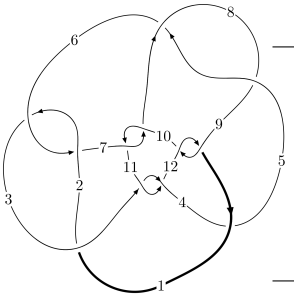
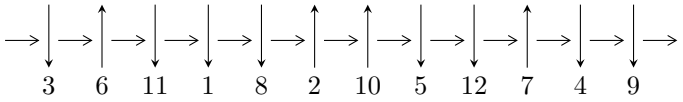
$12a_{0489}$ $(K12a_{0489})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.51227 \times 10^{329} u^{134} + 5.25666 \times 10^{328} u^{133} + \cdots + 1.45920 \times 10^{328} b - 6.64848 \times 10^{331},$$
$$1.39352 \times 10^{332} u^{134} - 2.28557 \times 10^{332} u^{133} + \cdots + 4.65486 \times 10^{330} a - 6.26320 \times 10^{334},$$
$$u^{135} - u^{134} + \cdots - 550u + 319 \rangle$$
$$I_2^u = \langle -14u^{29} - 338u^{28} + \cdots + 59b - 301,\ -479u^{29} - 1526u^{28} + \cdots + 59a + 528,\ u^{30} + 4u^{29} + \cdots + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 165 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. $\boldsymbol{I_1^u = \langle -9.51 \times 10^{329} u^{134} + 5.26 \times 10^{328} u^{133} + \cdots + 1.46 \times 10^{328} b - 6.65 \times 10^{331},\ 1.39 \times 10^{332} u^{134} - 2.29 \times 10^{332} u^{133} + \cdots + 4.65 \times 10^{330} a - 6.26 \times 10^{334},\ u^{135} - u^{134} + \cdots - 550u + 319 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -29.9368u^{134} + 49.1008u^{133} + \cdots - 22734.0u + 13455.2 \\ 65.1881u^{134} - 3.60242u^{133} + \cdots + 17400.5u + 4556.23 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -56.8695u^{134} + 29.8551u^{133} + \cdots - 24012.5u + 6285.24 \\ -7.53274u^{134} + 21.7455u^{133} + \cdots - 8585.10u + 6430.11 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -20.6048u^{134} + 99.7230u^{133} + \cdots - 31659.0u + 32778.9 \\ -20.8862u^{134} - 28.5899u^{133} + \cdots + 3043.27u - 12231.0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -95.1248u^{134} + 52.7032u^{133} + \cdots - 40134.4u + 8898.94 \\ 65.1881u^{134} - 3.60242u^{133} + \cdots + 17400.5u + 4556.23 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -66.5291u^{134} + 59.6662u^{133} + \cdots - 36144.2u + 14899.4 \\ 48.2123u^{134} - 2.48378u^{133} + \cdots + 13350.7u + 3263.57 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -51.2429u^{134} + 2.85544u^{133} + \cdots - 14140.6u - 2321.76 \\ -7.95475u^{134} + 31.5932u^{133} + \cdots - 11787.9u + 9758.36 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -151.201u^{134} + 24.3816u^{133} + \cdots - 49723.1u + 1938.73 \\ 51.2850u^{134} + 13.5590u^{133} + \cdots + 9761.08u + 8017.02 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 190.854u^{134} - 52.5163u^{133} + \cdots + 60035.6u - 2114.44$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{135} + 67u^{134} + \cdots - 3424696u - 101761$
c_2, c_6	$u^{135} - u^{134} + \cdots - 550u + 319$
c_3, c_{11}	$u^{135} - u^{134} + \cdots - 423962u + 25289$
c_4	$u^{135} - 9u^{134} + \cdots + 104857u + 98599$
c_5, c_8	$u^{135} - 6u^{134} + \cdots + 6299728u - 1729139$
c_7, c_{10}	$u^{135} + 6u^{134} + \cdots + 5575u + 4625$
c_9, c_{12}	$u^{135} - 3u^{134} + \cdots + 6999u + 481$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{135} + 19y^{134} + \cdots + 444067171988y - 10355301121$
c_2, c_6	$y^{135} + 67y^{134} + \cdots - 3424696y - 101761$
c_3, c_{11}	$y^{135} - 71y^{134} + \cdots + 117641731878y - 639533521$
c_4	$y^{135} + 39y^{134} + \cdots - 1832507948977y - 9721762801$
