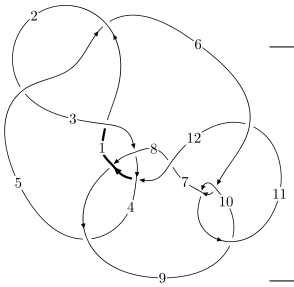
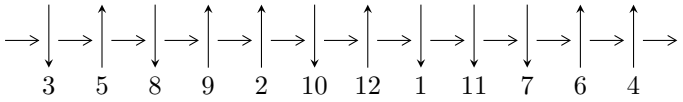
$12a_{0139}$ $(K12a_{0139})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I_1^u = \langle -1.34404 \times 10^{85} u^{129} - 2.83677 \times 10^{85} u^{128} + \cdots + 3.31526 \times 10^{84} b - 1.05008 \times 10^{85},$
$1.17862 \times 10^{85} u^{129} + 2.09114 \times 10^{85} u^{128} + \cdots + 3.31526 \times 10^{84} a + 7.72033 \times 10^{84},\ u^{130} + 3u^{129} + \cdots - 2u$
$I_2^u = \langle b - a - 1,\ a^2 + a + 1,\ u - 1 \rangle$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 132 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. $\boldsymbol{I_1^u = \langle -1.34\times 10^{85}u^{129} - 2.84\times 10^{85}u^{128} + \cdots + 3.32\times 10^{84}b - 1.05\times 10^{85},\ 1.18\times 10^{85}u^{129} + 2.09\times 10^{85}u^{128} + \cdots + 3.32\times 10^{84}a + 7.72\times 10^{84},\ u^{130} + 3u^{129} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -3.55515u^{129} - 6.30762u^{128} + \cdots + 10.4355u - 2.32873 \\ 4.05411u^{129} + 8.55670u^{128} + \cdots - 7.67266u + 3.16741 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^8 - u^6 + u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.34361u^{129} + 2.21906u^{128} + \cdots - 6.50877u + 1.76403 \\ 3.31056u^{129} + 6.97811u^{128} + \cdots - 5.48968u + 1.50109 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.779726u^{129} + 6.58769u^{128} + \cdots - 8.17552u + 1.77402 \\ 3.76185u^{129} + 7.89215u^{128} + \cdots - 6.59343u + 1.66634 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -2.14334u^{129} - 3.57272u^{128} + \cdots + 5.24061u - 3.85790 \\ 0.0243408u^{129} + 0.929845u^{128} + \cdots - 2.19183u + 0.167201 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -12.7433u^{129} - 23.2938u^{128} + \cdots + 33.5339u - 11.4273 \\ -4.00672u^{129} - 9.93596u^{128} + \cdots + 21.3244u - 7.44894 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18.2894u^{129} - 51.7968u^{128} + \cdots + 78.8220u - 19.8878$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{130} + 50u^{129} + \cdots + 65u + 1$
c_2, c_5	$u^{130} + 2u^{129} + \cdots - 3u + 1$
c_3	$u^{130} + 85u^{128} + \cdots + 118943u + 10463$
c_4	$u^{130} + 2u^{129} + \cdots - 221835u + 15679$
c_6, c_{10}	$u^{130} + 3u^{129} + \cdots - 2u + 1$
c_7	$u^{130} + u^{129} + \cdots - 21833018u + 2806801$
c_8	$u^{130} + 7u^{129} + \cdots + u^2 + 1$
c_9	$u^{130} + 61u^{129} + \cdots - 2u + 1$
c_{11}	$u^{130} + 3u^{129} + \cdots - 5888u + 1088$
c_{12}	$u^{130} + 13u^{129} + \cdots + 12u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{130} + 62y^{129} + \cdots - 1919y + 1$
c_2, c_5	$y^{130} + 50y^{129} + \cdots + 65y + 1$
c_3	$y^{130} + 170y^{129} + \cdots + 3781185289y + 109474369$
