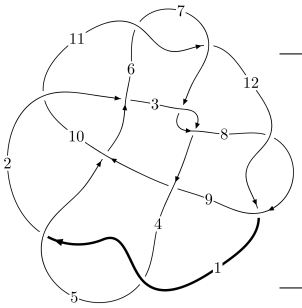
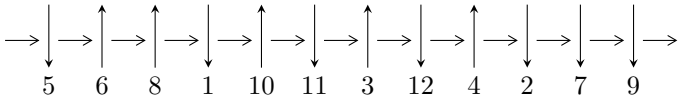
$12a_{1230}$ $(K12a_{1230})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -1.47607 \times 10^{645} u^{123} - 7.69890 \times 10^{645} u^{122} + \cdots + 2.13415 \times 10^{646} b - 7.51217 \times 10^{648}, \\ & 1.94953 \times 10^{649} u^{123} + 1.89460 \times 10^{649} u^{122} + \cdots + 3.75397 \times 10^{649} a - 2.18741 \times 10^{652}, \\ & 3u^{124} + u^{123} + \cdots - 11348u + 1759 \rangle \\ I_2^u = \langle & -8331351990u^{16} - 18113236103u^{15} + \cdots + 1741200047b - 861824796, \\ & -11475305931u^{16} - 25118430940u^{15} + \cdots + 1741200047a + 6459102451, \\ & 3u^{17} + 4u^{16} + \cdots - 16u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 141 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle -1.48 \times 10^{645} u^{123} - 7.70 \times 10^{645} u^{122} + \cdots + 2.13 \times 10^{646} b - 7.51 \times 10^{648},\ 1.95 \times 10^{649} u^{123} + 1.89 \times 10^{649} u^{122} + \cdots + 3.75 \times 10^{649} a - 2.19 \times 10^{652},\ 3u^{124} + u^{123} + \cdots - 11348u + 1759 \rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.519325u^{123} - 0.504692u^{122} + \cdots - 2320.34u + 582.693 \\ 0.0691645u^{123} + 0.360748u^{122} + \cdots - 849.222u + 351.998 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -0.407021u^{123} - 0.999868u^{122} + \cdots + 537.930u - 374.222 \\ 0.899250u^{123} + 1.15434u^{122} + \cdots + 3157.35u - 628.014 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -0.896202u^{123} - 1.09657u^{122} + \cdots - 3213.36u + 703.992 \\ -0.0927943u^{123} + 0.173284u^{122} + \cdots - 1498.89u + 504.077 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.546877u^{123} - 0.978883u^{122} + \cdots - 664.844u - 121.293 \\ 0.178286u^{123} - 0.0195075u^{122} + \cdots + 1646.99u - 487.848 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.588490u^{123} - 0.865440u^{122} + \cdots - 1471.12u + 230.695 \\ 0.0691645u^{123} + 0.360748u^{122} + \cdots - 849.222u + 351.998 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.202534u^{123} + 0.558045u^{122} + \cdots - 629.192u + 344.874 \\ 0.153383u^{123} + 0.399035u^{122} + \cdots - 194.488u + 136.408 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.48094u^{123} - 1.79696u^{122} + \cdots - 5580.55u + 1310.33 \\ -0.195990u^{123} + 0.0340962u^{122} + \cdots - 1997.47u + 649.189 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.878962u^{123} - 1.41971u^{122} + \cdots - 1890.44u + 315.400 \\ 1.49342u^{123} + 1.99627u^{122} + \cdots + 4994.05u - 1026.70 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -11.7889u^{123} - 14.0298u^{122} + \cdots - 44815.7u + 9573.22$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{124} + 3u^{123} + \cdots + 44u + 4$
c_2	$3(3u^{124} - 7u^{123} + \cdots - 30u - 1)$
c_3, c_7	$u^{124} + 2u^{123} + \cdots + 6u + 1$
c_5	$3(3u^{124} + 13u^{123} + \cdots + 1185u + 161)$
c_6, c_{11}	$u^{124} - 45u^{122} + \cdots - 513u - 31$
c_8, c_{12}	$3(3u^{124} - u^{123} + \cdots + 11348u + 1759)$
c_9	$u^{124} - u^{123} + \cdots - 1188544u - 211971$