c_5, c_8	$y^{135} + 80y^{134} + \cdots - 5136676650882y - 2989921681321$
c_7, c_{10}	$y^{135} + 84y^{134} + \cdots - 2837251875y - 21390625$
c_9, c_{12}	$y^{135} + 77y^{134} + \cdots - 2987973y - 231361$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.265838 + 0.981329I$ $a = 1.17941 - 1.28721I$ $b = 1.212520 - 0.375722I$	$1.78269 - 5.16544I$	0
$u = 0.265838 - 0.981329I$ $a = 1.17941 + 1.28721I$ $b = 1.212520 + 0.375722I$	$1.78269 + 5.16544I$	0
$u = 0.374199 + 0.903425I$ $a = 0.722251 + 0.141191I$ $b = -0.48921 + 1.92440I$	$-5.05415 - 0.80188I$	0
$u = 0.374199 - 0.903425I$ $a = 0.722251 - 0.141191I$ $b = -0.48921 - 1.92440I$	$-5.05415 + 0.80188I$	0
$u = 0.466349 + 0.915942I$ $a = 2.36119 - 3.43185I$ $b = 0.061703 + 1.071620I$	$-0.25900 + 2.18550I$	0
$u = 0.466349 - 0.915942I$ $a = 2.36119 + 3.43185I$ $b = 0.061703 - 1.071620I$	$-0.25900 - 2.18550I$	0
$u = 0.364886 + 0.900855I$ $a = -1.28870 + 0.61504I$ $b = -0.13762 - 1.95311I$	$-5.02629 + 3.85941I$	0
$u = 0.364886 - 0.900855I$ $a = -1.28870 - 0.61504I$ $b = -0.13762 + 1.95311I$	$-5.02629 - 3.85941I$	0
$u = 0.457705 + 0.927031I$ $a = -0.261377 + 0.984995I$ $b = -0.028770 - 0.159842I$	$1.65847 + 2.09523I$	0
$u = 0.457705 - 0.927031I$ $a = -0.261377 - 0.984995I$ $b = -0.028770 + 0.159842I$	$1.65847 - 2.09523I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.726714 + 0.633434I$ $a = 0.05426 + 1.55018I$ $b = -0.461684 + 1.097510I$	$-2.12663 - 0.80068I$	0
$u = 0.726714 - 0.633434I$ $a = 0.05426 - 1.55018I$ $b = -0.461684 - 1.097510I$	$-2.12663 + 0.80068I$	0
$u = -0.187369 + 0.943857I$ $a = -1.63419 - 1.84417I$ $b = 0.222091 + 0.743291I$	$2.09254 + 5.74840I$	0
$u = -0.187369 - 0.943857I$ $a = -1.63419 + 1.84417I$ $b = 0.222091 - 0.743291I$	$2.09254 - 5.74840I$	0
$u = -0.215758 + 0.932206I$ $a = 1.64183 + 1.13518I$ $b = 0.086520 - 0.953014I$	$-2.76081 + 1.33759I$	0
$u = -0.215758 - 0.932206I$ $a = 1.64183 - 1.13518I$ $b = 0.086520 + 0.953014I$	$-2.76081 - 1.33759I$	0
$u = -0.767637 + 0.717888I$ $a = 1.206440 + 0.058732I$ $b = 0.927206 - 0.460326I$	$8.78928 + 1.19131I$	0
$u = -0.767637 - 0.717888I$ $a = 1.206440 - 0.058732I$ $b = 0.927206 + 0.460326I$	$8.78928 - 1.19131I$	0
$u = -0.845569 + 0.417929I$ $a = -0.717754 - 1.122110I$ $b = -0.379717 - 1.235620I$	$-2.20552 + 7.02826I$	0
$u = -0.845569 - 0.417929I$ $a = -0.717754 + 1.122110I$ $b = -0.379717 + 1.235620I$	$-2.20552 - 7.02826I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.882693+0.331756I$ $a=\ \ 0.676897+0.927144I$ $b=\ \ 0.281110+1.065570I$	$-4.24619+2.41039I$	0
$u=-0.882693-0.331756I$ $a=\ \ 0.676897-0.927144I$ $b=\ \ 0.281110-1.065570I$	$-4.24619-2.41039I$	0
$u=\ \ 0.994252+0.374540I$ $a=\ \ 0.744033-0.927671I$ $b=\ \ 0.68805-1.26056I$	$3.02874-13.26000I$	0
$u=\ \ 0.994252-0.374540I$ $a=\ \ 0.744033+0.927671I$ $b=\ \ 0.68805+1.26056I$	$3.02874+13.26000I$	0
$u=-0.371813+0.995584I$ $a=-0.385802-0.791456I$ $b=-0.989393-0.610559I$	$-1.062960+0.685920I$	0
$u=-0.371813-0.995584I$ $a=-0.385802+0.791456I$ $b=-0.989393+0.610559I$	$-1.062960-0.685920I$	0
$u=\ \ 0.760598+0.544727I$ $a=-1.147330+0.724272I$ $b=-0.892174-0.333012I$	$1.94041-1.29727I$	0
$u=\ \ 0.760598-0.544727I$ $a=-1.147330-0.724272I$ $b=-0.892174+0.333012I$	$1.94041+1.29727I$	0
