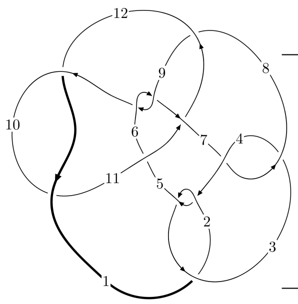
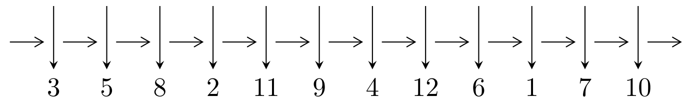
$12a_{0107}$ $(K12a_{0107})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 2.20020 \times 10^{1302} u^{128} + 2.69244 \times 10^{1303} u^{127} + \cdots + 4.96534 \times 10^{1303} b + 3.24071 \times 10^{1304}, \\
& -1.21845 \times 10^{1305} u^{128} - 1.49391 \times 10^{1306} u^{127} + \cdots + 1.27609 \times 10^{1306} a - 1.08044 \times 10^{1307}, \\
& 9u^{129} + 111u^{128} + \cdots + 5137u + 257 \rangle \\
I_2^u = \langle & b,\ u^7 - u^6 - u^5 + 3u^4 + u^3 - 3u^2 + a + 3,\ u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1 \rangle \\
I_3^u = \langle & b + 3u - 2,\ a + 3u - 1,\ 9u^2 - 9u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 139 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. $\boldsymbol{I_1^u = \langle 2.20 \times 10^{1302} u^{128} + 2.69 \times 10^{1303} u^{127} + \cdots + 4.97 \times 10^{1303} b + 3.24 \times 10^{1304},\ -1.22 \times 10^{1305} u^{128} - 1.49 \times 10^{1306} u^{127} + \cdots + 1.28 \times 10^{1306} a - 1.08 \times 10^{1307},\ 9u^{129} + 111u^{128} + \cdots + 5137u + 257 \rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0954827u^{128} + 1.17069u^{127} + \cdots + 214.507u + 8.46678 \\ -0.0443112u^{128} - 0.542246u^{127} + \cdots - 109.842u - 6.52665 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 0.0511715u^{128} + 0.628443u^{127} + \cdots + 104.665u + 1.94013 \\ -0.0443112u^{128} - 0.542246u^{127} + \cdots - 109.842u - 6.52665 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0215808u^{128} - 0.258363u^{127} + \cdots + 48.4855u + 2.98364 \\ -0.0222185u^{128} - 0.268499u^{127} + \cdots - 34.2702u - 2.52990 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0441534u^{128} - 0.530839u^{127} + \cdots + 18.0513u + 0.676483 \\ -0.0235416u^{128} - 0.284565u^{127} + \cdots - 37.0038u - 2.69891 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.111352u^{128} + 1.36964u^{127} + \cdots + 358.049u + 23.5975 \\ 0.113475u^{128} + 1.37895u^{127} + \cdots + 245.872u + 16.0714 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.00229959u^{128} - 0.0237417u^{127} + \cdots + 219.055u + 21.4240 \\ 0.117650u^{128} + 1.43086u^{127} + \cdots + 231.967u + 14.9510 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.104777u^{128} - 1.26102u^{127} + \cdots + 120.845u + 11.5128 \\ 0.0147018u^{128} + 0.177405u^{127} + \cdots - 5.72762u - 0.818042 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.0126662u^{128} + 0.150899u^{127} + \cdots - 201.626u - 14.2603 \\ -0.0271052u^{128} - 0.326635u^{127} + \cdots - 25.7115u - 2.71321 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0261881u^{128} - 0.309924u^{127} + \cdots + 241.686u + 17.6947 \\ 0.0271052u^{128} + 0.326635u^{127} + \cdots + 25.7115u + 2.71321 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5.34482u^{128} - 65.0381u^{127} + \cdots - 12750.8u - 927.585$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{129} + 68u^{128} + \cdots + 31u + 1$
