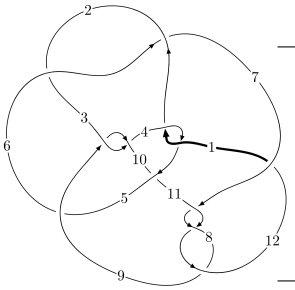
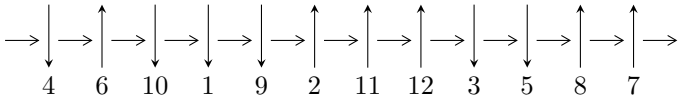
$12a_{0968}$ $(K12a_{0968})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 1.66735 \times 10^{500} u^{123} - 2.11747 \times 10^{498} u^{122} + \cdots + 1.13618 \times 10^{500} b + 5.33111 \times 10^{503}, \\ & - 7.52490 \times 10^{503} u^{123} - 1.24524 \times 10^{502} u^{122} + \cdots + 3.79142 \times 10^{503} a - 2.44838 \times 10^{507}, \\ & u^{124} + u^{123} + \cdots + 6267u + 3337 \rangle \\ I_2^u = \langle & 146398895 u^{27} - 49300484 u^{26} + \cdots + 30684719 b + 180392163, \\ & 345321576 u^{27} - 131091679 u^{26} + \cdots + 30684719 a + 749968064,\ u^{28} - 9u^{26} + \cdots + 3u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 152 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. $\boldsymbol{I_1^u = \langle 1.67 \times 10^{500} u^{123} - 2.12 \times 10^{498} u^{122} + \cdots + 1.14 \times 10^{500} b + 5.33 \times 10^{503},\ -7.52 \times 10^{503} u^{123} - 1.25 \times 10^{502} u^{122} + \cdots + 3.79 \times 10^{503} a - 2.45 \times 10^{507},\ u^{124} + u^{123} + \cdots + 6267u + 3337 \rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.98472u^{123} + 0.0328437u^{122} + \cdots + 5699.24u + 6457.70 \\ -1.46751u^{123} + 0.0186369u^{122} + \cdots - 4276.35u - 4692.15 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.69518u^{123} + 0.130301u^{122} + \cdots - 4860.86u - 5060.88 \\ -1.93539u^{123} + 0.0534685u^{122} + \cdots - 5542.57u - 6049.77 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0614829u^{123} - 0.418132u^{122} + \cdots - 260.898u - 1428.36 \\ 0.509867u^{123} - 0.144487u^{122} + \cdots + 1458.46u + 1233.81 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -3.50486u^{123} + 0.178179u^{122} + \cdots - 10051.2u - 10731.9 \\ -2.06520u^{123} + 0.0248781u^{122} + \cdots - 5954.65u - 6577.43 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.517208u^{123} + 0.0514805u^{122} + \cdots + 1422.89u + 1765.54 \\ -1.46751u^{123} + 0.0186369u^{122} + \cdots - 4276.35u - 4692.15 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3.37498u^{123} - 0.224652u^{122} + \cdots + 10242.0u + 10695.4 \\ 1.37358u^{123} - 0.0868308u^{122} + \cdots + 4199.78u + 4397.25 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.98546u^{123} - 0.0457094u^{122} + \cdots + 5925.96u + 6443.94 \\ -0.589160u^{123} + 0.142648u^{122} + \cdots - 1756.81u - 1539.59 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.96853u^{123} - 0.0341607u^{122} + \cdots - 8928.85u - 9979.19 \\ -0.253373u^{123} - 0.109983u^{122} + \cdots - 787.410u - 1204.28 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.783501u^{123} - 0.0743194u^{122} + \cdots + 2037.91u + 2088.12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{124} - 6u^{123} + \cdots - 1685u + 409$
c_2, c_6	$u^{124} - 2u^{123} + \cdots + 4203615u + 452717$
c_3, c_9	$u^{124} + u^{123} + \cdots + 6267u + 3337$
c_5	$u^{124} + 3u^{123} + \cdots + 57474466u + 17460809$
c_7, c_8, c_{11}	$u^{124} - 3u^{123} + \cdots + 78u + 17$
