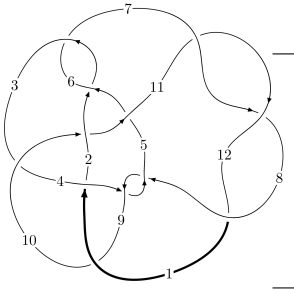
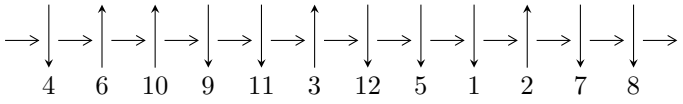
$12a_{0954}$ $(K12a_{0954})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 7.34935 \times 10^{686} u^{138} + 3.18871 \times 10^{687} u^{137} + \cdots + 2.74628 \times 10^{687} b + 7.47276 \times 10^{689}, \\ & 3.96893 \times 10^{689} u^{138} + 1.01996 \times 10^{690} u^{137} + \cdots + 4.23751 \times 10^{690} a - 1.16664 \times 10^{693}, \\ & u^{139} + 4u^{138} + \cdots + 10765u + 1543 \rangle \\ I_2^u = \langle & 2.42322 \times 10^{20} u^{33} - 2.34759 \times 10^{21} u^{32} + \cdots + 1.44163 \times 10^{21} b - 2.34593 \times 10^{21}, \\ & 7.15733 \times 10^{18} u^{33} + 2.04516 \times 10^{19} u^{32} + \cdots + 7.87774 \times 10^{18} a - 1.30471 \times 10^{19}, \ u^{34} - u^{33} + \cdots - 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 173 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. $\boldsymbol{I_1^u = \langle 7.35 \times 10^{686} u^{138} + 3.19 \times 10^{687} u^{137} + \cdots + 2.75 \times 10^{687} b + 7.47 \times 10^{689},\ 3.97 \times 10^{689} u^{138} + 1.02 \times 10^{690} u^{137} + \cdots + 4.24 \times 10^{690} a - 1.17 \times 10^{693},\ u^{139} + 4u^{138} + \cdots + 10765u + 1543 \rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} -0.0936618u^{138} - 0.240697u^{137} + \cdots + 1753.34u + 275.314 \\ -0.267611u^{138} - 1.16110u^{137} + \cdots - 2455.08u - 272.105 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 0.172908u^{138} + 0.100924u^{137} + \cdots - 9074.58u - 1380.96 \\ 0.524853u^{138} + 2.04517u^{137} + \cdots + 1010.16u - 20.9051 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.264885u^{138} - 0.991986u^{137} + \cdots + 16.6171u + 80.4220 \\ -0.320116u^{138} - 1.40709u^{137} + \cdots - 3212.85u - 364.547 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.412145u^{138} - 1.56850u^{137} + \cdots - 45.6170u + 182.029 \\ -0.473335u^{138} - 2.41050u^{137} + \cdots - 9853.94u - 1272.53 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.361273u^{138} - 1.40180u^{137} + \cdots - 701.737u + 3.20887 \\ -0.267611u^{138} - 1.16110u^{137} + \cdots - 2455.08u - 272.105 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.510251u^{138} - 1.80085u^{137} + \cdots + 1914.90u + 431.443 \\ -0.591229u^{138} - 2.68575u^{137} + \cdots - 7174.16u - 844.702 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.302426u^{138} + 1.57715u^{137} + \cdots + 6649.40u + 813.536 \\ 0.891376u^{138} + 3.49644u^{137} + \cdots + 495.277u - 220.580 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.300992u^{138} + 0.692750u^{137} + \cdots - 6844.57u - 1086.16 \\ 0.998380u^{138} + 4.67724u^{137} + \cdots + 14271.2u + 1727.14 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.33258u^{138} + 5.97100u^{137} + \cdots - 47823.9u - 7695.64$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{139} - 10u^{138} + \cdots + 668505u - 38071$
c_2, c_6	$u^{139} - 6u^{138} + \cdots + 73u + 1721$
c_3	$u^{139} + u^{138} + \cdots + 3238u + 389$
c_4, c_8	$u^{139} + 4u^{138} + \cdots + 10765u + 1543$
c_5	$u^{139} + u^{138} + \cdots - 112549u + 43381$
c_7, c_{11}, c_{12}	$u^{139} - u^{138} + \cdots - 629u + 71$
c_9	$u^{139} + 3u^{138} + \cdots - 19u + 1$
c_{10}	$u^{139} + 7u^{138} + \cdots + 685122u + 90743$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{139} + 46y^{138} + \cdots - 59985059471y - 1449401041$
