b=$	$1.250740+0.400651I$		
$u=$	$1.60260-0.25274I$		
$a=$	$0.690712-0.500312I$	$-4.45307+3.43240I$	0
$b=$	$1.250740-0.400651I$		
$u=$	$-1.52862+0.55714I$		
$a=$	$0.682849-0.548511I$	$0.40880+11.84720I$	0
$b=$	$1.62599-0.77661I$		
$u=$	$-1.52862-0.55714I$		
$a=$	$0.682849+0.548511I$	$0.40880-11.84720I$	0
$b=$	$1.62599+0.77661I$		
$u=$	$-0.16632+1.64997I$		
$a=$	$0.371395-0.651317I$	$-1.60563+3.51525I$	0
$b=$	$0.724073+0.233629I$		
$u=$	$-0.16632-1.64997I$		
$a=$	$0.371395+0.651317I$	$-1.60563-3.51525I$	0
$b=$	$0.724073-0.233629I$		
$u=$	$-1.64937+0.24487I$		
$a=$	$0.342808-0.482683I$	$-7.45412+7.78502I$	0
$b=$	$1.67047-0.94856I$		
$u=$	$-1.64937-0.24487I$		
$a=$	$0.342808+0.482683I$	$-7.45412-7.78502I$	0
$b=$	$1.67047+0.94856I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.192331+0.257922I$ $a=-3.22086+2.57656I$ $b=\ \ 0.835655+0.453628I$	$5.10604+2.00514I$	$-3.44801-3.01840I$
$u=-0.192331-0.257922I$ $a=-3.22086-2.57656I$ $b=\ \ 0.835655-0.453628I$	$5.10604-2.00514I$	$-3.44801+3.01840I$
$u=\ \ 1.54884+0.65931I$ $a=-0.702735+0.464999I$ $b=-1.56186-0.00648I$	$-8.65737-2.38711I$	0
$u=\ \ 1.54884-0.65931I$ $a=-0.702735-0.464999I$ $b=-1.56186+0.00648I$	$-8.65737+2.38711I$	0
$u=\ \ 0.31698+1.69698I$ $a=-0.518531-0.525207I$ $b=-0.526791+0.332370I$	$-0.46974+9.78880I$	0
$u=\ \ 0.31698-1.69698I$ $a=-0.518531+0.525207I$ $b=-0.526791-0.332370I$	$-0.46974-9.78880I$	0
$u=\ \ 1.67469+0.46506I$ $a=\ \ 0.740759-0.394277I$ $b=\ \ 1.64371+0.07659I$	$-8.13625-11.03410I$	0
$u=\ \ 1.67469-0.46506I$ $a=\ \ 0.740759+0.394277I$ $b=\ \ 1.64371-0.07659I$	$-8.13625+11.03410I$	0
$u=\ \ 0.252973+0.053072I$ $a=-2.07790-4.87814I$ $b=-0.772144-0.958751I$	$0.72540-6.49284I$	$-6.93254+7.11638I$
$u=\ \ 0.252973-0.053072I$ $a=-2.07790+4.87814I$ $b=-0.772144+0.958751I$	$0.72540+6.49284I$	$-6.93254-7.11638I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.236794$ $a = \ 1.90834$ $b = -0.406406$	-0.955408	-10.5310
$u = -1.70591 + 0.46834I$ $a = \ 0.274191 + 0.360493I$ $b = \ 0.969681 - 0.017552I$	$-8.72743 + 5.60952I$	0
$u = -1.70591 - 0.46834I$ $a = \ 0.274191 - 0.360493I$ $b = \ 0.969681 + 0.017552I$	$-8.72743 - 5.60952I$	0
$u = \ 1.58847 + 0.80392I$ $a = \ 0.727013 + 0.503810I$ $b = \ 1.90148 + 0.64698I$	$-4.6720 - 18.5303I$	0
$u = \ 1.58847 - 0.80392I$ $a = \ 0.727013 - 0.503810I$ $b = \ 1.90148 - 0.64698I$	$-4.6720 + 18.5303I$	0
$u = -1.75426 + 0.35934I$ $a = -0.449424 - 0.417568I$ $b = -1.223950 + 0.020180I$	$-7.99572 - 2.03072I$	0
$u = -1.75426 - 0.35934I$ $a = -0.449424 + 0.417568I$ $b = -1.223950 - 0.020180I$	$-7.99572 + 2.03072I$	0
$u = \ 1.52646 + 0.93747I$ $a = -0.740401 - 0.450761I$ $b = -2.03301 - 0.61294I$	$-5.01553 - 9.59640I$	0
$u = \ 1.52646 - 0.93747I$ $a = -0.740401 + 0.450761I$ $b = -2.03301 + 0.61294I$	$-5.01553 + 9.59640I$	0

II.