c_{10}	$u^{124} - u^{123} + \cdots - 4921u + 587$
c_{12}	$u^{124} + 9u^{123} + \cdots - 252952u - 25823$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{124} + 72y^{123} + \cdots + 9830777y + 167281$
c_2, c_6	$y^{124} + 94y^{123} + \cdots + 2080269273415y + 204952682089$
c_3, c_9	$y^{124} - 85y^{123} + \cdots - 217417697y + 11135569$
c_5	$y^{124} - 49y^{123} + \cdots - 10380445673668428y + 304879850934481$
c_7, c_8, c_{11}	$y^{124} - 113y^{123} + \cdots + 8842y + 289$
c_{10}	$y^{124} - 11y^{123} + \cdots - 15729395y + 344569$
c_{12}	$y^{124} + 19y^{123} + \cdots - 40988713052y + 666827329$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.751395 + 0.647947I$ $a = -0.444423 - 0.851288I$ $b = 1.43800 - 0.30287I$	$0.35757 - 2.52458I$	0
$u = 0.751395 - 0.647947I$ $a = -0.444423 + 0.851288I$ $b = 1.43800 + 0.30287I$	$0.35757 + 2.52458I$	0
$u = 1.017530 + 0.090414I$ $a = 0.138485 + 0.982190I$ $b = 1.20561 - 1.66871I$	$4.48519 + 0.42117I$	0
$u = 1.017530 - 0.090414I$ $a = 0.138485 - 0.982190I$ $b = 1.20561 + 1.66871I$	$4.48519 - 0.42117I$	0
$u = -0.856183 + 0.561569I$ $a = 0.579030 - 0.243502I$ $b = -0.717906 - 0.769695I$	$-0.64210 + 2.71262I$	0
$u = -0.856183 - 0.561569I$ $a = 0.579030 + 0.243502I$ $b = -0.717906 + 0.769695I$	$-0.64210 - 2.71262I$	0
$u = -0.379617 + 0.961102I$ $a = -0.292892 + 0.684607I$ $b = -0.072348 - 0.810126I$	$9.86516 + 1.82868I$	0
$u = -0.379617 - 0.961102I$ $a = -0.292892 - 0.684607I$ $b = -0.072348 + 0.810126I$	$9.86516 - 1.82868I$	0
$u = -0.686990 + 0.673145I$ $a = 0.450248 - 1.025700I$ $b = -1.59802 - 0.06875I$	$4.72490 + 5.19947I$	0
$u = -0.686990 - 0.673145I$ $a = 0.450248 + 1.025700I$ $b = -1.59802 + 0.06875I$	$4.72490 - 5.19947I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.801645+0.676898I$ $a=\ \ 0.595452-0.760437I$ $b=-1.49274-0.58807I$	$4.44911-0.03429I$	0
$u=-0.801645-0.676898I$ $a=\ \ 0.595452+0.760437I$ $b=-1.49274+0.58807I$	$4.44911+0.03429I$	0
$u=-0.183995+0.923140I$ $a=\ \ 1.287490-0.218341I$ $b=-0.996040+0.273161I$	$-1.74802-1.57494I$	0
$u=-0.183995-0.923140I$ $a=\ \ 1.287490+0.218341I$ $b=-0.996040-0.273161I$	$-1.74802+1.57494I$	0
$u=-1.046320+0.166367I$ $a=\ \ 0.060385+0.948348I$ $b=-0.20035-2.35004I$	$3.24681+8.29685I$	0
$u=-1.046320-0.166367I$ $a=\ \ 0.060385-0.948348I$ $b=-0.20035+2.35004I$	$3.24681-8.29685I$	0
$u=-1.063870+0.099118I$ $a=-0.42909-1.69946I$ $b=-0.929060+0.381333I$	$-3.04067+4.79725I$	0
$u=-1.063870-0.099118I$ $a=-0.42909+1.69946I$ $b=-0.929060-0.381333I$	$-3.04067-4.79725I$	0
$u=\ \ 0.885111+0.605177I$ $a=-0.681560-0.390823I$ $b=\ \ 0.940572-0.944198I$	$3.78465-5.84346I$	0
$u=\ \ 0.885111-0.605177I$ $a=-0.681560+0.390823I$ $b=\ \ 0.940572+0.944198I$	$3.78465+5.84346I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.997576 + 0.396495I$ $a = 0.662400 - 0.603344I$ $b = 0.888350 + 0.250860I$	$1.29894 - 3.71169I$	0
$u = 0.997576 - 0.396495I$ $a = 0.662400 + 0.603344I$ $b = 0.888350 - 0.250860I$	$1.29894 + 3.71169I$	0
$u = -1.073680 + 0.087462I$ $a = -0.037092 + 1.086680I$ $b = -0.60112 - 1.44378I$	$-1.49679 + 1.67439I$	0