c_2, c_6	$y^{139} - 74y^{138} + \cdots + 121225685y - 2961841$
c_3	$y^{139} + 27y^{138} + \cdots - 3405768y - 151321$
c_4, c_8	$y^{139} + 94y^{138} + \cdots - 45669961y - 2380849$
c_5	$y^{139} + 15y^{138} + \cdots - 293305335987y - 1881911161$
c_7, c_{11}, c_{12}	$y^{139} - 145y^{138} + \cdots + 23317y - 5041$
c_9	$y^{139} - 11y^{138} + \cdots + 31y - 1$
c_{10}	$y^{139} - 51y^{138} + \cdots + 9380316628y - 8234292049$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.984345+0.163711I$ $a=\ 0.317362-0.123113I$ $b=-0.405404+0.328192I$	$-1.61926+3.70744I$	0
$u=-0.984345-0.163711I$ $a=\ 0.317362+0.123113I$ $b=-0.405404-0.328192I$	$-1.61926-3.70744I$	0
$u=-0.858886+0.521143I$ $a=-0.034798+0.336032I$ $b=\ 1.50776+0.23002I$	$-5.00542-5.88034I$	0
$u=-0.858886-0.521143I$ $a=-0.034798-0.336032I$ $b=\ 1.50776-0.23002I$	$-5.00542+5.88034I$	0
$u=\ 0.967502+0.072523I$ $a=-0.494935-0.148784I$ $b=-1.56393+0.08436I$	$-8.84824+0.83629I$	0
$u=\ 0.967502-0.072523I$ $a=-0.494935+0.148784I$ $b=-1.56393-0.08436I$	$-8.84824-0.83629I$	0
$u=-0.173315+1.019320I$ $a=\ 0.25912+2.25416I$ $b=\ 1.46511-0.24456I$	$0.57027+8.62979I$	0
$u=-0.173315-1.019320I$ $a=\ 0.25912-2.25416I$ $b=\ 1.46511+0.24456I$	$0.57027-8.62979I$	0
$u=\ 0.209486+1.012630I$ $a=\ 0.01204-1.73362I$ $b=\ 1.45610+0.18075I$	$-2.24906-3.84323I$	0
$u=\ 0.209486-1.012630I$ $a=\ 0.01204+1.73362I$ $b=\ 1.45610-0.18075I$	$-2.24906+3.84323I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.867416+0.421365I$ $a=\ \ 0.607270-0.176153I$ $b=\ \ 0.786540+0.184391I$	$1.30510-1.99753I$	0
$u=-0.867416-0.421365I$ $a=\ \ 0.607270+0.176153I$ $b=\ \ 0.786540-0.184391I$	$1.30510+1.99753I$	0
$u=-0.177876+0.947063I$ $a=\ \ 0.701272+1.190700I$ $b=\ \ 1.328990-0.174052I$	$1.83948+0.31019I$	0
$u=-0.177876-0.947063I$ $a=\ \ 0.701272-1.190700I$ $b=\ \ 1.328990+0.174052I$	$1.83948-0.31019I$	0
$u=\ \ 0.948364+0.114684I$ $a=\ \ 0.254988+0.113237I$ $b=-0.525303-0.601669I$	$1.80221-9.27217I$	0
$u=\ \ 0.948364-0.114684I$ $a=\ \ 0.254988-0.113237I$ $b=-0.525303+0.601669I$	$1.80221+9.27217I$	0
$u=\ \ 0.947563+0.054813I$ $a=\ \ 0.329502+0.114601I$ $b=\ \ 0.065641-0.525613I$	$3.76074+0.63220I$	0
$u=\ \ 0.947563-0.054813I$ $a=\ \ 0.329502-0.114601I$ $b=\ \ 0.065641+0.525613I$	$3.76074-0.63220I$	0
$u=-0.345652+1.007400I$ $a=-0.87690+1.35211I$ $b=\ \ 1.46787-0.59646I$	$-3.10394+3.05580I$	0
$u=-0.345652-1.007400I$ $a=-0.87690-1.35211I$ $b=\ \ 1.46787+0.59646I$	$-3.10394-3.05580I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.665495+0.832437I$ $a=\ \ 0.597877+0.524581I$ $b=-0.289783-0.387641I$	$-0.92855+2.86098I$	0
$u=-0.665495-0.832437I$ $a=\ \ 0.597877-0.524581I$ $b=-0.289783+0.387641I$	$-0.92855-2.86098I$	0
$u=-0.416651+1.004640I$ $a=-0.17056-1.70837I$ $b=-0.400838+0.074764I$	$2.92086+6.73817I$	0
$u=-0.416651-1.004640I$ $a=-0.17056+1.70837I$ $b=-0.400838-0.074764I$	$2.92086-6.73817I$	0
$u=\ \ 0.328815+1.040940I$ $a=-1.03808-1.10020I$ $b=\ \ 1.72147+0.32756I$	$-3.06181-0.42276I$	0
$u=\ \ 0.328815-1.040940I$ $a=-1.03808+1.10020I$ $b=\ \ 1.72147-0.32756I$	$-3.06181+0.42276I$	0
$u=\ \ 0.298772+1.050800I$ $a=\ \ 0.13707+1.55026I$ $b=\ \ 0.124904-0.263502I$	$1.30186-3.91353I$	0
$u=\ \ 0.298772-1.050800I$ $a=\ \ 0.13707-1.55026I$ $b=\ \ 0.124904+0.263502I$	$1.30186+3.91353I$	0
$u=-0.903951+0.035507I$ $a=-0.334684+0.266905I$ $b=-1.49079-0.18892I$	$-7.63137-5.02257I$	0