c_4	$y^{130} + 114y^{129} + \cdots - 14793010375y + 245831041$
c_6, c_{10}	$y^{130} - 61y^{129} + \cdots + 2y + 1$
c_7	$y^{130} - 69y^{129} + \cdots - 65848387418830y + 7878131853601$
c_8	$y^{130} + 11y^{129} + \cdots + 2y + 1$
c_9	$y^{130} + 19y^{129} + \cdots - 194y + 1$
c_{11}	$y^{130} + 17y^{129} + \cdots + 59393408y + 1183744$
c_{12}	$y^{130} - 15y^{129} + \cdots - 360y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.951935+0.284455I$ $a=-0.14803-1.97266I$ $b=\ \ 0.488159+0.803024I$	$-1.56375+2.70725I$	0
$u=-0.951935-0.284455I$ $a=-0.14803+1.97266I$ $b=\ \ 0.488159-0.803024I$	$-1.56375-2.70725I$	0
$u=\ \ 0.931943+0.381019I$ $a=-0.31523-1.38191I$ $b=\ \ 0.782685-0.892227I$	$0.15075-4.42039I$	0
$u=\ \ 0.931943-0.381019I$ $a=-0.31523+1.38191I$ $b=\ \ 0.782685+0.892227I$	$0.15075+4.42039I$	0
$u=-0.966441+0.207465I$ $a=\ \ 0.775311+0.005982I$ $b=-0.025874-0.169066I$	$-1.71594+0.40119I$	0
$u=-0.966441-0.207465I$ $a=\ \ 0.775311-0.005982I$ $b=-0.025874+0.169066I$	$-1.71594-0.40119I$	0
$u=\ \ 0.653051+0.737590I$ $a=\ \ 1.37772+0.59405I$ $b=-0.660199+0.845729I$	$5.28261-2.80212I$	0
$u=\ \ 0.653051-0.737590I$ $a=\ \ 1.37772-0.59405I$ $b=-0.660199-0.845729I$	$5.28261+2.80212I$	0
$u=-0.896083+0.399735I$ $a=\ \ 2.02289+0.07038I$ $b=\ \ 0.212658-0.827549I$	$-1.92625-0.01548I$	0
$u=-0.896083-0.399735I$ $a=\ \ 2.02289-0.07038I$ $b=\ \ 0.212658+0.827549I$	$-1.92625+0.01548I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.605136 + 0.765907I$ $a = 0.503962 + 0.256466I$ $b = -0.653532 - 0.841229I$	$5.29625 + 2.29671I$	0
$u = 0.605136 - 0.765907I$ $a = 0.503962 - 0.256466I$ $b = -0.653532 + 0.841229I$	$5.29625 - 2.29671I$	0
$u = -1.003610 + 0.262917I$ $a = -3.31743 - 3.31682I$ $b = 0.514617 - 0.899800I$	$-1.88382 - 1.40297I$	0
$u = -1.003610 - 0.262917I$ $a = -3.31743 + 3.31682I$ $b = 0.514617 + 0.899800I$	$-1.88382 + 1.40297I$	0
$u = 1.018820 + 0.197031I$ $a = 0.16415 + 2.36199I$ $b = 0.672728 + 1.153990I$	$-1.21577 + 3.88550I$	0
$u = 1.018820 - 0.197031I$ $a = 0.16415 - 2.36199I$ $b = 0.672728 - 1.153990I$	$-1.21577 - 3.88550I$	0
$u = -0.613995 + 0.735363I$ $a = 1.60062 - 0.55695I$ $b = -0.707275 - 1.083810I$	$5.15125 + 11.52140I$	0
$u = -0.613995 - 0.735363I$ $a = 1.60062 + 0.55695I$ $b = -0.707275 + 1.083810I$	$5.15125 - 11.52140I$	0
$u = -0.586027 + 0.730245I$ $a = 0.634538 - 0.577967I$ $b = -0.897743 + 0.578951I$	$6.70126 + 5.60050I$	0
$u = -0.586027 - 0.730245I$ $a = 0.634538 + 0.577967I$ $b = -0.897743 - 0.578951I$	$6.70126 - 5.60050I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.905604+0.178476I$		
$a=$	$0.877477+0.488964I$	$0.87490+1.50720I$	0
$b=$	$0.856830+0.602172I$		
$u=$	$0.905604-0.178476I$		
$a=$	$0.877477-0.488964I$	$0.87490-1.50720I$	0
$b=$	$0.856830-0.602172I$		
$u=$	$-1.027860+0.329407I$		
