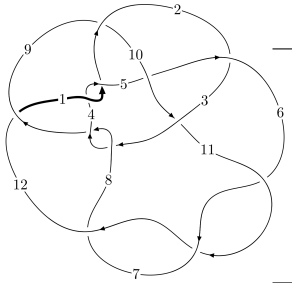
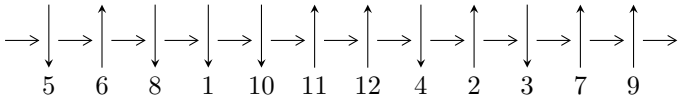
$12a_{1231}$ $(K12a_{1231})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 1.99754 \times 10^{289} u^{111} + 1.22647 \times 10^{289} u^{110} + \cdots + 2.03815 \times 10^{287} b - 6.40655 \times 10^{289}, \\ & 1.12492 \times 10^{290} u^{111} + 8.47128 \times 10^{289} u^{110} + \cdots + 2.03815 \times 10^{287} a - 2.42251 \times 10^{290}, \\ & 2u^{112} + u^{111} + \cdots - 30u + 1 \rangle \\ I_2^u = \langle & -32u^{15} - 74u^{14} + \cdots + 43b + 23,\ -40u^{15} - 28u^{14} + \cdots + 43a - 68,\ 2u^{16} + 3u^{15} + \cdots + 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 128 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. $\boldsymbol{I_1^u = \langle 2.00 \times 10^{289} u^{111} + 1.23 \times 10^{289} u^{110} + \cdots + 2.04 \times 10^{287} b - 6.41 \times 10^{289},\ 1.12 \times 10^{290} u^{111} + 8.47 \times 10^{289} u^{110} + \cdots + 2.04 \times 10^{287} a - 2.42 \times 10^{290},\ 2u^{112} + u^{111} + \cdots - 30u + 1 \rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -551.935u^{111} - 415.637u^{110} + \cdots - 29550.2u + 1188.58 \\ -98.0077u^{111} - 60.1758u^{110} + \cdots - 7598.38u + 314.332 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -394.383u^{111} - 312.399u^{110} + \cdots - 18944.3u + 760.560 \\ -105.829u^{111} - 65.1082u^{110} + \cdots - 8246.34u + 341.293 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -453.928u^{111} - 355.461u^{110} + \cdots - 21951.8u + 874.251 \\ -98.0077u^{111} - 60.1758u^{110} + \cdots - 7598.38u + 314.332 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 908.353u^{111} + 637.752u^{110} + \cdots + 52318.5u - 2021.35 \\ 30.7684u^{111} + 20.7117u^{110} + \cdots + 2266.98u - 91.6692 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1139.83u^{111} - 842.942u^{110} + \cdots - 59872.7u + 2318.75 \\ -92.0889u^{111} - 59.4474u^{110} + \cdots - 6446.70u + 256.944 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1108.35u^{111} + 819.201u^{110} + \cdots + 58304.1u - 2258.52 \\ 99.3976u^{111} + 64.4297u^{110} + \cdots + 7036.59u - 281.533 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 552.407u^{111} + 373.353u^{110} + \cdots + 35614.1u - 1396.31 \\ -38.5186u^{111} - 24.3200u^{110} + \cdots - 3107.36u + 134.687 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 353.645u^{111} + 195.115u^{110} + \cdots + 38493.2u - 1748.36$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$2(2u^{112} - 3u^{111} + \cdots + 6u - 1)$
c_2	$u^{112} + u^{111} + \cdots + 33183u + 20078$
c_3, c_8	$u^{112} - 4u^{111} + \cdots - 18821u - 1439$
