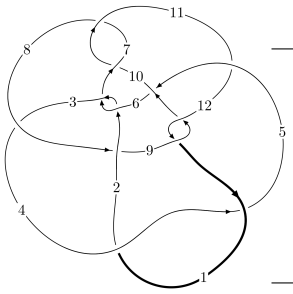
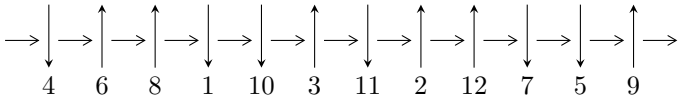
$12a_{0906}$ $(K12a_{0906})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3.04772 \times 10^{856} u^{165} + 2.15325 \times 10^{857} u^{164} + \cdots + 7.14027 \times 10^{856} b - 2.56483 \times 10^{859},$$
$$- 5.81109 \times 10^{862} u^{165} - 3.21459 \times 10^{863} u^{164} + \cdots + 1.88142 \times 10^{863} a + 1.42202 \times 10^{866},$$
$$u^{166} + 8u^{165} + \cdots + 2632u + 872 \rangle$$
$$I_2^u = \langle -2.55124 \times 10^{30} u^{37} + 8.73175 \times 10^{29} u^{36} + \cdots + 2.16094 \times 10^{30} b - 2.67181 \times 10^{30},$$
$$8.56010 \times 10^{31} u^{37} + 4.54227 \times 10^{31} u^{36} + \cdots + 3.94371 \times 10^{31} a + 2.76795 \times 10^{32},\ u^{38} - u^{37} + \cdots - 8u + 1 \rangle$$
$$I_3^u = \langle b^2 + bu + u^2 - b - u + 2,\ -u^2 + a - 1,\ u^3 - u^2 + 2u - 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 210 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle 3.05 \times 10^{856} u^{165} + 2.15 \times 10^{857} u^{164} + \cdots + 7.14 \times 10^{856} b - 2.56 \times 10^{859},\ -5.81 \times 10^{862} u^{165} - 3.21 \times 10^{863} u^{164} + \cdots + 1.88 \times 10^{863} a + 1.42 \times 10^{866},\ u^{166} + 8u^{165} + \cdots + 2632u + 872 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.308868u^{165} + 1.70860u^{164} + \cdots - 1647.45u - 755.823 \\ -0.426835u^{165} - 3.01565u^{164} + \cdots + 488.904u + 359.207 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.709267u^{165} + 5.10475u^{164} + \cdots - 399.199u - 450.266 \\ -0.801687u^{165} - 6.07418u^{164} + \cdots - 368.114u + 190.946 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.66949u^{165} + 12.4962u^{164} + \cdots + 514.887u - 490.226 \\ -1.29994u^{165} - 9.74217u^{164} + \cdots - 506.050u + 346.274 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.00412u^{165} + 8.54831u^{164} + \cdots + 3623.57u + 937.744 \\ -0.586007u^{165} - 5.28118u^{164} + \cdots - 2908.83u - 836.491 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.54406u^{165} - 10.8649u^{164} + \cdots + 1675.08u + 1229.26 \\ 1.57472u^{165} + 11.1056u^{164} + \cdots - 1400.65u - 1149.74 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.25092u^{165} + 9.70100u^{164} + \cdots + 1430.93u + 76.9177 \\ -1.55368u^{165} - 12.0162u^{164} + \cdots - 1799.48u - 58.1751 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.700034u^{165} + 6.28921u^{164} + \cdots + 3463.72u + 1005.58 \\ -0.281919u^{165} - 3.02209u^{164} + \cdots - 2748.98u - 904.325 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.277983u^{165} + 3.57812u^{164} + \cdots + 4227.48u + 1464.30 \\ -1.07064u^{165} - 9.95430u^{164} + \cdots - 5989.86u - 1805.10 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5.81941u^{165} - 45.7526u^{164} + \cdots - 8806.53u - 906.143$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{166} - 8u^{165} + \cdots - 2632u + 872$
c_2, c_6	$u^{166} - 6u^{165} + \cdots - 44364u + 15032$
c_3	$u^{166} + u^{165} + \cdots + 77004800u + 37093376$
c_5	$u^{166} - u^{165} + \cdots - 77004800u + 37093376$
c_7, c_{10}	$u^{166} + 6u^{165} + \cdots + 44364u + 15032$
c_8	$u^{166} - 2u^{165} + \cdots + 23296u + 6376$
c_9, c_{12}	$u^{166} + 8u^{165} + \cdots + 2632u + 872$
c_{11}	$u^{166} + 2u^{165} + \cdots - 23296u + 6376$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_9 c_{12}	$y^{166} + 112y^{165} + \cdots + 54967136y + 760384$
c_2, c_6, c_7 c_{10}	$y^{166} - 88y^{165} + \cdots - 10772707536y + 225961024$
c_3, c_5	$y^{166} - 37y^{165} + \cdots - 110732919839916032y + 1375918543077376$
c_8, c_{11}	$y^{166} - 4y^{165} + \cdots + 2251132064y + 40653376$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.972169 + 0.218898I$ $a = -0.128892 + 0.159914I$ $b = 0.234140 + 1.328490I$	$-7.28993 - 0.80501I$	0