c_2, c_4	$u^{129} - 10u^{128} + \cdots + 5u - 1$
c_3, c_7	$u^{129} + 2u^{128} + \cdots + 896u + 256$
c_5	$9(9u^{129} - 72u^{128} + \cdots - 1416882u + 58007)$
c_6, c_9	$u^{129} - 3u^{128} + \cdots + 3u - 1$
c_8	$9(9u^{129} - 111u^{128} + \cdots + 5137u - 257)$
c_{10}, c_{12}	$u^{129} - 4u^{128} + \cdots + 810u - 81$
c_{11}	$u^{129} - 2u^{128} + \cdots - 5940u + 324$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{129} - 4y^{128} + \cdots + 1563y - 1$
c_2, c_4	$y^{129} - 68y^{128} + \cdots + 31y - 1$
c_3, c_7	$y^{129} + 48y^{128} + \cdots - 933888y - 65536$
c_5	$81(81y^{129} - 1926y^{128} + \cdots + 4.58236 \times 10^{11}y - 3.36481 \times 10^{9})$
c_6, c_9	$y^{129} + 69y^{128} + \cdots + 31y - 1$
c_8	$81(81y^{129} + 1953y^{128} + \cdots - 1315317y - 66049)$
c_{10}, c_{12}	$y^{129} - 82y^{128} + \cdots + 92178y - 6561$
c_{11}	$y^{129} + 12y^{128} + \cdots + 12906216y - 104976$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.435964 + 0.912114I$ $a = -0.00814 + 1.87832I$ $b = -0.191368 - 1.227640I$	$7.90256 - 0.75255I$	0
$u = -0.435964 - 0.912114I$ $a = -0.00814 - 1.87832I$ $b = -0.191368 + 1.227640I$	$7.90256 + 0.75255I$	0
$u = 0.411533 + 0.926967I$ $a = 0.32805 - 1.69283I$ $b = 0.476647 + 1.106970I$	$2.20983 - 3.68482I$	0
$u = 0.411533 - 0.926967I$ $a = 0.32805 + 1.69283I$ $b = 0.476647 - 1.106970I$	$2.20983 + 3.68482I$	0
$u = -0.874519 + 0.547704I$ $a = 0.637430 - 0.368145I$ $b = 0.025470 - 0.914503I$	$1.88599 + 4.20801I$	0
$u = -0.874519 - 0.547704I$ $a = 0.637430 + 0.368145I$ $b = 0.025470 + 0.914503I$	$1.88599 - 4.20801I$	0
$u = 0.955609$ $a = -3.36955$ $b = -0.414891$	-2.95218	0
$u = -0.174007 + 1.038510I$ $a = -0.514443 - 1.168250I$ $b = -0.433681 + 1.273930I$	$4.44411 - 0.29904I$	0
$u = -0.174007 - 1.038510I$ $a = -0.514443 + 1.168250I$ $b = -0.433681 - 1.273930I$	$4.44411 + 0.29904I$	0
$u = 0.938888 + 0.091208I$ $a = -1.97734 + 0.30823I$ $b = -0.423058 - 0.813762I$	$-1.62544 - 1.74532I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.938888 - 0.091208I$ $a = -1.97734 - 0.30823I$ $b = -0.423058 + 0.813762I$	$-1.62544 + 1.74532I$	0
$u = -0.409205 + 0.847594I$ $a = 0.52684 + 1.35884I$ $b = 0.302427 - 1.316010I$	$3.08304 + 4.83288I$	0
$u = -0.409205 - 0.847594I$ $a = 0.52684 - 1.35884I$ $b = 0.302427 + 1.316010I$	$3.08304 - 4.83288I$	0
$u = -0.902376 + 0.560219I$ $a = -0.88592 - 1.39955I$ $b = -0.575630 + 1.056400I$	$-6.90472 + 4.00909I$	0
$u = -0.902376 - 0.560219I$ $a = -0.88592 + 1.39955I$ $b = -0.575630 - 1.056400I$	$-6.90472 - 4.00909I$	0
$u = -0.775280 + 0.509017I$ $a = 0.0796447 + 0.0901063I$ $b = 1.081100 + 0.460110I$	$-3.92344 + 1.90005I$	0
$u = -0.775280 - 0.509017I$ $a = 0.0796447 - 0.0901063I$ $b = 1.081100 - 0.460110I$	$-3.92344 - 1.90005I$	0
$u = 1.047190 + 0.246665I$ $a = 1.76430 - 0.43224I$ $b = 0.616968 + 0.997278I$	$-4.00569 - 6.12775I$	0
$u = 1.047190 - 0.246665I$ $a = 1.76430 + 0.43224I$ $b = 0.616968 - 0.997278I$	$-4.00569 + 6.12775I$	0
