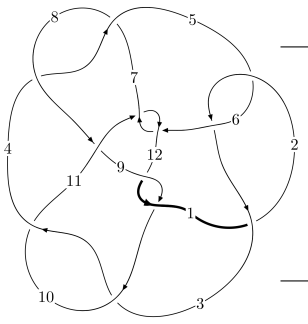
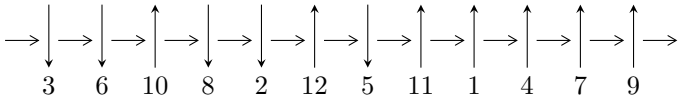
$12a_{0434}$ $(K12a_{0434})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 9.71302 \times 10^{556} u^{125} - 6.76323 \times 10^{557} u^{124} + \cdots + 1.54432 \times 10^{557} b + 9.08091 \times 10^{559}, \\ & 1.44998 \times 10^{560} u^{125} - 9.16910 \times 10^{559} u^{124} + \cdots + 3.22764 \times 10^{559} a - 3.36668 \times 10^{562}, \\ & u^{126} - 2u^{125} + \cdots - 347u - 209 \rangle \\ I_2^u = \langle & -2.54767 \times 10^{19} u^{28} - 8.03536 \times 10^{19} u^{27} + \cdots + 1.20106 \times 10^{19} b + 1.25244 \times 10^{20}, \\ & - 4.39555 \times 10^{19} u^{28} - 1.42315 \times 10^{20} u^{27} + \cdots + 1.20106 \times 10^{19} a + 2.23950 \times 10^{20}, \ u^{29} + 3u^{28} + \cdots - 8u + \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 155 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. $\boldsymbol{I_1^u = \langle 9.71 \times 10^{556} u^{125} - 6.76 \times 10^{557} u^{124} + \cdots + 1.54 \times 10^{557} b + 9.08 \times 10^{559},\ 1.45 \times 10^{560} u^{125} - 9.17 \times 10^{559} u^{124} + \cdots + 3.23 \times 10^{559} a - 3.37 \times 10^{562},\ u^{126} - 2u^{125} + \cdots - 347u - 209 \rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -4.49239u^{125} + 2.84081u^{124} + \cdots + 2658.84u + 1043.08 \\ -0.628950u^{125} + 4.37941u^{124} + \cdots - 902.391u - 588.019 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 12.6795u^{125} - 29.5835u^{124} + \cdots - 675.654u + 926.547 \\ 1.46707u^{125} - 5.94916u^{124} + \cdots + 701.891u + 556.492 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -5.12134u^{125} + 7.22022u^{124} + \cdots + 1756.45u + 455.061 \\ -0.628950u^{125} + 4.37941u^{124} + \cdots - 902.391u - 588.019 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 13.0154u^{125} - 29.2173u^{124} + \cdots - 1067.78u + 742.305 \\ 1.98155u^{125} - 7.75311u^{124} + \cdots + 858.066u + 702.323 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.520880u^{125} + 3.53209u^{124} + \cdots - 707.275u - 448.096 \\ 2.95348u^{125} - 7.44049u^{124} + \cdots - 31.7519u + 284.495 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -5.52684u^{125} + 6.83560u^{124} + \cdots + 2194.45u + 666.015 \\ -0.327914u^{125} + 3.67582u^{124} + \cdots - 914.697u - 562.572 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 2.41465u^{125} - 0.517100u^{124} + \cdots - 1699.20u - 736.916 \\ -0.803163u^{125} - 0.505149u^{124} + \cdots + 735.110u + 358.811 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.624449u^{125} - 1.81920u^{124} + \cdots + 93.7798u + 108.872 \\ -3.25032u^{125} + 6.88477u^{124} + \cdots + 412.972u - 89.4386 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -10.7598u^{125} + 12.4868u^{124} + \cdots + 4646.15u + 1557.69$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{126} + 46u^{125} + \cdots + 113201u + 1156$
c_2, c_5	$u^{126} + 4u^{125} + \cdots + 435u - 34$
c_3, c_{10}	$u^{126} + u^{125} + \cdots - 43434u + 3284$
c_4, c_7	$u^{126} - 2u^{125} + \cdots - 347u - 209$
c_6, c_{11}	$u^{126} - 10u^{125} + \cdots - 2573u - 589$