$u = 0.972169 - 0.218898I$ $a = -0.128892 - 0.159914I$ $b = 0.234140 - 1.328490I$	$-7.28993 + 0.80501I$	0
$u = -0.241874 + 0.958464I$ $a = -1.81538 + 0.81812I$ $b = 1.106070 - 0.249313I$	$-1.26280 + 2.02558I$	0
$u = -0.241874 - 0.958464I$ $a = -1.81538 - 0.81812I$ $b = 1.106070 + 0.249313I$	$-1.26280 - 2.02558I$	0
$u = -0.330909 + 0.958382I$ $a = 1.234160 + 0.600276I$ $b = -0.56010 - 1.49269I$	$0.64081 + 2.61414I$	0
$u = -0.330909 - 0.958382I$ $a = 1.234160 - 0.600276I$ $b = -0.56010 + 1.49269I$	$0.64081 - 2.61414I$	0
$u = 0.613798 + 0.813224I$ $a = -0.69358 - 1.37041I$ $b = 0.116888 - 1.252910I$	$-5.25563 - 2.26754I$	0
$u = 0.613798 - 0.813224I$ $a = -0.69358 + 1.37041I$ $b = 0.116888 + 1.252910I$	$-5.25563 + 2.26754I$	0
$u = -0.030127 + 1.025620I$ $a = -1.74054 - 0.44163I$ $b = 0.161139 - 0.843990I$	$4.56133 + 2.80842I$	0
$u = -0.030127 - 1.025620I$ $a = -1.74054 + 0.44163I$ $b = 0.161139 + 0.843990I$	$4.56133 - 2.80842I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.885024+0.524345I$ $a=\ \ 0.143825+0.269554I$ $b=-0.451443+0.448364I$	$1.42629-4.21693I$	0
$u=-0.885024-0.524345I$ $a=\ \ 0.143825-0.269554I$ $b=-0.451443-0.448364I$	$1.42629+4.21693I$	0
$u=-0.127639+0.955130I$ $a=-0.939256+0.779728I$ $b=\ \ 0.16705+1.40981I$	$-4.33829+4.25319I$	0
$u=-0.127639-0.955130I$ $a=-0.939256-0.779728I$ $b=\ \ 0.16705-1.40981I$	$-4.33829-4.25319I$	0
$u=-0.225299+0.936493I$ $a=\ \ 1.352360+0.100036I$ $b=-0.486351-1.236260I$	$0.64887+2.89892I$	0
$u=-0.225299-0.936493I$ $a=\ \ 1.352360-0.100036I$ $b=-0.486351+1.236260I$	$0.64887-2.89892I$	0
$u=\ \ 0.209745+1.023240I$ $a=\ \ 1.02484-1.59523I$ $b=-0.249301+1.027720I$	$-1.94689-3.53576I$	0
$u=\ \ 0.209745-1.023240I$ $a=\ \ 1.02484+1.59523I$ $b=-0.249301-1.027720I$	$-1.94689+3.53576I$	0
$u=\ \ 0.152380+0.931757I$ $a=-0.88458-1.19968I$ $b=\ \ 0.78153+1.70359I$	$-2.50839-0.97139I$	0
$u=\ \ 0.152380-0.931757I$ $a=-0.88458+1.19968I$ $b=\ \ 0.78153-1.70359I$	$-2.50839+0.97139I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.249301 + 1.027720I$ $a = 0.454155 + 0.833480I$ $b = -0.209745 + 1.023240I$	$1.94689 - 3.53576I$	0
$u = 0.249301 - 1.027720I$ $a = 0.454155 - 0.833480I$ $b = -0.209745 - 1.023240I$	$1.94689 + 3.53576I$	0
$u = 0.035069 + 1.059860I$ $a = 2.26454 - 0.47380I$ $b = -0.582937 + 0.928006I$	$4.95016 - 2.52119I$	0
$u = 0.035069 - 1.059860I$ $a = 2.26454 + 0.47380I$ $b = -0.582937 - 0.928006I$	$4.95016 + 2.52119I$	0
$u = -0.651241 + 0.667306I$ $a = 0.575706 + 0.364985I$ $b = 0.339015 - 1.328620I$	$-6.62966 - 2.49532I$	0
$u = -0.651241 - 0.667306I$ $a = 0.575706 - 0.364985I$ $b = 0.339015 + 1.328620I$	$-6.62966 + 2.49532I$	0
$u = -0.447824 + 0.970612I$ $a = -1.72043 - 0.13388I$ $b = 0.63804 + 1.35560I$	$-5.64838 + 6.76788I$	0
$u = -0.447824 - 0.970612I$ $a = -1.72043 + 0.13388I$ $b = 0.63804 - 1.35560I$	$-5.64838 - 6.76788I$	0
$u = 1.047770 + 0.258314I$ $a = -0.212607 + 0.061679I$ $b = -0.330148 - 1.199420I$	$-3.34359 + 1.96570I$	0
$u = 1.047770 - 0.258314I$ $a = -0.212607 - 0.061679I$ $b = -0.330148 + 1.199420I$	$-3.34359 - 1.96570I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.860323+0.669737I$		
$a=$	$0.037789-0.360133I$	$-4.59764+5.27559I$	0
$b=$	$0.461677+1.274220I$		
$u=$	$0.860323-0.669737I$		
$a=$	$0.037789+0.360133I$	$-4.59764-5.27559I$	0
$b=$	$0.461677-1.274220I$		
$u=$	$0.061638+0.907243I$		
$a=$	$0.780592-0.464704I$	$-2.66064+2.48196I$	0
$b=$	$-0.23918-1.46071I$		
$u=$	$0.061638-0.907243I$		
$a=$	$0.780592+0.464704I$	$-2.66064-2.48196I$	0
$b=$	$-0.23918+1.46071I$		
$u=$	$0.582937+0.928006I$		
$a=$	$1.59448+0.54639I$	$-4.95016-2.52119I$	0
$b=$	$-0.035069+1.059860I$		
$u=$	$0.582937-0.928006I$		
$a=$	$1.59448-0.54639I$	$-4.95016+2.52119I$	0
$b=$	$-0.035069-1.059860I$		
$u=$	$0.130373+1.088470I$		
$a=$	$-2.40675-0.57766I$	$1.31493-9.17596I$	0
$b=$	$0.363797-1.133890I$		
$u=$	$0.130373-1.088470I$		
$a=$	$-2.40675+0.57766I$	$1.31493+9.17596I$	0