$u = 0.965899 + 0.483062I$ $a = -0.0049121 + 0.0725376I$ $b = 0.408056 + 0.524170I$	$-4.20368 - 6.98905I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.965899 - 0.483062I$ $a = -0.0049121 - 0.0725376I$ $b = 0.408056 - 0.524170I$	$-4.20368 + 6.98905I$	0
$u = 0.493740 + 0.967666I$ $a = -0.1282740 - 0.0462710I$ $b = -1.115560 - 0.163228I$	$0.43091 - 5.89606I$	0
$u = 0.493740 - 0.967666I$ $a = -0.1282740 + 0.0462710I$ $b = -1.115560 + 0.163228I$	$0.43091 + 5.89606I$	0
$u = 1.091460 + 0.062412I$ $a = 1.35457 - 0.40708I$ $b = 0.693163 - 0.634356I$	$-5.11123 - 1.06296I$	0
$u = 1.091460 - 0.062412I$ $a = 1.35457 + 0.40708I$ $b = 0.693163 + 0.634356I$	$-5.11123 + 1.06296I$	0
$u = -0.697529 + 0.570729I$ $a = 0.099959 - 0.426434I$ $b = -0.665378 + 0.313323I$	$2.70854 + 2.21222I$	0
$u = -0.697529 - 0.570729I$ $a = 0.099959 + 0.426434I$ $b = -0.665378 - 0.313323I$	$2.70854 - 2.21222I$	0
$u = 0.482006 + 0.750145I$ $a = 0.224125 - 0.373842I$ $b = -0.899239 + 0.478152I$	$-2.15161 - 3.15660I$	0
$u = 0.482006 - 0.750145I$ $a = 0.224125 + 0.373842I$ $b = -0.899239 - 0.478152I$	$-2.15161 + 3.15660I$	0
$u = -0.766376 + 0.813066I$ $a = 0.193598 - 0.250455I$ $b = -0.817315 - 0.177510I$	$3.03000 + 2.69910I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.766376 - 0.813066I$ $a = 0.193598 + 0.250455I$ $b = -0.817315 + 0.177510I$	$3.03000 - 2.69910I$	0
$u = 1.068990 + 0.329115I$ $a = -0.566873 + 0.321498I$ $b = 0.108140 - 0.878237I$	$-0.309030 - 0.975544I$	0
$u = 1.068990 - 0.329115I$ $a = -0.566873 - 0.321498I$ $b = 0.108140 + 0.878237I$	$-0.309030 + 0.975544I$	0
$u = -0.142097 + 0.868320I$ $a = -0.41314 - 1.54711I$ $b = -0.084954 + 1.241910I$	$3.87976 - 0.76203I$	0
$u = -0.142097 - 0.868320I$ $a = -0.41314 + 1.54711I$ $b = -0.084954 - 1.241910I$	$3.87976 + 0.76203I$	0
$u = -0.544754 + 0.991787I$ $a = 0.647921 + 1.000990I$ $b = 0.601075 - 1.204190I$	$2.43301 + 5.31759I$	0
$u = -0.544754 - 0.991787I$ $a = 0.647921 - 1.000990I$ $b = 0.601075 + 1.204190I$	$2.43301 - 5.31759I$	0
$u = 0.332468 + 0.800674I$ $a = 0.54037 + 1.51501I$ $b = 0.310620 - 1.117390I$	$-1.93394 - 3.59448I$	0
$u = 0.332468 - 0.800674I$ $a = 0.54037 - 1.51501I$ $b = 0.310620 + 1.117390I$	$-1.93394 + 3.59448I$	0
$u = -0.945160 + 0.633454I$ $a = -0.0520476 - 0.0964746I$ $b = -1.099790 - 0.642821I$	$-6.23959 + 6.98143I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.945160 - 0.633454I$ $a = -0.0520476 + 0.0964746I$ $b = -1.099790 + 0.642821I$	$-6.23959 - 6.98143I$	0
$u = 0.559506 + 1.002350I$ $a = -0.48378 + 1.51997I$ $b = -0.659661 - 1.130090I$	$-0.14095 - 8.90764I$	0
$u = 0.559506 - 1.002350I$ $a = -0.48378 - 1.51997I$ $b = -0.659661 + 1.130090I$	$-0.14095 + 8.90764I$	0
$u = -1.131530 + 0.201429I$ $a = -0.0311714 - 0.0473643I$ $b = -0.505843 - 0.549552I$	$-8.55610 - 0.51653I$	0
$u = -1.131530 - 0.201429I$ $a = -0.0311714 + 0.0473643I$ $b = -0.505843 + 0.549552I$	$-8.55610 + 0.51653I$	0