$u=\ \ 0.286519+0.890166I$ $a=-1.144710+0.645186I$ $b=-0.776901+0.765914I$	$-2.15556-0.91680I$	0
$u=\ \ 0.286519-0.890166I$ $a=-1.144710-0.645186I$ $b=-0.776901-0.765914I$	$-2.15556+0.91680I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.777318+0.518275I$ $a=-0.227730-0.343635I$ $b=-0.510637-1.102750I$	$1.74694+2.14723I$	0
$u=-0.777318-0.518275I$ $a=-0.227730+0.343635I$ $b=-0.510637+1.102750I$	$1.74694-2.14723I$	0
$u=0.383945+0.995155I$ $a=-1.24783+1.35174I$ $b=-0.399140-1.173020I$	$-2.82130+3.53514I$	0
$u=0.383945-0.995155I$ $a=-1.24783-1.35174I$ $b=-0.399140+1.173020I$	$-2.82130-3.53514I$	0
$u=0.762367+0.536952I$ $a=-0.225190-1.365020I$ $b=0.100144-1.238080I$	$-1.39518+3.66830I$	0
$u=0.762367-0.536952I$ $a=-0.225190+1.365020I$ $b=0.100144+1.238080I$	$-1.39518-3.66830I$	0
$u=0.825777+0.425793I$ $a=1.160950+0.112814I$ $b=0.757772+0.811822I$	$6.25152+3.96870I$	0
$u=0.825777-0.425793I$ $a=1.160950-0.112814I$ $b=0.757772-0.811822I$	$6.25152-3.96870I$	0
$u=-0.339820+0.847663I$ $a=-1.88123-0.73761I$ $b=-0.689407+1.031730I$	$-0.57479-3.50977I$	0
$u=-0.339820-0.847663I$ $a=-1.88123+0.73761I$ $b=-0.689407-1.031730I$	$-0.57479+3.50977I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.551339 + 0.944571I$ $a = -2.80537 - 0.87573I$ $b = -0.120919 - 0.877859I$	$0.33137 + 2.46359I$	0
$u = 0.551339 - 0.944571I$ $a = -2.80537 + 0.87573I$ $b = -0.120919 + 0.877859I$	$0.33137 - 2.46359I$	0
$u = -0.747098 + 0.496691I$ $a = 0.753327 + 0.338635I$ $b = 0.643260 + 1.114100I$	$6.73489 + 6.90205I$	0
$u = -0.747098 - 0.496691I$ $a = 0.753327 - 0.338635I$ $b = 0.643260 - 1.114100I$	$6.73489 - 6.90205I$	0
$u = 1.055650 + 0.320503I$ $a = -0.596178 + 0.716528I$ $b = -0.576598 + 1.162180I$	$-0.57907 - 6.64964I$	0
$u = 1.055650 - 0.320503I$ $a = -0.596178 - 0.716528I$ $b = -0.576598 - 1.162180I$	$-0.57907 + 6.64964I$	0
$u = 0.582769 + 0.680195I$ $a = -0.10177 + 1.82737I$ $b = 0.139332 + 0.691801I$	$1.10381 + 2.08367I$	0
$u = 0.582769 - 0.680195I$ $a = -0.10177 - 1.82737I$ $b = 0.139332 - 0.691801I$	$1.10381 - 2.08367I$	0
$u = -0.720243 + 0.838281I$ $a = -0.867162 - 0.508026I$ $b = -0.894294 + 0.127528I$	$4.68723 - 2.72448I$	0
$u = -0.720243 - 0.838281I$ $a = -0.867162 + 0.508026I$ $b = -0.894294 - 0.127528I$	$4.68723 + 2.72448I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.794872+0.399127I$ $a=0.036138-0.214370I$ $b=0.480545+0.887485I$	$5.21269-4.11478I$	0
$u=-0.794872-0.399127I$ $a=0.036138+0.214370I$ $b=0.480545-0.887485I$	$5.21269+4.11478I$	0
$u=0.435199+0.764743I$ $a=2.23715-0.91291I$ $b=0.094622-0.861347I$	$0.22529+1.62225I$	0
$u=0.435199-0.764743I$ $a=2.23715+0.91291I$ $b=0.094622+0.861347I$	$0.22529-1.62225I$	0
$u=0.854569+0.205012I$ $a=0.877909-0.294115I$ $b=0.681772-0.870366I$	$6.02008-1.50841I$	0
$u=0.854569-0.205012I$ $a=0.877909+0.294115I$ $b=0.681772+0.870366I$	$6.02008+1.50841I$	0
$u=0.283631+1.099650I$ $a=1.05280-1.40620I$ $b=0.754219+0.915733I$	$1.46017+6.59736I$	0
$u=0.283631-1.099650I$ $a=1.05280+1.40620I$ $b=0.754219-0.915733I$	$1.46017-6.59736I$	0
$u=-0.290029+1.099260I$ $a=0.857895+0.027587I$ $b=-0.35741-1.62292I$	$-4.65362-0.62051I$	0