$\boldsymbol{I_2^u = \langle 3.88\times 10^{45}u^{40} - 3.63\times 10^{45}u^{39} + \cdots + 7.89\times 10^{44}b + 9.18\times 10^{44},\ 7.61\times 10^{44}u^{40} + 4.50\times 10^{45}u^{39} + \cdots + 7.89\times 10^{44}a - 1.28\times 10^{46},\ u^{41} - u^{40} + \cdots + 3u - 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -0.963638u^{40} - 5.69953u^{39} + \cdots - 47.6261u + 16.1970 \\ -4.91449u^{40} + 4.60205u^{39} + \cdots + 26.1838u - 1.16349 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.45903u^{40} - 3.10444u^{39} + \cdots + 0.824206u - 0.104529 \\ -3.37747u^{40} + 7.97212u^{39} + \cdots + 46.6810u - 9.22936 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.963638u^{40} - 5.69953u^{39} + \cdots - 47.6261u + 16.1970 \\ -3.07723u^{40} + 1.99962u^{39} + \cdots + 7.15791u + 5.49968 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.79964u^{40} + 0.292739u^{39} + \cdots - 18.5778u + 8.56998 \\ -1.33740u^{40} - 3.25771u^{39} + \cdots - 22.4747u + 10.9724 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 7.39024u^{40} - 2.43442u^{39} + \cdots - 23.7614u - 7.20263 \\ 3.04037u^{40} - 2.00109u^{39} + \cdots - 8.36037u - 1.63507 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -7.74379u^{40} + 10.3606u^{39} + \cdots + 86.0634u - 11.3041 \\ -5.69972u^{40} + 4.66512u^{39} + \cdots + 11.7382u + 2.98439 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.43297u^{40} + 6.78505u^{39} + \cdots + 84.6331u - 26.3385 \\ -1.15792u^{40} + 2.15953u^{39} + \cdots + 11.1019u - 4.10949 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2.27505u^{40} + 4.62552u^{39} + \cdots + 73.5312u - 22.2290 \\ -1.15792u^{40} + 2.15953u^{39} + \cdots + 11.1019u - 4.10949 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 38.1705u^{40} - 33.2461u^{39} + \cdots - 204.854u + 26.2450$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{41} - 10u^{40} + \cdots + 118u - 13$
c_2	$u^{41} - u^{40} + \cdots + 3u - 1$
c_3	$u^{41} + 18u^{39} + \cdots + 2u + 1$
c_4	$u^{41} + u^{40} + \cdots - 30u - 9$
c_5	$u^{41} + 2u^{40} + \cdots - 553u + 13$
c_6	$u^{41} + u^{40} + \cdots + 3u + 1$
c_7	$u^{41} + 16u^{39} + \cdots + 19u - 1$
c_8	$u^{41} + u^{40} + \cdots - u - 1$
c_9	$u^{41} + 18u^{39} + \cdots + 2u - 1$
c_{10}	$u^{41} + 12u^{39} + \cdots + 4u - 1$
c_{11}	$u^{41} + 16u^{39} + \cdots + 19u + 1$