$b=$	$0.363797+1.133890I$		
$u=$	$-0.142227+0.890446I$		
$a=$	$-0.24139+1.58897I$	$-2.01341+6.35063I$	0
$b=$	$0.32729-2.09186I$		
$u=$	$-0.142227-0.890446I$		
$a=$	$-0.24139-1.58897I$	$-2.01341-6.35063I$	0
$b=$	$0.32729+2.09186I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.101570+0.069081I$ $a=\ \ 0.228295-0.259670I$ $b=-0.385385-1.286770I$	$-1.48964+7.78003I$	0
$u=-1.101570-0.069081I$ $a=\ \ 0.228295+0.259670I$ $b=-0.385385+1.286770I$	$-1.48964-7.78003I$	0
$u=\ \ 1.109350+0.049474I$ $a=\ \ 0.002103+0.278265I$ $b=-0.240939+1.226760I$	$-4.28618-2.77563I$	0
$u=\ \ 1.109350-0.049474I$ $a=\ \ 0.002103-0.278265I$ $b=-0.240939-1.226760I$	$-4.28618+2.77563I$	0
$u=\ \ 0.401620+0.778058I$ $a=-1.78845-0.73107I$ $b=\ \ 0.832421+0.085376I$	$-0.645618+0.585336I$	0
$u=\ \ 0.401620-0.778058I$ $a=-1.78845+0.73107I$ $b=\ \ 0.832421-0.085376I$	$-0.645618-0.585336I$	0
$u=-1.106070+0.249313I$ $a=-0.162926-0.775764I$ $b=\ \ 0.241874-0.958464I$	$1.26280-2.02558I$	0
$u=-1.106070-0.249313I$ $a=-0.162926+0.775764I$ $b=\ \ 0.241874+0.958464I$	$1.26280+2.02558I$	0
$u=\ \ 0.083335+0.860633I$ $a=-2.07119+1.07012I$ $b=\ \ 1.32235-0.96830I$	$-2.88532-0.42811I$	0
$u=\ \ 0.083335-0.860633I$ $a=-2.07119-1.07012I$ $b=\ \ 1.32235+0.96830I$	$-2.88532+0.42811I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.161139+0.843990I$ $a=\ \ 2.10569+1.21665I$ $b=\ \ 0.030127-1.025620I$	$-4.56133-2.80842I$	0
$u=-0.161139-0.843990I$ $a=\ \ 2.10569-1.21665I$ $b=\ \ 0.030127+1.025620I$	$-4.56133+2.80842I$	0
$u=\ \ 0.614309+0.973766I$ $a=-1.68275+0.10562I$ $b=\ \ 0.73446-1.26312I$	$-3.55161-10.76260I$	0
$u=\ \ 0.614309-0.973766I$ $a=-1.68275-0.10562I$ $b=\ \ 0.73446+1.26312I$	$-3.55161+10.76260I$	0
$u=\ \ 0.696817+0.928767I$ $a=-0.069883-0.256345I$ $b=-0.116062-0.135620I$	$-1.19072-1.66992I$	0
$u=\ \ 0.696817-0.928767I$ $a=-0.069883+0.256345I$ $b=-0.116062+0.135620I$	$-1.19072+1.66992I$	0
$u=-0.832421+0.085376I$ $a=\ \ 0.018474+1.207020I$ $b=-0.401620+0.778058I$	$0.645618+0.585336I$	0
$u=-0.832421-0.085376I$ $a=\ \ 0.018474-1.207020I$ $b=-0.401620-0.778058I$	$0.645618-0.585336I$	0
$u=\ \ 0.788236+0.244072I$ $a=\ \ 0.012371+0.586664I$ $b=\ \ 0.494958-0.132987I$	$-3.03351-3.67994I$	0
$u=\ \ 0.788236-0.244072I$ $a=\ \ 0.012371-0.586664I$ $b=\ \ 0.494958+0.132987I$	$-3.03351+3.67994I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.034081+0.821473I$ $a=\ \ 3.09960-0.54004I$ $b=\ \ 0.034081+0.821473I$	$8.51377I$	0
$u=-0.034081-0.821473I$ $a=\ \ 3.09960+0.54004I$ $b=\ \ 0.034081-0.821473I$	$-8.51377I$	0
$u=\ \ 0.303969+1.143130I$ $a=\ \ 1.37878-0.74323I$ $b=-0.78329+1.51303I$	$0.84891-6.85717I$	0
$u=\ \ 0.303969-1.143130I$ $a=\ \ 1.37878+0.74323I$ $b=-0.78329-1.51303I$	$0.84891+6.85717I$	0
$u=-0.363797+1.133890I$ $a=\ \ 2.36613+0.64895I$ $b=-0.130373-1.088470I$	$-1.31493+9.17596I$	0
$u=-0.363797-1.133890I$ $a=\ \ 2.36613-0.64895I$ $b=-0.130373+1.088470I$	$-1.31493-9.17596I$	0
$u=\ \ 0.198308+1.176710I$ $a=\ \ 1.71393-0.52899I$ $b=-1.123230+0.576311I$	$4.15083-3.32222I$	0
$u=\ \ 0.198308-1.176710I$ $a=\ \ 1.71393+0.52899I$ $b=-1.123230-0.576311I$	$4.15083+3.32222I$	0
$u=-0.233186+0.768133I$ $a=-1.86686-1.12090I$ $b=\ \ 0.87930+1.27832I$	$-2.05570-4.32127I$	0
$u=-0.233186-0.768133I$ $a=-1.86686+1.12090I$ $b=\ \ 0.87930-1.27832I$	$-2.05570+4.32127I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.160540+0.784851I$ $a=-1.48487-0.10512I$ $b=\ \ 0.160540+0.784851I$	$-0.664448I$	0
$u=-0.160540-0.784851I$ $a=-1.48487+0.10512I$ $b=\ \ 0.160540-0.784851I$	$0.664448I$	0
$u=-0.743499+0.235712I$ $a=-0.662425-0.472261I$ $b=\ \ 0.304555-0.177362I$	$3.05344-0.37163I$	0
$u=-0.743499-0.235712I$ $a=-0.662425+0.472261I$ $b=\ \ 0.304555+0.177362I$	$3.05344+0.37163I$	0
$u=\ \ 0.330148+1.199420I$ $a=\ \ 1.091160+0.071251I$ $b=-1.047770-0.258314I$	$3.34359-1.96570I$	0
$u=\ \ 0.330148-1.199420I$ $a=\ \ 1.091160-0.071251I$ $b=-1.047770+0.258314I$	$3.34359+1.96570I$	0