c_5	$2(2u^{112} - 5u^{111} + \cdots + 1262u - 211)$
c_6, c_7, c_{11}	$2(2u^{112} - u^{111} + \cdots + 30u + 1)$
c_9	$u^{112} - 5u^{110} + \cdots - 17u + 1$
c_{10}	$u^{112} - 3u^{111} + \cdots + 1445u + 116$
c_{12}	$u^{112} - 3u^{111} + \cdots + 4391u - 2366$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$4(4y^{112} - 365y^{111} + \cdots - 942y + 1)$
c_2	$y^{112} - 51y^{111} + \cdots - 21359572553y + 403126084$
c_3, c_8	$y^{112} - 92y^{111} + \cdots - 91920487y + 2070721$
c_5	$4(4y^{112} - 121y^{111} + \cdots - 1692236y + 44521)$
c_6, c_7, c_{11}	$4(4y^{112} - 457y^{111} + \cdots - 108y + 1)$
c_9	$y^{112} - 10y^{111} + \cdots - 1271y + 1$
c_{10}	$y^{112} + 9y^{111} + \cdots - 1322657y + 13456$
c_{12}	$y^{112} + 21y^{111} + \cdots + 215563547y + 5597956$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.590366+0.885349I$ $a=-0.102462+1.298050I$ $b=-1.11216+0.87568I$	$-6.8356-13.8442I$	0
$u=-0.590366-0.885349I$ $a=-0.102462-1.298050I$ $b=-1.11216-0.87568I$	$-6.8356+13.8442I$	0
$u=\ 0.387376+0.820027I$ $a=\ 0.801976+0.900426I$ $b=\ 0.781284+0.066752I$	$-3.17183+5.58573I$	0
$u=\ 0.387376-0.820027I$ $a=\ 0.801976-0.900426I$ $b=\ 0.781284-0.066752I$	$-3.17183-5.58573I$	0
$u=-0.950565+0.582823I$ $a=\ 0.885922+0.749010I$ $b=-1.100390+0.730571I$	$-6.07516+1.98826I$	0
$u=-0.950565-0.582823I$ $a=\ 0.885922-0.749010I$ $b=-1.100390-0.730571I$	$-6.07516-1.98826I$	0
$u=-0.539116+0.977111I$ $a=\ 0.196917-1.010420I$ $b=\ 1.002550-0.842221I$	$-0.90925-8.02423I$	0
$u=-0.539116-0.977111I$ $a=\ 0.196917+1.010420I$ $b=\ 1.002550+0.842221I$	$-0.90925+8.02423I$	0
$u=\ 1.092700+0.292344I$ $a=\ 0.299720+0.356342I$ $b=\ 0.547701+0.773817I$	$-1.53248-1.05574I$	0
$u=\ 1.092700-0.292344I$ $a=\ 0.299720-0.356342I$ $b=\ 0.547701-0.773817I$	$-1.53248+1.05574I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.569748+1.005160I$ $a=-0.600229-0.292334I$ $b=-0.782709-0.777145I$	$-6.96272+7.75772I$	0
$u=-0.569748-1.005160I$ $a=-0.600229+0.292334I$ $b=-0.782709+0.777145I$	$-6.96272-7.75772I$	0
$u=0.508841+0.643434I$ $a=0.24252-1.69762I$ $b=-0.517859-0.894564I$	$-7.91872+5.18418I$	0
$u=0.508841-0.643434I$ $a=0.24252+1.69762I$ $b=-0.517859+0.894564I$	$-7.91872-5.18418I$	0
$u=-1.091250+0.502566I$ $a=0.295839-0.306431I$ $b=0.629753+0.307422I$	$0.932453+0.972249I$	0
$u=-1.091250-0.502566I$ $a=0.295839+0.306431I$ $b=0.629753-0.307422I$	$0.932453-0.972249I$	0
$u=0.761966+0.237108I$ $a=-1.217380+0.027406I$ $b=-1.100330+0.223061I$	$-5.06841-0.08229I$	0
$u=0.761966-0.237108I$ $a=-1.217380-0.027406I$ $b=-1.100330-0.223061I$	$-5.06841+0.08229I$	0
