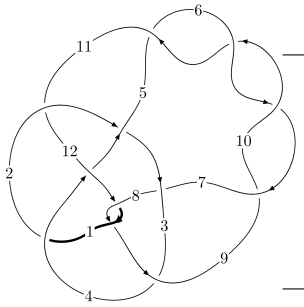
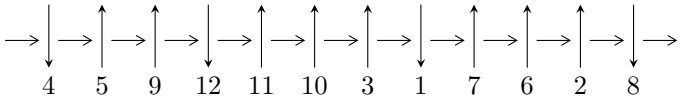
$12a_{0858}$ $(K12a_{0858})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4.29209 \times 10^{154} u^{103} - 9.15492 \times 10^{154} u^{102} + \cdots + 1.10622 \times 10^{155} b - 5.83673 \times 10^{155},$$
$$- 5.85136 \times 10^{155} u^{103} - 1.74496 \times 10^{156} u^{102} + \cdots + 1.10622 \times 10^{155} a - 7.67740 \times 10^{156},$$
$$u^{104} + 3u^{103} + \cdots + 31u + 1 \rangle$$
$$I_2^u = \langle -u^{21} - u^{20} + \cdots + b - 3,\ 2u^{21} + 4u^{20} + \cdots + a + 3,\ u^{22} + 2u^{21} + \cdots + 8u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 126 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. $I_1^u = \langle -4.29 \times 10^{154} u^{103} - 9.15 \times 10^{154} u^{102} + \cdots + 1.11 \times 10^{155} b - 5.84 \times 10^{155},\ -5.85 \times 10^{155} u^{103} - 1.74 \times 10^{156} u^{102} + \cdots + 1.11 \times 10^{155} a - 7.68 \times 10^{156},\ u^{104} + 3u^{103} + \cdots + 31u + 1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 5.28950u^{103} + 15.7740u^{102} + \cdots + 1359.16u + 69.4021 \\ 0.387996u^{103} + 0.827586u^{102} + \cdots + 112.043u + 5.27628 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 4.90151u^{103} + 14.9465u^{102} + \cdots + 1247.12u + 64.1258 \\ 0.387996u^{103} + 0.827586u^{102} + \cdots + 112.043u + 5.27628 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -5.09955u^{103} - 15.8273u^{102} + \cdots - 1348.62u - 60.5142 \\ -0.268969u^{103} - 1.64114u^{102} + \cdots - 126.625u - 4.31384 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 5.26176u^{103} + 16.1541u^{102} + \cdots + 1390.45u + 70.8132 \\ 0.154109u^{103} + 0.372863u^{102} + \cdots + 117.159u + 5.24451 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 4.09794u^{103} + 11.9682u^{102} + \cdots + 106.242u - 9.40838 \\ -0.0216898u^{103} - 0.0878425u^{102} + \cdots - 77.7280u - 4.38713 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.82974u^{103} - 4.02329u^{102} + \cdots - 596.508u - 12.8099 \\ 0.420981u^{103} + 1.67225u^{102} + \cdots + 54.8748u + 3.69402 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 - 2u \\ u^5 + 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.19505u^{103} - 3.04834u^{102} + \cdots - 478.535u - 23.6887$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{104}+8u^{103}+\cdots+14156u+5744$
c_2	$u^{104}+14u^{102}+\cdots+11537u+1378$
c_3	$u^{104}-u^{103}+\cdots+1584164u+498521$
c_4	$u^{104}+7u^{102}+\cdots-38u+1$
c_5, c_6, c_9 c_{10}	$u^{104}+3u^{103}+\cdots+31u+1$
c_7	$u^{104}-u^{103}+\cdots-487679u+95891$