$a=$	$-0.22085+5.11891I$	$-2.32336+3.10835I$	0
$b=$	$0.433858+0.895156I$		
$u=$	$-1.027860-0.329407I$		
$a=$	$-0.22085-5.11891I$	$-2.32336-3.10835I$	0
$b=$	$0.433858-0.895156I$		
$u=$	$0.414397+0.818585I$		
$a=$	$0.603615-0.127526I$	$4.22486+0.91362I$	0
$b=$	$-0.624398+0.741213I$		
$u=$	$0.414397-0.818585I$		
$a=$	$0.603615+0.127526I$	$4.22486-0.91362I$	0
$b=$	$-0.624398-0.741213I$		
$u=$	$0.368317+0.832365I$		
$a=$	$1.145250-0.644705I$	$3.65310+5.82723I$	0
$b=$	$-0.623897-0.927978I$		
$u=$	$0.368317-0.832365I$		
$a=$	$1.145250+0.644705I$	$3.65310-5.82723I$	0
$b=$	$-0.623897+0.927978I$		
$u=$	$1.026610+0.394021I$		
$a=$	$-0.28260-2.98165I$	$-2.55538-5.79673I$	0
$b=$	$0.485682-1.157470I$		
$u=$	$1.026610-0.394021I$		
$a=$	$-0.28260+2.98165I$	$-2.55538+5.79673I$	0
$b=$	$0.485682+1.157470I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.835328 + 0.323118I$ $a = 0.836461 - 0.453003I$ $b = 0.759574 - 0.225586I$	$1.17914 - 1.62230I$	0
$u = 0.835328 - 0.323118I$ $a = 0.836461 + 0.453003I$ $b = 0.759574 + 0.225586I$	$1.17914 + 1.62230I$	0
$u = -0.378631 + 0.807445I$ $a = 1.37867 + 0.75351I$ $b = -0.702678 + 1.116600I$	$3.8613 - 14.4056I$	0
$u = -0.378631 - 0.807445I$ $a = 1.37867 - 0.75351I$ $b = -0.702678 - 1.116600I$	$3.8613 + 14.4056I$	0
$u = -0.392706 + 0.793126I$ $a = 0.471970 + 0.465172I$ $b = -0.933173 - 0.532956I$	$5.65712 - 8.40978I$	0
$u = -0.392706 - 0.793126I$ $a = 0.471970 - 0.465172I$ $b = -0.933173 + 0.532956I$	$5.65712 + 8.40978I$	0
$u = 1.097370 + 0.218797I$ $a = 0.17818 + 2.80164I$ $b = 0.021544 + 1.258720I$	$-5.92732 + 3.77179I$	0
$u = 1.097370 - 0.218797I$ $a = 0.17818 - 2.80164I$ $b = 0.021544 - 1.258720I$	$-5.92732 - 3.77179I$	0
$u = 1.130670 + 0.154148I$ $a = -0.761839 + 0.559298I$ $b = -0.896843 + 0.506568I$	$0.63364 + 5.98730I$	0
$u = 1.130670 - 0.154148I$ $a = -0.761839 - 0.559298I$ $b = -0.896843 - 0.506568I$	$0.63364 - 5.98730I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.943036 + 0.645741I$ $a = \quad 0.0795485 + 0.0521160I$ $b = -0.682324 - 0.796300I$	$4.41795 - 2.44689I$	0
$u = \quad 0.943036 - 0.645741I$ $a = \quad 0.0795485 - 0.0521160I$ $b = -0.682324 + 0.796300I$	$4.41795 + 2.44689I$	0
$u = -1.017350 + 0.530862I$ $a = \quad 1.67630 - 1.13471I$ $b = \quad 0.273002 - 1.192200I$	$-1.80046 + 0.37940I$	0
$u = -1.017350 - 0.530862I$ $a = \quad 1.67630 + 1.13471I$ $b = \quad 0.273002 + 1.192200I$	$-1.80046 - 0.37940I$	0
$u = -0.470034 + 0.707573I$ $a = -0.745861 - 0.338659I$ $b = \quad 1.031710 + 0.431016I$	$5.45783 + 0.62163I$	0
$u = -0.470034 - 0.707573I$ $a = -0.745861 + 0.338659I$ $b = \quad 1.031710 - 0.431016I$	$5.45783 - 0.62163I$	0
$u = -0.448890 + 0.717970I$ $a = -0.873130 + 0.161716I$ $b = \quad 1.031290 - 0.535960I$	$5.34861 - 2.97580I$	0