$u=-0.290029-1.099260I$ $a=0.857895-0.027587I$ $b=-0.35741+1.62292I$	$-4.65362+0.62051I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.421078+1.060170I$ $a=\ \ 0.834382+0.516928I$ $b=\ \ 0.708648+0.317851I$	$-4.23295-3.45370I$	0
$u=-0.421078-1.060170I$ $a=\ \ 0.834382-0.516928I$ $b=\ \ 0.708648-0.317851I$	$-4.23295+3.45370I$	0
$u=\ \ 0.328998+1.094430I$ $a=-0.444577+0.507036I$ $b=\ \ 0.378405-0.621872I$	$1.84843+2.01030I$	0
$u=\ \ 0.328998-1.094430I$ $a=-0.444577-0.507036I$ $b=\ \ 0.378405+0.621872I$	$1.84843-2.01030I$	0
$u=\ \ 0.699652+0.486084I$ $a=\ \ 1.76471-0.81801I$ $b=\ \ 1.224430+0.443019I$	$5.79170-6.57634I$	0
$u=\ \ 0.699652-0.486084I$ $a=\ \ 1.76471+0.81801I$ $b=\ \ 1.224430-0.443019I$	$5.79170+6.57634I$	0
$u=\ \ 0.504710+1.034030I$ $a=\ \ 1.53961-0.41211I$ $b=\ \ 0.141439+1.014040I$	$-1.94154+2.70157I$	0
$u=\ \ 0.504710-1.034030I$ $a=\ \ 1.53961+0.41211I$ $b=\ \ 0.141439-1.014040I$	$-1.94154-2.70157I$	0
$u=-0.288709+1.116640I$ $a=-0.549556+0.260093I$ $b=\ \ 0.67576+1.51289I$	$-4.62033+0.51627I$	0
$u=-0.288709-1.116640I$ $a=-0.549556-0.260093I$ $b=\ \ 0.67576-1.51289I$	$-4.62033-0.51627I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.601897 + 1.005360I$ $a = -1.83629 - 0.18029I$ $b = -0.77300 - 1.30337I$	$-3.27840 + 5.88202I$	0
$u = 0.601897 - 1.005360I$ $a = -1.83629 + 0.18029I$ $b = -0.77300 + 1.30337I$	$-3.27840 - 5.88202I$	0
$u = -0.493673 + 1.079570I$ $a = -1.20529 - 0.83975I$ $b = -0.985626 + 0.155345I$	$-0.09723 - 7.30650I$	0
$u = -0.493673 - 1.079570I$ $a = -1.20529 + 0.83975I$ $b = -0.985626 - 0.155345I$	$-0.09723 + 7.30650I$	0
$u = -0.725373 + 0.950534I$ $a = 0.447350 + 0.864511I$ $b = 0.874319 + 0.296644I$	$8.11492 - 6.80194I$	0
$u = -0.725373 - 0.950534I$ $a = 0.447350 - 0.864511I$ $b = 0.874319 - 0.296644I$	$8.11492 + 6.80194I$	0
$u = -0.126354 + 1.191560I$ $a = 0.061222 + 0.642052I$ $b = -0.22556 - 1.43840I$	$-7.70180 + 4.47507I$	0
$u = -0.126354 - 1.191560I$ $a = 0.061222 - 0.642052I$ $b = -0.22556 + 1.43840I$	$-7.70180 - 4.47507I$	0
$u = 0.599444 + 1.045410I$ $a = 1.64387 + 0.31409I$ $b = 0.32716 + 1.42597I$	$-2.94318 + 1.48770I$	0
$u = 0.599444 - 1.045410I$ $a = 1.64387 - 0.31409I$ $b = 0.32716 - 1.42597I$	$-2.94318 - 1.48770I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.610787 + 1.044940I$ $a = -0.865488 + 0.496487I$ $b = -1.171840 + 0.081867I$	$0.42795 + 6.48627I$	0
$u = 0.610787 - 1.044940I$ $a = -0.865488 - 0.496487I$ $b = -1.171840 - 0.081867I$	$0.42795 - 6.48627I$	0
$u = 0.583969 + 1.063090I$ $a = 0.817273 - 0.921378I$ $b = 1.52568 - 0.31930I$	$4.07484 + 11.53030I$	0
$u = 0.583969 - 1.063090I$ $a = 0.817273 + 0.921378I$ $b = 1.52568 + 0.31930I$	$4.07484 - 11.53030I$	0
$u = -0.337676 + 1.175430I$ $a = -1.38803 - 0.92224I$ $b = -0.087836 + 0.410444I$	$0.58386 - 7.10567I$	0
$u = -0.337676 - 1.175430I$ $a = -1.38803 + 0.92224I$ $b = -0.087836 - 0.410444I$	$0.58386 + 7.10567I$	0
$u = -0.613282 + 1.062090I$ $a = -1.34536 - 0.61312I$ $b = -0.418964 + 1.329760I$	$0.10371 - 7.38645I$	0
$u = -0.613282 - 1.062090I$ $a = -1.34536 + 0.61312I$ $b = -0.418964 - 1.329760I$	$0.10371 + 7.38645I$	0
$u = -0.606712 + 1.066770I$ $a = 1.58179 + 0.92970I$ $b = 0.539517 - 1.251280I$	$5.03139 - 12.05540I$	0