$u = 1.152590 + 0.028082I$ $a = 1.81868 - 0.12420I$ $b = 0.748745 + 0.603153I$	$-5.03711 + 1.30340I$	0
$u = 1.152590 - 0.028082I$ $a = 1.81868 + 0.12420I$ $b = 0.748745 - 0.603153I$	$-5.03711 - 1.30340I$	0
$u = -0.592741 + 0.989525I$ $a = -0.29184 - 1.86030I$ $b = -0.043017 + 1.232660I$	$8.20160 + 4.60896I$	0
$u = -0.592741 - 0.989525I$ $a = -0.29184 + 1.86030I$ $b = -0.043017 - 1.232660I$	$8.20160 - 4.60896I$	0
$u = 0.992014 + 0.612550I$ $a = 0.391172 - 0.270225I$ $b = -0.501622 + 0.961337I$	$-1.85468 + 3.08743I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.992014 - 0.612550I$ $a = 0.391172 + 0.270225I$ $b = -0.501622 - 0.961337I$	$-1.85468 - 3.08743I$	0
$u = -0.792368 + 0.190746I$ $a = 0.67979 - 1.40241I$ $b = 0.628497 + 0.648119I$	$-0.107532 + 1.168680I$	0
$u = -0.792368 - 0.190746I$ $a = 0.67979 + 1.40241I$ $b = 0.628497 - 0.648119I$	$-0.107532 - 1.168680I$	0
$u = 0.105855 + 0.786102I$ $a = 0.184417 + 0.085720I$ $b = 1.189990 + 0.367385I$	$-0.722498 - 0.774565I$	0
$u = 0.105855 - 0.786102I$ $a = 0.184417 - 0.085720I$ $b = 1.189990 - 0.367385I$	$-0.722498 + 0.774565I$	0
$u = -0.960305 + 0.733846I$ $a = 0.84021 + 1.21591I$ $b = 0.690131 - 1.183640I$	$-1.58958 + 8.19357I$	0
$u = -0.960305 - 0.733846I$ $a = 0.84021 - 1.21591I$ $b = 0.690131 + 1.183640I$	$-1.58958 - 8.19357I$	0
$u = 1.219140 + 0.051643I$ $a = -0.940811 - 0.016798I$ $b = -0.452221 - 0.908343I$	$-1.30643 - 1.95102I$	0
$u = 1.219140 - 0.051643I$ $a = -0.940811 + 0.016798I$ $b = -0.452221 + 0.908343I$	$-1.30643 + 1.95102I$	0
$u = -0.872889 + 0.860169I$ $a = 1.24217 + 2.06389I$ $b = 0.451396 - 0.833928I$	$0.59629 + 4.24180I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.872889 - 0.860169I$ $a = 1.24217 - 2.06389I$ $b = 0.451396 + 0.833928I$	$0.59629 - 4.24180I$	0
$u = 0.517133 + 0.558525I$ $a = -0.86433 + 2.38447I$ $b = -0.426177 - 0.694272I$	$-2.75849 - 0.86457I$	0
$u = 0.517133 - 0.558525I$ $a = -0.86433 - 2.38447I$ $b = -0.426177 + 0.694272I$	$-2.75849 + 0.86457I$	0
$u = -1.028690 + 0.700070I$ $a = -0.286840 + 0.288830I$ $b = 0.461373 + 0.896592I$	$0.818942 + 0.469421I$	0
$u = -1.028690 - 0.700070I$ $a = -0.286840 - 0.288830I$ $b = 0.461373 - 0.896592I$	$0.818942 - 0.469421I$	0
$u = -0.895085 + 0.923482I$ $a = -0.207578 + 0.242694I$ $b = 0.963931 + 0.522551I$	$1.25794 + 6.76486I$	0
$u = -0.895085 - 0.923482I$ $a = -0.207578 - 0.242694I$ $b = 0.963931 - 0.522551I$	$1.25794 - 6.76486I$	0
$u = -1.065860 + 0.746555I$ $a = -0.89931 - 1.13648I$ $b = -0.793606 + 1.164820I$	$-4.5214 + 13.8088I$	0
$u = -1.065860 - 0.746555I$ $a = -0.89931 + 1.13648I$ $b = -0.793606 - 1.164820I$	$-4.5214 - 13.8088I$	0
$u = 1.301420 + 0.035128I$ $a = 0.834859 - 0.212634I$ $b = 0.637709 - 1.032430I$	$-3.72158 + 6.59471I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.301420 - 0.035128I$ $a = 0.834859 + 0.212634I$ $b = 0.637709 + 1.032430I$	$-3.72158 - 6.59471I$	0
$u = -0.398473 + 1.281640I$ $a = 1.54081 + 0.69231I$ $b = 0.666855 + 0.083688I$	$-1.00084 + 1.88868I$	0