c_8	$u^{126} + 16u^{125} + \cdots - 8670271u - 644753$
c_9, c_{12}	$u^{126} - 44u^{124} + \cdots + 448775u - 34921$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{126} + 82y^{125} + \cdots - 2963728001y + 1336336$
c_2, c_5	$y^{126} - 46y^{125} + \cdots - 113201y + 1156$
c_3, c_{10}	$y^{126} - 85y^{125} + \cdots - 747181100y + 10784656$
c_4, c_7	$y^{126} + 80y^{125} + \cdots - 2175715y + 43681$
c_6, c_{11}	$y^{126} + 40y^{125} + \cdots + 4386903y + 346921$
c_8	$y^{126} - 44y^{125} + \cdots - 35320777977971y + 415706431009$
c_9, c_{12}	$y^{126} - 88y^{125} + \cdots + 7738747697y + 1219476241$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.918554+0.382892I$ $a=\ 0.069082-0.707553I$ $b=\ 0.716442-0.348828I$	$6.33888+7.34118I$	0
$u=-0.918554-0.382892I$ $a=\ 0.069082+0.707553I$ $b=\ 0.716442+0.348828I$	$6.33888-7.34118I$	0
$u=-0.024941+0.966430I$ $a=\ 4.44092+0.33646I$ $b=-3.96951-0.52328I$	$3.51148-2.18628I$	0
$u=-0.024941-0.966430I$ $a=\ 4.44092-0.33646I$ $b=-3.96951+0.52328I$	$3.51148+2.18628I$	0
$u=\ 0.945274+0.458726I$ $a=\ 0.326155+0.330779I$ $b=\ 0.333947+1.100140I$	$-4.21417+2.72263I$	0
$u=\ 0.945274-0.458726I$ $a=\ 0.326155-0.330779I$ $b=\ 0.333947-1.100140I$	$-4.21417-2.72263I$	0
$u=\ 0.057623+1.060710I$ $a=-1.177790+0.181081I$ $b=\ 0.40022-1.49417I$	$1.74556-3.88859I$	0
$u=\ 0.057623-1.060710I$ $a=-1.177790-0.181081I$ $b=\ 0.40022+1.49417I$	$1.74556+3.88859I$	0
$u=\ 0.078826+1.067810I$ $a=\ 2.62867+0.05998I$ $b=-0.336959-0.797761I$	$9.49842-0.50398I$	0
$u=\ 0.078826-1.067810I$ $a=\ 2.62867-0.05998I$ $b=-0.336959+0.797761I$	$9.49842+0.50398I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.040872 + 1.074960I$ $a = 1.83280 + 1.40801I$ $b = -0.315733 + 1.092720I$	$6.20931 - 7.12639I$	0
$u = 0.040872 - 1.074960I$ $a = 1.83280 - 1.40801I$ $b = -0.315733 - 1.092720I$	$6.20931 + 7.12639I$	0
$u = 0.879333 + 0.277785I$ $a = -0.1077040 - 0.0740349I$ $b = -0.570900 - 1.171590I$	$-0.74106 + 7.37313I$	0
$u = 0.879333 - 0.277785I$ $a = -0.1077040 + 0.0740349I$ $b = -0.570900 + 1.171590I$	$-0.74106 - 7.37313I$	0
$u = 0.024557 + 1.078400I$ $a = -1.28679 - 0.60675I$ $b = 0.86022 + 1.45214I$	$3.25361 - 0.82524I$	0
$u = 0.024557 - 1.078400I$ $a = -1.28679 + 0.60675I$ $b = 0.86022 - 1.45214I$	$3.25361 + 0.82524I$	0
$u = -0.907784 + 0.114565I$ $a = -0.0391522 + 0.0596593I$ $b = -0.502144 + 1.027850I$	$0.01352 - 2.04886I$	0
$u = -0.907784 - 0.114565I$ $a = -0.0391522 - 0.0596593I$ $b = -0.502144 - 1.027850I$	$0.01352 + 2.04886I$	0
$u = 0.427894 + 0.998851I$ $a = 1.53351 - 0.34685I$ $b = -0.217091 + 1.043910I$	$-3.69560 - 0.52746I$	0
$u = 0.427894 - 0.998851I$ $a = 1.53351 + 0.34685I$ $b = -0.217091 - 1.043910I$	$-3.69560 + 0.52746I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.865598+0.276073I$ $a=\ \ 0.254193-0.232814I$ $b=\ \ 0.032276-0.962160I$	$-2.07762+1.21796I$	0
$u=-0.865598-0.276073I$ $a=\ \ 0.254193+0.232814I$ $b=\ \ 0.032276+0.962160I$	$-2.07762-1.21796I$	0
$u=\ \ 0.018444+1.092110I$ $a=-1.44523-0.26685I$ $b=\ \ 0.750592+0.862940I$	$3.38500-0.51199I$	0
$u=\ \ 0.018444-1.092110I$ $a=-1.44523+0.26685I$ $b=\ \ 0.750592-0.862940I$	$3.38500+0.51199I$	0