c_8, c_{12}	$u^{104}-u^{103}+\cdots-125u+142$
c_{11}	$u^{104}+10u^{103}+\cdots+18056u+1169$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{104} - 32y^{103} + \cdots - 1389779440y + 32993536$
c_2	$y^{104} + 28y^{103} + \cdots - 10876525y + 1898884$
c_3	$y^{104} + 49y^{103} + \cdots + 10000134915712y + 248523187441$
c_4	$y^{104} + 14y^{103} + \cdots - 30y + 1$
c_5, c_6, c_9 c_{10}	$y^{104} + 131y^{103} + \cdots - 163y + 1$
c_7	$y^{104} + 37y^{103} + \cdots + 307454898715y + 9195083881$
c_8, c_{12}	$y^{104} - 61y^{103} + \cdots - 477693y + 20164$
c_{11}	$y^{104} + 38y^{103} + \cdots + 142466966y + 1366561$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.502898+0.916877I$ $a=\ \ 0.731786+1.022940I$ $b=-0.612116+0.969487I$	$-7.90140-3.33837I$	0
$u=-0.502898-0.916877I$ $a=\ \ 0.731786-1.022940I$ $b=-0.612116-0.969487I$	$-7.90140+3.33837I$	0
$u=-0.141268+0.942566I$ $a=-0.379999-0.233920I$ $b=-1.335470-0.351793I$	$-5.49881+1.95923I$	0
$u=-0.141268-0.942566I$ $a=-0.379999+0.233920I$ $b=-1.335470+0.351793I$	$-5.49881-1.95923I$	0
$u=-0.570868+0.880506I$ $a=-0.618818-0.625987I$ $b=\ \ 0.116597-1.104840I$	$-7.41549-5.38278I$	0
$u=-0.570868-0.880506I$ $a=-0.618818+0.625987I$ $b=\ \ 0.116597+1.104840I$	$-7.41549+5.38278I$	0
$u=\ \ 0.162376+1.044170I$ $a=\ \ 0.684256+0.359913I$ $b=\ \ 0.791948+0.317582I$	$-1.40281+2.16908I$	0
$u=\ \ 0.162376-1.044170I$ $a=\ \ 0.684256-0.359913I$ $b=\ \ 0.791948-0.317582I$	$-1.40281-2.16908I$	0
$u=\ \ 0.132711+1.052880I$ $a=\ \ 1.278520-0.335968I$ $b=\ \ 0.238919-0.386711I$	$-5.03707-0.16972I$	0
$u=\ \ 0.132711-1.052880I$ $a=\ \ 1.278520+0.335968I$ $b=\ \ 0.238919+0.386711I$	$-5.03707+0.16972I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.328304 + 0.862251I$ $a = 0.165679 + 1.388680I$ $b = 0.874529 + 0.960461I$	$-1.19082 + 2.99470I$	0
$u = 0.328304 - 0.862251I$ $a = 0.165679 - 1.388680I$ $b = 0.874529 - 0.960461I$	$-1.19082 - 2.99470I$	0
$u = -0.276342 + 0.874409I$ $a = -0.07809 - 1.99438I$ $b = 0.92580 - 1.20926I$	$-2.01960 - 5.44676I$	0
$u = -0.276342 - 0.874409I$ $a = -0.07809 + 1.99438I$ $b = 0.92580 + 1.20926I$	$-2.01960 + 5.44676I$	0
$u = 0.538764 + 0.944968I$ $a = 0.404249 - 1.083240I$ $b = -0.929614 - 0.978308I$	$-2.34922 + 8.42032I$	0
$u = 0.538764 - 0.944968I$ $a = 0.404249 + 1.083240I$ $b = -0.929614 + 0.978308I$	$-2.34922 - 8.42032I$	0
$u = -0.532031 + 0.950553I$ $a = 0.364609 + 1.272250I$ $b = -1.00220 + 1.14405I$	$-5.9219 - 14.4505I$	0
$u = -0.532031 - 0.950553I$ $a = 0.364609 - 1.272250I$ $b = -1.00220 - 1.14405I$	$-5.9219 + 14.4505I$	0
$u = -0.691545 + 0.883155I$ $a = -0.626007 + 0.058674I$ $b = -0.303448 - 0.699022I$	$-5.06268 + 5.04824I$	0