$u=-0.233694+0.757943I$ $a=-0.310289-1.045990I$ $b=-0.679733-1.177870I$	$-8.18021-6.63313I$	0
$u=-0.233694-0.757943I$ $a=-0.310289+1.045990I$ $b=-0.679733+1.177870I$	$-8.18021+6.63313I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.439423 + 0.650359I$ $a = 0.15580 + 1.70235I$ $b = 0.736097 + 0.616610I$	$-3.30092 + 3.97805I$	0
$u = 0.439423 - 0.650359I$ $a = 0.15580 - 1.70235I$ $b = 0.736097 - 0.616610I$	$-3.30092 - 3.97805I$	0
$u = -0.534981 + 0.567137I$ $a = -0.582903 + 0.852307I$ $b = -0.771986 + 0.127212I$	$0.65467 - 1.94051I$	0
$u = -0.534981 - 0.567137I$ $a = -0.582903 - 0.852307I$ $b = -0.771986 - 0.127212I$	$0.65467 + 1.94051I$	0
$u = 0.561224 + 0.521086I$ $a = 0.04561 + 1.65702I$ $b = 1.077830 + 0.903388I$	$-1.78856 + 8.81527I$	0
$u = 0.561224 - 0.521086I$ $a = 0.04561 - 1.65702I$ $b = 1.077830 - 0.903388I$	$-1.78856 - 8.81527I$	0
$u = 0.476725 + 0.579061I$ $a = -1.06705 + 0.99583I$ $b = -0.390123 + 0.719749I$	$-7.95289 - 0.98790I$	0
$u = 0.476725 - 0.579061I$ $a = -1.06705 - 0.99583I$ $b = -0.390123 - 0.719749I$	$-7.95289 + 0.98790I$	0
$u = -0.744686 + 0.010412I$ $a = -0.900370 + 0.365272I$ $b = 0.523275 - 0.136180I$	$1.62810 - 0.09506I$	0
$u = -0.744686 - 0.010412I$ $a = -0.900370 - 0.365272I$ $b = 0.523275 + 0.136180I$	$1.62810 + 0.09506I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.558961 + 0.469651I$ $a = 0.086448 - 1.405570I$ $b = -1.112160 - 0.800844I$	$2.12676 + 4.19302I$	0
$u = 0.558961 - 0.469651I$ $a = 0.086448 + 1.405570I$ $b = -1.112160 + 0.800844I$	$2.12676 - 4.19302I$	0
$u = 0.333560 + 0.645536I$ $a = -0.60141 - 2.16439I$ $b = -0.966813 - 0.578879I$	$-6.44067 + 3.62679I$	0
$u = 0.333560 - 0.645536I$ $a = -0.60141 + 2.16439I$ $b = -0.966813 + 0.578879I$	$-6.44067 - 3.62679I$	0
$u = 0.183486 + 0.680996I$ $a = -0.199275 + 0.770862I$ $b = 0.707467 + 1.002360I$	$-1.70178 - 1.37820I$	0
$u = 0.183486 - 0.680996I$ $a = -0.199275 - 0.770862I$ $b = 0.707467 - 1.002360I$	$-1.70178 + 1.37820I$	0
$u = 0.613446 + 0.336149I$ $a = 1.071940 - 0.252155I$ $b = 0.733101 - 0.271972I$	$-2.67908 - 0.14330I$	0
$u = 0.613446 - 0.336149I$ $a = 1.071940 + 0.252155I$ $b = 0.733101 + 0.271972I$	$-2.67908 + 0.14330I$	0
$u = 0.160538 + 0.675799I$ $a = 1.37339 - 0.67453I$ $b = 0.822486 - 0.666790I$	$-3.00254 - 5.11079I$	0
$u = 0.160538 - 0.675799I$ $a = 1.37339 + 0.67453I$ $b = 0.822486 + 0.666790I$	$-3.00254 + 5.11079I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.298430 + 0.235302I$ $a = 0.102389 - 0.314641I$ $b = -0.08777 - 1.51926I$	$1.96152 + 4.82767I$	0
$u = 1.298430 - 0.235302I$ $a = 0.102389 + 0.314641I$ $b = -0.08777 + 1.51926I$	$1.96152 - 4.82767I$	0