$u=-0.897663$ $a=-0.223552$ $b=\ \ 0.882497$	1.97369	0
$u=\ \ 0.436929+1.023820I$ $a=-1.18070-1.02393I$ $b=\ \ 0.380839-1.050540I$	$3.26110-5.44389I$	0
$u=\ \ 0.436929-1.023820I$ $a=-1.18070+1.02393I$ $b=\ \ 0.380839+1.050540I$	$3.26110+5.44389I$	0
$u=\ \ 0.030154+1.130170I$ $a=\ \ 1.41025+1.05759I$ $b=-1.45272-1.42233I$	$2.69190+2.06472I$	0
$u=\ \ 0.030154-1.130170I$ $a=\ \ 1.41025-1.05759I$ $b=-1.45272+1.42233I$	$2.69190-2.06472I$	0
$u=-0.074362+1.148450I$ $a=\ \ 1.281810+0.172701I$ $b=-1.091870-0.434709I$	$2.46748+2.12269I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.074362-1.148450I$ $a=\ \ 1.281810-0.172701I$ $b=-1.091870+0.434709I$	$2.46748-2.12269I$	0
$u=-0.270200+1.119610I$ $a=-1.43576+0.51539I$ $b=\ \ 0.557561+0.875871I$	$4.85317+0.02134I$	0
$u=-0.270200-1.119610I$ $a=-1.43576-0.51539I$ $b=\ \ 0.557561-0.875871I$	$4.85317-0.02134I$	0
$u=\ \ 0.299826+1.113840I$ $a=-1.75337+0.69339I$ $b=\ \ 0.536150-1.212390I$	$-2.15733-5.33583I$	0
$u=\ \ 0.299826-1.113840I$ $a=-1.75337-0.69339I$ $b=\ \ 0.536150+1.212390I$	$-2.15733+5.33583I$	0
$u=\ \ 0.059383+0.842343I$ $a=-0.53175-1.79610I$ $b=\ \ 0.64371+1.88764I$	$3.75527+1.43948I$	0
$u=\ \ 0.059383-0.842343I$ $a=-0.53175+1.79610I$ $b=\ \ 0.64371-1.88764I$	$3.75527-1.43948I$	0
$u=\ \ 1.068340+0.445408I$ $a=\ \ 0.134972-0.617198I$ $b=-0.088056-1.038540I$	$-3.35405-0.21193I$	0
$u=\ \ 1.068340-0.445408I$ $a=\ \ 0.134972+0.617198I$ $b=-0.088056+1.038540I$	$-3.35405+0.21193I$	0
$u=-0.370409+0.756256I$ $a=-0.492177+0.837481I$ $b=-0.007368-0.578298I$	$0.62171+3.52461I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.370409-0.756256I$ $a=-0.492177-0.837481I$ $b=-0.007368+0.578298I$	$0.62171-3.52461I$	0
$u=0.818819+0.182554I$ $a=-0.427977+0.955272I$ $b=0.383790+1.269880I$	$-2.05594+4.51794I$	0
$u=0.818819-0.182554I$ $a=-0.427977-0.955272I$ $b=0.383790-1.269880I$	$-2.05594-4.51794I$	0
$u=-1.158010+0.131584I$ $a=0.275875-0.240365I$ $b=-0.025466-0.740787I$	$-1.99739+0.93723I$	0
$u=-1.158010-0.131584I$ $a=0.275875+0.240365I$ $b=-0.025466+0.740787I$	$-1.99739-0.93723I$	0
$u=-0.052207+0.820820I$ $a=2.28104-2.18706I$ $b=0.132211+0.608185I$	$5.21795+6.93543I$	0
$u=-0.052207-0.820820I$ $a=2.28104+2.18706I$ $b=0.132211-0.608185I$	$5.21795-6.93543I$	0
$u=0.757865+0.922383I$ $a=0.737161+0.863473I$ $b=-0.011622+0.530837I$	$8.36257-2.29532I$	0
$u=0.757865-0.922383I$ $a=0.737161-0.863473I$ $b=-0.011622-0.530837I$	$8.36257+2.29532I$	0
$u=0.590430+0.544226I$ $a=0.192648+0.429242I$ $b=-0.012240+1.312970I$	$-5.22611-3.55865I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.590430 - 0.544226I$ $a = 0.192648 - 0.429242I$ $b = -0.012240 - 1.312970I$	$-5.22611 + 3.55865I$	0
$u = -1.201770 + 0.052543I$ $a = -0.287487 + 0.311588I$ $b = 0.501161 + 1.100690I$	$5.49032 + 6.16296I$	0
$u = -1.201770 - 0.052543I$ $a = -0.287487 - 0.311588I$ $b = 0.501161 - 1.100690I$	$5.49032 - 6.16296I$	0
$u = -0.419061 + 1.148040I$ $a = 1.317360 + 0.098779I$ $b = -0.577335 - 1.055350I$	$0.62210 + 3.34775I$	0
$u = -0.419061 - 1.148040I$ $a = 1.317360 - 0.098779I$ $b = -0.577335 + 1.055350I$	$0.62210 - 3.34775I$	0