$u = -0.398473 - 1.281640I$ $a = 1.54081 - 0.69231I$ $b = 0.666855 - 0.083688I$	$-1.00084 - 1.88868I$	0
$u = -0.892562 + 1.005700I$ $a = -0.93267 - 1.64956I$ $b = -0.538338 + 1.124520I$	$5.71587 + 7.50058I$	0
$u = -0.892562 - 1.005700I$ $a = -0.93267 + 1.64956I$ $b = -0.538338 - 1.124520I$	$5.71587 - 7.50058I$	0
$u = -0.570094 + 0.164046I$ $a = 0.78526 - 1.91154I$ $b = 0.513844 - 0.972227I$	$0.08922 + 5.31573I$	$-12.0000 - 7.7377I$
$u = -0.570094 - 0.164046I$ $a = 0.78526 + 1.91154I$ $b = 0.513844 + 0.972227I$	$0.08922 - 5.31573I$	$-12.0000 + 7.7377I$
$u = -0.975735 + 1.019780I$ $a = 1.02579 + 1.47641I$ $b = 0.693994 - 1.139140I$	$3.20116 + 12.82290I$	0
$u = -0.975735 - 1.019780I$ $a = 1.02579 - 1.47641I$ $b = 0.693994 + 1.139140I$	$3.20116 - 12.82290I$	0
$u = -0.584597 + 0.016376I$ $a = 0.10923 - 2.03567I$ $b = -0.666782 - 1.057980I$	$-2.44628 - 10.17080I$	$-12.0000 + 10.9484I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.584597 - 0.016376I$ $a = 0.10923 + 2.03567I$ $b = -0.666782 + 1.057980I$	$-2.44628 + 10.17080I$	$-12.0000 - 10.9484I$
$u = 1.22060 + 0.80886I$ $a = 0.0633373 - 0.0188740I$ $b = 0.515312 - 0.615281I$	$-4.58140 - 5.74757I$	0
$u = 1.22060 - 0.80886I$ $a = 0.0633373 + 0.0188740I$ $b = 0.515312 + 0.615281I$	$-4.58140 + 5.74757I$	0
$u = 0.54817 + 1.36880I$ $a = -0.000295 - 1.321590I$ $b = 0.000328 + 1.373620I$	$6.49374 - 4.63447I$	0
$u = 0.54817 - 1.36880I$ $a = -0.000295 + 1.321590I$ $b = 0.000328 - 1.373620I$	$6.49374 + 4.63447I$	0
$u = 0.235054 + 0.435527I$ $a = -0.44541 + 2.70629I$ $b = 0.313701 + 0.441055I$	$-1.13956 + 1.32806I$	$-11.56070 - 1.59690I$
$u = 0.235054 - 0.435527I$ $a = -0.44541 - 2.70629I$ $b = 0.313701 - 0.441055I$	$-1.13956 - 1.32806I$	$-11.56070 + 1.59690I$
$u = 1.03024 + 1.12779I$ $a = -0.0909527 + 0.0034040I$ $b = -1.021900 + 0.393108I$	$-0.41432 - 8.09825I$	0
$u = 1.03024 - 1.12779I$ $a = -0.0909527 - 0.0034040I$ $b = -1.021900 - 0.393108I$	$-0.41432 + 8.09825I$	0
$u = 0.215053 + 0.376805I$ $a = 1.15910 - 1.68096I$ $b = 0.831125 + 1.109170I$	$0.78134 - 8.18503I$	$-11.0423 + 10.8586I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215053 - 0.376805I$ $a = 1.15910 + 1.68096I$ $b = 0.831125 - 1.109170I$	$0.78134 + 8.18503I$	$-11.0423 - 10.8586I$
$u = -0.387457 + 0.149103I$ $a = -4.72172 - 0.28820I$ $b = -0.828826 - 0.592006I$	$-3.89027 + 4.57234I$	$-17.0773 - 7.0245I$
$u = -0.387457 - 0.149103I$ $a = -4.72172 + 0.28820I$ $b = -0.828826 + 0.592006I$	$-3.89027 - 4.57234I$	$-17.0773 + 7.0245I$
$u = 0.362965 + 0.162049I$ $a = -3.25229 + 2.00494I$ $b = 0.194051 + 0.668016I$	$-1.14181 + 1.35551I$	$-11.47001 - 3.30210I$
$u = 0.362965 - 0.162049I$ $a = -3.25229 - 2.00494I$ $b = 0.194051 - 0.668016I$	$-1.14181 - 1.35551I$	$-11.47001 + 3.30210I$
$u = -0.028016 + 0.389254I$ $a = -0.86778 + 2.14055I$ $b = -0.731170 - 1.053620I$	$3.98035 - 2.83956I$	$-4.97619 + 5.97507I$
$u = -0.028016 - 0.389254I$ $a = -0.86778 - 2.14055I$ $b = -0.731170 + 1.053620I$	$3.98035 + 2.83956I$	$-4.97619 - 5.97507I$