$u = -1.073680 - 0.087462I$ $a = -0.037092 - 1.086680I$ $b = -0.60112 + 1.44378I$	$-1.49679 - 1.67439I$	0
$u = 1.085070 + 0.087802I$ $a = 0.22542 - 1.66536I$ $b = 0.833203 + 0.405992I$	$-7.03932 - 0.59794I$	0
$u = 1.085070 - 0.087802I$ $a = 0.22542 + 1.66536I$ $b = 0.833203 - 0.405992I$	$-7.03932 + 0.59794I$	0
$u = 1.078720 + 0.151683I$ $a = -0.059149 + 1.008330I$ $b = 0.13577 - 1.91283I$	$-2.21566 - 5.13599I$	0
$u = 1.078720 - 0.151683I$ $a = -0.059149 - 1.008330I$ $b = 0.13577 + 1.91283I$	$-2.21566 + 5.13599I$	0
$u = 0.816050 + 0.330070I$ $a = -0.731451 + 0.044798I$ $b = 0.183690 - 0.541400I$	$2.65243 + 0.13673I$	0
$u = 0.816050 - 0.330070I$ $a = -0.731451 - 0.044798I$ $b = 0.183690 + 0.541400I$	$2.65243 - 0.13673I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.121600+0.075195I$ $a=-0.03111-1.58714I$ $b=-0.679209+0.413456I$	$-3.25272-3.53201I$	0
$u=-1.121600-0.075195I$ $a=-0.03111+1.58714I$ $b=-0.679209-0.413456I$	$-3.25272+3.53201I$	0
$u=1.078790+0.328127I$ $a=0.959816-0.631273I$ $b=0.963005+0.378001I$	$1.16463-3.54205I$	0
$u=1.078790-0.328127I$ $a=0.959816+0.631273I$ $b=0.963005-0.378001I$	$1.16463+3.54205I$	0
$u=-1.13389$ $a=0.573544$ $b=0.904582$	-2.33630	0
$u=0.456626+0.702250I$ $a=-0.149831+0.709393I$ $b=0.430576-0.684536I$	$3.00312-0.38713I$	0
$u=0.456626-0.702250I$ $a=-0.149831-0.709393I$ $b=0.430576+0.684536I$	$3.00312+0.38713I$	0
$u=0.060198+0.827365I$ $a=-1.49574-0.23920I$ $b=1.015420+0.502709I$	$-4.81453-2.53246I$	0
$u=0.060198-0.827365I$ $a=-1.49574+0.23920I$ $b=1.015420-0.502709I$	$-4.81453+2.53246I$	0
$u=-1.20811$ $a=0.450878$ $b=1.26931$	-2.16439	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.155800+0.352764I$ $a=-1.087770-0.415277I$ $b=-0.936075+0.510536I$	$-1.26636+7.34053I$	0
$u=-1.155800-0.352764I$ $a=-1.087770+0.415277I$ $b=-0.936075-0.510536I$	$-1.26636-7.34053I$	0
$u=0.024937+0.790745I$ $a=1.62489-0.21735I$ $b=-1.012460+0.682595I$	$-0.24714+6.43951I$	0
$u=0.024937-0.790745I$ $a=1.62489+0.21735I$ $b=-1.012460-0.682595I$	$-0.24714-6.43951I$	0
$u=1.215660+0.123822I$ $a=-0.551505+0.226101I$ $b=-1.069120-0.575509I$	$-4.29478-2.92680I$	0
$u=1.215660-0.123822I$ $a=-0.551505-0.226101I$ $b=-1.069120+0.575509I$	$-4.29478+2.92680I$	0
$u=-0.757982+0.159362I$ $a=-0.588970-1.182140I$ $b=-1.167610+0.052228I$	$-0.023464+1.133320I$	0
$u=-0.757982-0.159362I$ $a=-0.588970+1.182140I$ $b=-1.167610-0.052228I$	$-0.023464-1.133320I$	0
$u=0.033712+1.231080I$ $a=0.975403+0.396561I$ $b=-1.014710-0.615162I$	$3.73079-12.02730I$	0
$u=0.033712-1.231080I$ $a=0.975403-0.396561I$ $b=-1.014710+0.615162I$	$3.73079+12.02730I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.766142 + 0.044296I$ $a = 0.787040 + 1.002180I$ $b = 1.56690 + 0.24167I$	$5.29105 - 1.35557I$	0
$u = 0.766142 - 0.044296I$ $a = 0.787040 - 1.002180I$ $b = 1.56690 - 0.24167I$	$5.29105 + 1.35557I$	0
$u = -1.218500 + 0.200633I$ $a = 0.677065 + 0.296816I$ $b = 0.967920 - 0.786297I$	$0.59788 + 6.18648I$	0
$u = -1.218500 - 0.200633I$ $a = 0.677065 - 0.296816I$ $b = 0.967920 + 0.786297I$	$0.59788 - 6.18648I$	0