$u=-0.719261+0.232376I$ $a=\ \ 0.020514-0.471466I$ $b=\ \ 0.385001-1.327700I$	$-7.76532-3.84221I$	0
$u=-0.719261-0.232376I$ $a=\ \ 0.020514+0.471466I$ $b=\ \ 0.385001+1.327700I$	$-7.76532+3.84221I$	0
$u=\ \ 0.240939+1.226760I$ $a=\ \ 1.353480-0.010847I$ $b=-1.109350+0.049474I$	$4.28618-2.77563I$	0
$u=\ \ 0.240939-1.226760I$ $a=\ \ 1.353480+0.010847I$ $b=-1.109350-0.049474I$	$4.28618+2.77563I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.116888+1.252910I$ $a=\ \ 1.77651+1.25446I$ $b=-0.613798-0.813224I$	$5.25563+2.26754I$	0
$u=-0.116888-1.252910I$ $a=\ \ 1.77651-1.25446I$ $b=-0.613798+0.813224I$	$5.25563-2.26754I$	0
$u=\ \ 1.123230+0.576311I$ $a=\ \ 0.211423+0.518704I$ $b=-0.198308+1.176710I$	$-4.15083-3.32222I$	0
$u=\ \ 1.123230-0.576311I$ $a=\ \ 0.211423-0.518704I$ $b=-0.198308-1.176710I$	$-4.15083+3.32222I$	0
$u=-0.310070+1.224610I$ $a=\ \ 1.61977-0.31229I$ $b=-1.348560+0.102625I$	$6.97620+6.78564I$	0
$u=-0.310070-1.224610I$ $a=\ \ 1.61977+0.31229I$ $b=-1.348560-0.102625I$	$6.97620-6.78564I$	0
$u=-0.686445+0.265915I$ $a=-1.052380-0.012259I$ $b=-0.069590+1.294380I$	$-1.29336+1.14631I$	0
$u=-0.686445-0.265915I$ $a=-1.052380+0.012259I$ $b=-0.069590-1.294380I$	$-1.29336-1.14631I$	0
$u=-0.406135+1.201730I$ $a=-1.87282-0.36960I$ $b=\ \ 0.58817+1.29969I$	$-4.73323+8.05445I$	0
$u=-0.406135-1.201730I$ $a=-1.87282+0.36960I$ $b=\ \ 0.58817-1.29969I$	$-4.73323-8.05445I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.714302+0.140698I$ $a=-0.166511-1.038200I$ $b=\ \ 0.714302+0.140698I$	$9.66190I$	0
$u=-0.714302-0.140698I$ $a=-0.166511+1.038200I$ $b=\ \ 0.714302-0.140698I$	$-9.66190I$	0
$u=-1.280860+0.073525I$ $a=-0.177460-0.212483I$ $b=\ \ 0.409078-1.266050I$	$-4.1077-13.8043I$	0
$u=-1.280860-0.073525I$ $a=-0.177460+0.212483I$ $b=\ \ 0.409078+1.266050I$	$-4.1077+13.8043I$	0
$u=\ \ 0.069590+1.294380I$ $a=-0.925594+0.281853I$ $b=\ \ 0.686445+0.265915I$	$1.29336+1.14631I$	0
$u=\ \ 0.069590-1.294380I$ $a=-0.925594-0.281853I$ $b=\ \ 0.686445-0.265915I$	$1.29336-1.14631I$	0
$u=\ \ 0.067307+1.322720I$ $a=-0.774104-1.111060I$ $b=\ \ 0.482054+0.306015I$	$3.80938-5.65587I$	0
$u=\ \ 0.067307-1.322720I$ $a=-0.774104+1.111060I$ $b=\ \ 0.482054-0.306015I$	$3.80938+5.65587I$	0
$u=\ \ 0.486351+1.236260I$ $a=-0.986871+0.314652I$ $b=\ \ 0.225299-0.936493I$	$-0.64887-2.89892I$	0
$u=\ \ 0.486351-1.236260I$ $a=-0.986871-0.314652I$ $b=\ \ 0.225299+0.936493I$	$-0.64887+2.89892I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.409078+1.266050I$ $a=-1.41004+0.30714I$ $b=\ \ 1.280860-0.073525I$	$4.1077+13.8043I$	0
$u=-0.409078-1.266050I$ $a=-1.41004-0.30714I$ $b=\ \ 1.280860+0.073525I$	$4.1077-13.8043I$	0
$u=\ \ 0.534347+1.228490I$ $a=-1.57597+0.40557I$ $b=\ \ 0.525199-1.270700I$	$-4.11997-4.57380I$	0
$u=\ \ 0.534347-1.228490I$ $a=-1.57597-0.40557I$ $b=\ \ 0.525199+1.270700I$	$-4.11997+4.57380I$	0
$u=\ \ 0.385385+1.286770I$ $a=-1.266930-0.161940I$ $b=\ \ 1.101570-0.069081I$	$1.48964-7.78003I$	0
$u=\ \ 0.385385-1.286770I$ $a=-1.266930+0.161940I$ $b=\ \ 1.101570+0.069081I$	$1.48964+7.78003I$	0
$u=-0.234140+1.328490I$ $a=\ \ 1.044440-0.352307I$ $b=-0.972169+0.218898I$	$7.28993-0.80501I$	0
$u=-0.234140-1.328490I$ $a=\ \ 1.044440+0.352307I$ $b=-0.972169-0.218898I$	$7.28993+0.80501I$	0
$u=\ \ 1.348560+0.102625I$ $a=-0.105012+0.302490I$ $b=\ \ 0.310070+1.224610I$	$-6.97620+6.78564I$	0
$u=\ \ 1.348560-0.102625I$ $a=-0.105012-0.302490I$ $b=\ \ 0.310070-1.224610I$	$-6.97620-6.78564I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.461677+1.274220I$ $a=\ \ 0.731739-0.408347I$ $b=-0.860323+0.669737I$	$4.59764+5.27559I$	0
$u=-0.461677-1.274220I$ $a=\ \ 0.731739+0.408347I$ $b=-0.860323-0.669737I$	$4.59764-5.27559I$	0
$u=\ \ 0.451443+0.448364I$ $a=-0.766158-1.003790I$ $b=\ \ 0.885024+0.524345I$	$-1.42629-4.21693I$	0
$u=\ \ 0.451443-0.448364I$ $a=-0.766158+1.003790I$ $b=\ \ 0.885024-0.524345I$	$-1.42629+4.21693I$	0