$u = 0.389939$ $a = -0.687099$ $b = 0.395152$	-0.675214	-14.6290
$u = 0.000187 + 0.387852I$ $a = 0.107141 + 0.910785I$ $b = 0.736606 + 0.101583I$	$-0.839116 + 0.254597I$	$-10.56987 + 0.84875I$
$u = 0.000187 - 0.387852I$ $a = 0.107141 - 0.910785I$ $b = 0.736606 - 0.101583I$	$-0.839116 - 0.254597I$	$-10.56987 - 0.84875I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.78522 + 1.40814I$ $a = -0.222654 + 1.317030I$ $b = -0.204658 - 1.363680I$	$6.10627 - 10.54450I$	0
$u = 0.78522 - 1.40814I$ $a = -0.222654 - 1.317030I$ $b = -0.204658 + 1.363680I$	$6.10627 + 10.54450I$	0
$u = 1.14927 + 1.14541I$ $a = 0.82442 - 1.44113I$ $b = 0.541886 + 1.019480I$	$-3.27476 - 10.10590I$	0
$u = 1.14927 - 1.14541I$ $a = 0.82442 + 1.44113I$ $b = 0.541886 - 1.019480I$	$-3.27476 + 10.10590I$	0
$u = 1.20230 + 1.20093I$ $a = 0.0903320 - 0.0153408I$ $b = 1.081690 - 0.612879I$	$-2.58803 - 12.99720I$	0
$u = 1.20230 - 1.20093I$ $a = 0.0903320 + 0.0153408I$ $b = 1.081690 + 0.612879I$	$-2.58803 + 12.99720I$	0
$u = -0.232112 + 0.164649I$ $a = -3.39764 + 4.61356I$ $b = -0.619424 + 0.699430I$	$-4.15839 + 2.13695I$	$-17.5319 - 6.2575I$
$u = -0.232112 - 0.164649I$ $a = -3.39764 - 4.61356I$ $b = -0.619424 - 0.699430I$	$-4.15839 - 2.13695I$	$-17.5319 + 6.2575I$
$u = 0.93590 + 1.48686I$ $a = -0.90016 + 2.49308I$ $b = -0.193008 - 0.474455I$	$-2.43184 + 0.84245I$	0
$u = 0.93590 - 1.48686I$ $a = -0.90016 - 2.49308I$ $b = -0.193008 + 0.474455I$	$-2.43184 - 0.84245I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.76516 + 0.21267I$ $a = 0.312954 + 0.516295I$ $b = 0.494219 - 1.032940I$	$1.26936 + 5.44661I$	0
$u = -1.76516 - 0.21267I$ $a = 0.312954 - 0.516295I$ $b = 0.494219 + 1.032940I$	$1.26936 - 5.44661I$	0
$u = 1.23776 + 1.28958I$ $a = -0.736692 + 1.195200I$ $b = -0.659884 - 1.184340I$	$2.0610 - 14.1160I$	0
$u = 1.23776 - 1.28958I$ $a = -0.736692 - 1.195200I$ $b = -0.659884 + 1.184340I$	$2.0610 + 14.1160I$	0
$u = -0.037150 + 0.176825I$ $a = -0.16567 - 10.12740I$ $b = -0.586562 + 0.959572I$	$-3.34466 + 2.62448I$	$-15.9889 - 1.0472I$
$u = -0.037150 - 0.176825I$ $a = -0.16567 + 10.12740I$ $b = -0.586562 - 0.959572I$	$-3.34466 - 2.62448I$	$-15.9889 + 1.0472I$
$u = -0.112443 + 0.133560I$ $a = -2.23281 + 0.77149I$ $b = 0.919315 - 0.803419I$	$-0.19016 - 1.46770I$	$-5.26638 + 3.44001I$
$u = -0.112443 - 0.133560I$ $a = -2.23281 - 0.77149I$ $b = 0.919315 + 0.803419I$	$-0.19016 + 1.46770I$	$-5.26638 - 3.44001I$
$u = -0.162629$ $a = -0.241003$ $b = -1.60820$	-10.5373	-421.260
$u = 1.33820 + 1.27595I$ $a = 0.812233 - 1.096010I$ $b = 0.776955 + 1.167520I$	$-0.7851 - 19.7119I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.33820 - 1.27595I$ $a = 0.812233 + 1.096010I$ $b = 0.776955 - 1.167520I$	$-0.7851 + 19.7119I$	0
$u = -1.84994 + 1.16767I$ $a = -0.268121 - 0.716754I$ $b = -0.161584 + 1.002220I$	$2.76309 + 0.92048I$	0
$u = -1.84994 - 1.16767I$ $a = -0.268121 + 0.716754I$ $b = -0.161584 - 1.002220I$	$2.76309 - 0.92048I$	0