$u = -1.209420 + 0.291333I$ $a = 0.146444 + 1.000370I$ $b = 1.12628 - 1.36689I$	$-0.25642 + 4.13332I$	0
$u = -1.209420 - 0.291333I$ $a = 0.146444 - 1.000370I$ $b = 1.12628 + 1.36689I$	$-0.25642 - 4.13332I$	0
$u = 1.190710 + 0.364499I$ $a = 1.130320 - 0.313228I$ $b = 0.922403 + 0.588108I$	$3.69884 - 11.19260I$	0
$u = 1.190710 - 0.364499I$ $a = 1.130320 + 0.313228I$ $b = 0.922403 - 0.588108I$	$3.69884 + 11.19260I$	0
$u = -0.002259 + 1.248730I$ $a = -0.972254 + 0.309604I$ $b = 0.997384 - 0.473808I$	$-1.72579 + 7.75822I$	0
$u = -0.002259 - 1.248730I$ $a = -0.972254 - 0.309604I$ $b = 0.997384 + 0.473808I$	$-1.72579 - 7.75822I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.137090+0.526599I$ $a=-0.726318-0.134812I$ $b=-0.575613+0.413199I$	$7.42382+3.42825I$	0
$u=-1.137090-0.526599I$ $a=-0.726318+0.134812I$ $b=-0.575613-0.413199I$	$7.42382-3.42825I$	0
$u=0.457479+0.580364I$ $a=-0.285439-1.349160I$ $b=1.176500+0.506816I$	$4.73492+1.24675I$	0
$u=0.457479-0.580364I$ $a=-0.285439+1.349160I$ $b=1.176500-0.506816I$	$4.73492-1.24675I$	0
$u=0.636864+0.373962I$ $a=-0.767069+0.192017I$ $b=0.428250-0.397915I$	$2.62564+0.12831I$	0
$u=0.636864-0.373962I$ $a=-0.767069-0.192017I$ $b=0.428250+0.397915I$	$2.62564-0.12831I$	0
$u=0.206329+0.680251I$ $a=0.030600+1.250090I$ $b=0.625464-1.042900I$	$6.75201+7.26759I$	$7.05707-3.65536I$
$u=0.206329-0.680251I$ $a=0.030600-1.250090I$ $b=0.625464+1.042900I$	$6.75201-7.26759I$	$7.05707+3.65536I$
$u=-0.285517+0.647666I$ $a=0.147525+1.123350I$ $b=-0.608234-0.879743I$	$1.43374-3.53123I$	$2.85137+3.03656I$
$u=-0.285517-0.647666I$ $a=0.147525-1.123350I$ $b=-0.608234+0.879743I$	$1.43374+3.53123I$	$2.85137-3.03656I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.070948+1.297840I$ $a=\ \ 0.920309+0.172501I$ $b=-0.897804-0.290185I$	$0.05682-2.88607I$	0
$u=-0.070948-1.297840I$ $a=\ \ 0.920309-0.172501I$ $b=-0.897804+0.290185I$	$0.05682+2.88607I$	0
$u=\ \ 1.334520+0.068617I$ $a=-0.441990+1.214080I$ $b=-0.568223-0.263963I$	$-2.50969-0.75103I$	0
$u=\ \ 1.334520-0.068617I$ $a=-0.441990-1.214080I$ $b=-0.568223+0.263963I$	$-2.50969+0.75103I$	0
$u=-1.112360+0.744367I$ $a=\ \ 0.625337-0.848142I$ $b=-0.866389+0.282141I$	$-2.83939-2.00800I$	0
$u=-1.112360-0.744367I$ $a=\ \ 0.625337+0.848142I$ $b=-0.866389-0.282141I$	$-2.83939+2.00800I$	0
$u=\ \ 1.270610+0.460417I$ $a=\ \ 0.014570+1.054440I$ $b=-1.80312-0.93642I$	$-4.01331-11.08650I$	0
$u=\ \ 1.270610-0.460417I$ $a=\ \ 0.014570-1.054440I$ $b=-1.80312+0.93642I$	$-4.01331+11.08650I$	0
$u=\ \ 1.341590+0.186756I$ $a=-0.376241+0.843487I$ $b=-1.034050-0.765858I$	$-4.84044-3.38683I$	0
$u=\ \ 1.341590-0.186756I$ $a=-0.376241-0.843487I$ $b=-1.034050+0.765858I$	$-4.84044+3.38683I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.357940+0.105503I$ $a=\ \ 0.506873+1.133400I$ $b=\ \ 0.819046-0.312293I$	$-6.16606+3.84885I$	0
$u=-1.357940-0.105503I$ $a=\ \ 0.506873-1.133400I$ $b=\ \ 0.819046+0.312293I$	$-6.16606-3.84885I$	0
$u=-1.364160+0.182462I$ $a=\ \ 0.589391+0.850107I$ $b=\ \ 1.178040-0.633689I$	$-0.77985+1.25276I$	0