c_{12}	$u^{41} + 3u^{40} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{41} - 10y^{40} + \cdots + 3992y - 169$
c_2, c_6	$y^{41} - 11y^{40} + \cdots - 25y - 1$
c_3, c_9	$y^{41} + 36y^{40} + \cdots - 36y - 1$
c_4	$y^{41} + 17y^{40} + \cdots - 1350y - 81$
c_5	$y^{41} + 26y^{40} + \cdots + 207061y - 169$
c_7, c_{11}	$y^{41} + 32y^{40} + \cdots + 367y - 1$
c_8	$y^{41} + 17y^{40} + \cdots - 61y - 1$
c_{10}	$y^{41} + 24y^{40} + \cdots + 30y - 1$
c_{12}	$y^{41} - 3y^{40} + \cdots - 14y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.018770+0.273603I$ $a=-0.531827+0.282873I$ $b=-1.65401-0.33244I$	$-4.73831-3.65726I$	$-14.3052-3.9976I$
$u=-1.018770-0.273603I$ $a=-0.531827-0.282873I$ $b=-1.65401+0.33244I$	$-4.73831+3.65726I$	$-14.3052+3.9976I$
$u=\ \ 1.07262$ $a=-0.441864$ $b=-0.414925$	-2.66003	-19.0360
$u=\ \ 1.09310$ $a=-1.03995$ $b=-1.64492$	-3.49678	-5.52960
$u=\ \ 0.875847+0.009781I$ $a=-0.27389+1.45395I$ $b=-1.088790-0.714685I$	$1.10985+2.84514I$	$-13.6513-5.1889I$
$u=\ \ 0.875847-0.009781I$ $a=-0.27389-1.45395I$ $b=-1.088790+0.714685I$	$1.10985-2.84514I$	$-13.6513+5.1889I$
$u=-0.066359+0.822836I$ $a=\ \ 0.062341-0.523898I$ $b=\ \ 1.060000+0.366974I$	$1.79164+2.92000I$	$-11.34534-3.30442I$
$u=-0.066359-0.822836I$ $a=\ \ 0.062341+0.523898I$ $b=\ \ 1.060000-0.366974I$	$1.79164-2.92000I$	$-11.34534+3.30442I$
$u=\ \ 0.287765+1.144540I$ $a=-0.944097-0.316620I$ $b=-0.221375-0.091725I$	$6.51650-2.92377I$	$3.23608+2.14669I$
$u=\ \ 0.287765-1.144540I$ $a=-0.944097+0.316620I$ $b=-0.221375+0.091725I$	$6.51650+2.92377I$	$3.23608-2.14669I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.276323 + 0.729259I$ $a = 1.320410 + 0.193163I$ $b = 1.37896 - 1.20843I$	$4.68320 - 2.97373I$	$0.72625 + 3.16578I$
$u = 0.276323 - 0.729259I$ $a = 1.320410 - 0.193163I$ $b = 1.37896 + 1.20843I$	$4.68320 + 2.97373I$	$0.72625 - 3.16578I$
$u = -1.221200 + 0.290564I$ $a = -0.649091 + 0.933414I$ $b = -1.56944 + 1.10034I$	$-1.19088 + 7.69652I$	$-14.7806 - 10.7388I$
$u = -1.221200 - 0.290564I$ $a = -0.649091 - 0.933414I$ $b = -1.56944 - 1.10034I$	$-1.19088 - 7.69652I$	$-14.7806 + 10.7388I$
$u = 0.386051 + 1.232040I$ $a = 0.080133 + 0.565919I$ $b = 0.339887 - 0.004680I$	$-0.53270 - 2.02999I$	0
$u = 0.386051 - 1.232040I$ $a = 0.080133 - 0.565919I$ $b = 0.339887 + 0.004680I$	$-0.53270 + 2.02999I$	0
$u = 1.291470 + 0.233731I$ $a = -0.254460 - 0.667173I$ $b = -1.43067 - 0.61212I$	$0.116287 - 0.794905I$	0