$u=-0.903951-0.035507I$ $a=-0.334684-0.266905I$ $b=-1.49079+0.18892I$	$-7.63137+5.02257I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.305158 + 0.816887I$ $a = 0.33859 - 1.71210I$ $b = 0.241817 + 1.118750I$	$2.35998 - 5.79520I$	0
$u = 0.305158 - 0.816887I$ $a = 0.33859 + 1.71210I$ $b = 0.241817 - 1.118750I$	$2.35998 + 5.79520I$	0
$u = 0.820846 + 0.267285I$ $a = -1.075110 - 0.400041I$ $b = -1.59964 + 0.01315I$	$-6.77889 + 2.54045I$	0
$u = 0.820846 - 0.267285I$ $a = -1.075110 + 0.400041I$ $b = -1.59964 - 0.01315I$	$-6.77889 - 2.54045I$	0
$u = 0.846059 + 0.764034I$ $a = -0.064795 - 0.277890I$ $b = 1.45640 - 0.15711I$	$-6.79054 - 0.70134I$	0
$u = 0.846059 - 0.764034I$ $a = -0.064795 + 0.277890I$ $b = 1.45640 + 0.15711I$	$-6.79054 + 0.70134I$	0
$u = -0.410065 + 0.753558I$ $a = 0.257721 + 1.114800I$ $b = 0.280895 - 0.583056I$	$-0.90606 + 1.55341I$	0
$u = -0.410065 - 0.753558I$ $a = 0.257721 - 1.114800I$ $b = 0.280895 + 0.583056I$	$-0.90606 - 1.55341I$	0
$u = 0.663817 + 0.931200I$ $a = 0.02898 + 1.54162I$ $b = -1.41554 - 0.29313I$	$-6.21862 - 4.94337I$	0
$u = 0.663817 - 0.931200I$ $a = 0.02898 - 1.54162I$ $b = -1.41554 + 0.29313I$	$-6.21862 + 4.94337I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.055156+0.848071I$ $a=\ \ 0.81299-1.50904I$ $b=-0.485747+0.310112I$	$1.85993+1.66350I$	0
$u=-0.055156-0.848071I$ $a=\ \ 0.81299+1.50904I$ $b=-0.485747-0.310112I$	$1.85993-1.66350I$	0
$u=-0.120590+0.837860I$ $a=\ \ 0.53710-2.73606I$ $b=-1.311550-0.073495I$	$-0.15517-7.25854I$	0
$u=-0.120590-0.837860I$ $a=\ \ 0.53710+2.73606I$ $b=-1.311550+0.073495I$	$-0.15517+7.25854I$	0
$u=-0.239360+0.811073I$ $a=\ \ 0.67104-2.24339I$ $b=-1.024730+0.221853I$	$1.54634+1.64211I$	0
$u=-0.239360-0.811073I$ $a=\ \ 0.67104+2.24339I$ $b=-1.024730-0.221853I$	$1.54634-1.64211I$	0
$u=\ \ 0.269501+1.126440I$ $a=-0.168913+1.115810I$ $b=\ \ 0.666706-0.630340I$	$2.03934-3.87980I$	0
$u=\ \ 0.269501-1.126440I$ $a=-0.168913-1.115810I$ $b=\ \ 0.666706+0.630340I$	$2.03934+3.87980I$	0
$u=\ \ 0.320024+1.120450I$ $a=-0.09647+1.68783I$ $b=-0.137077-1.008610I$	$1.58535-5.28364I$	0
$u=\ \ 0.320024-1.120450I$ $a=-0.09647-1.68783I$ $b=-0.137077+1.008610I$	$1.58535+5.28364I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.317984 + 1.122460I$ $a = -0.95229 - 1.24699I$ $b = 1.49185 + 0.10434I$	$-4.52917 - 3.20075I$	0
$u = 0.317984 - 1.122460I$ $a = -0.95229 + 1.24699I$ $b = 1.49185 - 0.10434I$	$-4.52917 + 3.20075I$	0
$u = -0.306639 + 1.126310I$ $a = 0.20136 - 1.64185I$ $b = -0.565466 + 0.757861I$	$1.98266 + 2.53406I$	0
$u = -0.306639 - 1.126310I$ $a = 0.20136 + 1.64185I$ $b = -0.565466 - 0.757861I$	$1.98266 - 2.53406I$	0
$u = 0.013356 + 0.827803I$ $a = -0.349403 + 0.562074I$ $b = -1.67021 - 0.02537I$	$-6.39087 + 2.02065I$	0
$u = 0.013356 - 0.827803I$ $a = -0.349403 - 0.562074I$ $b = -1.67021 + 0.02537I$	$-6.39087 - 2.02065I$	0
$u = -0.292769 + 1.138220I$ $a = -0.56388 - 1.30126I$ $b = 0.764263 + 1.097700I$	$5.68267 + 7.59871I$	0
$u = -0.292769 - 1.138220I$ $a = -0.56388 + 1.30126I$ $b = 0.764263 - 1.097700I$	$5.68267 - 7.59871I$	0
$u = 0.044985 + 1.184420I$ $a = -0.160859 - 1.263000I$ $b = -0.399145 + 0.580971I$	$3.74587 + 1.13480I$	0
$u = 0.044985 - 1.184420I$ $a = -0.160859 + 1.263000I$ $b = -0.399145 - 0.580971I$	$3.74587 - 1.13480I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.591452+1.029330I$ $a=\ \ 0.30372-1.57353I$ $b=-1.51211+0.41168I$	$-3.42516+11.21010I$	0