$u = -0.691545 - 0.883155I$ $a = -0.626007 - 0.058674I$ $b = -0.303448 + 0.699022I$	$-5.06268 - 5.04824I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.840047 + 0.076471I$ $a = 0.327363 + 0.245393I$ $b = -0.594520 - 0.700938I$	$0.76666 + 3.88111I$	0
$u = 0.840047 - 0.076471I$ $a = 0.327363 - 0.245393I$ $b = -0.594520 + 0.700938I$	$0.76666 - 3.88111I$	0
$u = 0.048893 + 0.839271I$ $a = -1.16896 + 2.29985I$ $b = 0.394853 + 0.947867I$	$-6.18765 + 5.05686I$	0
$u = 0.048893 - 0.839271I$ $a = -1.16896 - 2.29985I$ $b = 0.394853 - 0.947867I$	$-6.18765 - 5.05686I$	0
$u = 0.054307 + 0.830716I$ $a = 0.212346 + 1.076540I$ $b = -0.601861 + 1.043040I$	$-2.87472 + 1.68657I$	0
$u = 0.054307 - 0.830716I$ $a = 0.212346 - 1.076540I$ $b = -0.601861 - 1.043040I$	$-2.87472 - 1.68657I$	0
$u = -0.811464 + 0.083411I$ $a = 0.275473 - 0.260082I$ $b = -0.747402 + 0.862488I$	$-2.77324 - 9.99543I$	0
$u = -0.811464 - 0.083411I$ $a = 0.275473 + 0.260082I$ $b = -0.747402 - 0.862488I$	$-2.77324 + 9.99543I$	0
$u = -0.103146 + 0.808046I$ $a = -0.38687 - 1.52545I$ $b = -1.11179 - 1.59842I$	$-5.86231 - 5.76260I$	0
$u = -0.103146 - 0.808046I$ $a = -0.38687 + 1.52545I$ $b = -1.11179 + 1.59842I$	$-5.86231 + 5.76260I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.409728 + 0.673140I$ $a = -0.58461 + 1.34596I$ $b = 0.83524 + 1.36856I$	$-2.13658 + 6.08917I$	0
$u = 0.409728 - 0.673140I$ $a = -0.58461 - 1.34596I$ $b = 0.83524 - 1.36856I$	$-2.13658 - 6.08917I$	0
$u = -0.769636 + 0.053062I$ $a = 0.375105 - 0.232095I$ $b = -0.229831 + 0.894662I$	$-4.92977 + 0.88276I$	0
$u = -0.769636 - 0.053062I$ $a = 0.375105 + 0.232095I$ $b = -0.229831 - 0.894662I$	$-4.92977 - 0.88276I$	0
$u = 0.679892 + 1.028790I$ $a = -0.305880 + 0.158737I$ $b = 0.003951 + 0.615735I$	$-1.87702 + 1.33803I$	0
$u = 0.679892 - 1.028790I$ $a = -0.305880 - 0.158737I$ $b = 0.003951 - 0.615735I$	$-1.87702 - 1.33803I$	0
$u = -0.298746 + 0.693724I$ $a = -0.06811 + 2.41205I$ $b = -0.412342 + 0.182178I$	$-3.49112 - 6.57213I$	0
$u = -0.298746 - 0.693724I$ $a = -0.06811 - 2.41205I$ $b = -0.412342 - 0.182178I$	$-3.49112 + 6.57213I$	0
$u = -0.237343 + 0.668959I$ $a = -0.60277 - 1.51902I$ $b = 1.00094 - 1.13669I$	$-0.73294 - 3.33904I$	0
$u = -0.237343 - 0.668959I$ $a = -0.60277 + 1.51902I$ $b = 1.00094 + 1.13669I$	$-0.73294 + 3.33904I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.489607 + 0.472391I$ $a = 1.186520 - 0.254661I$ $b = -0.543846 - 0.236945I$	$0.80233 + 1.78889I$	$4.00000 + 2.53482I$
$u = 0.489607 - 0.472391I$ $a = 1.186520 + 0.254661I$ $b = -0.543846 + 0.236945I$	$0.80233 - 1.78889I$	$4.00000 - 2.53482I$