$u = 1.291470 - 0.233731I$ $a = -0.254460 + 0.667173I$ $b = -1.43067 + 0.61212I$	$0.116287 + 0.794905I$	0
$u = -1.250030 + 0.436722I$ $a = -1.243060 - 0.145871I$ $b = -1.89550 + 0.02285I$	$-7.29483 + 2.16952I$	0
$u = -1.250030 - 0.436722I$ $a = -1.243060 + 0.145871I$ $b = -1.89550 - 0.02285I$	$-7.29483 - 2.16952I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.430664 + 0.477805I$ $a = -1.13123 - 1.46052I$ $b = 0.945759 - 0.984755I$	$5.21589 - 0.96720I$	$-2.18305 - 1.69740I$
$u = 0.430664 - 0.477805I$ $a = -1.13123 + 1.46052I$ $b = 0.945759 + 0.984755I$	$5.21589 + 0.96720I$	$-2.18305 + 1.69740I$
$u = 1.38770$ $a = -0.0376824$ $b = 0.406956$	-2.79189	0
$u = 0.132832 + 0.593293I$ $a = -2.38555 - 0.17586I$ $b = -0.592730 - 0.088052I$	$3.94008 - 5.18269I$	$-2.5559 + 15.8852I$
$u = 0.132832 - 0.593293I$ $a = -2.38555 + 0.17586I$ $b = -0.592730 + 0.088052I$	$3.94008 + 5.18269I$	$-2.5559 - 15.8852I$
$u = 0.124887 + 1.406320I$ $a = 0.636403 - 0.062341I$ $b = 0.574077 - 0.243199I$	$5.30956 - 4.02270I$	0
$u = 0.124887 - 1.406320I$ $a = 0.636403 + 0.062341I$ $b = 0.574077 + 0.243199I$	$5.30956 + 4.02270I$	0
$u = -1.44696 + 0.19780I$ $a = -0.046410 - 1.102740I$ $b = -0.396514 + 0.477298I$	$-1.66380 - 5.14150I$	0
$u = -1.44696 - 0.19780I$ $a = -0.046410 + 1.102740I$ $b = -0.396514 - 0.477298I$	$-1.66380 + 5.14150I$	0
$u = 0.095993 + 0.523173I$ $a = 1.89251 + 0.85596I$ $b = -0.31760 + 2.18859I$	$3.11653 + 7.41408I$	$-1.51475 - 5.02418I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.095993 - 0.523173I$ $a = 1.89251 - 0.85596I$ $b = -0.31760 - 2.18859I$	$3.11653 - 7.41408I$	$-1.51475 + 5.02418I$
$u = -0.145778 + 0.504069I$ $a = -2.01654 + 1.18157I$ $b = -0.64656 + 1.93617I$	$3.38482 + 4.81560I$	$0.12248 - 4.76400I$
$u = -0.145778 - 0.504069I$ $a = -2.01654 - 1.18157I$ $b = -0.64656 - 1.93617I$	$3.38482 - 4.81560I$	$0.12248 + 4.76400I$
$u = 1.52761 + 0.38577I$ $a = -0.818580 - 0.459920I$ $b = -1.375120 - 0.306811I$	$-4.53549 - 3.88093I$	0
$u = 1.52761 - 0.38577I$ $a = -0.818580 + 0.459920I$ $b = -1.375120 + 0.306811I$	$-4.53549 + 3.88093I$	0
$u = -0.127963 + 0.397242I$ $a = -3.30560 + 0.63125I$ $b = 0.447621 + 0.203727I$	$6.42926 + 5.04167I$	$-10.32758 - 1.16283I$
$u = -0.127963 - 0.397242I$ $a = -3.30560 - 0.63125I$ $b = 0.447621 - 0.203727I$	$6.42926 - 5.04167I$	$-10.32758 + 1.16283I$
$u = -1.58375 + 0.36940I$ $a = 0.354076 - 0.245773I$ $b = 1.45639 - 0.58261I$	$-7.66062 + 6.86079I$	0
