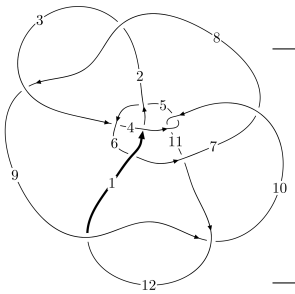
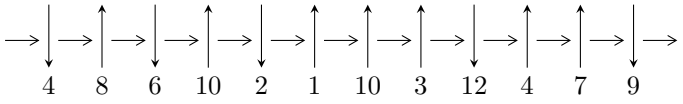
$12n_{0872}$ $(K12n_{0872})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.23788 \times 10^{617} u^{103} - 2.13157 \times 10^{617} u^{102} + \cdots + 4.60669 \times 10^{619} b - 1.99228 \times 10^{621},$$
$$1.16323 \times 10^{621} u^{103} + 2.66509 \times 10^{620} u^{102} + \cdots + 2.21582 \times 10^{622} a + 2.45180 \times 10^{624},$$
$$u^{104} - 46u^{102} + \cdots + 1213u - 481 \rangle$$
$$I_2^u = \langle 3.57205 \times 10^{41} u^{38} - 1.99879 \times 10^{42} u^{37} + \cdots + 2.14995 \times 10^{42} b + 5.04738 \times 10^{42},$$
$$- 1.71684 \times 10^{43} u^{38} + 1.96289 \times 10^{43} u^{37} + \cdots + 2.14995 \times 10^{42} a - 6.45705 \times 10^{43},\ u^{39} - u^{38} + \cdots + 6u +$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 143 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. $\boldsymbol{I_1^u = \langle -9.24 \times 10^{617} u^{103} - 2.13 \times 10^{617} u^{102} + \cdots + 4.61 \times 10^{619} b - 1.99 \times 10^{621},\ 1.16 \times 10^{621} u^{103} + 2.67 \times 10^{620} u^{102} + \cdots + 2.22 \times 10^{622} a + 2.45 \times 10^{624},\ u^{104} - 46 u^{102} + \cdots + 1213 u - 481 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.0524965u^{103} - 0.0120276u^{102} + \cdots - 186.829u - 110.650 \\ 0.0200532u^{103} + 0.00462711u^{102} + \cdots + 74.8146u + 43.2475 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0381236u^{103} - 0.00827763u^{102} + \cdots - 138.937u - 72.1056 \\ 0.0437309u^{103} + 0.0101189u^{102} + \cdots + 163.774u + 92.2742 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -0.0324433u^{103} - 0.00740048u^{102} + \cdots - 112.015u - 67.4025 \\ 0.0200532u^{103} + 0.00462711u^{102} + \cdots + 74.8146u + 43.2475 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.134160u^{103} + 0.0308828u^{102} + \cdots + 503.351u + 280.897 \\ 0.0829877u^{103} + 0.0195287u^{102} + \cdots + 307.232u + 172.162 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.134160u^{103} + 0.0308828u^{102} + \cdots + 503.351u + 280.897 \\ 0.0757825u^{103} + 0.0178965u^{102} + \cdots + 280.162u + 157.307 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.150051u^{103} + 0.0345510u^{102} + \cdots + 576.541u + 307.325 \\ 0.0617242u^{103} + 0.0144059u^{102} + \cdots + 222.546u + 125.979 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.128848u^{103} - 0.0292433u^{102} + \cdots - 481.056u - 271.980 \\ -0.0856454u^{103} - 0.0201046u^{102} + \cdots - 318.073u - 177.623 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0927804u^{103} + 0.0225380u^{102} + \cdots + 335.410u + 191.496 \\ -0.0320252u^{103} - 0.00726549u^{102} + \cdots - 122.725u - 67.7945 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0640073u^{103} + 0.0156871u^{102} + \cdots + 282.714u + 148.258$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{104} - 12u^{103} + \cdots - 248936u - 16709$
c_2, c_8	$u^{104} + 3u^{103} + \cdots + 113528u + 9059$
c_3	$u^{104} - 7u^{103} + \cdots - 6u + 1$