$u = 1.343260 + 0.024703I$ $a = -0.79980 + 1.39977I$ $b = 1.038890 + 0.659096I$	$-0.12150 + 6.44986I$	0
$u = 1.343260 - 0.024703I$ $a = -0.79980 - 1.39977I$ $b = 1.038890 - 0.659096I$	$-0.12150 - 6.44986I$	0
$u = 1.366240 + 0.046024I$ $a = 0.560578 - 0.987074I$ $b = -1.091950 - 0.866032I$	$4.33941 + 2.95088I$	0
$u = 1.366240 - 0.046024I$ $a = 0.560578 + 0.987074I$ $b = -1.091950 + 0.866032I$	$4.33941 - 2.95088I$	0
$u = 1.36756$ $a = 1.72809$ $b = -1.32458$	-3.87440	0
$u = -1.375580 + 0.054428I$ $a = -0.058414 + 0.233208I$ $b = 0.85136 + 1.17842I$	$2.73981 - 0.95287I$	0
$u = -1.375580 - 0.054428I$ $a = -0.058414 - 0.233208I$ $b = 0.85136 - 1.17842I$	$2.73981 + 0.95287I$	0
$u = 1.39179$ $a = -0.665022$ $b = 2.65741$	2.05074	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.391760+0.151237I$ $a=-0.346628-0.427342I$ $b=-0.538958-0.756680I$	$-2.05807-1.42124I$	0
$u=-1.391760-0.151237I$ $a=-0.346628+0.427342I$ $b=-0.538958+0.756680I$	$-2.05807+1.42124I$	0
$u=1.383380+0.245331I$ $a=-0.200611+0.257569I$ $b=-0.27130+1.55987I$	$-3.06588+10.17870I$	0
$u=1.383380-0.245331I$ $a=-0.200611-0.257569I$ $b=-0.27130-1.55987I$	$-3.06588-10.17870I$	0
$u=1.405420+0.025980I$ $a=-0.354219+0.448139I$ $b=1.72762+2.16535I$	$1.99770-0.22845I$	0
$u=1.405420-0.025980I$ $a=-0.354219-0.448139I$ $b=1.72762-2.16535I$	$1.99770+0.22845I$	0
$u=0.465488+0.351819I$ $a=0.023333+0.303003I$ $b=0.930736+0.639447I$	$-1.84150-1.16696I$	0
$u=0.465488-0.351819I$ $a=0.023333-0.303003I$ $b=0.930736-0.639447I$	$-1.84150+1.16696I$	0
$u=-1.42221+0.03410I$ $a=-0.842144+0.248954I$ $b=1.123970+0.118692I$	$3.31166-0.09381I$	0
$u=-1.42221-0.03410I$ $a=-0.842144-0.248954I$ $b=1.123970-0.118692I$	$3.31166+0.09381I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.30230 + 1.39371I$ $a = -0.297118 + 0.046754I$ $b = -0.387699 + 0.464785I$	$-0.486493 + 0.007462I$	0
$u = \quad 0.30230 - 1.39371I$ $a = -0.297118 - 0.046754I$ $b = -0.387699 - 0.464785I$	$-0.486493 - 0.007462I$	0
$u = -1.43585 + 0.06329I$ $a = \quad 0.832002 - 0.993622I$ $b = -0.807707 - 0.181747I$	$6.17126 - 3.60997I$	0
$u = -1.43585 - 0.06329I$ $a = \quad 0.832002 + 0.993622I$ $b = -0.807707 + 0.181747I$	$6.17126 + 3.60997I$	0
$u = -1.43996$ $a = \quad 0.0590229$ $b = -3.67297$	1.33127	0
$u = -1.44182 + 0.06731I$ $a = -0.63195 + 1.46857I$ $b = \quad 0.664139 + 0.183670I$	$1.59046 - 7.35618I$	0
$u = -1.44182 - 0.06731I$ $a = -0.63195 - 1.46857I$ $b = \quad 0.664139 - 0.183670I$	$1.59046 + 7.35618I$	0
$u = -0.149075 + 0.504192I$ $a = -0.94511 + 1.14088I$ $b = -0.610927 + 0.572174I$	$0.054414 - 1.368480I$	$0.99794 + 3.85630I$