$u=-0.339015+1.328620I$ $a=-0.866270+0.256667I$ $b=\ \ 0.651241-0.667306I$	$6.62966+2.49532I$	0
$u=-0.339015-1.328620I$ $a=-0.866270-0.256667I$ $b=\ \ 0.651241+0.667306I$	$6.62966-2.49532I$	0
$u=-0.525199+1.270700I$ $a=\ \ 1.317640-0.150072I$ $b=-0.534347-1.228490I$	$4.11997+4.57380I$	0
$u=-0.525199-1.270700I$ $a=\ \ 1.317640+0.150072I$ $b=-0.534347+1.228490I$	$4.11997-4.57380I$	0
$u=-0.385001+1.327700I$ $a=-0.939073+0.367520I$ $b=\ \ 0.719261-0.232376I$	$7.76532+3.84221I$	0
$u=-0.385001-1.327700I$ $a=-0.939073-0.367520I$ $b=\ \ 0.719261+0.232376I$	$7.76532-3.84221I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.16705+1.40981I$ $a=-0.87657-1.30961I$ $b=\ \ 0.127639+0.955130I$	$4.33829+4.25319I$	0
$u=-0.16705-1.40981I$ $a=-0.87657+1.30961I$ $b=\ \ 0.127639-0.955130I$	$4.33829-4.25319I$	0
$u=-0.58817+1.29969I$ $a=-1.399390+0.174731I$ $b=\ \ 0.406135+1.201730I$	$4.73323+8.05445I$	0
$u=-0.58817-1.29969I$ $a=-1.399390-0.174731I$ $b=\ \ 0.406135-1.201730I$	$4.73323-8.05445I$	0
$u=-0.482054+0.306015I$ $a=\ \ 1.13197+1.63236I$ $b=-0.067307+1.322720I$	$-3.80938-5.65587I$	0
$u=-0.482054-0.306015I$ $a=\ \ 1.13197-1.63236I$ $b=-0.067307-1.322720I$	$-3.80938+5.65587I$	0
$u=\ \ 0.61776+1.30687I$ $a=\ \ 1.200820-0.231807I$ $b=-0.61776+1.30687I$	$-7.98531I$	0
$u=\ \ 0.61776-1.30687I$ $a=\ \ 1.200820+0.231807I$ $b=-0.61776-1.30687I$	$7.98531I$	0
$u=-0.73446+1.26312I$ $a=\ \ 1.154390-0.240091I$ $b=-0.614309-0.973766I$	$3.55161+10.76260I$	0
$u=-0.73446-1.26312I$ $a=\ \ 1.154390+0.240091I$ $b=-0.614309+0.973766I$	$3.55161-10.76260I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.55984 + 1.35269I$ $a = 1.277190 - 0.263601I$ $b = -0.55984 + 1.35269I$	$-8.66768I$	0
$u = 0.55984 - 1.35269I$ $a = 1.277190 + 0.263601I$ $b = -0.55984 - 1.35269I$	$8.66768I$	0
$u = -0.52831 + 1.36936I$ $a = 1.49399 + 0.31411I$ $b = -0.63120 - 1.36963I$	$2.96539 + 13.50520I$	0
$u = -0.52831 - 1.36936I$ $a = 1.49399 - 0.31411I$ $b = -0.63120 + 1.36963I$	$2.96539 - 13.50520I$	0
$u = 0.23918 + 1.46071I$ $a = -0.442710 + 1.146230I$ $b = -0.061638 - 0.907243I$	$2.66064 - 2.48196I$	0
$u = 0.23918 - 1.46071I$ $a = -0.442710 - 1.146230I$ $b = -0.061638 + 0.907243I$	$2.66064 + 2.48196I$	0
$u = -0.494958 + 0.132987I$ $a = 0.301143 + 1.053580I$ $b = -0.788236 - 0.244072I$	$3.03351 + 3.67994I$	0
$u = -0.494958 - 0.132987I$ $a = 0.301143 - 1.053580I$ $b = -0.788236 + 0.244072I$	$3.03351 - 3.67994I$	0
$u = -0.63804 + 1.35560I$ $a = -1.164130 + 0.030727I$ $b = 0.447824 + 0.970612I$	$5.64838 + 6.76788I$	0
$u = -0.63804 - 1.35560I$ $a = -1.164130 - 0.030727I$ $b = 0.447824 - 0.970612I$	$5.64838 - 6.76788I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.63120 + 1.36963I$ $a = -1.321960 + 0.113276I$ $b = 0.52831 - 1.36936I$	$-2.96539 - 13.50520I$	0
$u = 0.63120 - 1.36963I$ $a = -1.321960 - 0.113276I$ $b = 0.52831 + 1.36936I$	$-2.96539 + 13.50520I$	0
$u = -0.61818 + 1.37844I$ $a = -1.43618 - 0.18376I$ $b = 0.61818 + 1.37844I$	$20.3606I$	0
$u = -0.61818 - 1.37844I$ $a = -1.43618 + 0.18376I$ $b = 0.61818 - 1.37844I$	$-20.3606I$	0
$u = 0.373681 + 0.268102I$ $a = -3.14053 - 2.43672I$ $b = -0.068273 - 0.202972I$	$-0.091634 + 0.759404I$	0
$u = 0.373681 - 0.268102I$ $a = -3.14053 + 2.43672I$ $b = -0.068273 + 0.202972I$	$-0.091634 - 0.759404I$	0
$u = -0.87930 + 1.27832I$ $a = -0.382366 + 0.348568I$ $b = 0.233186 + 0.768133I$	$2.05570 - 4.32127I$	0
$u = -0.87930 - 1.27832I$ $a = -0.382366 - 0.348568I$ $b = 0.233186 - 0.768133I$	$2.05570 + 4.32127I$	0
$u = 0.56010 + 1.49269I$ $a = -0.692095 + 0.163853I$ $b = 0.330909 - 0.958382I$	$-0.64081 - 2.61414I$	0
$u = 0.56010 - 1.49269I$ $a = -0.692095 - 0.163853I$ $b = 0.330909 + 0.958382I$	$-0.64081 + 2.61414I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.174652 + 0.334054I$ $a = -1.004240 - 0.737722I$ $b = -0.174652 + 0.334054I$	$-0.928350I$	$0. + 6.99737I$