$u = -0.153609 + 0.741021I$ $a = -0.89518 + 1.24537I$ $b = -0.045147 - 0.794457I$	$0.60697 + 3.54106I$	0
$u = -0.153609 - 0.741021I$ $a = -0.89518 - 1.24537I$ $b = -0.045147 + 0.794457I$	$0.60697 - 3.54106I$	0
$u = 0.677189 + 0.304420I$ $a = -0.422325 + 1.017960I$ $b = 0.630078 + 0.126608I$	$8.02653 - 1.87252I$	0
$u = 0.677189 - 0.304420I$ $a = -0.422325 - 1.017960I$ $b = 0.630078 - 0.126608I$	$8.02653 + 1.87252I$	0
$u = 0.278905 + 0.687966I$ $a = -2.35007 - 0.61230I$ $b = -0.151919 - 0.458597I$	$2.12253 + 1.95328I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.278905 - 0.687966I$ $a = -2.35007 + 0.61230I$ $b = -0.151919 + 0.458597I$	$2.12253 - 1.95328I$	0
$u = 0.525462 + 1.157170I$ $a = 1.404100 + 0.035346I$ $b = -0.569885 + 1.278930I$	$-1.82249 - 8.06939I$	0
$u = 0.525462 - 1.157170I$ $a = 1.404100 - 0.035346I$ $b = -0.569885 - 1.278930I$	$-1.82249 + 8.06939I$	0
$u = 0.505095 + 1.169740I$ $a = -1.70121 + 0.12319I$ $b = 0.87422 - 1.28467I$	$2.03931 - 12.41120I$	0
$u = 0.505095 - 1.169740I$ $a = -1.70121 - 0.12319I$ $b = 0.87422 + 1.28467I$	$2.03931 + 12.41120I$	0
$u = 1.279410 + 0.059956I$ $a = -0.180346 + 0.337985I$ $b = 0.575025 + 1.131350I$	$4.03281 + 12.33620I$	0
$u = 1.279410 - 0.059956I$ $a = -0.180346 - 0.337985I$ $b = 0.575025 - 1.131350I$	$4.03281 - 12.33620I$	0
$u = 0.438641 + 1.234670I$ $a = 2.00664 - 0.11759I$ $b = -0.421715 + 1.238580I$	$1.25347 - 9.15448I$	0
$u = 0.438641 - 1.234670I$ $a = 2.00664 + 0.11759I$ $b = -0.421715 - 1.238580I$	$1.25347 + 9.15448I$	0
$u = -0.469073 + 1.237820I$ $a = -1.53054 - 0.19269I$ $b = 0.85367 + 1.14080I$	$3.50116 + 6.99638I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.469073-1.237820I$ $a=-1.53054+0.19269I$ $b=\ \ 0.85367-1.14080I$	$3.50116-6.99638I$	0
$u=-0.155480+1.342660I$ $a=\ \ 1.43366+1.57515I$ $b=-0.332080-0.878261I$	$9.26629+3.49629I$	0
$u=-0.155480-1.342660I$ $a=\ \ 1.43366-1.57515I$ $b=-0.332080+0.878261I$	$9.26629-3.49629I$	0
$u=\ \ 0.556430+1.234250I$ $a=-1.43375+0.00783I$ $b=\ \ 0.301267-1.014880I$	$-0.56358-5.61803I$	0
$u=\ \ 0.556430-1.234250I$ $a=-1.43375-0.00783I$ $b=\ \ 0.301267+1.014880I$	$-0.56358+5.61803I$	0
$u=-0.495869+1.259870I$ $a=\ \ 1.189350-0.536732I$ $b=-0.961458-0.303118I$	$5.76407+4.92777I$	0
$u=-0.495869-1.259870I$ $a=\ \ 1.189350+0.536732I$ $b=-0.961458+0.303118I$	$5.76407-4.92777I$	0
$u=\ \ 0.330966+1.326110I$ $a=\ \ 1.302950+0.401404I$ $b=-1.203540-0.362403I$	$12.94500-5.58288I$	0
$u=\ \ 0.330966-1.326110I$ $a=\ \ 1.302950-0.401404I$ $b=-1.203540+0.362403I$	$12.94500+5.58288I$	0
$u=-0.311911+1.352600I$ $a=-0.020455+0.762014I$ $b=\ \ 0.312233-0.610569I$	$4.79275+2.31439I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.311911-1.352600I$ $a=-0.020455-0.762014I$ $b=\ \ 0.312233+0.610569I$	$4.79275-2.31439I$	0
$u=\ \ 0.049951+1.390300I$ $a=-0.547206-0.853015I$ $b=\ \ 0.461882+0.747891I$	$5.28642+4.15361I$	0
$u=\ \ 0.049951-1.390300I$ $a=-0.547206+0.853015I$ $b=\ \ 0.461882-0.747891I$	$5.28642-4.15361I$	0
$u=-0.097617+1.390920I$ $a=-0.22255-1.60789I$ $b=-0.135814+0.654518I$	$8.03746+4.83610I$	0