c_4, c_{10}	$u^{104} - 46u^{102} + \cdots - 1213u - 481$
c_5	$u^{104} + 17u^{102} + \cdots - 422700176u - 225656489$
c_6	$u^{104} + 4u^{103} + \cdots - 39794u - 3223$
c_7	$u^{104} + 4u^{103} + \cdots - 7017838u - 1565497$
c_9, c_{12}	$u^{104} - 6u^{103} + \cdots - 580u + 71$
c_{11}	$u^{104} - 2u^{103} + \cdots - 63017876u - 39654871$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{104} + 46y^{103} + \cdots - 6027901366y + 279190681$
c_2, c_8	$y^{104} - 83y^{103} + \cdots - 2711816774y + 82065481$
c_3	$y^{104} - 21y^{103} + \cdots - 186y + 1$
c_4, c_{10}	$y^{104} - 92y^{103} + \cdots - 6263091y + 231361$
c_5	$y^{104} + 34y^{103} + \cdots + 567548679396571134y + 50920851027807121$
c_6	$y^{104} - 32y^{103} + \cdots + 738170736y + 10387729$
c_7	$y^{104} - 46y^{103} + \cdots - 93370286202562y + 2450780857009$
c_9, c_{12}	$y^{104} + 64y^{103} + \cdots + 348466y + 5041$
c_{11}	$y^{104} - 38y^{103} + \cdots - 12842525972544346y + 1572508794026641$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.756388+0.614504I$ $a=\ \ 0.953008-0.229351I$ $b=-0.239639+0.440382I$	$0.84585-1.85988I$	0
$u=-0.756388-0.614504I$ $a=\ \ 0.953008+0.229351I$ $b=-0.239639-0.440382I$	$0.84585+1.85988I$	0
$u=\ \ 0.043265+1.026080I$ $a=\ \ 0.046814+0.470367I$ $b=-0.468872+0.940055I$	$1.10399+5.81000I$	0
$u=\ \ 0.043265-1.026080I$ $a=\ \ 0.046814-0.470367I$ $b=-0.468872-0.940055I$	$1.10399-5.81000I$	0
$u=\ \ 0.559475+0.780068I$ $a=-1.146960+0.561597I$ $b=-0.303316+0.521127I$	$1.77195+6.26844I$	0
$u=\ \ 0.559475-0.780068I$ $a=-1.146960-0.561597I$ $b=-0.303316-0.521127I$	$1.77195-6.26844I$	0
$u=\ \ 0.479752+0.972353I$ $a=-1.91141-1.44571I$ $b=-1.028730+0.471775I$	$-2.99427+3.87327I$	0
$u=\ \ 0.479752-0.972353I$ $a=-1.91141+1.44571I$ $b=-1.028730-0.471775I$	$-2.99427-3.87327I$	0
$u=-1.11214$ $a=\ \ 0.978552$ $b=\ \ 0.687155$	1.70571	0
$u=\ \ 0.257608+0.797734I$ $a=\ \ 0.519153-0.274406I$ $b=-0.681323-0.687497I$	$-1.82356-1.36255I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.257608 - 0.797734I$ $a = 0.519153 + 0.274406I$ $b = -0.681323 + 0.687497I$	$-1.82356 + 1.36255I$	0
$u = -0.079941 + 0.815009I$ $a = 0.366854 - 0.910951I$ $b = -0.407217 - 0.332853I$	$-1.77525 - 1.53905I$	0
$u = -0.079941 - 0.815009I$ $a = 0.366854 + 0.910951I$ $b = -0.407217 + 0.332853I$	$-1.77525 + 1.53905I$	0
$u = -0.552200 + 1.118290I$ $a = 1.52956 - 0.88253I$ $b = 1.69002 + 0.24137I$	$-0.45824 - 4.15337I$	0
$u = -0.552200 - 1.118290I$ $a = 1.52956 + 0.88253I$ $b = 1.69002 - 0.24137I$	$-0.45824 + 4.15337I$	0
$u = -1.237520 + 0.208871I$ $a = 0.42277 + 1.36469I$ $b = -0.283995 - 1.243000I$	$4.04848 - 3.85454I$	0
$u = -1.237520 - 0.208871I$ $a = 0.42277 - 1.36469I$ $b = -0.283995 + 1.243000I$	$4.04848 + 3.85454I$	0
$u = 1.241120 + 0.205283I$ $a = 0.339401 - 1.191240I$ $b = -0.278663 + 1.316540I$	$3.18290 + 3.60441I$	0
$u = 1.241120 - 0.205283I$ $a = 0.339401 + 1.191240I$ $b = -0.278663 - 1.316540I$	$3.18290 - 3.60441I$	0
$u = -0.052331 + 1.292450I$ $a = -0.0316547 - 0.0907787I$ $b = -0.592848 - 0.101762I$	$-3.95483 - 1.93894I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.052331-1.292450I$ $a=-0.0316547+0.0907787I$ $b=-0.592848+0.101762I$	$-3.95483+1.93894I$	0