$u=-0.591452-1.029330I$ $a=\ \ 0.30372+1.57353I$ $b=-1.51211-0.41168I$	$-3.42516-11.21010I$	0
$u=\ \ 0.111053+0.799051I$ $a=\ \ 0.58668+2.35867I$ $b=-1.322310-0.072592I$	$-3.16650+2.25588I$	0
$u=\ \ 0.111053-0.799051I$ $a=\ \ 0.58668-2.35867I$ $b=-1.322310+0.072592I$	$-3.16650-2.25588I$	0
$u=\ \ 0.017340+1.193460I$ $a=-0.63967+1.52873I$ $b=-0.318717-0.660277I$	$6.39748-5.33155I$	0
$u=\ \ 0.017340-1.193460I$ $a=-0.63967-1.52873I$ $b=-0.318717+0.660277I$	$6.39748+5.33155I$	0
$u=-0.002475+0.800728I$ $a=\ \ 1.54046+0.42662I$ $b=-2.03520-0.17589I$	$-4.86930-1.22848I$	0
$u=-0.002475-0.800728I$ $a=\ \ 1.54046-0.42662I$ $b=-2.03520+0.17589I$	$-4.86930+1.22848I$	0
$u=-0.411807+1.127770I$ $a=-0.939757+1.025840I$ $b=\ \ 1.339180-0.027451I$	$-3.92750-0.69940I$	0
$u=-0.411807-1.127770I$ $a=-0.939757-1.025840I$ $b=\ \ 1.339180+0.027451I$	$-3.92750+0.69940I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.286293+1.168760I$ $a=-0.464937-0.653723I$ $b=\ \ 1.141310+0.599099I$	$4.72297-0.88647I$	0
$u=-0.286293-1.168760I$ $a=-0.464937+0.653723I$ $b=\ \ 1.141310-0.599099I$	$4.72297+0.88647I$	0
$u=-0.764720+0.165524I$ $a=-0.781745+0.770300I$ $b=-1.49881+0.08202I$	$-6.32352-0.11113I$	0
$u=-0.764720-0.165524I$ $a=-0.781745-0.770300I$ $b=-1.49881-0.08202I$	$-6.32352+0.11113I$	0
$u=-0.983411+0.788853I$ $a=-0.670181-0.732094I$ $b=-1.343380-0.099506I$	$-0.51861-2.64876I$	0
$u=-0.983411-0.788853I$ $a=-0.670181+0.732094I$ $b=-1.343380+0.099506I$	$-0.51861+2.64876I$	0
$u=\ \ 0.469999+0.555462I$ $a=\ \ 1.018480+0.816931I$ $b=\ \ 0.252338+0.060750I$	$-0.178880+0.828653I$	0
$u=\ \ 0.469999-0.555462I$ $a=\ \ 1.018480-0.816931I$ $b=\ \ 0.252338-0.060750I$	$-0.178880-0.828653I$	0
$u=-1.319750+0.070360I$ $a=\ \ 0.344735-0.167665I$ $b=\ \ 1.50974+0.22288I$	$-4.82742-12.35860I$	0
$u=-1.319750-0.070360I$ $a=\ \ 0.344735+0.167665I$ $b=\ \ 1.50974-0.22288I$	$-4.82742+12.35860I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.029267 + 1.338280I$ $a = -0.723211 + 0.352034I$ $b = -0.161327 - 0.286038I$	$6.73997 + 1.76346I$	0
$u = 0.029267 - 1.338280I$ $a = -0.723211 - 0.352034I$ $b = -0.161327 + 0.286038I$	$6.73997 - 1.76346I$	0
$u = -0.480236 + 1.257160I$ $a = -0.61828 + 1.67050I$ $b = 1.360700 - 0.056883I$	$-2.94707 + 4.84807I$	0
$u = -0.480236 - 1.257160I$ $a = -0.61828 - 1.67050I$ $b = 1.360700 + 0.056883I$	$-2.94707 - 4.84807I$	0
$u = 0.529183 + 1.245100I$ $a = -0.36871 - 1.70433I$ $b = 1.51942 + 0.08729I$	$-3.70618 - 7.66035I$	0
$u = 0.529183 - 1.245100I$ $a = -0.36871 + 1.70433I$ $b = 1.51942 - 0.08729I$	$-3.70618 + 7.66035I$	0
$u = 0.478702 + 1.268950I$ $a = 0.234035 - 1.110490I$ $b = 0.122953 + 0.874659I$	$7.74290 - 4.28518I$	0
$u = 0.478702 - 1.268950I$ $a = 0.234035 + 1.110490I$ $b = 0.122953 - 0.874659I$	$7.74290 + 4.28518I$	0
$u = -0.203929 + 1.347900I$ $a = 0.255826 + 0.576506I$ $b = -0.661616 - 0.539673I$	$7.23546 + 1.47321I$	0
$u = -0.203929 - 1.347900I$ $a = 0.255826 - 0.576506I$ $b = -0.661616 + 0.539673I$	$7.23546 - 1.47321I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.243923 + 0.585508I$ $a = 1.71426 - 1.22931I$ $b = -0.677211 + 0.670446I$	$1.78589 + 2.70114I$	0
$u = 0.243923 - 0.585508I$ $a = 1.71426 + 1.22931I$ $b = -0.677211 - 0.670446I$	$1.78589 - 2.70114I$	0
$u = 0.472975 + 1.308290I$ $a = 0.020706 - 1.387770I$ $b = 0.554955 + 0.976408I$	$6.0954 - 14.2634I$	0
$u = 0.472975 - 1.308290I$ $a = 0.020706 + 1.387770I$ $b = 0.554955 - 0.976408I$	$6.0954 + 14.2634I$	0