$u = -1.58375 - 0.36940I$ $a = 0.354076 + 0.245773I$ $b = 1.45639 + 0.58261I$	$-7.66062 - 6.86079I$	0
$u = 0.15465 + 1.64026I$ $a = 1.014210 + 0.054440I$ $b = 2.81204 + 0.13437I$	$8.57164 + 0.46776I$	0

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.15465-1.64026I$		
$a=$	$1.014210-0.054440I$	$8.57164-0.46776I$	0
$b=$	$2.81204-0.13437I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{41}-10u^{40}+\cdots+118u-13)$ $\cdot(u^{109}-5u^{108}+\cdots+2849220u-293753)$
c_2	$(u^{41}-u^{40}+\cdots+3u-1)(u^{109}+4u^{108}+\cdots+727773u+58405)$
c_3	$(u^{41}+18u^{39}+\cdots+2u+1)(u^{109}+u^{108}+\cdots+18828u+2079)$
c_4	$(u^{41}+u^{40}+\cdots-30u-9)(u^{109}+4u^{108}+\cdots-24796u+1679)$
c_5	$(u^{41}+2u^{40}+\cdots-553u+13)$ $\cdot(u^{109}+u^{108}+\cdots-1214779937u+75810647)$
c_6	$(u^{41}+u^{40}+\cdots+3u+1)(u^{109}+4u^{108}+\cdots+727773u+58405)$
c_7	$(u^{41}+16u^{39}+\cdots+19u-1)(u^{109}+3u^{108}+\cdots+4565u+4481)$
c_8	$(u^{41}+u^{40}+\cdots-u-1)(u^{109}+2u^{108}+\cdots-13u+1)$
c_9	$(u^{41}+18u^{39}+\cdots+2u-1)(u^{109}+u^{108}+\cdots+18828u+2079)$
c_{10}	$(u^{41}+12u^{39}+\cdots+4u-1)(u^{109}+u^{108}+\cdots+4838u+2189)$
c_{11}	$(u^{41}+16u^{39}+\cdots+19u+1)(u^{109}+3u^{108}+\cdots+4565u+4481)$
c_{12}	$(u^{41}+3u^{40}+\cdots+2u+1)(u^{109}-8u^{108}+\cdots-2468184u+292253)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{41} - 10y^{40} + \cdots + 3992y - 169)$ $\cdot (y^{109} - 33y^{108} + \cdots + 7391217447958y - 86290825009)$
c_2, c_6	$(y^{41} - 11y^{40} + \cdots - 25y - 1)$ $\cdot (y^{109} - 78y^{108} + \cdots + 176189049349y - 3411144025)$
c_3, c_9	$(y^{41} + 36y^{40} + \cdots - 36y - 1)$ $\cdot (y^{109} + 93y^{108} + \cdots - 38599578y - 4322241)$
c_4	$(y^{41} + 17y^{40} + \cdots - 1350y - 81)$ $\cdot (y^{109} + 22y^{108} + \cdots + 390164552y - 2819041)$
c_5	$(y^{41} + 26y^{40} + \cdots + 207061y - 169)$ $\cdot (y^{109} - 21y^{108} + \cdots + 602106898292238931y - 5747254198558609)$
c_7, c_{11}	$(y^{41} + 32y^{40} + \cdots + 367y - 1)$ $\cdot (y^{109} + 61y^{108} + \cdots - 397560707y - 20079361)$
c_8	$(y^{41} + 17y^{40} + \cdots - 61y - 1)(y^{109} + 14y^{108} + \cdots + 9y - 1)$
c_{10}	$(y^{41} + 24y^{40} + \cdots + 30y - 1)$ $\cdot (y^{109} + 45y^{108} + \cdots - 112723288y - 4791721)$
c_{12}	$(y^{41} - 3y^{40} + \cdots - 14y - 1)$ $\cdot (y^{109} - 34y^{108} + \cdots - 684202546700y - 85411816009)$