$u = 0.174652 - 0.334054I$ $a = -1.004240 + 0.737722I$ $b = -0.174652 - 0.334054I$	$0.928350I$	$0. - 6.99737I$
$u = -1.32235 + 0.96830I$ $a = 0.155400 - 0.367164I$ $b = -0.083335 - 0.860633I$	$2.88532 + 0.42811I$	0
$u = -1.32235 - 0.96830I$ $a = 0.155400 + 0.367164I$ $b = -0.083335 + 0.860633I$	$2.88532 - 0.42811I$	0
$u = -0.304555 + 0.177362I$ $a = 0.45862 + 1.57601I$ $b = 0.743499 - 0.235712I$	$-3.05344 + 0.37163I$	$-4.41447 + 2.91552I$
$u = -0.304555 - 0.177362I$ $a = 0.45862 - 1.57601I$ $b = 0.743499 + 0.235712I$	$-3.05344 - 0.37163I$	$-4.41447 - 2.91552I$
$u = 0.78329 + 1.51303I$ $a = 0.665389 - 0.117496I$ $b = -0.303969 + 1.143130I$	$-0.84891 - 6.85717I$	0
$u = 0.78329 - 1.51303I$ $a = 0.665389 + 0.117496I$ $b = -0.303969 - 1.143130I$	$-0.84891 + 6.85717I$	0
$u = 0.068273 + 0.202972I$ $a = 8.90502 + 0.57452I$ $b = -0.373681 - 0.268102I$	$0.091634 - 0.759404I$	$12.21539 + 1.68846I$
$u = 0.068273 - 0.202972I$ $a = 8.90502 - 0.57452I$ $b = -0.373681 + 0.268102I$	$0.091634 + 0.759404I$	$12.21539 - 1.68846I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.116062 + 0.135620I$ $a = 1.04351 + 2.62194I$ $b = -0.696817 - 0.928767I$	$1.19072 + 1.66992I$	$-12.48819 + 2.15812I$
$u = 0.116062 - 0.135620I$ $a = 1.04351 - 2.62194I$ $b = -0.696817 + 0.928767I$	$1.19072 - 1.66992I$	$-12.48819 - 2.15812I$
$u = -0.78153 + 1.70359I$ $a = -0.117275 - 0.231026I$ $b = -0.152380 + 0.931757I$	$2.50839 - 0.97139I$	0
$u = -0.78153 - 1.70359I$ $a = -0.117275 + 0.231026I$ $b = -0.152380 - 0.931757I$	$2.50839 + 0.97139I$	0
$u = -0.32729 + 2.09186I$ $a = -0.037266 + 0.214055I$ $b = 0.142227 - 0.890446I$	$2.01341 - 6.35063I$	0
$u = -0.32729 - 2.09186I$ $a = -0.037266 - 0.214055I$ $b = 0.142227 + 0.890446I$	$2.01341 + 6.35063I$	0

II.

$\boldsymbol{I_2^u = \langle -2.55\times 10^{30}u^{37}+8.73\times 10^{29}u^{36}+\cdots+2.16\times 10^{30}b-2.67\times 10^{30},\ 8.56\times 10^{31}u^{37}+4.54\times 10^{31}u^{36}+\cdots+3.94\times 10^{31}a+2.77\times 10^{32},\ u^{38}-u^{37}+\cdots-8u+1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2.17057u^{37} - 1.15178u^{36} + \cdots + 11.1508u - 7.01865 \\ 1.18062u^{37} - 0.404072u^{36} + \cdots - 9.36136u + 1.23641 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -4.29415u^{37} + 0.467845u^{36} + \cdots - 3.89602u - 4.93272 \\ 2.19941u^{37} - 0.907133u^{36} + \cdots - 11.2694u + 1.74037 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -13.1177u^{37} + 8.80233u^{36} + \cdots - 254.288u + 47.5716 \\ 1.57959u^{37} + 0.284487u^{36} + \cdots + 0.995340u + 0.792686 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.53749u^{37} - 2.23026u^{36} + \cdots + 9.06011u - 2.36862 \\ -2.13981u^{37} + 1.55284u^{36} + \cdots - 14.4874u + 1.49894 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.18350u^{37} + 3.79407u^{36} + \cdots - 40.7575u - 0.708877 \\ -0.0996288u^{37} - 2.44960u^{36} + \cdots + 13.6914u - 1.36519 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -17.2790u^{37} + 16.2247u^{36} + \cdots - 315.662u + 52.6626 \\ 1.88153u^{37} - 3.83957u^{36} + \cdots + 23.6180u - 2.10771 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.135992u^{37} - 0.829652u^{36} + \cdots - 0.575461u - 1.08889 \\ -0.738310u^{37} + 0.152234u^{36} + \cdots - 4.85187u + 0.219207 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -7.36042u^{37} + 4.46863u^{36} + \cdots - 45.7297u + 1.47141 \\ 0.834513u^{37} - 2.31566u^{36} + \cdots + 12.6154u - 1.63493 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 31.5312u^{37} - 19.9178u^{36} + \cdots + 569.219u - 68.4921$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$u^{38} - u^{37} + \cdots - 8u + 1$
c_2, c_{10}	$u^{38} - u^{37} + \cdots - 3u + 1$
c_3	$u^{38} - 2u^{37} + \cdots + 14u + 28$
c_4, c_9	$u^{38} + u^{37} + \cdots + 8u + 1$
c_5	$u^{38} + 2u^{37} + \cdots - 14u + 28$
c_6, c_7	$u^{38} + u^{37} + \cdots + 3u + 1$