$u=1.316300+0.242283I$ $a=0.699095+0.836061I$ $b=0.701758-0.503985I$	$5.01156+5.64140I$	0
$u=1.316300-0.242283I$ $a=0.699095-0.836061I$ $b=0.701758+0.503985I$	$5.01156-5.64140I$	0
$u=-0.174763+1.327980I$ $a=0.121819-0.136944I$ $b=0.520470+1.048980I$	$8.07740+0.96350I$	0
$u=-0.174763-1.327980I$ $a=0.121819+0.136944I$ $b=0.520470-1.048980I$	$8.07740-0.96350I$	0
$u=-0.520435+0.354656I$ $a=1.056080+0.327009I$ $b=-0.450370-0.117474I$	$0.84359-1.70694I$	$4.49768+5.15421I$
$u=-0.520435-0.354656I$ $a=1.056080-0.327009I$ $b=-0.450370+0.117474I$	$0.84359+1.70694I$	$4.49768-5.15421I$
$u=0.596675+0.201234I$ $a=0.408682+0.394693I$ $b=0.238546-0.794451I$	$3.32423-2.67744I$	$6.96385+1.14988I$
$u=0.596675-0.201234I$ $a=0.408682-0.394693I$ $b=0.238546+0.794451I$	$3.32423+2.67744I$	$6.96385-1.14988I$
$u=-1.381170+0.256326I$ $a=0.455512-0.994438I$ $b=0.173705+0.785758I$	$3.20991-0.82993I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.381170-0.256326I$ $a=\ 0.455512+0.994438I$ $b=\ 0.173705-0.785758I$	$3.20991+0.82993I$	0
$u=\ 0.473373+0.304198I$ $a=\ 0.780415+0.227803I$ $b=-1.065160-0.452018I$	$-1.88690-1.07563I$	$-0.370812-1.040121I$
$u=\ 0.473373-0.304198I$ $a=\ 0.780415-0.227803I$ $b=-1.065160+0.452018I$	$-1.88690+1.07563I$	$-0.370812+1.040121I$
$u=-0.499233+0.255636I$ $a=\ 0.498852+0.083658I$ $b=\ 0.530811-0.422327I$	$1.340360-0.220514I$	$8.29449+0.78751I$
$u=-0.499233-0.255636I$ $a=\ 0.498852-0.083658I$ $b=\ 0.530811+0.422327I$	$1.340360+0.220514I$	$8.29449-0.78751I$
$u=\ 1.43614+0.11613I$ $a=\ 0.383333+1.117580I$ $b=\ 0.216582-1.063790I$	$7.23064-2.27781I$	0
$u=\ 1.43614-0.11613I$ $a=\ 0.383333-1.117580I$ $b=\ 0.216582+1.063790I$	$7.23064+2.27781I$	0
$u=-1.43874+0.08514I$ $a=-0.18808+1.43903I$ $b=\ 0.268252-1.200850I$	$9.50641-2.53195I$	0
$u=-1.43874-0.08514I$ $a=-0.18808-1.43903I$ $b=\ 0.268252+1.200850I$	$9.50641+2.53195I$	0
$u=\ 0.337037+0.433784I$ $a=\ 1.232520-0.335320I$ $b=-0.983901+0.278226I$	$-0.53776+1.39330I$	$1.75716+0.61906I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.337037 - 0.433784I$ $a = 1.232520 + 0.335320I$ $b = -0.983901 - 0.278226I$	$-0.53776 - 1.39330I$	$1.75716 - 0.61906I$
$u = -1.45495 + 0.02322I$ $a = -0.60993 - 1.34266I$ $b = -0.143920 + 0.848854I$	$10.85450 - 6.48839I$	0
$u = -1.45495 - 0.02322I$ $a = -0.60993 + 1.34266I$ $b = -0.143920 - 0.848854I$	$10.85450 + 6.48839I$	0
$u = -0.090629 + 0.518992I$ $a = 1.290290 + 0.113821I$ $b = -0.992919 - 0.177822I$	$-0.848158 - 0.616971I$	$5.30485 + 0.57557I$
$u = -0.090629 - 0.518992I$ $a = 1.290290 - 0.113821I$ $b = -0.992919 + 0.177822I$	$-0.848158 + 0.616971I$	$5.30485 - 0.57557I$
$u = -0.025369 + 0.510521I$ $a = 1.04170 + 2.27833I$ $b = -0.109941 + 1.010940I$	$0.96411 - 2.80779I$	$3.93129 - 3.03588I$
$u = -0.025369 - 0.510521I$ $a = 1.04170 - 2.27833I$ $b = -0.109941 - 1.010940I$	$0.96411 + 2.80779I$	$3.93129 + 3.03588I$
$u = 0.061045 + 0.493659I$ $a = 2.37160 - 0.15194I$ $b = 0.947452 + 0.263918I$	$-0.25369 - 2.78146I$	$2.20642 + 5.49581I$