$u=-1.364160-0.182462I$ $a=\ \ 0.589391-0.850107I$ $b=\ \ 1.178040+0.633689I$	$-0.77985-1.25276I$	0
$u=-1.301470+0.453126I$ $a=-0.036211+1.016460I$ $b=\ \ 1.70474-0.82638I$	$-8.92649+7.23221I$	0
$u=-1.301470-0.453126I$ $a=-0.036211-1.016460I$ $b=\ \ 1.70474+0.82638I$	$-8.92649-7.23221I$	0
$u=-0.554220+0.260693I$ $a=-1.56349+0.78617I$ $b=-0.842132+1.065170I$	$4.58297-6.36736I$	$4.07483+2.80097I$
$u=-0.554220-0.260693I$ $a=-1.56349-0.78617I$ $b=-0.842132-1.065170I$	$4.58297+6.36736I$	$4.07483-2.80097I$
$u=\ \ 1.383100+0.121026I$ $a=-0.583644+1.105500I$ $b=-0.994287-0.270684I$	$-1.82524-7.05691I$	0
$u=\ \ 1.383100-0.121026I$ $a=-0.583644-1.105500I$ $b=-0.994287+0.270684I$	$-1.82524+7.05691I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.133690 + 0.582214I$ $a = -0.196827 - 1.277730I$ $b = 0.397514 + 0.946890I$	$4.71875 - 3.38023I$	$6.64414 + 4.35761I$
$u = 0.133690 - 0.582214I$ $a = -0.196827 + 1.277730I$ $b = 0.397514 - 0.946890I$	$4.71875 + 3.38023I$	$6.64414 - 4.35761I$
$u = 1.35446 + 0.43895I$ $a = 0.063835 + 0.943257I$ $b = -1.52755 - 0.67883I$	$-6.42352 - 3.29632I$	0
$u = 1.35446 - 0.43895I$ $a = 0.063835 - 0.943257I$ $b = -1.52755 + 0.67883I$	$-6.42352 + 3.29632I$	0
$u = 1.26619 + 0.68789I$ $a = -0.424259 - 0.922122I$ $b = 0.968060 + 0.393870I$	$-7.59267 - 2.73535I$	0
$u = 1.26619 - 0.68789I$ $a = -0.424259 + 0.922122I$ $b = 0.968060 - 0.393870I$	$-7.59267 + 2.73535I$	0
$u = -1.35690 + 0.63945I$ $a = 0.258980 - 0.952187I$ $b = -1.088830 + 0.546129I$	$-4.92798 + 7.67664I$	0
$u = -1.35690 - 0.63945I$ $a = 0.258980 + 0.952187I$ $b = -1.088830 - 0.546129I$	$-4.92798 - 7.67664I$	0
$u = -1.49910 + 0.13833I$ $a = 0.084334 + 0.558995I$ $b = 0.959584 - 0.943950I$	$0.60089 + 5.40912I$	0
$u = -1.49910 - 0.13833I$ $a = 0.084334 - 0.558995I$ $b = 0.959584 + 0.943950I$	$0.60089 - 5.40912I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.348423+0.344696I$ $a=\ 0.30651-1.80875I$ $b=-0.738044+0.261750I$	$0.075407+1.227190I$	$-3.47759-2.38744I$
$u=-0.348423-0.344696I$ $a=\ 0.30651+1.80875I$ $b=-0.738044-0.261750I$	$0.075407-1.227190I$	$-3.47759+2.38744I$
$u=-0.245732+0.420988I$ $a=-2.35533+0.07608I$ $b=\ 0.120310+0.922398I$	$2.71565-1.20267I$	$6.59206-0.69470I$
$u=-0.245732-0.420988I$ $a=-2.35533-0.07608I$ $b=\ 0.120310-0.922398I$	$2.71565+1.20267I$	$6.59206+0.69470I$
$u=\ 1.46757+0.37527I$ $a=\ 0.054024+0.768850I$ $b=-1.146250-0.604520I$	$-5.67762-3.18221I$	0
$u=\ 1.46757-0.37527I$ $a=\ 0.054024-0.768850I$ $b=-1.146250+0.604520I$	$-5.67762+3.18221I$	0
$u=\ 1.40887+0.56704I$ $a=-0.006496-1.035880I$ $b=\ 1.47110+0.84866I$	$-6.2207-14.0648I$	0
$u=\ 1.40887-0.56704I$ $a=-0.006496+1.035880I$ $b=\ 1.47110-0.84866I$	$-6.2207+14.0648I$	0
$u=\ 0.425497+0.223608I$ $a=\ 1.97396+1.03359I$ $b=\ 0.537923+0.806925I$	$-0.39799+3.38715I$	$-1.55691-0.81056I$
$u=\ 0.425497-0.223608I$ $a=\ 1.97396-1.03359I$ $b=\ 0.537923-0.806925I$	$-0.39799-3.38715I$	$-1.55691+0.81056I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.41178+0.56267I$ $a=-0.033083-1.038470I$ $b=-1.52929+0.91871I$	$-0.8335+18.2721I$	0