$u = -0.606712 - 1.066770I$ $a = 1.58179 - 0.92970I$ $b = 0.539517 + 1.251280I$	$5.03139 + 12.05540I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.549921+1.102620I$ $a=-1.83190-0.45737I$ $b=-0.88035+1.41293I$	$-2.89414-6.77157I$	0
$u=-0.549921-1.102620I$ $a=-1.83190+0.45737I$ $b=-0.88035-1.41293I$	$-2.89414+6.77157I$	0
$u=-0.709740+0.288840I$ $a=\ \ 1.34883+1.51456I$ $b=\ \ 0.901939+1.056320I$	$-0.51947+3.40508I$	0
$u=-0.709740-0.288840I$ $a=\ \ 1.34883-1.51456I$ $b=\ \ 0.901939-1.056320I$	$-0.51947-3.40508I$	0
$u=\ \ 0.518904+0.551373I$ $a=-1.003490-0.758728I$ $b=-0.522844+0.066760I$	$2.79508+1.97263I$	0
$u=\ \ 0.518904-0.551373I$ $a=-1.003490+0.758728I$ $b=-0.522844-0.066760I$	$2.79508-1.97263I$	0
$u=-0.541662+1.121070I$ $a=\ \ 1.85218+0.66699I$ $b=\ \ 1.18886-1.19569I$	$-2.91590-8.17489I$	0
$u=-0.541662-1.121070I$ $a=\ \ 1.85218-0.66699I$ $b=\ \ 1.18886+1.19569I$	$-2.91590+8.17489I$	0
$u=\ \ 0.320210+0.670359I$ $a=\ \ 0.637183-0.127117I$ $b=\ \ 0.033106-0.270911I$	$-0.268047+1.163710I$	0
$u=\ \ 0.320210-0.670359I$ $a=\ \ 0.637183+0.127117I$ $b=\ \ 0.033106+0.270911I$	$-0.268047-1.163710I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.661060+0.333300I$ $a=-0.72374-1.54608I$ $b=-0.649448-1.203380I$	$-0.70385+2.04571I$	0
$u=-0.661060-0.333300I$ $a=-0.72374+1.54608I$ $b=-0.649448+1.203380I$	$-0.70385-2.04571I$	0
$u=-0.629014+1.107950I$ $a=0.782958+0.688370I$ $b=0.251962-1.172940I$	$3.13624-1.23174I$	0
$u=-0.629014-1.107950I$ $a=0.782958-0.688370I$ $b=0.251962+1.172940I$	$3.13624+1.23174I$	0
$u=-0.625418+1.127980I$ $a=-1.83549-0.18447I$ $b=-0.507040+1.308170I$	$-4.34091-12.49700I$	0
$u=-0.625418-1.127980I$ $a=-1.83549+0.18447I$ $b=-0.507040-1.308170I$	$-4.34091+12.49700I$	0
$u=0.659081+1.114230I$ $a=0.154599-0.334752I$ $b=0.725506-0.606655I$	$4.21917+1.56628I$	0
$u=0.659081-1.114230I$ $a=0.154599+0.334752I$ $b=0.725506+0.606655I$	$4.21917-1.56628I$	0
$u=-0.206654+1.281800I$ $a=-0.049187-0.429626I$ $b=0.115875+1.307200I$	$-9.61896-0.98289I$	0
$u=-0.206654-1.281800I$ $a=-0.049187+0.429626I$ $b=0.115875-1.307200I$	$-9.61896+0.98289I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.607649+1.164710I$ $a=\ 1.58659+0.21218I$ $b=\ 0.465343-1.147890I$	$-6.75191-7.88347I$	0
$u=-0.607649-1.164710I$ $a=\ 1.58659-0.21218I$ $b=\ 0.465343+1.147890I$	$-6.75191+7.88347I$	0
$u=-1.051640+0.800246I$ $a=\ 0.424442-0.476358I$ $b=\ 0.253392-0.822663I$	$5.79308-7.21676I$	0
$u=-1.051640-0.800246I$ $a=\ 0.424442+0.476358I$ $b=\ 0.253392+0.822663I$	$5.79308+7.21676I$	0
$u=-0.587178+0.317424I$ $a=-1.80447-0.63816I$ $b=-0.846508-0.183741I$	$2.07823+3.00622I$	0
$u=-0.587178-0.317424I$ $a=-1.80447+0.63816I$ $b=-0.846508+0.183741I$	$2.07823-3.00622I$	0
$u=\ 0.657156+1.193770I$ $a=\ 1.63336-0.41163I$ $b=\ 0.74806+1.39534I$	$0.5042+19.2274I$	0
$u=\ 0.657156-1.193770I$ $a=\ 1.63336+0.41163I$ $b=\ 0.74806-1.39534I$	$0.5042-19.2274I$	0
$u=\ 0.551630+1.248360I$ $a=\ 1.155080-0.800960I$ $b=\ 0.613649+1.048520I$	$2.86001+6.73264I$	0
$u=\ 0.551630-1.248360I$ $a=\ 1.155080+0.800960I$ $b=\ 0.613649-1.048520I$	$2.86001-6.73264I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.662450 + 1.225020I$ $a = -1.41640 + 0.38718I$ $b = -0.62891 - 1.32970I$	$-3.36305 + 12.77810I$	0