$u = 0.061045 - 0.493659I$ $a = 2.37160 + 0.15194I$ $b = 0.947452 - 0.263918I$	$-0.25369 + 2.78146I$	$2.20642 - 5.49581I$
$u = 0.18426 + 1.49536I$ $a = 0.325806 - 0.013730I$ $b = -0.190423 - 0.077217I$	$-1.71906 + 0.61777I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.18426 - 1.49536I$ $a = 0.325806 + 0.013730I$ $b = -0.190423 + 0.077217I$	$-1.71906 - 0.61777I$	0
$u = 1.51730 + 0.38462I$ $a = 0.002624 - 1.264570I$ $b = -0.94235 + 1.62193I$	$2.76297 + 6.27366I$	0
$u = 1.51730 - 0.38462I$ $a = 0.002624 + 1.264570I$ $b = -0.94235 - 1.62193I$	$2.76297 - 6.27366I$	0
$u = -1.56574 + 0.12682I$ $a = -0.639263 - 0.502518I$ $b = -1.081930 + 0.421284I$	$7.69459 + 6.35826I$	0
$u = -1.56574 - 0.12682I$ $a = -0.639263 + 0.502518I$ $b = -1.081930 - 0.421284I$	$7.69459 - 6.35826I$	0
$u = 1.55933 + 0.22492I$ $a = 0.155107 + 1.012440I$ $b = 0.274584 - 0.670362I$	$5.23399 + 4.89676I$	0
$u = 1.55933 - 0.22492I$ $a = 0.155107 - 1.012440I$ $b = 0.274584 + 0.670362I$	$5.23399 - 4.89676I$	0
$u = -1.55267 + 0.31896I$ $a = -0.096842 + 1.391900I$ $b = -0.94876 - 2.49473I$	$5.77660 - 1.06575I$	0
$u = -1.55267 - 0.31896I$ $a = -0.096842 - 1.391900I$ $b = -0.94876 + 2.49473I$	$5.77660 + 1.06575I$	0
$u = 1.58254 + 0.13787I$ $a = -0.441432 - 0.916190I$ $b = 0.191245 + 1.306220I$	$5.73185 - 6.24754I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.58254 - 0.13787I$ $a = -0.441432 + 0.916190I$ $b = 0.191245 - 1.306220I$	$5.73185 + 6.24754I$	0
$u = 1.60273 + 0.13079I$ $a = -0.077357 - 1.159800I$ $b = 0.172948 + 1.329900I$	$8.08362 + 2.71293I$	0
$u = 1.60273 - 0.13079I$ $a = -0.077357 + 1.159800I$ $b = 0.172948 - 1.329900I$	$8.08362 - 2.71293I$	0
$u = 1.60813 + 0.02386I$ $a = -0.250032 + 1.049610I$ $b = 0.289823 - 0.885399I$	$5.89098 + 4.69416I$	0
$u = 1.60813 - 0.02386I$ $a = -0.250032 - 1.049610I$ $b = 0.289823 + 0.885399I$	$5.89098 - 4.69416I$	0
$u = -1.59173 + 0.37969I$ $a = 0.044658 + 1.232300I$ $b = -1.10744 - 1.54241I$	$6.91684 - 11.13780I$	0
$u = -1.59173 - 0.37969I$ $a = 0.044658 - 1.232300I$ $b = -1.10744 + 1.54241I$	$6.91684 + 11.13780I$	0
$u = 1.64848 + 0.01689I$ $a = -0.395136 - 0.733982I$ $b = 2.09514 + 1.15918I$	$9.53284 + 7.96172I$	0
$u = 1.64848 - 0.01689I$ $a = -0.395136 + 0.733982I$ $b = 2.09514 - 1.15918I$	$9.53284 - 7.96172I$	0
$u = -1.64310 + 0.13786I$ $a = -0.364892 + 0.902513I$ $b = 0.43140 - 1.45698I$	$5.18984 + 2.46675I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.64310-0.13786I$ $a=-0.364892-0.902513I$ $b=\ \ 0.43140+1.45698I$	$5.18984-2.46675I$	0
$u=-0.166413+0.298634I$ $a=\ \ 3.16526+1.96290I$ $b=\ \ 0.828427-0.529954I$	$6.21785+5.73133I$	$5.01843-6.13992I$
$u=-0.166413-0.298634I$ $a=\ \ 3.16526-1.96290I$ $b=\ \ 0.828427+0.529954I$	$6.21785-5.73133I$	$5.01843+6.13992I$
$u=\ \ 1.66740$ $a=-0.621700$ $b=-1.22807$	3.12880	0
$u=\ \ 1.66090+0.15762I$ $a=-0.414612-0.909175I$ $b=\ \ 1.19545+1.41298I$	$12.88540-3.37022I$	0
$u=\ \ 1.66090-0.15762I$ $a=-0.414612+0.909175I$ $b=\ \ 1.19545-1.41298I$	$12.88540+3.37022I$	0