$u = -0.448890 - 0.717970I$ $a = -0.873130 - 0.161716I$ $b = \quad 1.031290 + 0.535960I$	$5.34861 + 2.97580I$	0
$u = -0.494047 + 0.681234I$ $a = -1.281140 + 0.003257I$ $b = \quad 0.790215 + 1.104020I$	$3.63704 + 3.57179I$	0
$u = -0.494047 - 0.681234I$ $a = -1.281140 - 0.003257I$ $b = \quad 0.790215 - 1.104020I$	$3.63704 - 3.57179I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.560638+0.627367I$ $a=-0.385416+0.468501I$ $b=\ \ 0.163272+1.217210I$	$-0.45617+4.17625I$	0
$u=-0.560638-0.627367I$ $a=-0.385416-0.468501I$ $b=\ \ 0.163272-1.217210I$	$-0.45617-4.17625I$	0
$u=-0.417757+0.723230I$ $a=-1.338840-0.423458I$ $b=\ \ 0.751878-1.168800I$	$3.24162-5.80998I$	0
$u=-0.417757-0.723230I$ $a=-1.338840+0.423458I$ $b=\ \ 0.751878+1.168800I$	$3.24162+5.80998I$	0
$u=-1.100610+0.381496I$ $a=\ \ 0.198443-1.062870I$ $b=-0.445712-0.247280I$	$-3.12074+1.12926I$	0
$u=-1.100610-0.381496I$ $a=\ \ 0.198443+1.062870I$ $b=-0.445712+0.247280I$	$-3.12074-1.12926I$	0
$u=\ \ 0.451795+0.702261I$ $a=\ \ 0.347784-0.119952I$ $b=\ \ 0.271289+0.089096I$	$2.56021+1.11625I$	0
$u=\ \ 0.451795-0.702261I$ $a=\ \ 0.347784+0.119952I$ $b=\ \ 0.271289-0.089096I$	$2.56021-1.11625I$	0
$u=-0.976829+0.638318I$ $a=-0.1107970+0.0497567I$ $b=-0.706858+1.063770I$	$4.07477-6.30156I$	0
$u=-0.976829-0.638318I$ $a=-0.1107970-0.0497567I$ $b=-0.706858-1.063770I$	$4.07477+6.30156I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.155540 + 0.164924I$ $a = 0.05425 - 2.21563I$ $b = -0.680797 - 1.111760I$	$-1.20719 + 11.80260I$	0
$u = 1.155540 - 0.164924I$ $a = 0.05425 + 2.21563I$ $b = -0.680797 + 1.111760I$	$-1.20719 - 11.80260I$	0
$u = -0.367787 + 0.739991I$ $a = -0.453090 - 0.785097I$ $b = 0.082081 - 1.290190I$	$-1.42238 - 6.21996I$	0
$u = -0.367787 - 0.739991I$ $a = -0.453090 + 0.785097I$ $b = 0.082081 + 1.290190I$	$-1.42238 + 6.21996I$	0
$u = -0.996636 + 0.624668I$ $a = 1.007410 - 0.893486I$ $b = -0.876209 - 0.605123I$	$5.48321 - 0.43853I$	0
$u = -0.996636 - 0.624668I$ $a = 1.007410 + 0.893486I$ $b = -0.876209 + 0.605123I$	$5.48321 + 0.43853I$	0
$u = 1.117000 + 0.376273I$ $a = -0.37182 - 2.64776I$ $b = -0.131366 - 1.162720I$	$-7.49900 - 4.15326I$	0
$u = 1.117000 - 0.376273I$ $a = -0.37182 + 2.64776I$ $b = -0.131366 + 1.162720I$	$-7.49900 + 4.15326I$	0
$u = 0.987832 + 0.653910I$ $a = 1.29622 + 0.94083I$ $b = -0.665656 + 0.882854I$	$4.15786 - 7.64742I$	0
$u = 0.987832 - 0.653910I$ $a = 1.29622 - 0.94083I$ $b = -0.665656 - 0.882854I$	$4.15786 + 7.64742I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.454735 + 0.676370I$ $a = -2.80402 + 1.84368I$ $b = 0.560265 - 0.838253I$	$2.31190 - 1.21104I$	$-16.9103 + 0.I$
$u = 0.454735 - 0.676370I$ $a = -2.80402 - 1.84368I$ $b = 0.560265 + 0.838253I$	$2.31190 + 1.21104I$	$-16.9103 + 0.I$