$u=-0.097617-1.390920I$ $a=-0.22255+1.60789I$ $b=-0.135814-0.654518I$	$8.03746-4.83610I$	0
$u=-0.375691+0.464527I$ $a=-1.28877-1.01024I$ $b=\ \ 0.242319+1.289270I$	$3.97037+1.67145I$	$0.-3.30792I$
$u=-0.375691-0.464527I$ $a=-1.28877+1.01024I$ $b=\ \ 0.242319-1.289270I$	$3.97037-1.67145I$	$0.+3.30792I$
$u=-0.363807+1.357350I$ $a=\ \ 1.255860-0.418469I$ $b=-1.369510+0.301300I$	$11.6122+11.6353I$	0
$u=-0.363807-1.357350I$ $a=\ \ 1.255860+0.418469I$ $b=-1.369510-0.301300I$	$11.6122-11.6353I$	0
$u=-0.538028+0.170374I$ $a=\ \ 0.825388-0.251543I$ $b=\ \ 0.217151+0.042210I$	$-1.372470+0.321947I$	$-6.01687-1.10782I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.538028-0.170374I$ $a=\ 0.825388+0.251543I$ $b=\ 0.217151-0.042210I$	$-1.372470-0.321947I$	$-6.01687+1.10782I$
$u=\ 0.23960+1.41596I$ $a=-0.996334-0.025525I$ $b=\ 0.929917+0.292310I$	$7.29399-0.75259I$	0
$u=\ 0.23960-1.41596I$ $a=-0.996334+0.025525I$ $b=\ 0.929917-0.292310I$	$7.29399+0.75259I$	0
$u=-0.44072+1.37705I$ $a=-1.211350-0.219615I$ $b=\ 0.703451+0.915085I$	$3.09554+6.13461I$	0
$u=-0.44072-1.37705I$ $a=-1.211350+0.219615I$ $b=\ 0.703451-0.915085I$	$3.09554-6.13461I$	0
$u=-0.32458+1.42570I$ $a=-0.984100+0.002430I$ $b=\ 0.911709-0.069142I$	$7.13063+6.47120I$	0
$u=-0.32458-1.42570I$ $a=-0.984100-0.002430I$ $b=\ 0.911709+0.069142I$	$7.13063-6.47120I$	0
$u=\ 0.299469+0.409329I$ $a=-0.196991-0.319119I$ $b=-0.269357-1.375150I$	$-4.52056+2.57364I$	$0.85767+9.96111I$
$u=\ 0.299469-0.409329I$ $a=-0.196991+0.319119I$ $b=-0.269357+1.375150I$	$-4.52056-2.57364I$	$0.85767-9.96111I$
$u=\ 0.83092+1.24573I$ $a=\ 0.814856+0.539922I$ $b=-0.429058+0.955563I$	$9.49764-4.23612I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.83092 - 1.24573I$ $a = 0.814856 - 0.539922I$ $b = -0.429058 - 0.955563I$	$9.49764 + 4.23612I$	0
$u = -0.53958 + 1.40113I$ $a = 1.47289 + 0.11517I$ $b = -0.69544 - 1.25690I$	$10.0867 + 12.2105I$	0
$u = -0.53958 - 1.40113I$ $a = 1.47289 - 0.11517I$ $b = -0.69544 + 1.25690I$	$10.0867 - 12.2105I$	0
$u = 1.45883 + 0.38744I$ $a = 0.017582 - 0.368664I$ $b = -0.397239 - 0.930564I$	$-0.08376 + 4.26243I$	0
$u = 1.45883 - 0.38744I$ $a = 0.017582 + 0.368664I$ $b = -0.397239 + 0.930564I$	$-0.08376 - 4.26243I$	0
$u = -1.49600 + 0.27134I$ $a = 0.052662 + 0.318184I$ $b = -0.376128 + 0.803486I$	$0.375529 + 0.975196I$	0
$u = -1.49600 - 0.27134I$ $a = 0.052662 - 0.318184I$ $b = -0.376128 - 0.803486I$	$0.375529 - 0.975196I$	0
$u = 0.59588 + 1.40014I$ $a = 1.43633 - 0.02163I$ $b = -0.73271 + 1.33370I$	$8.3189 - 18.8404I$	0
$u = 0.59588 - 1.40014I$ $a = 1.43633 + 0.02163I$ $b = -0.73271 - 1.33370I$	$8.3189 + 18.8404I$	0
$u = -0.75824 + 1.33102I$ $a = 0.878477 - 0.468347I$ $b = -0.638515 - 0.967184I$	$8.84445 - 0.81180I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.75824-1.33102I$ $a=\ \ 0.878477+0.468347I$ $b=-0.638515+0.967184I$	$8.84445+0.81180I$	0
$u=-0.272773+0.353512I$ $a=\ \ 0.74308+2.29748I$ $b=\ \ 0.606304-1.174530I$	$2.56750+3.62198I$	$1.34821-2.97501I$
$u=-0.272773-0.353512I$ $a=\ \ 0.74308-2.29748I$ $b=\ \ 0.606304+1.174530I$	$2.56750-3.62198I$	$1.34821+2.97501I$
$u=-0.60135+1.46565I$ $a=-1.101330-0.025648I$ $b=\ \ 0.630868+1.151840I$	$4.76654+6.36692I$	0