$u=\ \ 0.323065+0.053749I$ $a=\ \ 6.12307+1.87193I$ $b=-0.208011-0.846828I$	$-2.44406-2.53576I$	$5.95296+7.08262I$
$u=\ \ 0.323065-0.053749I$ $a=\ \ 6.12307-1.87193I$ $b=-0.208011+0.846828I$	$-2.44406+2.53576I$	$5.95296-7.08262I$
$u=-0.10274+1.67429I$ $a=\ \ 0.0921413+0.0591271I$ $b=\ \ 0.56502-1.30388I$	$2.51947+3.44695I$	0
$u=-0.10274-1.67429I$ $a=\ \ 0.0921413-0.0591271I$ $b=\ \ 0.56502+1.30388I$	$2.51947-3.44695I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.54450 + 0.76341I$ $a = 0.359265 + 1.206980I$ $b = 1.18244 - 1.28426I$	$12.8242 + 6.3084I$	0
$u = 1.54450 - 0.76341I$ $a = 0.359265 - 1.206980I$ $b = 1.18244 + 1.28426I$	$12.8242 - 6.3084I$	0
$u = -1.73970 + 0.05367I$ $a = -0.296579 + 0.866963I$ $b = 0.609796 - 0.896396I$	$8.21686 + 6.53641I$	0
$u = -1.73970 - 0.05367I$ $a = -0.296579 - 0.866963I$ $b = 0.609796 + 0.896396I$	$8.21686 - 6.53641I$	0
$u = -1.74903 + 0.15975I$ $a = -0.664116 + 0.965931I$ $b = 2.06036 - 2.62689I$	$6.33606 - 0.80961I$	0
$u = -1.74903 - 0.15975I$ $a = -0.664116 - 0.965931I$ $b = 2.06036 + 2.62689I$	$6.33606 + 0.80961I$	0
$u = 0.232422 + 0.001806I$ $a = 1.61246 + 1.60544I$ $b = 1.111540 - 0.606422I$	$1.09944 + 7.69062I$	$9.29665 - 1.98480I$
$u = 0.232422 - 0.001806I$ $a = 1.61246 - 1.60544I$ $b = 1.111540 + 0.606422I$	$1.09944 - 7.69062I$	$9.29665 + 1.98480I$
$u = -0.184348 + 0.131797I$ $a = 7.96561 + 8.61699I$ $b = 0.032242 - 0.731472I$	$2.63552 - 8.00089I$	$13.8289 + 5.2451I$
$u = -0.184348 - 0.131797I$ $a = 7.96561 - 8.61699I$ $b = 0.032242 + 0.731472I$	$2.63552 + 8.00089I$	$13.8289 - 5.2451I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.62585 + 0.71969I$ $a = -0.341893 - 0.759788I$ $b = -0.346088 + 1.177830I$	$8.01378 + 4.66019I$	0
$u = 1.62585 - 0.71969I$ $a = -0.341893 + 0.759788I$ $b = -0.346088 - 1.177830I$	$8.01378 - 4.66019I$	0
$u = -0.096357 + 0.189225I$ $a = 1.84010 - 1.28802I$ $b = 1.099090 + 0.511799I$	$-0.37155 - 4.63756I$	$5.92962 + 12.03433I$
$u = -0.096357 - 0.189225I$ $a = 1.84010 + 1.28802I$ $b = 1.099090 - 0.511799I$	$-0.37155 + 4.63756I$	$5.92962 - 12.03433I$
$u = -0.08271 + 1.80979I$ $a = 0.0552974 - 0.0688722I$ $b = 0.364543 + 1.297180I$	$5.71209 - 9.57896I$	0
$u = -0.08271 - 1.80979I$ $a = 0.0552974 + 0.0688722I$ $b = 0.364543 - 1.297180I$	$5.71209 + 9.57896I$	0
$u = -1.64125 + 0.86922I$ $a = -0.309707 + 0.660661I$ $b = -0.447918 - 1.094930I$	$12.0338 - 9.2583I$	0
$u = -1.64125 - 0.86922I$ $a = -0.309707 - 0.660661I$ $b = -0.447918 + 1.094930I$	$12.0338 + 9.2583I$	0
$u = 1.72596 + 0.69271I$ $a = 0.176980 + 1.109110I$ $b = 1.09514 - 1.44804I$	$11.5105 + 18.3276I$	0
$u = 1.72596 - 0.69271I$ $a = 0.176980 - 1.109110I$ $b = 1.09514 + 1.44804I$	$11.5105 - 18.3276I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.69905+0.75774I$ $a=\ \ 0.250741-1.095290I$ $b=\ \ 1.16105+1.43310I$	$7.5758-12.1822I$	0
$u=-1.69905-0.75774I$ $a=\ \ 0.250741+1.095290I$ $b=\ \ 1.16105-1.43310I$	$7.5758+12.1822I$	0
$u=-1.81637+0.71837I$ $a=-0.238109+0.780834I$ $b=-0.47363-1.36093I$	$11.24820+0.27627I$	0
$u=-1.81637-0.71837I$ $a=-0.238109-0.780834I$ $b=-0.47363+1.36093I$	$11.24820-0.27627I$	0

II.