$u = -0.485685 + 1.308060I$ $a = -0.016512 + 1.221730I$ $b = 0.448426 - 0.794756I$	$2.72436 + 8.80622I$	0
$u = -0.485685 - 1.308060I$ $a = -0.016512 - 1.221730I$ $b = 0.448426 + 0.794756I$	$2.72436 - 8.80622I$	0
$u = -0.482126 + 1.310420I$ $a = -0.60989 + 1.53158I$ $b = 1.44761 - 0.36304I$	$-3.67713 + 10.05830I$	0
$u = -0.482126 - 1.310420I$ $a = -0.60989 - 1.53158I$ $b = 1.44761 + 0.36304I$	$-3.67713 - 10.05830I$	0
$u = 0.470960 + 1.318270I$ $a = -0.244101 + 1.009770I$ $b = -0.462786 - 0.706849I$	$7.79209 - 5.86442I$	0
$u = 0.470960 - 1.318270I$ $a = -0.244101 - 1.009770I$ $b = -0.462786 + 0.706849I$	$7.79209 + 5.86442I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.311795+1.366990I$ $a=\ \ 0.251787-0.893057I$ $b=-0.506581+0.493165I$	$3.33592+2.56159I$	0
$u=-0.311795-1.366990I$ $a=\ \ 0.251787+0.893057I$ $b=-0.506581-0.493165I$	$3.33592-2.56159I$	0
$u=-0.006162+1.411590I$ $a=\ \ 1.359200+0.310126I$ $b=-0.984952-0.255896I$	$4.55631+1.85744I$	0
$u=-0.006162-1.411590I$ $a=\ \ 1.359200-0.310126I$ $b=-0.984952+0.255896I$	$4.55631-1.85744I$	0
$u=\ \ 0.50300+1.32450I$ $a=-0.58636-1.41272I$ $b=\ \ 1.53634+0.23865I$	$-4.91159-6.12885I$	0
$u=\ \ 0.50300-1.32450I$ $a=-0.58636+1.41272I$ $b=\ \ 1.53634-0.23865I$	$-4.91159+6.12885I$	0
$u=-0.71700+1.23574I$ $a=\ \ 0.253055+1.186140I$ $b=\ \ 1.51331-0.25034I$	$1.32555+9.36622I$	0
$u=-0.71700-1.23574I$ $a=\ \ 0.253055-1.186140I$ $b=\ \ 1.51331+0.25034I$	$1.32555-9.36622I$	0
$u=-0.72333+1.26805I$ $a=-0.064981-1.241090I$ $b=-1.298660+0.310131I$	$3.32242+8.49482I$	0
$u=-0.72333-1.26805I$ $a=-0.064981+1.241090I$ $b=-1.298660-0.310131I$	$3.32242-8.49482I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.482157+0.220360I$ $a=-0.278266+0.045029I$ $b=\ \ 0.970059+0.451821I$	$-0.605439+0.578334I$	$-9.72146-4.72163I$
$u=-0.482157-0.220360I$ $a=-0.278266-0.045029I$ $b=\ \ 0.970059-0.451821I$	$-0.605439-0.578334I$	$-9.72146+4.72163I$
$u=\ \ 1.47578+0.09554I$ $a=\ \ 0.297164+0.110617I$ $b=\ \ 1.45579-0.13678I$	$-7.65728+5.54083I$	0
$u=\ \ 1.47578-0.09554I$ $a=\ \ 0.297164-0.110617I$ $b=\ \ 1.45579+0.13678I$	$-7.65728-5.54083I$	0
$u=\ \ 1.02528+1.08199I$ $a=-0.311868+0.850210I$ $b=-1.324520-0.051711I$	$-4.36691-3.99481I$	0
$u=\ \ 1.02528-1.08199I$ $a=-0.311868-0.850210I$ $b=-1.324520+0.051711I$	$-4.36691+3.99481I$	0
$u=-0.494883$ $a=\ \ 0.102296$ $b=\ \ 0.632447$	-0.995022	-10.4170
$u=-0.64051+1.38498I$ $a=\ \ 0.282725-1.370150I$ $b=-1.56164+0.35151I$	$-0.7176+19.0975I$	0
$u=-0.64051-1.38498I$ $a=\ \ 0.282725+1.370150I$ $b=-1.56164-0.35151I$	$-0.7176-19.0975I$	0
$u=\ \ 0.441286+0.169341I$ $a=-0.563984+0.644494I$ $b=\ \ 0.503126-0.615647I$	$-1.11149+2.17687I$	$-10.00702-6.78210I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.441286 - 0.169341I$ $a = -0.563984 - 0.644494I$ $b = 0.503126 + 0.615647I$	$-1.11149 - 2.17687I$	$-10.00702 + 6.78210I$
$u = 0.68401 + 1.39597I$ $a = 0.235535 + 1.243560I$ $b = -1.50227 - 0.29335I$	$-3.59093 - 12.77850I$	0
$u = 0.68401 - 1.39597I$ $a = 0.235535 - 1.243560I$ $b = -1.50227 + 0.29335I$	$-3.59093 + 12.77850I$	0
$u = -0.06213 + 1.57487I$ $a = 1.306160 - 0.089405I$ $b = -1.348360 - 0.063021I$	$2.66607 - 2.78713I$	0
$u = -0.06213 - 1.57487I$ $a = 1.306160 + 0.089405I$ $b = -1.348360 + 0.063021I$	$2.66607 + 2.78713I$	0
$u = -1.28553 + 0.96753I$ $a = 0.396940 + 0.274903I$ $b = 1.276190 - 0.074530I$	$1.25242 - 1.30341I$	0