$u=-1.41178-0.56267I$ $a=-0.033083+1.038470I$ $b=-1.52929-0.91871I$	$-0.8335-18.2721I$	0
$u=-1.40594+0.57901I$ $a=\ \ 0.061776-1.006140I$ $b=-1.35010+0.78793I$	$-4.30471+9.36842I$	0
$u=-1.40594-0.57901I$ $a=\ \ 0.061776+1.006140I$ $b=-1.35010-0.78793I$	$-4.30471-9.36842I$	0
$u=-0.171398+0.417225I$ $a=\ \ 0.441467-0.987280I$ $b=-0.365355+0.491527I$	$0.013485+0.969511I$	$0.47383-6.63664I$
$u=-0.171398-0.417225I$ $a=\ \ 0.441467+0.987280I$ $b=-0.365355-0.491527I$	$0.013485-0.969511I$	$0.47383+6.63664I$
$u=\ \ 1.44817+0.59202I$ $a=-0.047962-0.864363I$ $b=\ \ 1.09882+0.95237I$	$3.93753-8.26311I$	0
$u=\ \ 1.44817-0.59202I$ $a=-0.047962+0.864363I$ $b=\ \ 1.09882-0.95237I$	$3.93753+8.26311I$	0
$u=-1.55722+0.47170I$ $a=-0.181763+0.693989I$ $b=\ \ 0.987400-0.331427I$	$-6.90817-1.15884I$	0
$u=-1.55722-0.47170I$ $a=-0.181763-0.693989I$ $b=\ \ 0.987400+0.331427I$	$-6.90817+1.15884I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.60655 + 0.55341I$ $a = 0.248893 + 0.624832I$ $b = -0.822670 - 0.182162I$	$-1.13787 + 5.17317I$	0
$u = 1.60655 - 0.55341I$ $a = 0.248893 - 0.624832I$ $b = -0.822670 + 0.182162I$	$-1.13787 - 5.17317I$	0
$u = 0.20937 + 1.72026I$ $a = -0.622515 + 0.021296I$ $b = 0.569919 - 0.121943I$	$8.74696 + 0.84069I$	0
$u = 0.20937 - 1.72026I$ $a = -0.622515 - 0.021296I$ $b = 0.569919 + 0.121943I$	$8.74696 - 0.84069I$	0

II. $\boldsymbol{I_2^u = \langle 1.46\times 10^8 u^{27} - 4.93\times 10^7 u^{26} + \cdots + 3.07\times 10^7 b + 1.80\times 10^8,\ 3.45\times 10^8 u^{27} - 1.31\times 10^8 u^{26} + \cdots + 3.07\times 10^7 a + 7.50\times 10^8,\ u^{28} - 9u^{26} + \cdots + 3u + 1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -11.2539u^{27} + 4.27221u^{26} + \cdots - 12.4949u - 24.4411 \\ -4.77107u^{27} + 1.60668u^{26} + \cdots - 1.61175u - 5.87889 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 13.0249u^{27} - 5.87889u^{26} + \cdots + 22.1066u + 27.3200 \\ u^{27} - 8u^{25} + \cdots - 3u^2 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -17.0101u^{27} + 7.02511u^{26} + \cdots - 26.1719u - 34.3451 \\ 0.0725921u^{27} - 0.736357u^{26} + \cdots + 3.56278u + 4.27221 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 16.0975u^{27} - 6.61525u^{26} + \cdots + 23.6694u + 31.5922 \\ -0.889267u^{27} + 0.665879u^{26} + \cdots - 1.42630u - 3.53586 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -16.0249u^{27} + 5.87889u^{26} + \cdots - 14.1066u - 30.3200 \\ -4.77107u^{27} + 1.60668u^{26} + \cdots - 1.61175u - 5.87889 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -9.02511u^{27} + 4.98515u^{26} + \cdots - 23.6851u - 20.0101 \\ -3.14622u^{27} + 2.21408u^{26} + \cdots - 11.9303u - 6.98515 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 22.8693u^{27} - 10.1887u^{26} + \cdots + 36.2949u + 48.0696 \\ 3.15094u^{27} - 2.29070u^{26} + \cdots + 8.78983u + 4.18205 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -24.3646u^{27} + 9.92910u^{26} + \cdots - 39.7992u - 53.9924 \\ -1.79635u^{27} - 0.301914u^{26} + \cdots + 0.124577u - 1.57907 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{404592713}{30684719}u^{27} + \frac{218851799}{30684719}u^{26} + \cdots - \frac{1075399250}{30684719}u - \frac{1160614009}{30684719}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 5u^{27} + \cdots + u + 1$