c_8	$u^{38} + u^{37} + \cdots + 4u + 1$
c_{11}	$u^{38} - u^{37} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_9 c_{12}	$y^{38} + 29y^{37} + \cdots + 14y + 1$
c_2, c_6, c_7 c_{10}	$y^{38} - 23y^{37} + \cdots - 29y + 1$
c_3, c_5	$y^{38} - 40y^{36} + \cdots - 2380y + 784$
c_8, c_{11}	$y^{38} - 3y^{37} + \cdots + 32y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.933085 + 0.407912I$ $a = 0.221568 - 0.665433I$ $b = 0.185024 - 1.212340I$	$-4.23539 - 2.76947I$	$-5.70457 - 0.94630I$
$u = 0.933085 - 0.407912I$ $a = 0.221568 + 0.665433I$ $b = 0.185024 + 1.212340I$	$-4.23539 + 2.76947I$	$-5.70457 + 0.94630I$
$u = -0.340511 + 0.973127I$ $a = 2.81883 - 0.44021I$ $b = -0.340511 - 0.973127I$	$9.77424I$	$0. - 11.74663I$
$u = -0.340511 - 0.973127I$ $a = 2.81883 + 0.44021I$ $b = -0.340511 + 0.973127I$	$-9.77424I$	$0. + 11.74663I$
$u = -0.908887 + 0.069929I$ $a = -0.477828 + 0.623256I$ $b = 0.302700 + 0.834985I$	$2.02629 + 1.51983I$	$3.65866 - 2.81426I$
$u = -0.908887 - 0.069929I$ $a = -0.477828 - 0.623256I$ $b = 0.302700 - 0.834985I$	$2.02629 - 1.51983I$	$3.65866 + 2.81426I$
$u = -0.069019 + 0.885914I$ $a = 0.819102 - 0.967431I$ $b = -0.27953 + 1.78152I$	$-1.84829 + 5.92717I$	$0.866897 - 1.032654I$
$u = -0.069019 - 0.885914I$ $a = 0.819102 + 0.967431I$ $b = -0.27953 - 1.78152I$	$-1.84829 - 5.92717I$	$0.866897 + 1.032654I$
$u = 0.302700 + 0.834985I$ $a = 1.39394 + 0.57384I$ $b = -0.908887 + 0.069929I$	$-2.02629 - 1.51983I$	$-3.65866 + 2.81426I$
$u = 0.302700 - 0.834985I$ $a = 1.39394 - 0.57384I$ $b = -0.908887 - 0.069929I$	$-2.02629 + 1.51983I$	$-3.65866 - 2.81426I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.083005 + 0.879285I$ $a = 1.85347 + 1.11055I$ $b = -1.00387 - 1.29195I$	$-2.80877 - 0.42407I$	$-6.63080 + 0.12335I$
$u = 0.083005 - 0.879285I$ $a = 1.85347 - 1.11055I$ $b = -1.00387 + 1.29195I$	$-2.80877 + 0.42407I$	$-6.63080 - 0.12335I$
$u = 0.599807 + 0.979180I$ $a = 0.520410 - 0.236654I$ $b = -0.092209 + 0.471920I$	$-1.57677 - 1.71782I$	$-8.52291 + 0.I$
$u = 0.599807 - 0.979180I$ $a = 0.520410 + 0.236654I$ $b = -0.092209 - 0.471920I$	$-1.57677 + 1.71782I$	$-8.52291 + 0.I$
$u = 0.402827 + 1.115830I$ $a = 1.82813 - 0.31574I$ $b = -0.63829 + 1.30833I$	$-4.77406 - 7.12992I$	$0. + 3.49375I$
$u = 0.402827 - 1.115830I$ $a = 1.82813 + 0.31574I$ $b = -0.63829 - 1.30833I$	$-4.77406 + 7.12992I$	$0. - 3.49375I$
$u = 0.185024 + 1.212340I$ $a = -1.41955 + 0.72810I$ $b = 0.933085 - 0.407912I$	$4.23539 - 2.76947I$	$5.70457 + 0.I$
$u = 0.185024 - 1.212340I$ $a = -1.41955 - 0.72810I$ $b = 0.933085 + 0.407912I$	$4.23539 + 2.76947I$	$5.70457 + 0.I$
$u = 0.576577 + 0.514480I$ $a = -0.585116 + 0.217032I$ $b = -0.373316 - 1.341120I$	$-6.71738 + 3.21759I$	$-3.21108 - 5.05543I$
$u = 0.576577 - 0.514480I$ $a = -0.585116 - 0.217032I$ $b = -0.373316 + 1.341120I$	$-6.71738 - 3.21759I$	$-3.21108 + 5.05543I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.157862+1.249940I$ $a=-1.55615-1.09990I$ $b=\ 0.421901+0.531771I$	$5.78678+4.10535I$	$9.77321+0.I$
$u=-0.157862-1.249940I$ $a=-1.55615+1.09990I$ $b=\ 0.421901-0.531771I$	$5.78678-4.10535I$	$9.77321+0.I$
$u=\ 0.421901+0.531771I$ $a=\ 0.71850+2.24216I$ $b=-0.157862+1.249940I$	$-5.78678-4.10535I$	$-9.77321+6.22329I$
$u=\ 0.421901-0.531771I$ $a=\ 0.71850-2.24216I$ $b=-0.157862-1.249940I$	$-5.78678+4.10535I$	$-9.77321-6.22329I$
$u=-0.373316+1.341120I$ $a=-0.784797+0.237629I$ $b=\ 0.576577-0.514480I$	$6.71738+3.21759I$	0
$u=-0.373316-1.341120I$ $a=-0.784797-0.237629I$ $b=\ 0.576577+0.514480I$	$6.71738-3.21759I$	0
$u=-0.63829+1.30833I$ $a=-1.255780+0.132452I$ $b=\ 0.402827+1.115830I$	$4.77406+7.12992I$	0
$u=-0.63829-1.30833I$ $a=-1.255780-0.132452I$ $b=\ 0.402827-1.115830I$	$4.77406-7.12992I$	0
$u=\ 0.59606+1.34379I$ $a=-1.124550+0.305279I$ $b=\ 0.59606-1.34379I$	$-8.35939I$	0