$u = \quad 0.662450 - 1.225020I$ $a = -1.41640 - 0.38718I$ $b = -0.62891 + 1.32970I$	$-3.36305 - 12.77810I$	0
$u = \quad 0.119207 + 1.394450I$ $a = -0.171912 + 0.309394I$ $b = \quad 0.404428 - 1.255520I$	$-3.33366 - 9.51592I$	0
$u = \quad 0.119207 - 1.394450I$ $a = -0.171912 - 0.309394I$ $b = \quad 0.404428 + 1.255520I$	$-3.33366 + 9.51592I$	0
$u = -0.98901 + 1.04603I$ $a = -0.394789 + 0.403330I$ $b = \quad 0.028808 + 0.776809I$	$5.09633 - 0.04450I$	0
$u = -0.98901 - 1.04603I$ $a = -0.394789 - 0.403330I$ $b = \quad 0.028808 - 0.776809I$	$5.09633 + 0.04450I$	0
$u = \quad 0.395614 + 0.378247I$ $a = \quad 0.469500 - 0.436509I$ $b = -0.209541 - 0.721310I$	$-0.226398 + 1.318720I$	$-2.08224 - 2.35375I$
$u = \quad 0.395614 - 0.378247I$ $a = \quad 0.469500 + 0.436509I$ $b = -0.209541 + 0.721310I$	$-0.226398 - 1.318720I$	$-2.08224 + 2.35375I$
$u = -0.534104$ $a = \quad 1.65875$ $b = \quad 0.369217$	-1.53099	-6.46000
$u = -0.01787 + 1.48662I$ $a = \quad 0.137891 + 1.024120I$ $b = -0.194720 - 0.741850I$	$-5.43801 + 0.25019I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.01787-1.48662I$ $a=\ \ 0.137891-1.024120I$ $b=-0.194720+0.741850I$	$-5.43801-0.25019I$	0
$u=\ \ 0.24347+1.53187I$ $a=\ \ 0.164497-0.228208I$ $b=-0.300126+1.087210I$	$-6.91027-1.91053I$	0
$u=\ \ 0.24347-1.53187I$ $a=\ \ 0.164497+0.228208I$ $b=-0.300126-1.087210I$	$-6.91027+1.91053I$	0
$u=\ \ 0.007458+0.392032I$ $a=\ \ 1.08981-0.96336I$ $b=-0.335568-0.749597I$	$-0.20607+1.43037I$	$-5.28294-3.67391I$
$u=\ \ 0.007458-0.392032I$ $a=\ \ 1.08981+0.96336I$ $b=-0.335568+0.749597I$	$-0.20607-1.43037I$	$-5.28294+3.67391I$

II. $I_2^u = \langle -14u^{29} - 338u^{28} + \cdots + 59b - 301,\ -479u^{29} - 1526u^{28} + \cdots + 59a + 528,\ u^{30} + 4u^{29} + \cdots + u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 8.11864u^{29} + 25.8644u^{28} + \cdots + 4.45763u - 8.94915 \\ 0.237288u^{29} + 5.72881u^{28} + \cdots + 4.91525u + 5.10169 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 3.05085u^{29} + 13.0847u^{28} + \cdots + 15.3390u + 3.59322 \\ -1.08475u^{29} - 7.47458u^{28} + \cdots - 0.898305u - 4.32203 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -6.18644u^{29} - 26.6441u^{28} + \cdots - 14.5763u - 9.50847 \\ -1.42373u^{29} - 11.3729u^{28} + \cdots - 2.49153u - 5.61017 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 7.88136u^{29} + 20.1356u^{28} + \cdots - 0.457627u - 14.0508 \\ 0.237288u^{29} + 5.72881u^{28} + \cdots + 4.91525u + 5.10169 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 11.0847u^{29} + 44.4746u^{28} + \cdots + 11.8983u + 10.3220 \\ -7.89831u^{29} - 24.8305u^{28} + \cdots - 10.3220u + 4.18644 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 3.05085u^{29} + 14.0847u^{28} + \cdots + 15.3390u + 4.59322 \\ -1.08475u^{29} - 7.47458u^{28} + \cdots - 1.89831u - 4.32203 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.89831u^{29} + 7.83051u^{28} + \cdots - 7.67797u - 3.18644 \\ -4.32203u^{29} - 13.2034u^{28} + \cdots - 2.81356u + 3.57627 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{765}{59}u^{29} + \frac{3163}{59}u^{28} + \cdots + \frac{1560}{59}u + \frac{547}{59}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} - 20u^{29} + \cdots - 21u + 1$