$u = -0.149075 - 0.504192I$ $a = -0.94511 - 1.14088I$ $b = -0.610927 - 0.572174I$	$0.054414 + 1.368480I$	$0.99794 - 3.85630I$
$u = -1.46329 + 0.22171I$ $a = \quad 0.72474 + 1.35578I$ $b = -1.044330 + 0.649176I$	$-0.58596 - 6.75157I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.46329-0.22171I$ $a=\ \ 0.72474-1.35578I$ $b=-1.044330-0.649176I$	$-0.58596+6.75157I$	0
$u=-0.510457+0.086922I$ $a=\ \ 1.97887-1.81247I$ $b=-0.265064+0.377912I$	$-1.94431-2.13405I$	$2.32412+6.81583I$
$u=-0.510457-0.086922I$ $a=\ \ 1.97887+1.81247I$ $b=-0.265064-0.377912I$	$-1.94431+2.13405I$	$2.32412-6.81583I$
$u=-1.50348+0.22309I$ $a=-0.638772-1.061640I$ $b=\ \ 0.928579-0.720640I$	$3.07735-7.15990I$	0
$u=-1.50348-0.22309I$ $a=-0.638772+1.061640I$ $b=\ \ 0.928579+0.720640I$	$3.07735+7.15990I$	0
$u=-1.49388+0.30393I$ $a=-0.125412-1.084930I$ $b=\ \ 0.983426-0.345192I$	$2.93583-9.67376I$	0
$u=-1.49388-0.30393I$ $a=-0.125412+1.084930I$ $b=\ \ 0.983426+0.345192I$	$2.93583+9.67376I$	0
$u=-1.51421+0.17868I$ $a=\ \ 0.666131+0.742857I$ $b=-1.49902+0.79847I$	$8.91590-6.68730I$	0
$u=-1.51421-0.17868I$ $a=\ \ 0.666131-0.742857I$ $b=-1.49902-0.79847I$	$8.91590+6.68730I$	0
$u=\ \ 1.46393+0.42707I$ $a=\ \ 0.400574-0.703058I$ $b=-1.32675-0.90235I$	$4.14729+5.81797I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.46393 - 0.42707I$ $a = 0.400574 + 0.703058I$ $b = -1.32675 + 0.90235I$	$4.14729 - 5.81797I$	0
$u = 1.51736 + 0.17092I$ $a = 0.279173 - 0.805873I$ $b = -1.032590 - 0.401616I$	$7.44180 + 4.58976I$	0
$u = 1.51736 - 0.17092I$ $a = 0.279173 + 0.805873I$ $b = -1.032590 + 0.401616I$	$7.44180 - 4.58976I$	0
$u = -1.51512 + 0.19650I$ $a = -0.719707 - 0.510490I$ $b = 1.55153 - 0.53896I$	$4.63698 - 1.67249I$	0
$u = -1.51512 - 0.19650I$ $a = -0.719707 + 0.510490I$ $b = 1.55153 + 0.53896I$	$4.63698 + 1.67249I$	0
$u = -1.51971 + 0.18217I$ $a = -0.643184 - 0.856014I$ $b = 1.42249 - 0.96880I$	$5.03581 - 11.44180I$	0
$u = -1.51971 - 0.18217I$ $a = -0.643184 + 0.856014I$ $b = 1.42249 + 0.96880I$	$5.03581 + 11.44180I$	0
$u = 0.385385 + 0.257518I$ $a = -1.69933 + 1.27300I$ $b = 0.979834 + 0.468293I$	$-2.59766 - 0.34195I$	$-6.16678 - 7.93909I$
$u = 0.385385 - 0.257518I$ $a = -1.69933 - 1.27300I$ $b = 0.979834 - 0.468293I$	$-2.59766 + 0.34195I$	$-6.16678 + 7.93909I$
$u = 1.53672 + 0.02430I$ $a = 0.854452 - 1.028970I$ $b = -0.518225 - 0.117988I$	$4.99245 - 2.15881I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.53672 - 0.02430I$ $a = 0.854452 + 1.028970I$ $b = -0.518225 + 0.117988I$	$4.99245 + 2.15881I$	0
$u = -1.52434 + 0.21328I$ $a = 0.684131 + 0.935220I$ $b = -0.722279 + 0.945973I$	$-1.23112 - 8.31311I$	0