$u = -0.056856 + 0.667069I$ $a = -1.026160 - 0.899272I$ $b = 1.082170 - 0.479825I$	$-0.78029 - 2.45975I$	$1.56496 + 4.60534I$
$u = -0.056856 - 0.667069I$ $a = -1.026160 + 0.899272I$ $b = 1.082170 + 0.479825I$	$-0.78029 + 2.45975I$	$1.56496 - 4.60534I$
$u = 0.079539 + 0.659669I$ $a = 1.21852 + 1.18832I$ $b = 0.487415 + 0.558178I$	$-1.04432 + 1.94452I$	$0.44759 - 4.35481I$
$u = 0.079539 - 0.659669I$ $a = 1.21852 - 1.18832I$ $b = 0.487415 - 0.558178I$	$-1.04432 - 1.94452I$	$0.44759 + 4.35481I$
$u = -0.034529 + 1.367220I$ $a = 1.251690 - 0.268262I$ $b = 0.739942 - 0.073109I$	$-5.06693 - 0.49368I$	0
$u = -0.034529 - 1.367220I$ $a = 1.251690 + 0.268262I$ $b = 0.739942 + 0.073109I$	$-5.06693 + 0.49368I$	0
$u = 0.384071 + 0.487436I$ $a = 0.751499 - 1.132160I$ $b = -0.280619 + 0.013695I$	$0.74823 + 1.41717I$	$7.99103 - 4.76808I$
$u = 0.384071 - 0.487436I$ $a = 0.751499 + 1.132160I$ $b = -0.280619 - 0.013695I$	$0.74823 - 1.41717I$	$7.99103 + 4.76808I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.570445 + 0.227108I$ $a = 0.724932 + 0.725809I$ $b = 0.712694 - 0.892078I$	$-0.80561 - 2.69224I$	$0.86014 + 3.46707I$
$u = 0.570445 - 0.227108I$ $a = 0.724932 - 0.725809I$ $b = 0.712694 + 0.892078I$	$-0.80561 + 2.69224I$	$0.86014 - 3.46707I$
$u = -0.397156 + 0.323544I$ $a = 0.93708 - 1.37258I$ $b = 0.822579 + 0.535327I$	$0.221336 + 1.123620I$	$1.97465 + 3.42457I$
$u = -0.397156 - 0.323544I$ $a = 0.93708 + 1.37258I$ $b = 0.822579 - 0.535327I$	$0.221336 - 1.123620I$	$1.97465 - 3.42457I$
$u = 0.506465 + 0.002396I$ $a = -0.105042 - 0.152201I$ $b = 0.804872 + 0.250234I$	$1.43831 + 0.12872I$	$9.00370 + 1.16576I$
$u = 0.506465 - 0.002396I$ $a = -0.105042 + 0.152201I$ $b = 0.804872 - 0.250234I$	$1.43831 - 0.12872I$	$9.00370 - 1.16576I$
$u = 0.11093 + 1.51234I$ $a = 0.523741 - 0.597490I$ $b = -0.777182 - 0.293338I$	$-5.75279 + 3.87407I$	0
$u = 0.11093 - 1.51234I$ $a = 0.523741 + 0.597490I$ $b = -0.777182 + 0.293338I$	$-5.75279 - 3.87407I$	0
$u = -0.450202 + 0.168694I$ $a = 1.57697 - 0.98184I$ $b = -0.849531 - 0.131713I$	$-1.99105 + 3.91633I$	$4.79400 - 3.67932I$
$u = -0.450202 - 0.168694I$ $a = 1.57697 + 0.98184I$ $b = -0.849531 + 0.131713I$	$-1.99105 - 3.91633I$	$4.79400 + 3.67932I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.408993+0.061968I$ $a=-0.870341+0.284115I$ $b=\ 0.920328-0.783783I$	$0.80123-3.04052I$	$6.83565+8.73795I$
$u=-0.408993-0.061968I$ $a=-0.870341-0.284115I$ $b=\ 0.920328+0.783783I$	$0.80123+3.04052I$	$6.83565-8.73795I$
$u=\ 0.06184+1.59500I$ $a=\ 0.23501-1.40430I$ $b=-0.076351-0.495907I$	$-6.51615+2.69010I$	0