$u=\ 0.59606-1.34379I$ $a=-1.124550-0.305279I$ $b=\ 0.59606+1.34379I$	$8.35939I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.092209+0.471920I$ $a=-1.133270+0.277519I$ $b=\ \ 0.599807+0.979180I$	$1.57677+1.71782I$	$8.52291-0.80662I$
$u=-0.092209-0.471920I$ $a=-1.133270-0.277519I$ $b=\ \ 0.599807-0.979180I$	$1.57677-1.71782I$	$8.52291+0.80662I$
$u=-1.00387+1.29195I$ $a=\ \ 0.439538-0.163487I$ $b=\ \ 0.083005-0.879285I$	$2.80877-0.42407I$	0
$u=-1.00387-1.29195I$ $a=\ \ 0.439538+0.163487I$ $b=\ \ 0.083005+0.879285I$	$2.80877+0.42407I$	0
$u=\ \ 0.262503+0.185193I$ $a=-4.48019-6.07184I$ $b=\ \ 0.262503-0.185193I$	$0.606687I$	$0.+51.5656I$
$u=\ \ 0.262503-0.185193I$ $a=-4.48019+6.07184I$ $b=\ \ 0.262503+0.185193I$	$-0.606687I$	$0.-51.5656I$
$u=-0.27953+1.78152I$ $a=-0.296286-0.379246I$ $b=-0.069019+0.885914I$	$1.84829-5.92717I$	0
$u=-0.27953-1.78152I$ $a=-0.296286+0.379246I$ $b=-0.069019-0.885914I$	$1.84829+5.92717I$	0

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

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + 1 \\ b \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} u^2 b + b + 1 \\ -bu - u^2 + b + u - 2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} bu + b - 1 \\ -bu - u^2 + u - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2 b - bu + 2b \\ -u^2 + u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^2 b + bu + u^2 + b - u + 1 \\ -2bu - 2u^2 + b + 2u - 2 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4bu - 8u^2 + 8u - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -0.662359 + 0.562280I$ $b = 0.215080 - 1.307140I$	$-5.65624I$	$0. + 5.95889I$
$u = 0.215080 + 1.307140I$ $a = -0.662359 + 0.562280I$ $b = 0.569840$	$4.13758 - 2.82812I$	$6.52927 + 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.662359 - 0.562280I$ $b = 0.215080 + 1.307140I$	$5.65624I$	$0. - 5.95889I$
$u = 0.215080 - 1.307140I$ $a = -0.662359 - 0.562280I$ $b = 0.569840$	$4.13758 + 2.82812I$	$6.52927 - 2.97945I$
$u = 0.569840$ $a = 1.32472$ $b = 0.215080 + 1.307140I$	$-4.13758 + 2.82812I$	$-6.52927 - 2.97945I$
$u = 0.569840$ $a = 1.32472$ $b = 0.215080 - 1.307140I$	$-4.13758 - 2.82812I$	$-6.52927 + 2.97945I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3-u^2+2u-1)^2)(u^{38}-u^{37}+\cdots-8u+1)$ $\cdot(u^{166}-8u^{165}+\cdots-2632u+872)$
c_2	$((u^3+u^2-1)^2)(u^{38}-u^{37}+\cdots-3u+1)$ $\cdot(u^{166}-6u^{165}+\cdots-44364u+15032)$
c_3	$((u^3+u^2-1)^2)(u^{38}-2u^{37}+\cdots+14u+28)$ $\cdot(u^{166}+u^{165}+\cdots+77004800u+37093376)$
c_4	$((u^3+u^2+2u+1)^2)(u^{38}+u^{37}+\cdots+8u+1)$ $\cdot(u^{166}-8u^{165}+\cdots-2632u+872)$
c_5	$((u^3-u^2+1)^2)(u^{38}+2u^{37}+\cdots-14u+28)$ $\cdot(u^{166}-u^{165}+\cdots-77004800u+37093376)$
c_6	$((u^3-u^2+1)^2)(u^{38}+u^{37}+\cdots+3u+1)$ $\cdot(u^{166}-6u^{165}+\cdots-44364u+15032)$
c_7	$((u^3-u^2+1)^2)(u^{38}+u^{37}+\cdots+3u+1)$ $\cdot(u^{166}+6u^{165}+\cdots+44364u+15032)$
c_8	$((u^3-u^2+2u-1)^2)(u^{38}+u^{37}+\cdots+4u+1)$ $\cdot(u^{166}-2u^{165}+\cdots+23296u+6376)$
c_9	$((u^3+u^2+2u+1)^2)(u^{38}+u^{37}+\cdots+8u+1)$ $\cdot(u^{166}+8u^{165}+\cdots+2632u+872)$
c_{10}	$((u^3+u^2-1)^2)(u^{38}-u^{37}+\cdots-3u+1)$ $\cdot(u^{166}+6u^{165}+\cdots+44364u+15032)$
c_{11}	$((u^3+u^2+2u+1)^2)(u^{38}-u^{37}+\cdots-4u+1)$ $\cdot(u^{166}+2u^{165}+\cdots-23296u+6376)$
c_{12}	$((u^3-u^2+2u-1)^2)(u^{38}-u^{37}+\cdots-8u+1)$ $\cdot(u^{166}+8u^{165}+\cdots+2632u+872)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_9 c_{12}	$((y^3+3y^2+2y-1)^2)(y^{38}+29y^{37}+\cdots+14y+1)$ $\cdot(y^{166}+112y^{165}+\cdots+54967136y+760384)$
c_2, c_6, c_7 c_{10}	$((y^3-y^2+2y-1)^2)(y^{38}-23y^{37}+\cdots-29y+1)$ $\cdot(y^{166}-88y^{165}+\cdots-10772707536y+225961024)$
c_3, c_5	$((y^3-y^2+2y-1)^2)(y^{38}-40y^{36}+\cdots-2380y+784)$ $\cdot(y^{166}-37y^{165}+\cdots-110732919839916032y+1375918543077376)$
c_8, c_{11}	$((y^3+3y^2+2y-1)^2)(y^{38}-3y^{37}+\cdots+32y+1)$ $\cdot(y^{166}-4y^{165}+\cdots+2251132064y+40653376)$