$u = -1.143040 + 0.314243I$ $a = 0.46535 - 1.86891I$ $b = -0.314503 - 0.707096I$	$-3.28483 + 1.01028I$	0
$u = -1.143040 - 0.314243I$ $a = 0.46535 + 1.86891I$ $b = -0.314503 + 0.707096I$	$-3.28483 - 1.01028I$	0
$u = 0.425483 + 0.690833I$ $a = -3.71442 - 0.35239I$ $b = 0.557092 + 0.881789I$	$2.17127 + 3.24734I$	$-13.4996 + 13.7790I$
$u = 0.425483 - 0.690833I$ $a = -3.71442 + 0.35239I$ $b = 0.557092 - 0.881789I$	$2.17127 - 3.24734I$	$-13.4996 - 13.7790I$
$u = -1.047400 + 0.572532I$ $a = 0.792308 + 0.288123I$ $b = 0.821592 - 1.075850I$	$2.00132 + 1.28465I$	0
$u = -1.047400 - 0.572532I$ $a = 0.792308 - 0.288123I$ $b = 0.821592 + 1.075850I$	$2.00132 - 1.28465I$	0
$u = 1.069700 + 0.534717I$ $a = 1.75541 + 2.55227I$ $b = 0.339537 + 0.887971I$	$-0.88647 - 3.60045I$	0
$u = 1.069700 - 0.534717I$ $a = 1.75541 - 2.55227I$ $b = 0.339537 - 0.887971I$	$-0.88647 + 3.60045I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.193250+0.100148I$ $a=-0.007553-1.273030I$ $b=-0.547079-0.801466I$	$-1.23069+1.50596I$	0
$u=-1.193250-0.100148I$ $a=-0.007553+1.273030I$ $b=-0.547079+0.801466I$	$-1.23069-1.50596I$	0
$u=1.064830+0.567394I$ $a=-0.72933-1.89628I$ $b=0.568028+0.816331I$	$0.51783-3.61735I$	0
$u=1.064830-0.567394I$ $a=-0.72933+1.89628I$ $b=0.568028-0.816331I$	$0.51783+3.61735I$	0
$u=-1.062420+0.582305I$ $a=0.558111+1.290780I$ $b=1.047910-0.382477I$	$3.70910+4.33562I$	0
$u=-1.062420-0.582305I$ $a=0.558111-1.290780I$ $b=1.047910+0.382477I$	$3.70910-4.33562I$	0
$u=1.126010+0.449604I$ $a=-0.772483-0.098456I$ $b=-0.694249-0.379283I$	$-2.65232-6.51534I$	0
$u=1.126010-0.449604I$ $a=-0.772483+0.098456I$ $b=-0.694249+0.379283I$	$-2.65232+6.51534I$	0
$u=1.069740+0.577482I$ $a=0.336304-0.251962I$ $b=0.303521-0.163960I$	$0.74062-6.04326I$	0
$u=1.069740-0.577482I$ $a=0.336304+0.251962I$ $b=0.303521+0.163960I$	$0.74062+6.04326I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.205430+0.168178I$ $a=\ \ 0.04786+1.70583I$ $b=-0.571082+0.903173I$	$-1.58036-2.98303I$	0
$u=-1.205430-0.168178I$ $a=\ \ 0.04786-1.70583I$ $b=-0.571082-0.903173I$	$-1.58036+2.98303I$	0
$u=-1.123310+0.472373I$ $a=\ \ 1.65357-2.41237I$ $b=-0.214084-1.097040I$	$-6.85094+3.52114I$	0
$u=-1.123310-0.472373I$ $a=\ \ 1.65357+2.41237I$ $b=-0.214084+1.097040I$	$-6.85094-3.52114I$	0
$u=\ \ 1.079460+0.567991I$ $a=-3.99411-1.56684I$ $b=\ \ 0.560188-0.899200I$	$0.25253-8.11189I$	0
$u=\ \ 1.079460-0.567991I$ $a=-3.99411+1.56684I$ $b=\ \ 0.560188+0.899200I$	$0.25253+8.11189I$	0
$u=-1.074020+0.582938I$ $a=-0.75638+1.52052I$ $b=\ \ 1.044260+0.577075I$	$3.50527+7.96038I$	0
$u=-1.074020-0.582938I$ $a=-0.75638-1.52052I$ $b=\ \ 1.044260-0.577075I$	$3.50527-7.96038I$	0
$u=-1.087830+0.578708I$ $a=-2.01544+2.24277I$ $b=\ \ 0.745220+1.196100I$	$1.27171+10.78980I$	0