c_2	$u^{28} - u^{27} + \cdots + 5u + 1$
c_3	$u^{28} - 9u^{26} + \cdots - 3u + 1$
c_4	$u^{28} + 5u^{27} + \cdots - u + 1$
c_5	$u^{28} + 4u^{27} + \cdots + 2u + 1$
c_6	$u^{28} + u^{27} + \cdots - 5u + 1$
c_7, c_8	$u^{28} - 2u^{27} + \cdots + 2u + 1$
c_9	$u^{28} - 9u^{26} + \cdots + 3u + 1$
c_{10}	$u^{28} - 2u^{26} + \cdots - 3u + 1$
c_{11}	$u^{28} + 2u^{27} + \cdots - 2u + 1$
c_{12}	$u^{28} - 6u^{27} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{28} + 23y^{27} + \cdots + 25y + 1$
c_2, c_6	$y^{28} + 25y^{27} + \cdots + 23y + 1$
c_3, c_9	$y^{28} - 18y^{27} + \cdots - 21y + 1$
c_5	$y^{28} - 6y^{27} + \cdots - 16y + 1$
c_7, c_8, c_{11}	$y^{28} - 30y^{27} + \cdots + 10y + 1$
c_{10}	$y^{28} - 4y^{27} + \cdots + 17y + 1$
c_{12}	$y^{28} - 6y^{27} + \cdots + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.806829+0.504212I$ $a=\ \ 0.196665-0.675656I$ $b=-1.315650-0.487350I$	$0.93521+2.14891I$	$5.36900+0.24553I$
$u=-0.806829-0.504212I$ $a=\ \ 0.196665+0.675656I$ $b=-1.315650+0.487350I$	$0.93521-2.14891I$	$5.36900-0.24553I$
$u=\ \ 0.969397+0.536667I$ $a=-0.215188-0.550510I$ $b=\ \ 1.54002+0.07648I$	$5.02084-3.66202I$	$3.39637+2.53321I$
$u=\ \ 0.969397-0.536667I$ $a=-0.215188+0.550510I$ $b=\ \ 1.54002-0.07648I$	$5.02084+3.66202I$	$3.39637-2.53321I$
$u=\ \ 0.802840+0.377635I$ $a=-0.050134-0.678040I$ $b=\ \ 1.53222-1.07968I$	$5.84916-0.09120I$	$8.21534+2.60779I$
$u=\ \ 0.802840-0.377635I$ $a=-0.050134+0.678040I$ $b=\ \ 1.53222+1.07968I$	$5.84916+0.09120I$	$8.21534-2.60779I$
$u=\ \ 1.126170+0.486144I$ $a=\ \ 0.488450+1.170240I$ $b=-0.655980-0.296538I$	$-2.31204+2.54594I$	$2.65405-2.18906I$
$u=\ \ 1.126170-0.486144I$ $a=\ \ 0.488450-1.170240I$ $b=-0.655980+0.296538I$	$-2.31204-2.54594I$	$2.65405+2.18906I$
$u=\ \ 1.214100+0.234357I$ $a=-0.25170+1.41863I$ $b=-0.880323-0.435283I$	$-3.37961-5.76968I$	$-3.40786+7.37327I$
$u=\ \ 1.214100-0.234357I$ $a=-0.25170-1.41863I$ $b=-0.880323+0.435283I$	$-3.37961+5.76968I$	$-3.40786-7.37327I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.215000+0.343977I$ $a=-0.106721+1.294370I$ $b=\ \ 0.748421-0.396151I$	$-6.79383+1.77431I$	$-4.04218-2.08021I$
$u=-1.215000-0.343977I$ $a=-0.106721-1.294370I$ $b=\ \ 0.748421+0.396151I$	$-6.79383-1.77431I$	$-4.04218+2.08021I$
$u=-0.671326+0.235199I$ $a=-0.279107-0.888529I$ $b=-0.27708-1.54948I$	$4.47508+7.70400I$	$4.11456-7.62956I$
$u=-0.671326-0.235199I$ $a=-0.279107+0.888529I$ $b=-0.27708+1.54948I$	$4.47508-7.70400I$	$4.11456+7.62956I$
$u=-1.290560+0.101916I$ $a=\ \ 0.601581+0.891797I$ $b=\ \ 1.090060-0.738610I$	$-1.41103+2.12823I$	$-2.42660-4.65983I$
$u=-1.290560-0.101916I$ $a=\ \ 0.601581-0.891797I$ $b=\ \ 1.090060+0.738610I$	$-1.41103-2.12823I$	$-2.42660+4.65983I$