$u=\ 0.06184-1.59500I$ $a=\ 0.23501+1.40430I$ $b=-0.076351+0.495907I$	$-6.51615-2.69010I$	0
$u=-0.00686+1.59874I$ $a=\ 0.49443+1.47750I$ $b=\ 0.070839+0.929945I$	$-8.76444+2.10610I$	0
$u=-0.00686-1.59874I$ $a=\ 0.49443-1.47750I$ $b=\ 0.070839-0.929945I$	$-8.76444-2.10610I$	0
$u=\ 0.09071+1.62099I$ $a=\ 0.38141+2.24288I$ $b=\ 1.04947+1.86313I$	$-10.04900+7.81578I$	0
$u=\ 0.09071-1.62099I$ $a=\ 0.38141-2.24288I$ $b=\ 1.04947-1.86313I$	$-10.04900-7.81578I$	0
$u=-0.05613+1.63119I$ $a=\ 0.57924-1.96031I$ $b=\ 1.30610-1.53456I$	$-8.81712-4.37016I$	0
$u=-0.05613-1.63119I$ $a=\ 0.57924+1.96031I$ $b=\ 1.30610+1.53456I$	$-8.81712+4.37016I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.01126+1.63337I$ $a=\ \ 0.360804-0.737559I$ $b=\ \ 1.43899-0.49323I$	$-8.92043-2.68470I$	0
$u=-0.01126-1.63337I$ $a=\ \ 0.360804+0.737559I$ $b=\ \ 1.43899+0.49323I$	$-8.92043+2.68470I$	0
$u=-0.06741+1.63246I$ $a=-0.29501+1.81166I$ $b=-0.151442+0.454421I$	$-11.61330-7.84388I$	0
$u=-0.06741-1.63246I$ $a=-0.29501-1.81166I$ $b=-0.151442-0.454421I$	$-11.61330+7.84388I$	0
$u=-0.02728+1.66296I$ $a=-1.15006-2.07477I$ $b=-1.55205-1.96957I$	$-14.5853-6.2594I$	0
$u=-0.02728-1.66296I$ $a=-1.15006+2.07477I$ $b=-1.55205+1.96957I$	$-14.5853+6.2594I$	0
$u=\ \ 0.01513+1.66372I$ $a=-0.59500+1.59738I$ $b=-1.07841+1.42400I$	$-11.65700+1.95959I$	0
$u=\ \ 0.01513-1.66372I$ $a=-0.59500-1.59738I$ $b=-1.07841-1.42400I$	$-11.65700-1.95959I$	0
$u=\ \ 0.01664+1.66945I$ $a=-0.28312+1.86519I$ $b=\ \ 0.674892+1.040730I$	$-15.0505+5.3333I$	0
$u=\ \ 0.01664-1.66945I$ $a=-0.28312-1.86519I$ $b=\ \ 0.674892-1.040730I$	$-15.0505-5.3333I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.08409 + 1.67730I$ $a = 0.62495 + 1.93763I$ $b = 1.02211 + 1.51213I$	$-10.09910 + 4.56839I$	0
$u = 0.08409 - 1.67730I$ $a = 0.62495 - 1.93763I$ $b = 1.02211 - 1.51213I$	$-10.09910 - 4.56839I$	0
$u = -0.07088 + 1.68001I$ $a = 0.47194 - 2.25156I$ $b = 0.94189 - 1.58874I$	$-11.00560 - 6.77939I$	0
$u = -0.07088 - 1.68001I$ $a = 0.47194 + 2.25156I$ $b = 0.94189 + 1.58874I$	$-11.00560 + 6.77939I$	0
$u = -0.16505 + 1.67970I$ $a = -0.30640 - 1.49193I$ $b = 0.32631 - 1.38443I$	$-16.2170 - 8.2628I$	0
$u = -0.16505 - 1.67970I$ $a = -0.30640 + 1.49193I$ $b = 0.32631 + 1.38443I$	$-16.2170 + 8.2628I$	0
$u = -0.14240 + 1.68308I$ $a = 0.07083 + 1.53547I$ $b = -0.87679 + 1.11168I$	$-16.8778 - 5.8754I$	0
$u = -0.14240 - 1.68308I$ $a = 0.07083 - 1.53547I$ $b = -0.87679 - 1.11168I$	$-16.8778 + 5.8754I$	0
$u = -0.02267 + 1.69173I$ $a = -1.205200 - 0.631112I$ $b = -1.77192 - 0.61321I$	$-14.8104 + 1.4077I$	0