$u=-0.60135-1.46565I$ $a=-1.101330+0.025648I$ $b=\ \ 0.630868-1.151840I$	$4.76654-6.36692I$	0
$u=\ \ 0.67865+1.43637I$ $a=-1.116720-0.057110I$ $b=\ \ 0.565015-1.245900I$	$3.69754-11.80000I$	0
$u=\ \ 0.67865-1.43637I$ $a=-1.116720+0.057110I$ $b=\ \ 0.565015+1.245900I$	$3.69754+11.80000I$	0
$u=-0.51750+1.55446I$ $a=\ \ 0.280508-0.301184I$ $b=-0.474205+0.701344I$	$10.28270+0.47817I$	0
$u=-0.51750-1.55446I$ $a=\ \ 0.280508+0.301184I$ $b=-0.474205-0.701344I$	$10.28270-0.47817I$	0
$u=\ \ 0.37770+1.61937I$ $a=\ \ 0.394028+0.249851I$ $b=-0.619533-0.651264I$	$9.78181+5.75052I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.37770 - 1.61937I$ $a = \ 0.394028 - 0.249851I$ $b = -0.619533 + 0.651264I$	$9.78181 - 5.75052I$	0
$u = \ 0.045137 + 0.326929I$ $a = \ 0.49966 - 2.73098I$ $b = -0.531974 + 0.490781I$	$1.30986 + 0.59411I$	$6.78812 + 0.60254I$
$u = \ 0.045137 - 0.326929I$ $a = \ 0.49966 + 2.73098I$ $b = -0.531974 - 0.490781I$	$1.30986 - 0.59411I$	$6.78812 - 0.60254I$
$u = -0.138891 + 0.093016I$ $a = -5.07056 + 4.36281I$ $b = -0.736783 + 0.050413I$	$2.26073 + 2.27254I$	$2.93447 - 3.92634I$
$u = -0.138891 - 0.093016I$ $a = -5.07056 - 4.36281I$ $b = -0.736783 - 0.050413I$	$2.26073 - 2.27254I$	$2.93447 + 3.92634I$
$u = \ 0.119304$ $a = \ 3.49767$ $b = -0.428944$	0.804932	12.5510

II.

$\boldsymbol{I_2^u = \langle -2.55\times10^{19}u^{28}-8.04\times10^{19}u^{27}+\cdots+1.20\times10^{19}b+1.25\times10^{20},\ -4.40\times10^{19}u^{28}-1.42\times10^{20}u^{27}+\cdots+1.20\times10^{19}a+2.24\times10^{20},\ u^{29}+3u^{28}+\cdots-8u+1\rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3.65972u^{28} + 11.8491u^{27} + \cdots + 58.2904u - 18.6460 \\ 2.12119u^{28} + 6.69021u^{27} + \cdots + 31.6633u - 10.4278 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.692241u^{28} - 2.07788u^{27} + \cdots - 4.55807u + 5.92518 \\ 0.757298u^{28} + 2.42089u^{27} + \cdots + 13.8941u - 2.75072 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 5.78090u^{28} + 18.5393u^{27} + \cdots + 89.9537u - 29.0738 \\ 2.12119u^{28} + 6.69021u^{27} + \cdots + 31.6633u - 10.4278 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0880395u^{28} + 0.392441u^{27} + \cdots + 9.27866u + 1.35211 \\ 0.757154u^{28} + 2.41010u^{27} + \cdots + 13.6576u - 2.55354 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.256852u^{28} - 0.948162u^{27} + \cdots - 7.93820u - 2.14935 \\ -0.480128u^{28} - 1.80859u^{27} + \cdots - 12.5926u + 2.56013 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 3.84977u^{28} + 12.3322u^{27} + \cdots + 60.2647u - 19.1157 \\ 2.26943u^{28} + 7.17428u^{27} + \cdots + 32.7513u - 10.8105 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.925559u^{28} - 2.73069u^{27} + \cdots - 13.5616u + 5.12547 \\ -0.328548u^{28} - 1.48025u^{27} + \cdots + 2.54750u + 0.957574 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.406996u^{28} - 1.00081u^{27} + \cdots + 0.498985u + 4.90687 \\ -0.351073u^{28} - 1.38763u^{27} + \cdots + 17.0925u - 2.38615 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{178125843860361583741}{12010613790385279591}u^{28} + \frac{554229173555532494534}{12010613790385279591}u^{27} + \cdots + \frac{2724744148645829240045}{12010613790385279591}u - \frac{843102347053851211534}{12010613790385279591}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} - 13u^{28} + \cdots + 16u - 1$