$u = -1.28553 - 0.96753I$ $a = 0.396940 - 0.274903I$ $b = 1.276190 + 0.074530I$	$1.25242 + 1.30341I$	0
$u = 0.241955 + 0.286787I$ $a = 0.52822 + 2.11625I$ $b = -0.010502 - 0.436220I$	$-0.31035 + 1.53561I$	$-3.66990 - 2.05770I$
$u = 0.241955 - 0.286787I$ $a = 0.52822 - 2.11625I$ $b = -0.010502 + 0.436220I$	$-0.31035 - 1.53561I$	$-3.66990 + 2.05770I$
$u = 0.76362 + 1.46956I$ $a = -0.098563 - 0.788348I$ $b = 1.47755 + 0.14763I$	$-3.07121 - 4.80744I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.76362 - 1.46956I$ $a = -0.098563 + 0.788348I$ $b = 1.47755 - 0.14763I$	$-3.07121 + 4.80744I$	0
$u = 0.104539 + 0.320779I$ $a = 3.67031 - 1.25778I$ $b = -0.669820 + 0.460719I$	$1.81067 + 2.73604I$	$-8.65394 - 9.11644I$
$u = 0.104539 - 0.320779I$ $a = 3.67031 + 1.25778I$ $b = -0.669820 - 0.460719I$	$1.81067 - 2.73604I$	$-8.65394 + 9.11644I$
$u = 0.68136 + 1.58249I$ $a = -0.165977 + 0.230023I$ $b = -0.051096 - 0.345852I$	$5.34498 + 3.05259I$	0
$u = 0.68136 - 1.58249I$ $a = -0.165977 - 0.230023I$ $b = -0.051096 + 0.345852I$	$5.34498 - 3.05259I$	0
$u = -0.171884 + 0.102164I$ $a = -1.68530 - 4.79340I$ $b = -0.175850 + 0.767770I$	$2.78895 - 5.20934I$	$-2.76911 + 4.47247I$
$u = -0.171884 - 0.102164I$ $a = -1.68530 + 4.79340I$ $b = -0.175850 - 0.767770I$	$2.78895 + 5.20934I$	$-2.76911 - 4.47247I$
$u = -0.56846 + 2.23731I$ $a = 0.238955 - 0.106565I$ $b = -1.358650 - 0.068988I$	$1.05518 - 4.29031I$	0
$u = -0.56846 - 2.23731I$ $a = 0.238955 + 0.106565I$ $b = -1.358650 + 0.068988I$	$1.05518 + 4.29031I$	0

II.

$\boldsymbol{I_2^u = \langle 2.42\times 10^{20}u^{33} - 2.35\times 10^{21}u^{32} + \cdots + 1.44\times 10^{21}b - 2.35\times 10^{21},\ 7.16\times 10^{18}u^{33} + 2.05\times 10^{19}u^{32} + \cdots + 7.88\times 10^{18}a - 1.30\times 10^{19},\ u^{34} - u^{33} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} -0.908550u^{33} - 2.59612u^{32} + \cdots + 12.0468u + 1.65619 \\ -0.168089u^{33} + 1.62843u^{32} + \cdots - 5.13536u + 1.62728 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 2.63831u^{33} - 1.50005u^{32} + \cdots + 2.33522u - 6.43665 \\ -1.74573u^{33} - 0.0271975u^{32} + \cdots + 3.80070u + 2.36963 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -2.91393u^{33} + 0.199904u^{32} + \cdots + 5.19820u + 6.46239 \\ -2.01382u^{33} + 3.30889u^{32} + \cdots - 8.39724u + 5.64283 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -10.0759u^{33} + 4.65189u^{32} + \cdots - 2.16344u + 22.0079 \\ -9.04370u^{33} + 4.86761u^{32} + \cdots - 3.67696u + 13.2638 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.07664u^{33} - 0.967690u^{32} + \cdots + 6.91139u + 3.28347 \\ -0.168089u^{33} + 1.62843u^{32} + \cdots - 5.13536u + 1.62728 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -6.36158u^{33} + 4.81683u^{32} + \cdots - 11.9301u + 11.3245 \\ 1.11212u^{33} + 1.18109u^{32} + \cdots - 4.00294u + 1.46834 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -10.4173u^{33} + 5.09406u^{32} + \cdots - 7.36855u + 21.4701 \\ -3.55043u^{33} + 2.29948u^{32} + \cdots - 1.14029u + 12.6122 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 4.67923u^{33} - 3.76446u^{32} + \cdots + 6.15777u - 10.6570 \\ 0.168089u^{33} - 2.62843u^{32} + \cdots + 7.13536u - 1.62728 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{5133919483953423541516}{4805423068017631125 73}u^{33} + \frac{7144395300028282477834}{480542306801763112573}u^{32} + \cdots - \frac{2314381124603349774 9879}{480542306801763112573}u + \frac{1048968287448163575 4129}{480542306801763112573}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{34} - 3u^{33} + \cdots + 2u + 1$