$u = -0.02267 - 1.69173I$ $a = -1.205200 + 0.631112I$ $b = -1.77192 + 0.61321I$	$-14.8104 - 1.4077I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.15326 + 1.69277I$ $a = -0.25585 - 1.64137I$ $b = -1.14981 - 1.22068I$	$-11.4479 + 11.1627I$	0
$u = 0.15326 - 1.69277I$ $a = -0.25585 + 1.64137I$ $b = -1.14981 + 1.22068I$	$-11.4479 - 11.1627I$	0
$u = 0.01869 + 1.70226I$ $a = 0.422433 - 0.545258I$ $b = -0.425173 - 0.406842I$	$-14.6931 + 0.3069I$	0
$u = 0.01869 - 1.70226I$ $a = 0.422433 + 0.545258I$ $b = -0.425173 + 0.406842I$	$-14.6931 - 0.3069I$	0
$u = -0.15215 + 1.69617I$ $a = -0.29351 + 1.85137I$ $b = -1.17227 + 1.39675I$	$-15.0671 - 17.1743I$	0
$u = -0.15215 - 1.69617I$ $a = -0.29351 - 1.85137I$ $b = -1.17227 - 1.39675I$	$-15.0671 + 17.1743I$	0
$u = 0.13765 + 1.71554I$ $a = 0.141859 + 1.187960I$ $b = 0.617032 + 1.085440I$	$-11.58530 + 4.29339I$	0
$u = 0.13765 - 1.71554I$ $a = 0.141859 - 1.187960I$ $b = 0.617032 - 1.085440I$	$-11.58530 - 4.29339I$	0
$u = -0.135262 + 0.224383I$ $a = 1.70040 - 2.96158I$ $b = 0.335448 + 0.496452I$	$0.13864 + 1.58495I$	$1.31807 - 1.97880I$
$u = -0.135262 - 0.224383I$ $a = 1.70040 + 2.96158I$ $b = 0.335448 - 0.496452I$	$0.13864 - 1.58495I$	$1.31807 + 1.97880I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.19178+1.74653I$ $a=-0.156767-0.694979I$ $b=\ \ 0.304116-0.753836I$	$-14.2097+1.3446I$	0
$u=-0.19178-1.74653I$ $a=-0.156767+0.694979I$ $b=\ \ 0.304116+0.753836I$	$-14.2097-1.3446I$	0
$u=-0.0819509+0.0317781I$ $a=\ \ 4.88891+11.43510I$ $b=-0.253995+1.080020I$	$-3.58644+4.97389I$	$1.73611-5.61537I$
$u=-0.0819509-0.0317781I$ $a=\ \ 4.88891-11.43510I$ $b=-0.253995-1.080020I$	$-3.58644-4.97389I$	$1.73611+5.61537I$

II.

$\boldsymbol{I_2^u = \langle -u^{21}-u^{20}+\cdots+b-3,\ 2u^{21}+4u^{20}+\cdots+a+3,\ u^{22}+2u^{21}+\cdots+8u+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -2u^{21} - 4u^{20} + \cdots - 30u - 3 \\ u^{21} + u^{20} + \cdots + 12u + 3 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -3u^{21} - 5u^{20} + \cdots - 42u - 6 \\ u^{21} + u^{20} + \cdots + 12u + 3 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{21} - 15u^{19} + \cdots - 9u + 1 \\ 2u^{21} + 3u^{20} + \cdots + 23u + 3 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -3u^{21} - 5u^{20} + \cdots - 42u - 5 \\ 2u^{21} + 3u^{20} + \cdots + 25u + 5 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -2u^{21} - 3u^{20} + \cdots - 40u^2 - 14u \\ 2u^{21} + 3u^{20} + \cdots + 25u + 4 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{21} + u^{20} + \cdots + 17u + 2 \\ -u^{21} - 2u^{20} + \cdots - 15u - 3 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 - 2u \\ u^5 + 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $=$