c_2	$u^{29} + 3u^{28} + \cdots - 4u - 1$
c_3	$u^{29} + 6u^{26} + \cdots + 2u - 1$
c_4	$u^{29} - 3u^{28} + \cdots - 8u - 1$
c_5	$u^{29} - 3u^{28} + \cdots - 4u + 1$
c_6	$u^{29} - 9u^{28} + \cdots + 6u + 1$
c_7	$u^{29} + 3u^{28} + \cdots - 8u + 1$
c_8	$u^{29} + 3u^{28} + \cdots + 22u + 1$
c_9	$u^{29} - 7u^{28} + \cdots - 4u + 1$
c_{10}	$u^{29} - 6u^{26} + \cdots + 2u + 1$
c_{11}	$u^{29} + 9u^{28} + \cdots + 6u - 1$
c_{12}	$u^{29} + 7u^{28} + \cdots - 4u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} + 19y^{28} + \cdots - 32y - 1$
c_2, c_5	$y^{29} - 13y^{28} + \cdots + 16y - 1$
c_3, c_{10}	$y^{29} - 82y^{27} + \cdots + 20y - 1$
c_4, c_7	$y^{29} + 13y^{28} + \cdots + 50y - 1$
c_6, c_{11}	$y^{29} - 7y^{28} + \cdots - 4y - 1$
c_8	$y^{29} - 7y^{28} + \cdots + 30y - 1$
c_9, c_{12}	$y^{29} - 15y^{28} + \cdots + 6y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.989390 + 0.299698I$ $a = -0.025024 - 0.664688I$ $b = -0.334712 - 1.058650I$	$-3.22522 + 2.71391I$	$1.47853 - 3.22285I$
$u = 0.989390 - 0.299698I$ $a = -0.025024 + 0.664688I$ $b = -0.334712 + 1.058650I$	$-3.22522 - 2.71391I$	$1.47853 + 3.22285I$
$u = -0.028343 + 0.945821I$ $a = -3.29296 + 0.23137I$ $b = 2.48827 - 0.04734I$	$3.61853 - 2.20839I$	$21.0931 + 1.2981I$
$u = -0.028343 - 0.945821I$ $a = -3.29296 - 0.23137I$ $b = 2.48827 + 0.04734I$	$3.61853 + 2.20839I$	$21.0931 - 1.2981I$
$u = 0.922510 + 0.166298I$ $a = 0.855762 + 0.367010I$ $b = 0.174156 + 1.080320I$	$-1.25822 + 3.12297I$	$-0.29143 - 2.67047I$
$u = 0.922510 - 0.166298I$ $a = 0.855762 - 0.367010I$ $b = 0.174156 - 1.080320I$	$-1.25822 - 3.12297I$	$-0.29143 + 2.67047I$
$u = -0.051743 + 1.078020I$ $a = -2.46201 + 0.23759I$ $b = 2.33399 - 0.03201I$	$2.89048 + 1.77769I$	$24.2405 - 5.5862I$
$u = -0.051743 - 1.078020I$ $a = -2.46201 - 0.23759I$ $b = 2.33399 + 0.03201I$	$2.89048 - 1.77769I$	$24.2405 + 5.5862I$
$u = 0.382500 + 0.781101I$ $a = 1.70492 + 2.38388I$ $b = -0.294933 + 0.927904I$	$4.63906 - 7.77018I$	$2.80322 + 9.30198I$
$u = 0.382500 - 0.781101I$ $a = 1.70492 - 2.38388I$ $b = -0.294933 - 0.927904I$	$4.63906 + 7.77018I$	$2.80322 - 9.30198I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.133760+0.173273I$ $a=\ \ 0.529302-0.164104I$ $b=\ \ 0.162508-0.862481I$	$-0.43221+1.75663I$	$0.65513-3.87002I$
$u=-1.133760-0.173273I$ $a=\ \ 0.529302+0.164104I$ $b=\ \ 0.162508+0.862481I$	$-0.43221-1.75663I$	$0.65513+3.87002I$
$u=-0.731815+1.010840I$ $a=\ \ 0.845882-0.884048I$ $b=-0.303128-0.642758I$	$8.35750+2.79074I$	$5.73183-8.68065I$
$u=-0.731815-1.010840I$ $a=\ \ 0.845882+0.884048I$ $b=-0.303128+0.642758I$	$8.35750-2.79074I$	$5.73183+8.68065I$
$u=-0.168352+1.242060I$ $a=-0.0698392+0.0097782I$ $b=-0.365018+0.031356I$	$4.92175+3.01470I$	$5.96326-4.71590I$
$u=-0.168352-1.242060I$ $a=-0.0698392-0.0097782I$ $b=-0.365018-0.031356I$	$4.92175-3.01470I$	$5.96326+4.71590I$