$\boldsymbol{I_2^u = \langle 3.57\times 10^{41}u^{38} - 2.00\times 10^{42}u^{37} + \cdots + 2.15\times 10^{42}b + 5.05\times 10^{42},\ -1.72\times 10^{43}u^{38} + 1.96\times 10^{43}u^{37} + \cdots + 2.15\times 10^{42}a - 6.46\times 10^{43},\ u^{39} - u^{38} + \cdots + 6u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 7.98548u^{38} - 9.12995u^{37} + \cdots + 81.0981u + 30.0335 \\ -0.166146u^{38} + 0.929693u^{37} + \cdots + 1.67110u - 2.34768 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -7.79895u^{38} + 9.46660u^{37} + \cdots - 79.2390u - 29.2786 \\ 1.60711u^{38} - 0.715761u^{37} + \cdots + 17.0296u + 4.72651 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 7.81934u^{38} - 8.20026u^{37} + \cdots + 82.7692u + 27.6859 \\ -0.166146u^{38} + 0.929693u^{37} + \cdots + 1.67110u - 2.34768 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -5.03822u^{38} + 8.07873u^{37} + \cdots - 38.0591u - 19.7559 \\ 3.70352u^{38} - 2.35693u^{37} + \cdots + 40.4455u + 11.0152 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -5.03822u^{38} + 8.07873u^{37} + \cdots - 38.0591u - 19.7559 \\ 3.90266u^{38} - 2.45839u^{37} + \cdots + 53.6503u + 14.0557 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 7.59285u^{38} - 9.38603u^{37} + \cdots + 65.4431u + 27.8874 \\ 1.40118u^{38} - 2.14980u^{37} + \cdots + 8.57664u + 3.91192 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 6.37281u^{38} - 9.21544u^{37} + \cdots + 60.7681u + 26.4002 \\ -2.71720u^{38} + 0.940791u^{37} + \cdots - 39.0238u - 9.32125 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -6.44687u^{38} + 7.05539u^{37} + \cdots - 57.6520u - 20.8889 \\ 1.10191u^{38} - 1.92891u^{37} + \cdots + 21.2655u + 8.42309 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 17.4964u^{38} - 17.4105u^{37} + \cdots + 159.113u + 50.7900$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{39}+u^{38}+\cdots+5u-1$
c_2	$u^{39}-2u^{38}+\cdots+3u-1$
c_3	$u^{39}-12u^{38}+\cdots+3u-1$
c_4	$u^{39}-u^{38}+\cdots+6u+1$
c_5	$u^{39}+5u^{38}+\cdots+9u+1$
c_6	$u^{39}-u^{38}+\cdots+u+1$
c_7	$u^{39}+9u^{38}+\cdots-27u-1$
c_8	$u^{39}+2u^{38}+\cdots+3u+1$
c_9	$u^{39}-7u^{38}+\cdots-111u+17$
c_{10}	$u^{39}+u^{38}+\cdots+6u-1$
c_{11}	$u^{39}+u^{38}+\cdots+u-1$
c_{12}	$u^{39}+7u^{38}+\cdots-111u-17$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{39} + 11y^{38} + \cdots + 9y - 1$
c_2, c_8	$y^{39} - 30y^{38} + \cdots + 21y - 1$
c_3	$y^{39} - 24y^{38} + \cdots - 51y - 1$
c_4, c_{10}	$y^{39} - 15y^{38} + \cdots + 10y - 1$
c_5	$y^{39} - 21y^{38} + \cdots - 419y - 1$
c_6	$y^{39} - 11y^{38} + \cdots - 69y - 1$
c_7	$y^{39} + 15y^{38} + \cdots + 117y - 1$
c_9, c_{12}	$y^{39} + 21y^{38} + \cdots - 6243y - 289$
c_{11}	$y^{39} + 11y^{38} + \cdots - 23y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.714234+0.646090I$ $a=\ 0.567389-0.166197I$ $b=-0.897728+0.002371I$	$-0.42956-2.08315I$	$1.07908+10.26660I$
$u=-0.714234-0.646090I$ $a=\ 0.567389+0.166197I$ $b=-0.897728-0.002371I$	$-0.42956+2.08315I$	$1.07908-10.26660I$