$u=-1.087830-0.578708I$ $a=-2.01544-2.24277I$ $b=\ \ 0.745220-1.196100I$	$1.27171-10.78980I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.112710 + 0.541441I$ $a = -0.37760 - 1.61344I$ $b = -0.055519 - 0.780968I$	$-1.72144 - 6.65549I$	0
$u = 1.112710 - 0.541441I$ $a = -0.37760 + 1.61344I$ $b = -0.055519 + 0.780968I$	$-1.72144 + 6.65549I$	0
$u = 0.024144 + 0.757115I$ $a = 0.443826 - 1.023970I$ $b = -0.596666 - 1.030190I$	$-1.20535 + 7.18811I$	$-0.33826 - 8.22116I$
$u = 0.024144 - 0.757115I$ $a = 0.443826 + 1.023970I$ $b = -0.596666 + 1.030190I$	$-1.20535 - 7.18811I$	$-0.33826 + 8.22116I$
$u = -1.175960 + 0.405685I$ $a = -0.89336 + 1.68852I$ $b = -0.553370 + 1.020650I$	$-4.76957 - 3.09335I$	0
$u = -1.175960 - 0.405685I$ $a = -0.89336 - 1.68852I$ $b = -0.553370 - 1.020650I$	$-4.76957 + 3.09335I$	0
$u = 1.164500 + 0.438192I$ $a = 0.73319 + 2.63405I$ $b = -0.592085 + 1.067770I$	$-4.54838 - 11.43550I$	0
$u = 1.164500 - 0.438192I$ $a = 0.73319 - 2.63405I$ $b = -0.592085 - 1.067770I$	$-4.54838 + 11.43550I$	0
$u = -1.108850 + 0.572725I$ $a = -1.73368 + 1.89625I$ $b = 0.066256 + 1.316560I$	$-3.59278 + 11.20930I$	0
$u = -1.108850 - 0.572725I$ $a = -1.73368 - 1.89625I$ $b = 0.066256 - 1.316560I$	$-3.59278 - 11.20930I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.116290+0.596941I$ $a=-0.753048-1.043810I$ $b=-0.947349+0.520031I$	$3.50820+13.62670I$	0
$u=-1.116290-0.596941I$ $a=-0.753048+1.043810I$ $b=-0.947349-0.520031I$	$3.50820-13.62670I$	0
$u=1.113110+0.612423I$ $a=-0.512604+0.329161I$ $b=-0.624648-0.696799I$	$2.13905-6.25198I$	0
$u=1.113110-0.612423I$ $a=-0.512604-0.329161I$ $b=-0.624648+0.696799I$	$2.13905+6.25198I$	0
$u=-1.125900+0.597400I$ $a=1.97138-2.27327I$ $b=-0.702496-1.126950I$	$1.6378+19.6584I$	0
$u=-1.125900-0.597400I$ $a=1.97138+2.27327I$ $b=-0.702496+1.126950I$	$1.6378-19.6584I$	0
$u=0.300763+0.660103I$ $a=0.655329+0.997752I$ $b=0.012248+0.658081I$	$0.58863+1.97072I$	$1.01913-3.76688I$
$u=0.300763-0.660103I$ $a=0.655329-0.997752I$ $b=0.012248-0.658081I$	$0.58863-1.97072I$	$1.01913+3.76688I$
$u=1.136340+0.603691I$ $a=1.63995+1.90641I$ $b=-0.620273+0.954062I$	$1.36145-11.16380I$	0
$u=1.136340-0.603691I$ $a=1.63995-1.90641I$ $b=-0.620273-0.954062I$	$1.36145+11.16380I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.401739 + 0.579883I$ $a = 1.01256 - 2.00554I$ $b = 0.340585 - 0.812865I$	$1.033700 - 0.901182I$	$5.52632 + 3.19951I$
$u = 0.401739 - 0.579883I$ $a = 1.01256 + 2.00554I$ $b = 0.340585 + 0.812865I$	$1.033700 + 0.901182I$	$5.52632 - 3.19951I$
$u = 0.088291 + 0.684301I$ $a = 0.305618 + 0.466857I$ $b = -0.608701 + 0.487163I$	$0.30001 + 2.37537I$	$2.20863 - 3.79545I$
$u = 0.088291 - 0.684301I$ $a = 0.305618 - 0.466857I$ $b = -0.608701 - 0.487163I$	$0.30001 - 2.37537I$	$2.20863 + 3.79545I$