$u = -1.52434 - 0.21328I$ $a = 0.684131 - 0.935220I$ $b = -0.722279 - 0.945973I$	$-1.23112 + 8.31311I$	0
$u = 1.57037 + 0.10518I$ $a = -0.464481 + 0.675080I$ $b = 0.830325 + 0.188200I$	$9.68462 + 0.75111I$	0
$u = 1.57037 - 0.10518I$ $a = -0.464481 - 0.675080I$ $b = 0.830325 - 0.188200I$	$9.68462 - 0.75111I$	0
$u = -1.54872 + 0.33463I$ $a = 0.120186 + 0.778443I$ $b = -0.794087 + 0.209483I$	$6.13408 - 5.25289I$	0
$u = -1.54872 - 0.33463I$ $a = 0.120186 - 0.778443I$ $b = -0.794087 - 0.209483I$	$6.13408 + 5.25289I$	0
$u = 1.54991 + 0.33692I$ $a = -0.560707 + 0.875963I$ $b = 1.36205 + 0.83316I$	$5.82114 + 12.74530I$	0
$u = 1.54991 - 0.33692I$ $a = -0.560707 - 0.875963I$ $b = 1.36205 - 0.83316I$	$5.82114 - 12.74530I$	0
$u = 1.56442 + 0.31341I$ $a = 0.658091 - 0.958017I$ $b = -1.35610 - 0.85602I$	$0.1513 + 18.2516I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.56442 - 0.31341I$ $a = 0.658091 + 0.958017I$ $b = -1.35610 + 0.85602I$	$0.1513 - 18.2516I$	0
$u = 1.64164$ $a = -0.903636$ $b = 0.802025$	10.0897	0
$u = 1.71719$ $a = 1.10127$ $b = -1.09235$	4.09498	0
$u = -0.152207 + 0.233846I$ $a = 0.88074 - 2.39473I$ $b = 0.26084 - 1.45426I$	$-3.01848 + 0.92319I$	$-16.3696 + 13.5516I$
$u = -0.152207 - 0.233846I$ $a = 0.88074 + 2.39473I$ $b = 0.26084 + 1.45426I$	$-3.01848 - 0.92319I$	$-16.3696 - 13.5516I$
$u = 0.224919 + 0.150669I$ $a = 3.09304 + 2.61529I$ $b = -0.722493 - 0.378562I$	$0.63477 + 2.73106I$	$4.28983 - 7.49724I$
$u = 0.224919 - 0.150669I$ $a = 3.09304 - 2.61529I$ $b = -0.722493 + 0.378562I$	$0.63477 - 2.73106I$	$4.28983 + 7.49724I$
$u = 0.187786 + 0.121629I$ $a = -4.27561 - 6.56272I$ $b = 0.683970 + 0.326310I$	$-3.96325 + 6.53810I$	$4.31549 - 7.93821I$
$u = 0.187786 - 0.121629I$ $a = -4.27561 + 6.56272I$ $b = 0.683970 - 0.326310I$	$-3.96325 - 6.53810I$	$4.31549 + 7.93821I$
$u = 0.192807$ $a = -8.38944$ $b = -0.824520$	-8.08321	-11.5990

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.154095$ $a = \ 3.94542$ $b = \ 1.50180$	-2.45282	-31.3710
$u = -2.37999$ $a = -0.135595$ $b = \ 0.373572$	0.188819	0

II. $I_2^u = \langle -32u^{15} - 74u^{14} + \cdots + 43b + 23,\ -40u^{15} - 28u^{14} + \cdots + 43a - 68,\ 2u^{16} + 3u^{15} + \cdots + 2u + 1 \rangle$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.930233u^{15} + 0.651163u^{14} + \cdots - 1.81395u + 1.58140 \\ 0.744186u^{15} + 1.72093u^{14} + \cdots - 0.651163u - 0.534884 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0930233u^{15} + 0.465116u^{14} + \cdots - 1.58140u + 1.55814 \\ 1.48837u^{15} + 1.44186u^{14} + \cdots - 0.302326u - 0.0697674 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.186047u^{15} - 1.06977u^{14} + \cdots - 1.16279u + 2.11628 \\ 0.744186u^{15} + 1.72093u^{14} + \cdots - 0.651163u - 0.534884 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.139535u^{15} - 0.302326u^{14} + \cdots + 0.627907u - 1.16279 \\ -0.139535u^{15} - 1.69767u^{14} + \cdots + 2.37209u + 1.16279 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.58140u^{15} + 5.90698u^{14} + \cdots - 3.88372u + 0.488372 \\ 1.81395u^{15} + 2.06977u^{14} + \cdots - 0.837209u - 0.116279 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.76744u^{15} + 4.83721u^{14} + \cdots - 2.04651u - 0.395349 \\ 0.604651u^{15} + 2.02326u^{14} + \cdots - 0.279070u - 0.372093 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.90698u^{15} + 2.53488u^{14} + \cdots + 1.58140u + 0.441860 \\ -2.13953u^{15} - 4.69767u^{14} + \cdots + 4.37209u + 0.162791 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{358}{43}u^{15} - \frac{1059}{43}u^{14} + \cdots + \frac{1399}{43}u + \frac{131}{43}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$2(2u^{16}+3u^{15}+\cdots-10u+1)$
c_2	$u^{16}-6u^{15}+\cdots-u-2$
c_3	$u^{16}+3u^{15}+\cdots+3u+1$
c_4	$2(2u^{16}-3u^{15}+\cdots+10u+1)$
c_5	$2(2u^{16}-u^{15}+\cdots+12u^2-1)$
c_6, c_7	$2(2u^{16}+3u^{15}+\cdots+2u+1)$
c_8	$u^{16}-3u^{15}+\cdots-3u+1$
c_9	$u^{16}-3u^{15}+\cdots-u-1$
c_{10}	$u^{16}+4u^{13}+\cdots-11u-4$
c_{11}	$2(2u^{16}-3u^{15}+\cdots-2u+1)$
c_{12}	$u^{16}-5u^{13}+\cdots+7u+2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$4(4y^{16} - 65y^{15} + \cdots - 62y + 1)$
c_2	$y^{16} - 24y^{15} + \cdots - 25y + 4$
c_3, c_8	$y^{16} - 29y^{15} + \cdots - 23y + 1$
c_5	$4(4y^{16} - 29y^{15} + \cdots - 24y + 1)$
c_6, c_7, c_{11}	$4(4y^{16} - 77y^{15} + \cdots - 12y + 1)$
c_9	$y^{16} - 11y^{15} + \cdots - 23y + 1$
c_{10}	$y^{16} - 14y^{14} + \cdots - 193y + 16$
c_{12}	$y^{16} - 42y^{14} + \cdots - 229y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.07814$ $a = 1.60048$ $b = 0.656552$	-6.06624	-8.72690
$u = -1.134000 + 0.316000I$ $a = -0.215381 - 0.266032I$ $b = 0.347675 + 0.416064I$	$0.486667 + 0.542049I$	$-2.18976 + 1.23348I$
$u = -1.134000 - 0.316000I$ $a = -0.215381 + 0.266032I$ $b = 0.347675 - 0.416064I$	$0.486667 - 0.542049I$	$-2.18976 - 1.23348I$
$u = 0.798785$ $a = -2.08662$ $b = 1.18227$	-7.07830	-2.71470
$u = 1.39766$ $a = 0.401465$ $b = -4.20557$	1.89719	-62.4810
$u = 0.081248 + 0.574229I$ $a = -2.28547 - 1.09977I$ $b = -0.611183 - 0.480838I$	$-4.65589 + 6.47534I$	$-7.82126 - 7.39766I$
$u = 0.081248 - 0.574229I$ $a = -2.28547 + 1.09977I$ $b = -0.611183 + 0.480838I$	$-4.65589 - 6.47534I$	$-7.82126 + 7.39766I$