$u=\ 0.481158+0.998076I$ $a=\ 1.67117+1.11651I$ $b=\ 1.66742+0.03836I$	$-0.68641+4.30104I$	$-8.2586-15.9444I$
$u=\ 0.481158-0.998076I$ $a=\ 1.67117-1.11651I$ $b=\ 1.66742-0.03836I$	$-0.68641-4.30104I$	$-8.2586+15.9444I$
$u=\ 1.112590+0.017384I$ $a=\ 0.745644+1.198550I$ $b=-0.113319-1.246330I$	$4.15102-4.90321I$	$6.96774+7.97063I$
$u=\ 1.112590-0.017384I$ $a=\ 0.745644-1.198550I$ $b=-0.113319+1.246330I$	$4.15102+4.90321I$	$6.96774-7.97063I$
$u=-0.222731+0.835366I$ $a=\ 0.337960-0.239393I$ $b=-0.799132+0.439136I$	$-1.73712+0.24562I$	$-2.41052+2.12061I$
$u=-0.222731-0.835366I$ $a=\ 0.337960+0.239393I$ $b=-0.799132-0.439136I$	$-1.73712-0.24562I$	$-2.41052-2.12061I$
$u=\ 0.375900+0.690760I$ $a=\ 2.01354-0.71595I$ $b=\ 0.303125-1.354280I$	$1.12137+3.36026I$	$9.5968-11.1830I$
$u=\ 0.375900-0.690760I$ $a=\ 2.01354+0.71595I$ $b=\ 0.303125+1.354280I$	$1.12137-3.36026I$	$9.5968+11.1830I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.454300+1.145050I$ $a=-1.77685+1.04562I$ $b=-1.070190-0.458548I$	$-2.63420-3.92959I$	$8.09206+6.77888I$
$u=-0.454300-1.145050I$ $a=-1.77685-1.04562I$ $b=-1.070190+0.458548I$	$-2.63420+3.92959I$	$8.09206-6.77888I$
$u=-1.24851$ $a=-1.17716$ $b=-0.780352$	1.41069	-14.4990
$u=\ \ 1.272260+0.166109I$ $a=-0.869963-0.952108I$ $b=-0.693692+0.551477I$	$5.03700+5.96400I$	$6.7854-17.7637I$
$u=\ \ 1.272260-0.166109I$ $a=-0.869963+0.952108I$ $b=-0.693692-0.551477I$	$5.03700-5.96400I$	$6.7854+17.7637I$
$u=\ \ 0.311211+0.596597I$ $a=\ \ 0.172876+0.158815I$ $b=\ \ 1.111070+0.652901I$	$-0.57987-4.15092I$	$0.15664-1.51083I$
$u=\ \ 0.311211-0.596597I$ $a=\ \ 0.172876-0.158815I$ $b=\ \ 1.111070-0.652901I$	$-0.57987+4.15092I$	$0.15664+1.51083I$
$u=\ \ 0.312657+0.572753I$ $a=\ \ 0.215966-0.166208I$ $b=\ \ 0.990024-0.564976I$	$0.68699+8.04590I$	$-2.39016-12.20225I$
$u=\ \ 0.312657-0.572753I$ $a=\ \ 0.215966+0.166208I$ $b=\ \ 0.990024+0.564976I$	$0.68699-8.04590I$	$-2.39016+12.20225I$
$u=-0.173412+0.621258I$ $a=-0.68541-3.69947I$ $b=-0.053529-0.487116I$	$2.21579-8.10973I$	$-3.82432+10.35697I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.173412-0.621258I$ $a=-0.68541+3.69947I$ $b=-0.053529+0.487116I$	$2.21579+8.10973I$	$-3.82432-10.35697I$
$u=0.128428+1.376150I$ $a=0.310283-0.006319I$ $b=-0.491663+0.093070I$	$-1.91949+0.73835I$	$-14.3543-11.4356I$
$u=0.128428-1.376150I$ $a=0.310283+0.006319I$ $b=-0.491663-0.093070I$	$-1.91949-0.73835I$	$-14.3543+11.4356I$
$u=-1.369690+0.203673I$ $a=0.279040+1.137730I$ $b=-0.32764-1.39829I$	$2.77371-3.09104I$	0
$u=-1.369690-0.203673I$ $a=0.279040-1.137730I$ $b=-0.32764+1.39829I$	$2.77371+3.09104I$	0
$u=-1.40802+0.13736I$ $a=-0.604487+1.106370I$ $b=0.337327-0.798972I$	$8.52161+5.14948I$	0
$u=-1.40802-0.13736I$ $a=-0.604487-1.106370I$ $b=0.337327+0.798972I$	$8.52161-5.14948I$	0
$u=-0.03599+1.47002I$ $a=0.236779+0.000150I$ $b=0.322316+0.203582I$	$-3.64293-1.95250I$	0
$u=-0.03599-1.47002I$ $a=0.236779-0.000150I$ $b=0.322316-0.203582I$	$-3.64293+1.95250I$	0