$u = -0.126061 + 0.648378I$ $a = 0.96121 + 1.22805I$ $b = -0.140084 + 1.073500I$	$-4.07696 + 0.70334I$	$-5.41284 - 1.11187I$
$u = -0.126061 - 0.648378I$ $a = 0.96121 - 1.22805I$ $b = -0.140084 - 1.073500I$	$-4.07696 - 0.70334I$	$-5.41284 + 1.11187I$
$u = 0.464948 + 0.130618I$ $a = 1.54928 + 0.39000I$ $b = 0.601231 + 0.607377I$	$1.00842 + 1.42479I$	$3.94593 - 3.39925I$
$u = 0.464948 - 0.130618I$ $a = 1.54928 - 0.39000I$ $b = 0.601231 - 0.607377I$	$1.00842 - 1.42479I$	$3.94593 + 3.39925I$
$u = 0.018684 + 0.316194I$ $a = 1.55806 + 1.07895I$ $b = 0.505716 + 0.996536I$	$-0.25297 + 2.82529I$	$1.22965 - 2.68926I$
$u = 0.018684 - 0.316194I$ $a = 1.55806 - 1.07895I$ $b = 0.505716 - 0.996536I$	$-0.25297 - 2.82529I$	$1.22965 + 2.68926I$

II. $I_2^u = \langle b-a-1,\ a^2+a+1,\ u-1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-1\\0\end{pmatrix}$$
$$a_2 = \begin{pmatrix}a\\a+1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}2\\1\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\a\end{pmatrix}$$
$$a_3 = \begin{pmatrix}a\\a\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-a\\0\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a-5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = -0.500000 + 0.866025I$ $b = \quad 0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-3.00000 - 3.46410I$
$u = \quad 1.00000$ $a = -0.500000 - 0.866025I$ $b = \quad 0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-3.00000 + 3.46410I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^{130}+50u^{129}+\cdots+65u+1)$
c_2	$(u^2+u+1)(u^{130}+2u^{129}+\cdots-3u+1)$
c_3	$(u^2-u+1)(u^{130}+85u^{128}+\cdots+118943u+10463)$
c_4	$(u^2-u+1)(u^{130}+2u^{129}+\cdots-221835u+15679)$
c_5	$(u^2-u+1)(u^{130}+2u^{129}+\cdots-3u+1)$
c_6	$((u-1)^2)(u^{130}+3u^{129}+\cdots-2u+1)$
c_7	$((u-1)^2)(u^{130}+u^{129}+\cdots-2.18330\times10^7u+2806801)$
c_8	$((u-1)^2)(u^{130}+7u^{129}+\cdots+u^2+1)$
c_9	$((u-1)^2)(u^{130}+61u^{129}+\cdots-2u+1)$
c_{10}	$((u+1)^2)(u^{130}+3u^{129}+\cdots-2u+1)$
c_{11}	$u^2(u^{130}+3u^{129}+\cdots-5888u+1088)$
c_{12}	$u^2(u^{130}+13u^{129}+\cdots+12u+4)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)(y^{130}+62y^{129}+\cdots-1919y+1)$
c_2, c_5	$(y^2+y+1)(y^{130}+50y^{129}+\cdots+65y+1)$
c_3	$(y^2+y+1)(y^{130}+170y^{129}+\cdots+3.78119\times10^9y+1.09474\times10^8)$
c_4	$(y^2+y+1)(y^{130}+114y^{129}+\cdots-1.47930\times10^{10}y+2.45831\times10^8)$
c_6, c_{10}	$((y-1)^2)(y^{130}-61y^{129}+\cdots+2y+1)$
c_7	$(y-1)^2$ $\cdot(y^{130}-69y^{129}+\cdots-65848387418830y+7878131853601)$
c_8	$((y-1)^2)(y^{130}+11y^{129}+\cdots+2y+1)$
c_9	$((y-1)^2)(y^{130}+19y^{129}+\cdots-194y+1)$
c_{11}	$y^2(y^{130}+17y^{129}+\cdots+5.93934\times10^7y+1183744)$
c_{12}	$y^2(y^{130}-15y^{129}+\cdots-360y+16)$