c_2	$u^{34} + 3u^{33} + \cdots - 12u^2 + 1$
c_3	$u^{34} + 8u^{32} + \cdots + 3u + 1$
c_4	$u^{34} + u^{33} + \cdots + 2u + 1$
c_5	$u^{34} - 11u^{31} + \cdots - 14u + 7$
c_6	$u^{34} - 3u^{33} + \cdots - 12u^2 + 1$
c_7	$u^{34} - 22u^{32} + \cdots - 2u + 1$
c_8	$u^{34} - u^{33} + \cdots - 2u + 1$
c_9	$u^{34} + 2u^{33} + \cdots + 6u + 1$
c_{10}	$u^{34} - 8u^{33} + \cdots - 3u + 1$
c_{11}, c_{12}	$u^{34} - 22u^{32} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{34} + 19y^{33} + \cdots + 16y + 1$
c_2, c_6	$y^{34} - 17y^{33} + \cdots - 24y + 1$
c_3	$y^{34} + 16y^{33} + \cdots - 43y + 1$
c_4, c_8	$y^{34} + 31y^{33} + \cdots + 6y + 1$
c_5	$y^{34} - 4y^{32} + \cdots + 420y + 49$
c_7, c_{11}, c_{12}	$y^{34} - 44y^{33} + \cdots - 4y + 1$
c_9	$y^{34} - 10y^{33} + \cdots - 6y + 1$
c_{10}	$y^{34} - 18y^{33} + \cdots + 13y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.250991 + 0.969974I$ $a = -0.63563 + 1.93750I$ $b = 0.129935 - 0.763170I$	$4.06668 - 6.23256I$	$2.12183 + 6.48438I$
$u = 0.250991 - 0.969974I$ $a = -0.63563 - 1.93750I$ $b = 0.129935 + 0.763170I$	$4.06668 + 6.23256I$	$2.12183 - 6.48438I$
$u = -0.677603 + 0.700787I$ $a = -0.792597 - 0.465438I$ $b = 0.243331 + 0.272295I$	$-0.81533 + 3.14866I$	$2.56827 - 13.46216I$
$u = -0.677603 - 0.700787I$ $a = -0.792597 + 0.465438I$ $b = 0.243331 - 0.272295I$	$-0.81533 - 3.14866I$	$2.56827 + 13.46216I$
$u = 0.257266 + 1.099500I$ $a = -1.13109 - 0.96855I$ $b = 1.59236 + 0.30128I$	$-3.30866 - 2.09368I$	$-4.38002 + 1.39172I$
$u = 0.257266 - 1.099500I$ $a = -1.13109 + 0.96855I$ $b = 1.59236 - 0.30128I$	$-3.30866 + 2.09368I$	$-4.38002 - 1.39172I$
$u = -0.493506 + 1.020270I$ $a = 0.39609 + 2.03796I$ $b = 1.42569 - 0.23612I$	$-0.59879 + 9.53316I$	$-4.52624 - 9.24335I$
$u = -0.493506 - 1.020270I$ $a = 0.39609 - 2.03796I$ $b = 1.42569 + 0.23612I$	$-0.59879 - 9.53316I$	$-4.52624 + 9.24335I$
$u = 0.047750 + 0.865028I$ $a = 0.993652 - 0.060201I$ $b = -1.96390 + 0.12117I$	$-4.58568 + 1.03591I$	$3.42727 + 4.29021I$
$u = 0.047750 - 0.865028I$ $a = 0.993652 + 0.060201I$ $b = -1.96390 - 0.12117I$	$-4.58568 - 1.03591I$	$3.42727 - 4.29021I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.277085+1.117790I$ $a=\ \ 0.18153-1.72208I$ $b=-0.130570+0.636388I$	$1.92760+4.15710I$	$2.71544-4.86218I$
$u=-0.277085-1.117790I$ $a=\ \ 0.18153+1.72208I$ $b=-0.130570-0.636388I$	$1.92760-4.15710I$	$2.71544+4.86218I$
$u=\ \ 0.841720+0.966361I$ $a=\ \ 0.417053-1.141370I$ $b=\ \ 1.372320+0.138010I$	$-4.84372-4.73899I$	$-7.36388+8.17453I$
$u=\ \ 0.841720-0.966361I$ $a=\ \ 0.417053+1.141370I$ $b=\ \ 1.372320-0.138010I$	$-4.84372+4.73899I$	$-7.36388-8.17453I$
$u=\ \ 0.629391+0.167260I$ $a=-0.245765+1.045850I$ $b=-1.56741+0.02046I$	$-7.51453-2.12726I$	$-10.87405+3.06968I$
$u=\ \ 0.629391-0.167260I$ $a=-0.245765-1.045850I$ $b=-1.56741-0.02046I$	$-7.51453+2.12726I$	$-10.87405-3.06968I$
$u=-0.026109+1.362470I$ $a=-0.0339369+0.0621455I$ $b=-0.920837-0.190099I$	$5.37188-2.58329I$	$0.+3.79080I$
$u=-0.026109-1.362470I$ $a=-0.0339369-0.0621455I$ $b=-0.920837+0.190099I$	$5.37188+2.58329I$	$0.-3.79080I$
$u=\ \ 0.471911+1.279610I$ $a=-0.58081-1.65905I$ $b=\ \ 1.49801+0.15734I$	$-3.85962-6.71967I$	0