c_2	$u^{30} - 4u^{29} + \cdots - u + 1$
c_3	$u^{30} + 2u^{29} + \cdots + 3u + 1$
c_4	$u^{30} + 2u^{28} + \cdots + 6u + 1$
c_5	$u^{30} - u^{29} + \cdots - u + 1$
c_6	$u^{30} + 4u^{29} + \cdots + u + 1$
c_7	$u^{30} + 5u^{29} + \cdots - 2u + 1$
c_8	$u^{30} + u^{29} + \cdots + u + 1$
c_9	$u^{30} - 6u^{29} + \cdots - 2u + 1$
c_{10}	$u^{30} - 5u^{29} + \cdots + 2u + 1$
c_{11}	$u^{30} - 2u^{29} + \cdots - 3u + 1$
c_{12}	$u^{30} + 6u^{29} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} - 4y^{29} + \cdots + 25y + 1$
c_2, c_6	$y^{30} + 20y^{29} + \cdots + 21y + 1$
c_3, c_{11}	$y^{30} - 6y^{29} + \cdots - 9y + 1$
c_4	$y^{30} + 4y^{29} + \cdots + 18y + 1$
c_5, c_8	$y^{30} + 5y^{29} + \cdots + 7y + 1$
c_7, c_{10}	$y^{30} + 25y^{29} + \cdots + 20y + 1$
c_9, c_{12}	$y^{30} + 10y^{29} + \cdots + 14y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.445722 + 0.954794I$ $a = -1.65957 + 0.56811I$ $b = -0.574836 - 0.984730I$	$-0.43010 + 4.21658I$	$-3.73888 - 7.94851I$
$u = 0.445722 - 0.954794I$ $a = -1.65957 - 0.56811I$ $b = -0.574836 + 0.984730I$	$-0.43010 - 4.21658I$	$-3.73888 + 7.94851I$
$u = -0.308462 + 1.016310I$ $a = 0.930381 - 0.293040I$ $b = -0.58696 - 1.84384I$	$-5.94101 + 1.00334I$	$-13.76651 - 2.47501I$
$u = -0.308462 - 1.016310I$ $a = 0.930381 + 0.293040I$ $b = -0.58696 + 1.84384I$	$-5.94101 - 1.00334I$	$-13.76651 + 2.47501I$
$u = 0.550144 + 0.747189I$ $a = 1.00821 - 1.95221I$ $b = 0.036140 - 0.898819I$	$0.38574 + 1.80493I$	$-11.3825 - 19.1307I$
$u = 0.550144 - 0.747189I$ $a = 1.00821 + 1.95221I$ $b = 0.036140 + 0.898819I$	$0.38574 - 1.80493I$	$-11.3825 + 19.1307I$
$u = 0.479406 + 0.960770I$ $a = 2.15878 - 1.80135I$ $b = 0.082314 + 1.063390I$	$-0.29749 + 2.32333I$	$-1.14621 - 12.73624I$
$u = 0.479406 - 0.960770I$ $a = 2.15878 + 1.80135I$ $b = 0.082314 - 1.063390I$	$-0.29749 - 2.32333I$	$-1.14621 + 12.73624I$
$u = -0.199636 + 0.875305I$ $a = -1.41947 - 0.53770I$ $b = -0.17965 + 1.85776I$	$-5.21532 - 3.08728I$	$-8.41567 + 0.63875I$
$u = -0.199636 - 0.875305I$ $a = -1.41947 + 0.53770I$ $b = -0.17965 - 1.85776I$	$-5.21532 + 3.08728I$	$-8.41567 - 0.63875I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.487907 + 0.743348I$ $a = -0.295928 + 0.768409I$ $b = -0.591800 + 0.774680I$	$0.238077 - 0.383087I$	$-1.58290 - 1.50378I$
$u = 0.487907 - 0.743348I$ $a = -0.295928 - 0.768409I$ $b = -0.591800 - 0.774680I$	$0.238077 + 0.383087I$	$-1.58290 + 1.50378I$
$u = -0.729198 + 0.376162I$ $a = -0.90584 - 1.48708I$ $b = -0.755070 - 1.102790I$	$-1.82213 + 2.97745I$	$-6.45991 - 3.30340I$
$u = -0.729198 - 0.376162I$ $a = -0.90584 + 1.48708I$ $b = -0.755070 + 1.102790I$	$-1.82213 - 2.97745I$	$-6.45991 + 3.30340I$
$u = -0.899637 + 0.796429I$ $a = 0.095625 + 0.266244I$ $b = 0.295452 - 0.364975I$	$6.40181 - 6.63112I$	$0.84279 + 3.17821I$
$u = -0.899637 - 0.796429I$ $a = 0.095625 - 0.266244I$ $b = 0.295452 + 0.364975I$	$6.40181 + 6.63112I$	$0.84279 - 3.17821I$
$u = -0.340453 + 1.164410I$ $a = 1.38024 + 1.49102I$ $b = 0.672393 - 0.646111I$	$1.07852 - 7.98736I$	$-4.00000 + 11.87705I$
$u = -0.340453 - 1.164410I$ $a = 1.38024 - 1.49102I$ $b = 0.672393 + 0.646111I$	$1.07852 + 7.98736I$	$-4.00000 - 11.87705I$