$u = -1.41304 + 0.31478I$ $a = -0.329320 - 0.826191I$ $b = 0.988302 - 0.942736I$	$3.37386 - 5.56665I$	$-0.78610 + 4.99093I$
$u = -1.41304 - 0.31478I$ $a = -0.329320 + 0.826191I$ $b = 0.988302 + 0.942736I$	$3.37386 + 5.56665I$	$-0.78610 - 4.99093I$
$u = -1.45818 + 0.17899I$ $a = 0.39357 + 1.47087I$ $b = -0.750143 + 0.653825I$	$0.68526 - 9.01641I$	$-0.11802 + 8.70317I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.45818-0.17899I$ $a=\ \ 0.39357-1.47087I$ $b=-0.750143-0.653825I$	$0.68526+9.01641I$	$-0.11802-8.70317I$
$u=\ \ 0.467885$ $a=-1.45890$ $b=-1.17068$	-2.26601	16.7990
$u=-0.342064+0.196600I$ $a=\ \ 1.16681+1.48462I$ $b=-0.983292+0.866238I$	$-2.48546+0.94026I$	$-5.57205-0.17330I$
$u=-0.342064-0.196600I$ $a=\ \ 1.16681-1.48462I$ $b=-0.983292-0.866238I$	$-2.48546-0.94026I$	$-5.57205+0.17330I$
$u=\ \ 1.63557$ $a=\ \ 0.953506$ $b=-1.21135$	5.43157	8.15920
$u=\ \ 1.65402$ $a=-0.870357$ $b=\ \ 0.766059$	9.98301	-35.2800

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$4(2u^{16}+3u^{15}+\cdots-10u+1)(2u^{112}-3u^{111}+\cdots+6u-1)$
c_2	$(u^{16}-6u^{15}+\cdots-u-2)(u^{112}+u^{111}+\cdots+33183u+20078)$
c_3	$(u^{16}+3u^{15}+\cdots+3u+1)(u^{112}-4u^{111}+\cdots-18821u-1439)$
c_4	$4(2u^{16}-3u^{15}+\cdots+10u+1)(2u^{112}-3u^{111}+\cdots+6u-1)$
c_5	$4(2u^{16}-u^{15}+\cdots+12u^2-1)(2u^{112}-5u^{111}+\cdots+1262u-211)$
c_6, c_7	$4(2u^{16}+3u^{15}+\cdots+2u+1)(2u^{112}-u^{111}+\cdots+30u+1)$
c_8	$(u^{16}-3u^{15}+\cdots-3u+1)(u^{112}-4u^{111}+\cdots-18821u-1439)$
c_9	$(u^{16}-3u^{15}+\cdots-u-1)(u^{112}-5u^{110}+\cdots-17u+1)$
c_{10}	$(u^{16}+4u^{13}+\cdots-11u-4)(u^{112}-3u^{111}+\cdots+1445u+116)$
c_{11}	$4(2u^{16}-3u^{15}+\cdots-2u+1)(2u^{112}-u^{111}+\cdots+30u+1)$
c_{12}	$(u^{16}-5u^{13}+\cdots+7u+2)(u^{112}-3u^{111}+\cdots+4391u-2366)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$16(4y^{16} - 65y^{15} + \cdots - 62y + 1)(4y^{112} - 365y^{111} + \cdots - 942y + 1)$
c_2	$(y^{16} - 24y^{15} + \cdots - 25y + 4)$ $\cdot (y^{112} - 51y^{111} + \cdots - 21359572553y + 403126084)$
c_3, c_8	$(y^{16} - 29y^{15} + \cdots - 23y + 1)$ $\cdot (y^{112} - 92y^{111} + \cdots - 91920487y + 2070721)$
c_5	$16(4y^{16} - 29y^{15} + \cdots - 24y + 1)$ $\cdot (4y^{112} - 121y^{111} + \cdots - 1692236y + 44521)$
c_6, c_7, c_{11}	$16(4y^{16} - 77y^{15} + \cdots - 12y + 1)(4y^{112} - 457y^{111} + \cdots - 108y + 1)$
c_9	$(y^{16} - 11y^{15} + \cdots - 23y + 1)(y^{112} - 10y^{111} + \cdots - 1271y + 1)$
c_{10}	$(y^{16} - 14y^{14} + \cdots - 193y + 16)$ $\cdot (y^{112} + 9y^{111} + \cdots - 1322657y + 13456)$
c_{12}	$(y^{16} - 42y^{14} + \cdots - 229y + 4)$ $\cdot (y^{112} + 21y^{111} + \cdots + 215563547y + 5597956)$