$-10u^{21}-7u^{20}-141u^{19}-90u^{18}-840u^{17}-473u^{16}-2754u^{15}-1311u^{14}-5433u^{13}-2083u^{12}-6642u^{11}-1999u^{10}-5017u^9-1297u^8-2278u^7-654u^6-592u^5-202u^4-84u^3-22u^2-19u+4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{22} - 13u^{21} + \cdots - 11u + 1$
c_2	$u^{22} + 9u^{21} + \cdots + 5u + 1$
c_3	$u^{22} + 4u^{20} + \cdots + u + 1$
c_4	$u^{22} + u^{21} + \cdots + u + 1$
c_5, c_6	$u^{22} + 2u^{21} + \cdots + 8u + 1$
c_7	$u^{22} + 4u^{20} + \cdots + 2u + 1$
c_8	$u^{22} - 5u^{20} + \cdots - u + 1$
c_9, c_{10}	$u^{22} - 2u^{21} + \cdots - 8u + 1$
c_{11}	$u^{22} + u^{21} + \cdots + u + 1$
c_{12}	$u^{22} - 5u^{20} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{22}+3y^{21}+\cdots+23y+1$
c_2	$y^{22}+7y^{21}+\cdots+11y+1$
c_3	$y^{22}+8y^{21}+\cdots+19y+1$
c_4	$y^{22}+13y^{21}+\cdots+9y+1$
c_5, c_6, c_9 c_{10}	$y^{22}+30y^{21}+\cdots+52y^2+1$
c_7	$y^{22}+8y^{21}+\cdots-10y+1$
c_8, c_{12}	$y^{22}-10y^{21}+\cdots-15y+1$
c_{11}	$y^{22}+9y^{21}+\cdots+13y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.260039+0.814231I$ $a=-0.07282-1.69631I$ $b=\ \ 1.02045-1.27936I$	$-1.50865-4.06278I$	$-1.73350+7.43931I$
$u=-0.260039-0.814231I$ $a=-0.07282+1.69631I$ $b=\ \ 1.02045+1.27936I$	$-1.50865+4.06278I$	$-1.73350-7.43931I$
$u=-0.513392+1.101110I$ $a=\ \ 0.331724-0.097201I$ $b=\ \ 0.009125+0.374583I$	$-1.54750-1.16736I$	$6.12536-5.58688I$
$u=-0.513392-1.101110I$ $a=\ \ 0.331724+0.097201I$ $b=\ \ 0.009125-0.374583I$	$-1.54750+1.16736I$	$6.12536+5.58688I$
$u=\ \ 0.342694+0.691677I$ $a=-0.037082+0.398376I$ $b=-0.351209-0.606327I$	$-4.42431-3.92780I$	$-1.78221+1.52974I$
$u=\ \ 0.342694-0.691677I$ $a=-0.037082-0.398376I$ $b=-0.351209+0.606327I$	$-4.42431+3.92780I$	$-1.78221-1.52974I$
$u=\ \ 0.225543+0.680682I$ $a=-1.11825+2.21918I$ $b=-0.051851+1.135470I$	$-4.53032+5.87417I$	$-3.21531-7.87829I$
$u=\ \ 0.225543-0.680682I$ $a=-1.11825-2.21918I$ $b=-0.051851-1.135470I$	$-4.53032-5.87417I$	$-3.21531+7.87829I$
$u=-0.04968+1.42999I$ $a=\ \ 1.348280+0.372464I$ $b=\ \ 0.996629+0.422487I$	$-4.80045+1.01728I$	$2.84745-8.71021I$
$u=-0.04968-1.42999I$ $a=\ \ 1.348280-0.372464I$ $b=\ \ 0.996629-0.422487I$	$-4.80045-1.01728I$	$2.84745+8.71021I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.421916+0.289657I$ $a=-1.71025+0.48258I$ $b=\ \ 0.603986-0.426323I$	$0.74603-2.40280I$	$5.79656+9.33997I$
$u=-0.421916-0.289657I$ $a=-1.71025-0.48258I$ $b=\ \ 0.603986+0.426323I$	$0.74603+2.40280I$	$5.79656-9.33997I$
$u=-0.08819+1.52280I$ $a=-0.597078-0.689567I$ $b=\ \ 0.816795-0.301665I$	$-5.54671-3.96043I$	$17.2601+10.8631I$