$u=-1.238250+0.243114I$ $a=\ \ 0.108639+0.293679I$ $b=-0.208142+0.711251I$	$-1.74429+0.23639I$	$3.35622+2.18818I$
$u=-1.238250-0.243114I$ $a=\ \ 0.108639-0.293679I$ $b=-0.208142-0.711251I$	$-1.74429-0.23639I$	$3.35622-2.18818I$
$u=\ \ 0.451257+1.235060I$ $a=-1.69121+0.03870I$ $b=\ \ 0.506722-1.187020I$	$0.00773-7.72786I$	$3.05433+6.29121I$
$u=\ \ 0.451257-1.235060I$ $a=-1.69121-0.03870I$ $b=\ \ 0.506722+1.187020I$	$0.00773+7.72786I$	$3.05433-6.29121I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.389867+1.275870I$ $a=\ \ 1.48632+0.34942I$ $b=-0.072248-0.702705I$	$9.24746+2.11983I$	$7.90286-1.80386I$
$u=-0.389867-1.275870I$ $a=\ \ 1.48632-0.34942I$ $b=-0.072248+0.702705I$	$9.24746-2.11983I$	$7.90286+1.80386I$
$u=\ \ 0.02529+1.44052I$ $a=\ \ 0.08475-1.44923I$ $b=\ \ 0.162063+0.730385I$	$7.83096+5.59239I$	$6.20850-8.26918I$
$u=\ \ 0.02529-1.44052I$ $a=\ \ 0.08475+1.44923I$ $b=\ \ 0.162063-0.730385I$	$7.83096-5.59239I$	$6.20850+8.26918I$
$u=-0.48630+1.39391I$ $a=-1.142240-0.094252I$ $b=\ \ 0.777530+0.891154I$	$2.62700+5.87075I$	$-2.36163-3.50141I$
$u=-0.48630-1.39391I$ $a=-1.142240+0.094252I$ $b=\ \ 0.777530-0.891154I$	$2.62700-5.87075I$	$-2.36163+3.50141I$
$u=-0.480454$ $a=-0.161795$ $b=-0.631026$	-0.190931	0.949670
$u=\ \ 0.197709+0.016958I$ $a=\ \ 0.64861+2.52493I$ $b=-0.211546+1.324180I$	$-4.48638-2.96588I$	$2.19081+9.30835I$
$u=\ \ 0.197709-0.016958I$ $a=\ \ 0.64861-2.52493I$ $b=-0.211546-1.324180I$	$-4.48638+2.96588I$	$2.19081-9.30835I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{29}-13u^{28}+\cdots+16u-1)(u^{126}+46u^{125}+\cdots+113201u+1156)$
c_2	$(u^{29}+3u^{28}+\cdots-4u-1)(u^{126}+4u^{125}+\cdots+435u-34)$
c_3	$(u^{29}+6u^{26}+\cdots+2u-1)(u^{126}+u^{125}+\cdots-43434u+3284)$
c_4	$(u^{29}-3u^{28}+\cdots-8u-1)(u^{126}-2u^{125}+\cdots-347u-209)$
c_5	$(u^{29}-3u^{28}+\cdots-4u+1)(u^{126}+4u^{125}+\cdots+435u-34)$
c_6	$(u^{29}-9u^{28}+\cdots+6u+1)(u^{126}-10u^{125}+\cdots-2573u-589)$
c_7	$(u^{29}+3u^{28}+\cdots-8u+1)(u^{126}-2u^{125}+\cdots-347u-209)$
c_8	$(u^{29}+3u^{28}+\cdots+22u+1)$ $\cdot(u^{126}+16u^{125}+\cdots-8670271u-644753)$
c_9	$(u^{29}-7u^{28}+\cdots-4u+1)(u^{126}-44u^{124}+\cdots+448775u-34921)$
c_{10}	$(u^{29}-6u^{26}+\cdots+2u+1)(u^{126}+u^{125}+\cdots-43434u+3284)$
c_{11}	$(u^{29}+9u^{28}+\cdots+6u-1)(u^{126}-10u^{125}+\cdots-2573u-589)$
c_{12}	$(u^{29}+7u^{28}+\cdots-4u-1)(u^{126}-44u^{124}+\cdots+448775u-34921)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{29}+19y^{28}+\cdots-32y-1)$ $\cdot(y^{126}+82y^{125}+\cdots-2963728001y+1336336)$
c_2, c_5	$(y^{29}-13y^{28}+\cdots+16y-1)(y^{126}-46y^{125}+\cdots-113201y+1156)$
c_3, c_{10}	$(y^{29}-82y^{27}+\cdots+20y-1)$ $\cdot(y^{126}-85y^{125}+\cdots-747181100y+10784656)$
c_4, c_7	$(y^{29}+13y^{28}+\cdots+50y-1)$ $\cdot(y^{126}+80y^{125}+\cdots-2175715y+43681)$
c_6, c_{11}	$(y^{29}-7y^{28}+\cdots-4y-1)(y^{126}+40y^{125}+\cdots+4386903y+346921)$
c_8	$(y^{29}-7y^{28}+\cdots+30y-1)$ $\cdot(y^{126}-44y^{125}+\cdots-35320777977971y+415706431009)$
c_9, c_{12}	$(y^{29}-15y^{28}+\cdots+6y-1)$ $\cdot(y^{126}-88y^{125}+\cdots+7738747697y+1219476241)$