$u=-0.117621+0.507121I$ $a=2.66716+2.72764I$ $b=-0.383874+0.570432I$	$-2.89285+2.32384I$	$-9.41904-1.51012I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.117621-0.507121I$ $a=\ \ 2.66716-2.72764I$ $b=-0.383874-0.570432I$	$-2.89285-2.32384I$	$-9.41904+1.51012I$
$u=-1.48664+0.02246I$ $a=\ \ 0.280735+0.606854I$ $b=\ \ 1.038490-0.338876I$	$9.47591-6.43947I$	0
$u=-1.48664-0.02246I$ $a=\ \ 0.280735-0.606854I$ $b=\ \ 1.038490+0.338876I$	$9.47591+6.43947I$	0
$u=\ \ 1.67357+0.22377I$ $a=-0.456454-1.214950I$ $b=\ \ 0.77755+2.86138I$	$6.20977+0.99443I$	0
$u=\ \ 1.67357-0.22377I$ $a=-0.456454+1.214950I$ $b=\ \ 0.77755-2.86138I$	$6.20977-0.99443I$	0
$u=\ \ 1.71613+0.04435I$ $a=-0.265544-0.915483I$ $b=\ \ 0.242885+1.082420I$	$6.80583-4.95581I$	0
$u=\ \ 1.71613-0.04435I$ $a=-0.265544+0.915483I$ $b=\ \ 0.242885-1.082420I$	$6.80583+4.95581I$	0
$u=-0.277002+0.011658I$ $a=\ \ 0.24875+2.82151I$ $b=-1.069260-0.235741I$	$-1.92818-2.02296I$	$-0.64962+5.12891I$
$u=-0.277002-0.011658I$ $a=\ \ 0.24875-2.82151I$ $b=-1.069260+0.235741I$	$-1.92818+2.02296I$	$-0.64962-5.12891I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{39}+u^{38}+\cdots+5u-1)(u^{104}-12u^{103}+\cdots-248936u-16709)$
c_2	$(u^{39}-2u^{38}+\cdots+3u-1)(u^{104}+3u^{103}+\cdots+113528u+9059)$
c_3	$(u^{39}-12u^{38}+\cdots+3u-1)(u^{104}-7u^{103}+\cdots-6u+1)$
c_4	$(u^{39}-u^{38}+\cdots+6u+1)(u^{104}-46u^{102}+\cdots-1213u-481)$
c_5	$(u^{39}+5u^{38}+\cdots+9u+1)$ $\cdot(u^{104}+17u^{102}+\cdots-422700176u-225656489)$
c_6	$(u^{39}-u^{38}+\cdots+u+1)(u^{104}+4u^{103}+\cdots-39794u-3223)$
c_7	$(u^{39}+9u^{38}+\cdots-27u-1)$ $\cdot(u^{104}+4u^{103}+\cdots-7017838u-1565497)$
c_8	$(u^{39}+2u^{38}+\cdots+3u+1)(u^{104}+3u^{103}+\cdots+113528u+9059)$
c_9	$(u^{39}-7u^{38}+\cdots-111u+17)(u^{104}-6u^{103}+\cdots-580u+71)$
c_{10}	$(u^{39}+u^{38}+\cdots+6u-1)(u^{104}-46u^{102}+\cdots-1213u-481)$
c_{11}	$(u^{39}+u^{38}+\cdots+u-1)(u^{104}-2u^{103}+\cdots-6.30179\times10^{7}u-3.96549\times10^{7})$
c_{12}	$(u^{39}+7u^{38}+\cdots-111u-17)(u^{104}-6u^{103}+\cdots-580u+71)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{39}+11y^{38}+\cdots+9y-1)$ $\cdot(y^{104}+46y^{103}+\cdots-6027901366y+279190681)$
c_2, c_8	$(y^{39}-30y^{38}+\cdots+21y-1)$ $\cdot(y^{104}-83y^{103}+\cdots-2711816774y+82065481)$
c_3	$(y^{39}-24y^{38}+\cdots-51y-1)(y^{104}-21y^{103}+\cdots-186y+1)$
c_4, c_{10}	$(y^{39}-15y^{38}+\cdots+10y-1)$ $\cdot(y^{104}-92y^{103}+\cdots-6263091y+231361)$
c_5	$(y^{39}-21y^{38}+\cdots-419y-1)$ $\cdot(y^{104}+34y^{103}+\cdots+567548679396571134y+50920851027807121)$
c_6	$(y^{39}-11y^{38}+\cdots-69y-1)$ $\cdot(y^{104}-32y^{103}+\cdots+738170736y+10387729)$
c_7	$(y^{39}+15y^{38}+\cdots+117y-1)$ $\cdot(y^{104}-46y^{103}+\cdots-93370286202562y+2450780857009)$
c_9, c_{12}	$(y^{39}+21y^{38}+\cdots-6243y-289)$ $\cdot(y^{104}+64y^{103}+\cdots+348466y+5041)$
c_{11}	$(y^{39}+11y^{38}+\cdots-23y-1)$ $\cdot(y^{104}-38y^{103}+\cdots-12842525972544346y+1572508794026641)$