$u = -0.564387 + 1.099550I$ $a = -1.87625 - 0.48376I$ $b = -1.06407 + 1.28895I$	$-3.93401 - 7.90064I$	$-10.35948 + 7.50937I$
$u = -0.564387 - 1.099550I$ $a = -1.87625 + 0.48376I$ $b = -1.06407 - 1.28895I$	$-3.93401 + 7.90064I$	$-10.35948 - 7.50937I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.197926+0.668079I$ $a=\ 1.90614+2.68099I$ $b=\ 0.717229+0.329616I$	$3.12459+5.59619I$	$2.69085-4.07860I$
$u=-0.197926-0.668079I$ $a=\ 1.90614-2.68099I$ $b=\ 0.717229-0.329616I$	$3.12459-5.59619I$	$2.69085+4.07860I$
$u=-0.901589+1.034270I$ $a=-0.141386-0.086425I$ $b=\ 0.157863+0.450157I$	$5.72044+0.00206I$	$5.25685+0.I$
$u=-0.901589-1.034270I$ $a=-0.141386+0.086425I$ $b=\ 0.157863-0.450157I$	$5.72044-0.00206I$	$5.25685+0.I$
$u=-0.079532+1.392870I$ $a=\ 0.239324+0.297812I$ $b=-0.207270-1.205400I$	$-7.44963+0.67114I$	$-9.45187+0.I$
$u=-0.079532-1.392870I$ $a=\ 0.239324-0.297812I$ $b=-0.207270+1.205400I$	$-7.44963-0.67114I$	$-9.45187+0.I$
$u=\ 0.08237+1.45314I$ $a=\ 0.367254-1.056200I$ $b=-0.124711+0.739093I$	$-5.53954-0.66816I$	$-9.2942+11.9638I$
$u=\ 0.08237-1.45314I$ $a=\ 0.367254+1.056200I$ $b=-0.124711-0.739093I$	$-5.53954+0.66816I$	$-9.2942-11.9638I$
$u=\ 0.175274+0.350098I$ $a=\ 0.21249-2.65739I$ $b=-0.377030-0.670119I$	$-1.12434+2.00392I$	$-5.71869-5.01514I$
$u=\ 0.175274-0.350098I$ $a=\ 0.21249+2.65739I$ $b=-0.377030+0.670119I$	$-1.12434-2.00392I$	$-5.71869+5.01514I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{30}-20u^{29}+\cdots-21u+1)$ $\cdot(u^{135}+67u^{134}+\cdots-3424696u-101761)$
c_2	$(u^{30}-4u^{29}+\cdots-u+1)(u^{135}-u^{134}+\cdots-550u+319)$
c_3	$(u^{30}+2u^{29}+\cdots+3u+1)(u^{135}-u^{134}+\cdots-423962u+25289)$
c_4	$(u^{30}+2u^{28}+\cdots+6u+1)(u^{135}-9u^{134}+\cdots+104857u+98599)$
c_5	$(u^{30}-u^{29}+\cdots-u+1)(u^{135}-6u^{134}+\cdots+6299728u-1729139)$
c_6	$(u^{30}+4u^{29}+\cdots+u+1)(u^{135}-u^{134}+\cdots-550u+319)$
c_7	$(u^{30}+5u^{29}+\cdots-2u+1)(u^{135}+6u^{134}+\cdots+5575u+4625)$
c_8	$(u^{30}+u^{29}+\cdots+u+1)(u^{135}-6u^{134}+\cdots+6299728u-1729139)$
c_9	$(u^{30}-6u^{29}+\cdots-2u+1)(u^{135}-3u^{134}+\cdots+6999u+481)$
c_{10}	$(u^{30}-5u^{29}+\cdots+2u+1)(u^{135}+6u^{134}+\cdots+5575u+4625)$
c_{11}	$(u^{30}-2u^{29}+\cdots-3u+1)(u^{135}-u^{134}+\cdots-423962u+25289)$
c_{12}	$(u^{30}+6u^{29}+\cdots+2u+1)(u^{135}-3u^{134}+\cdots+6999u+481)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{30} - 4y^{29} + \cdots + 25y + 1)$ $\cdot (y^{135} + 19y^{134} + \cdots + 444067171988y - 10355301121)$
c_2, c_6	$(y^{30} + 20y^{29} + \cdots + 21y + 1)$ $\cdot (y^{135} + 67y^{134} + \cdots - 3424696y - 101761)$
c_3, c_{11}	$(y^{30} - 6y^{29} + \cdots - 9y + 1)$ $\cdot (y^{135} - 71y^{134} + \cdots + 117641731878y - 639533521)$
c_4	$(y^{30} + 4y^{29} + \cdots + 18y + 1)$ $\cdot (y^{135} + 39y^{134} + \cdots - 1832507948977y - 9721762801)$
c_5, c_8	$(y^{30} + 5y^{29} + \cdots + 7y + 1)$ $\cdot (y^{135} + 80y^{134} + \cdots - 5136676650882y - 2989921681321)$
c_7, c_{10}	$(y^{30} + 25y^{29} + \cdots + 20y + 1)$ $\cdot (y^{135} + 84y^{134} + \cdots - 2837251875y - 21390625)$
c_9, c_{12}	$(y^{30} + 10y^{29} + \cdots + 14y + 1)$ $\cdot (y^{135} + 77y^{134} + \cdots - 2987973y - 231361)$