$u = -3.09726 + 4.26344I$ $a = 0.245780 - 0.852545I$ $b = 0.354878 + 1.013590I$	$2.08506 - 0.96748I$	0
$u = -3.09726 - 4.26344I$ $a = 0.245780 + 0.852545I$ $b = 0.354878 - 1.013590I$	$2.08506 + 0.96748I$	0
$u = 1.50261 + 5.46217I$ $a = -0.986527 - 0.592195I$ $b = -0.733347 + 0.404998I$	$-1.87304 - 0.83221I$	0
$u = 1.50261 - 5.46217I$ $a = -0.986527 + 0.592195I$ $b = -0.733347 - 0.404998I$	$-1.87304 + 0.83221I$	0
$u = -6.26376 + 4.79909I$ $a = -0.372172 + 0.692722I$ $b = -0.582621 - 1.073900I$	$0.04635 - 5.79605I$	0
$u = -6.26376 - 4.79909I$ $a = -0.372172 - 0.692722I$ $b = -0.582621 + 1.073900I$	$0.04635 + 5.79605I$	0

II.

$$\boldsymbol{I_2^u = \langle b,\ u^7-u^6-u^5+3u^4+u^3-3u^2+a+3,\ u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1\rangle}$$

(i) Arc colorings

$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^7+u^6+u^5-3u^4-u^3+3u^2-3\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^7+u^6+u^5-3u^4-u^3+3u^2-3\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-u^2+1\\-u^4\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^4-u^2+1\\u^6+u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^6-u^4+2u^2-1\\u^6+u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^6+u^4-2u^2+1\\-u^6-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u^7+2u^6+u^5-4u^4-u^3+5u^2-4\\u^6+u^2\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^7-4u^6-2u^5+5u^4+3u^3-5u^2-5u-10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^8$
c_3, c_7	u^8
c_4	$(u+1)^8$
c_5, c_{10}	$u^8+u^7-3u^6-2u^5+3u^4+2u-1$
c_6	$u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1$
c_8	$u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1$
c_9	$u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1$
c_{11}	$u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1$
c_{12}	$u^8-u^7-3u^6+2u^5+3u^4-2u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_7	y^8
c_5, c_{10}, c_{12}	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_6, c_9	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_8, c_{11}	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.570868 + 0.730671I$ $a = -1.21928 + 2.03110I$ $b = 0$	$-2.68559 + 1.13123I$	$-18.1377 - 5.3065I$
$u = 0.570868 - 0.730671I$ $a = -1.21928 - 2.03110I$ $b = 0$	$-2.68559 - 1.13123I$	$-18.1377 + 5.3065I$
$u = -0.855237 + 0.665892I$ $a = 1.230330 + 0.083902I$ $b = 0$	$0.51448 + 2.57849I$	$-10.11893 - 3.45077I$
$u = -0.855237 - 0.665892I$ $a = 1.230330 - 0.083902I$ $b = 0$	$0.51448 - 2.57849I$	$-10.11893 + 3.45077I$
$u = -1.09818$ $a = -0.337834$ $b = 0$	-8.14766	-12.9880
$u = 1.031810 + 0.655470I$ $a = 0.370895 + 0.073482I$ $b = 0$	$-4.02461 - 6.44354I$	$-10.82984 + 2.68172I$
$u = 1.031810 - 0.655470I$ $a = 0.370895 - 0.073482I$ $b = 0$	$-4.02461 + 6.44354I$	$-10.82984 - 2.68172I$
$u = 0.603304$ $a = -2.42604$ $b = 0$	-2.48997	-13.8390