$u=\ \ 0.471911-1.279610I$ $a=-0.58081+1.65905I$ $b=\ \ 1.49801-0.15734I$	$-3.85962+6.71967I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.025080 + 0.611874I$ $a = -2.19622 + 2.16804I$ $b = 0.822926 - 0.452030I$	$2.13503 + 2.66695I$	$14.7577 - 4.6092I$
$u = 0.025080 - 0.611874I$ $a = -2.19622 - 2.16804I$ $b = 0.822926 + 0.452030I$	$2.13503 - 2.66695I$	$14.7577 + 4.6092I$
$u = -0.493390 + 0.354956I$ $a = 1.52749 + 0.53896I$ $b = 1.159940 - 0.126418I$	$0.558027 - 0.158162I$	$-2.97180 - 0.11446I$
$u = -0.493390 - 0.354956I$ $a = 1.52749 - 0.53896I$ $b = 1.159940 + 0.126418I$	$0.558027 + 0.158162I$	$-2.97180 + 0.11446I$
$u = -0.043892 + 1.406880I$ $a = 1.53185 - 0.14746I$ $b = -1.027860 - 0.109949I$	$4.92213 + 1.40586I$	0
$u = -0.043892 - 1.406880I$ $a = 1.53185 + 0.14746I$ $b = -1.027860 + 0.109949I$	$4.92213 - 1.40586I$	0
$u = -0.361296 + 0.455613I$ $a = 1.120080 - 0.599527I$ $b = 0.491759 + 0.255867I$	$-0.21706 - 1.46690I$	$-5.50931 + 5.93816I$
$u = -0.361296 - 0.455613I$ $a = 1.120080 + 0.599527I$ $b = 0.491759 - 0.255867I$	$-0.21706 + 1.46690I$	$-5.50931 - 5.93816I$
$u = 0.527366 + 0.015721I$ $a = -0.83416 - 1.39593I$ $b = -1.57966 + 0.00185I$	$-7.50532 + 2.12522I$	$-11.90247 - 2.43579I$
$u = 0.527366 - 0.015721I$ $a = -0.83416 + 1.39593I$ $b = -1.57966 - 0.00185I$	$-7.50532 - 2.12522I$	$-11.90247 + 2.43579I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.41539 + 1.53396I$ $a = -0.0417313 - 0.0719245I$ $b = -0.185653 - 0.217265I$	$5.09978 + 3.10128I$	0
$u = \quad 0.41539 - 1.53396I$ $a = -0.0417313 + 0.0719245I$ $b = -0.185653 + 0.217265I$	$5.09978 - 3.10128I$	0
$u = -0.59399 + 1.93477I$ $a = \quad 0.324210 - 0.335059I$ $b = -1.360380 - 0.058900I$	$0.94290 - 3.97207I$	0
$u = -0.59399 - 1.93477I$ $a = \quad 0.324210 + 0.335059I$ $b = -1.360380 + 0.058900I$	$0.94290 + 3.97207I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{34}-3u^{33}+\cdots+2u+1)(u^{139}-10u^{138}+\cdots+668505u-38071)$
c_2	$(u^{34}+3u^{33}+\cdots-12u^2+1)(u^{139}-6u^{138}+\cdots+73u+1721)$
c_3	$(u^{34}+8u^{32}+\cdots+3u+1)(u^{139}+u^{138}+\cdots+3238u+389)$
c_4	$(u^{34}+u^{33}+\cdots+2u+1)(u^{139}+4u^{138}+\cdots+10765u+1543)$
c_5	$(u^{34}-11u^{31}+\cdots-14u+7)(u^{139}+u^{138}+\cdots-112549u+43381)$
c_6	$(u^{34}-3u^{33}+\cdots-12u^2+1)(u^{139}-6u^{138}+\cdots+73u+1721)$
c_7	$(u^{34}-22u^{32}+\cdots-2u+1)(u^{139}-u^{138}+\cdots-629u+71)$
c_8	$(u^{34}-u^{33}+\cdots-2u+1)(u^{139}+4u^{138}+\cdots+10765u+1543)$
c_9	$(u^{34}+2u^{33}+\cdots+6u+1)(u^{139}+3u^{138}+\cdots-19u+1)$
c_{10}	$(u^{34}-8u^{33}+\cdots-3u+1)(u^{139}+7u^{138}+\cdots+685122u+90743)$
c_{11}, c_{12}	$(u^{34}-22u^{32}+\cdots+2u+1)(u^{139}-u^{138}+\cdots-629u+71)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{34}+19y^{33}+\cdots+16y+1)$ $\cdot(y^{139}+46y^{138}+\cdots-59985059471y-1449401041)$
c_2, c_6	$(y^{34}-17y^{33}+\cdots-24y+1)$ $\cdot(y^{139}-74y^{138}+\cdots+121225685y-2961841)$
c_3	$(y^{34}+16y^{33}+\cdots-43y+1)$ $\cdot(y^{139}+27y^{138}+\cdots-3405768y-151321)$
c_4, c_8	$(y^{34}+31y^{33}+\cdots+6y+1)$ $\cdot(y^{139}+94y^{138}+\cdots-45669961y-2380849)$
c_5	$(y^{34}-4y^{32}+\cdots+420y+49)$ $\cdot(y^{139}+15y^{138}+\cdots-293305335987y-1881911161)$
c_7, c_{11}, c_{12}	$(y^{34}-44y^{33}+\cdots-4y+1)(y^{139}-145y^{138}+\cdots+23317y-5041)$
c_9	$(y^{34}-10y^{33}+\cdots-6y+1)(y^{139}-11y^{138}+\cdots+31y-1)$
c_{10}	$(y^{34}-18y^{33}+\cdots+13y+1)$ $\cdot(y^{139}-51y^{138}+\cdots+9380316628y-8234292049)$