$u=-0.157515+0.625458I$ $a=\ \ 1.20007-0.84368I$ $b=-0.440347-0.223426I$	$1.10455+1.45223I$	$3.50142-1.73573I$
$u=-0.157515-0.625458I$ $a=\ \ 1.20007+0.84368I$ $b=-0.440347+0.223426I$	$1.10455-1.45223I$	$3.50142+1.73573I$
$u=\ \ 0.590815+0.243283I$ $a=\ \ 0.262344-1.134000I$ $b=\ \ 0.175686-1.107600I$	$-0.58696-4.37855I$	$-2.22528+8.16724I$
$u=\ \ 0.590815-0.243283I$ $a=\ \ 0.262344+1.134000I$ $b=\ \ 0.175686+1.107600I$	$-0.58696+4.37855I$	$-2.22528-8.16724I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.373270 + 0.128981I$ $a = -0.361022 + 0.835361I$ $b = -0.835644 - 0.819872I$	$-4.64030 - 3.93989I$	$-1.72189 + 10.29250I$
$u = 1.373270 - 0.128981I$ $a = -0.361022 - 0.835361I$ $b = -0.835644 + 0.819872I$	$-4.64030 + 3.93989I$	$-1.72189 - 10.29250I$
$u = -1.47604 + 0.05254I$ $a = 0.276643 + 0.664043I$ $b = 0.588292 - 1.013640I$	$0.86367 + 6.40097I$	$1.80276 - 8.11267I$
$u = -1.47604 - 0.05254I$ $a = 0.276643 - 0.664043I$ $b = 0.588292 + 1.013640I$	$0.86367 - 6.40097I$	$1.80276 + 8.11267I$
$u = -0.447361 + 0.046870I$ $a = -1.14346 - 1.80045I$ $b = 0.286806 - 0.508445I$	$1.86504 + 1.51757I$	$-1.99627 - 3.02328I$
$u = -0.447361 - 0.046870I$ $a = -1.14346 + 1.80045I$ $b = 0.286806 + 0.508445I$	$1.86504 - 1.51757I$	$-1.99627 + 3.02328I$
$u = -0.01196 + 1.60518I$ $a = -0.618419 - 0.082608I$ $b = 0.443517 - 0.064100I$	$8.87983 - 0.55549I$	$6.26659 - 8.21924I$
$u = -0.01196 - 1.60518I$ $a = -0.618419 + 0.082608I$ $b = 0.443517 + 0.064100I$	$8.87983 + 0.55549I$	$6.26659 + 8.21924I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{28}-5u^{27}+\cdots+u+1)(u^{124}-6u^{123}+\cdots-1685u+409)$
c_2	$(u^{28}-u^{27}+\cdots+5u+1)(u^{124}-2u^{123}+\cdots+4203615u+452717)$
c_3	$(u^{28}-9u^{26}+\cdots-3u+1)(u^{124}+u^{123}+\cdots+6267u+3337)$
c_4	$(u^{28}+5u^{27}+\cdots-u+1)(u^{124}-6u^{123}+\cdots-1685u+409)$
c_5	$(u^{28}+4u^{27}+\cdots+2u+1)$ $\cdot(u^{124}+3u^{123}+\cdots+57474466u+17460809)$
c_6	$(u^{28}+u^{27}+\cdots-5u+1)(u^{124}-2u^{123}+\cdots+4203615u+452717)$
c_7, c_8	$(u^{28}-2u^{27}+\cdots+2u+1)(u^{124}-3u^{123}+\cdots+78u+17)$
c_9	$(u^{28}-9u^{26}+\cdots+3u+1)(u^{124}+u^{123}+\cdots+6267u+3337)$
c_{10}	$(u^{28}-2u^{26}+\cdots-3u+1)(u^{124}-u^{123}+\cdots-4921u+587)$
c_{11}	$(u^{28}+2u^{27}+\cdots-2u+1)(u^{124}-3u^{123}+\cdots+78u+17)$
c_{12}	$(u^{28}-6u^{27}+\cdots-4u+1)(u^{124}+9u^{123}+\cdots-252952u-25823)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{28}+23y^{27}+\cdots+25y+1)$ $\cdot(y^{124}+72y^{123}+\cdots+9830777y+167281)$
c_2, c_6	$(y^{28}+25y^{27}+\cdots+23y+1)$ $\cdot(y^{124}+94y^{123}+\cdots+2080269273415y+204952682089)$
c_3, c_9	$(y^{28}-18y^{27}+\cdots-21y+1)$ $\cdot(y^{124}-85y^{123}+\cdots-217417697y+11135569)$
c_5	$(y^{28}-6y^{27}+\cdots-16y+1)$ $\cdot(y^{124}-49y^{123}+\cdots-10380445673668428y+304879850934481)$
c_7, c_8, c_{11}	$(y^{28}-30y^{27}+\cdots+10y+1)(y^{124}-113y^{123}+\cdots+8842y+289)$
c_{10}	$(y^{28}-4y^{27}+\cdots+17y+1)$ $\cdot(y^{124}-11y^{123}+\cdots-15729395y+344569)$
c_{12}	$(y^{28}-6y^{27}+\cdots+4y+1)$ $\cdot(y^{124}+19y^{123}+\cdots-40988713052y+666827329)$