III. $I_3^u = \langle b + 3u - 2,\ a + 3u - 1,\ 9u^2 - 9u + 1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -3u + 1 \\ -3u + 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u - \frac{1}{9} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -6u + 3 \\ -3u + 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ 3u - 3 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 3u - 3 \\ \frac{8}{3}u - 3 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -9u + 9 \\ -8u + 8 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 9u - 9 \\ 9u - 8 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 3u - 3 \\ 3u - 3 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2 \\ 3u - 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -560u + \frac{4285}{9}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^2 - 3u + 1$
c_2, c_3	$u^2 + u - 1$
c_4, c_7	$u^2 - u - 1$
c_5	$(3u + 1)^2$
c_8	$9u^2 - 9u + 1$
c_9	$u^2 + 3u + 1$
c_{10}	$(u - 1)^2$
c_{11}	u^2
c_{12}	$(u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_9	$y^2 - 7y + 1$
c_2, c_3, c_4 c_7	$y^2 - 3y + 1$
c_5	$(9y - 1)^2$
c_8	$81y^2 - 63y + 1$
c_{10}, c_{12}	$(y - 1)^2$
c_{11}	y^2

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.872678$ $a = -1.61803$ $b = -0.618034$	-2.63189	-12.5890
$u = 0.127322$ $a = 0.618034$ $b = 1.61803$	-10.5276	404.810

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^8)(u^2-3u+1)(u^{129}+68u^{128}+\cdots+31u+1)$
c_2	$((u-1)^8)(u^2+u-1)(u^{129}-10u^{128}+\cdots+5u-1)$
c_3	$u^8(u^2+u-1)(u^{129}+2u^{128}+\cdots+896u+256)$
c_4	$((u+1)^8)(u^2-u-1)(u^{129}-10u^{128}+\cdots+5u-1)$
c_5	$(3u+1)^2(u^8+u^7-3u^6-2u^5+3u^4+2u-1)$ $\cdot(9u^{129}-72u^{128}+\cdots-1416882u+58007)$
c_6	$(u^2-3u+1)(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{129}-3u^{128}+\cdots+3u-1)$
c_7	$u^8(u^2-u-1)(u^{129}+2u^{128}+\cdots+896u+256)$
c_8	$(9u^2-9u+1)(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)$ $\cdot(9u^{129}-111u^{128}+\cdots+5137u-257)$
c_9	$(u^2+3u+1)(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)$ $\cdot(u^{129}-3u^{128}+\cdots+3u-1)$
c_{10}	$(u-1)^2(u^8+u^7-3u^6-2u^5+3u^4+2u-1)$ $\cdot(u^{129}-4u^{128}+\cdots+810u-81)$
c_{11}	$u^2(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot(u^{129}-2u^{128}+\cdots-5940u+324)$
c_{12}	$(u+1)^2(u^8-u^7-3u^6+2u^5+3u^4-2u-1)$ $\cdot(u^{129}-4u^{128}+\cdots+810u-81)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^8)(y^2-7y+1)(y^{129}-4y^{128}+\cdots+1563y-1)$
c_2, c_4	$((y-1)^8)(y^2-3y+1)(y^{129}-68y^{128}+\cdots+31y-1)$
c_3, c_7	$y^8(y^2-3y+1)(y^{129}+48y^{128}+\cdots-933888y-65536)$
c_5	$(9y-1)^2(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(81y^{129}-1926y^{128}+\cdots+458235777734y-3364812049)$
c_6, c_9	$(y^2-7y+1)(y^8+5y^7+\cdots-4y+1)$ $\cdot(y^{129}+69y^{128}+\cdots+31y-1)$
c_8	$(81y^2-63y+1)(y^8-3y^7+\cdots-4y+1)$ $\cdot(81y^{129}+1953y^{128}+\cdots-1315317y-66049)$
c_{10}, c_{12}	$(y-1)^2(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(y^{129}-82y^{128}+\cdots+92178y-6561)$
c_{11}	$y^2(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(y^{129}+12y^{128}+\cdots+12906216y-104976)$