$u=-0.08819-1.52280I$ $a=-0.597078+0.689567I$ $b=\ \ 0.816795+0.301665I$	$-5.54671+3.96043I$	$17.2601-10.8631I$
$u=\ \ 0.06151+1.64708I$ $a=-0.21693+2.25230I$ $b=\ \ 0.12336+1.51523I$	$-12.7952+6.9466I$	$-4.71884-5.98802I$
$u=\ \ 0.06151-1.64708I$ $a=-0.21693-2.25230I$ $b=\ \ 0.12336-1.51523I$	$-12.7952-6.9466I$	$-4.71884+5.98802I$
$u=-0.07021+1.67025I$ $a=\ \ 0.67086-2.16616I$ $b=\ \ 1.18851-1.72785I$	$-10.26870-5.32986I$	$-2.59736+6.54048I$
$u=-0.07021-1.67025I$ $a=\ \ 0.67086+2.16616I$ $b=\ \ 1.18851+1.72785I$	$-10.26870+5.32986I$	$-2.59736-6.54048I$
$u=-0.283622+0.162602I$ $a=\ \ 1.20764-1.85056I$ $b=\ \ 0.937792+0.676253I$	$0.54699+1.98347I$	$7.55461-2.60545I$
$u=-0.283622-0.162602I$ $a=\ \ 1.20764+1.85056I$ $b=\ \ 0.937792-0.676253I$	$0.54699-1.98347I$	$7.55461+2.60545I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.05730 + 1.72809I$		
$a = -0.306085 + 0.092293I$	$-13.44380 - 2.19567I$	$-2.03687 + 5.18624I$
$b = -0.793590 - 0.075830I$		
$u = \ \ 0.05730 - 1.72809I$		
$a = -0.306085 - 0.092293I$	$-13.44380 + 2.19567I$	$-2.03687 - 5.18624I$
$b = -0.793590 + 0.075830I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{22}-13u^{21}+\cdots-11u+1)(u^{104}+8u^{103}+\cdots+14156u+5744)$
c_2	$(u^{22}+9u^{21}+\cdots+5u+1)(u^{104}+14u^{102}+\cdots+11537u+1378)$
c_3	$(u^{22}+4u^{20}+\cdots+u+1)(u^{104}-u^{103}+\cdots+1584164u+498521)$
c_4	$(u^{22}+u^{21}+\cdots+u+1)(u^{104}+7u^{102}+\cdots-38u+1)$
c_5, c_6	$(u^{22}+2u^{21}+\cdots+8u+1)(u^{104}+3u^{103}+\cdots+31u+1)$
c_7	$(u^{22}+4u^{20}+\cdots+2u+1)(u^{104}-u^{103}+\cdots-487679u+95891)$
c_8	$(u^{22}-5u^{20}+\cdots-u+1)(u^{104}-u^{103}+\cdots-125u+142)$
c_9, c_{10}	$(u^{22}-2u^{21}+\cdots-8u+1)(u^{104}+3u^{103}+\cdots+31u+1)$
c_{11}	$(u^{22}+u^{21}+\cdots+u+1)(u^{104}+10u^{103}+\cdots+18056u+1169)$
c_{12}	$(u^{22}-5u^{20}+\cdots+u+1)(u^{104}-u^{103}+\cdots-125u+142)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{22}+3y^{21}+\cdots+23y+1)$ $\cdot(y^{104}-32y^{103}+\cdots-1389779440y+32993536)$
c_2	$(y^{22}+7y^{21}+\cdots+11y+1)$ $\cdot(y^{104}+28y^{103}+\cdots-10876525y+1898884)$
c_3	$(y^{22}+8y^{21}+\cdots+19y+1)$ $\cdot(y^{104}+49y^{103}+\cdots+10000134915712y+248523187441)$
c_4	$(y^{22}+13y^{21}+\cdots+9y+1)(y^{104}+14y^{103}+\cdots-30y+1)$
c_5, c_6, c_9 c_{10}	$(y^{22}+30y^{21}+\cdots+52y^2+1)(y^{104}+131y^{103}+\cdots-163y+1)$
c_7	$(y^{22}+8y^{21}+\cdots-10y+1)$ $\cdot(y^{104}+37y^{103}+\cdots+307454898715y+9195083881)$
c_8, c_{12}	$(y^{22}-10y^{21}+\cdots-15y+1)(y^{104}-61y^{103}+\cdots-477693y+20164)$
c_{11}	$(y^{22}+9y^{21}+\cdots+13y+1)$ $\cdot(y^{104}+38y^{103}+\cdots+142466966y+1366561)$