c_{10}	$u^{124} + 2u^{123} + \cdots - 48068u - 4247$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{124} - 97y^{123} + \cdots + 544y + 16$
c_2	$9(9y^{124} - 235y^{123} + \cdots - 228y + 1)$
c_3, c_7	$y^{124} - 66y^{123} + \cdots - 200y + 1$
c_5	$9(9y^{124} - 235y^{123} + \cdots + 463375y + 25921)$
c_6, c_{11}	$y^{124} - 90y^{123} + \cdots - 403847y + 961$
c_8, c_{12}	$9(9y^{124} - 1087y^{123} + \cdots - 2.08080 \times 10^8 y + 3094081)$
c_9	$y^{124} + 29y^{123} + \cdots + 896206404524y + 44931704841$
c_{10}	$y^{124} - 44y^{123} + \cdots - 1625831284y + 18037009$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.788605 + 0.603204I$ $a = -0.773510 + 0.152551I$ $b = -1.155560 - 0.574558I$	$-2.43728 + 1.83748I$	0
$u = 0.788605 - 0.603204I$ $a = -0.773510 - 0.152551I$ $b = -1.155560 + 0.574558I$	$-2.43728 - 1.83748I$	0
$u = 0.123262 + 1.005660I$ $a = 0.311877 + 0.261104I$ $b = -1.165100 + 0.482298I$	$1.31303 - 5.91813I$	0
$u = 0.123262 - 1.005660I$ $a = 0.311877 - 0.261104I$ $b = -1.165100 - 0.482298I$	$1.31303 + 5.91813I$	0
$u = -0.949710 + 0.238781I$ $a = 0.58259 + 1.35786I$ $b = 1.171990 + 0.531039I$	$1.34709 + 1.96348I$	0
$u = -0.949710 - 0.238781I$ $a = 0.58259 - 1.35786I$ $b = 1.171990 - 0.531039I$	$1.34709 - 1.96348I$	0
$u = -0.975980 + 0.302633I$ $a = -0.08994 + 1.56774I$ $b = 0.342586 + 0.781780I$	$-0.96971 + 3.60554I$	0
$u = -0.975980 - 0.302633I$ $a = -0.08994 - 1.56774I$ $b = 0.342586 - 0.781780I$	$-0.96971 - 3.60554I$	0
$u = 0.968093 + 0.072187I$ $a = -2.42423 - 2.56791I$ $b = -0.876990 - 0.089373I$	$-4.80410 - 0.11389I$	0
$u = 0.968093 - 0.072187I$ $a = -2.42423 + 2.56791I$ $b = -0.876990 + 0.089373I$	$-4.80410 + 0.11389I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.05831$ $a = 1.48125$ $b = -1.29432$	-5.24214	0
$u = 0.894123 + 0.279210I$ $a = -0.10822 + 2.16309I$ $b = -1.16089 + 1.18171I$	$-2.48013 - 5.46707I$	0
$u = 0.894123 - 0.279210I$ $a = -0.10822 - 2.16309I$ $b = -1.16089 - 1.18171I$	$-2.48013 + 5.46707I$	0
$u = -0.979983 + 0.431569I$ $a = 0.575071 - 1.253460I$ $b = 0.147458 - 0.031198I$	$-5.89109 + 9.09334I$	0
$u = -0.979983 - 0.431569I$ $a = 0.575071 + 1.253460I$ $b = 0.147458 + 0.031198I$	$-5.89109 - 9.09334I$	0
$u = 0.903842 + 0.580723I$ $a = -0.856001 - 0.351840I$ $b = -0.153008 - 0.040285I$	$-5.25838 - 0.22234I$	0
$u = 0.903842 - 0.580723I$ $a = -0.856001 + 0.351840I$ $b = -0.153008 + 0.040285I$	$-5.25838 + 0.22234I$	0
$u = 0.888925 + 0.236273I$ $a = -0.75252 - 1.70671I$ $b = 1.045960 - 0.225775I$	$0.344321 - 0.915316I$	0
$u = 0.888925 - 0.236273I$ $a = -0.75252 + 1.70671I$ $b = 1.045960 + 0.225775I$	$0.344321 + 0.915316I$	0
$u = 0.086900 + 1.088350I$ $a = -0.338466 - 0.485239I$ $b = 1.248980 - 0.176372I$	$2.07576 - 6.77659I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.086900 - 1.088350I$ $a = -0.338466 + 0.485239I$ $b = 1.248980 + 0.176372I$	$2.07576 + 6.77659I$	0
$u = -0.133340 + 0.893430I$ $a = 0.255453 + 0.028036I$ $b = -1.290390 + 0.097289I$	$6.38240 - 2.65405I$	0
$u = -0.133340 - 0.893430I$ $a = 0.255453 - 0.028036I$ $b = -1.290390 - 0.097289I$	$6.38240 + 2.65405I$	0
$u = 1.103370 + 0.111328I$ $a = -0.00971 + 2.27977I$ $b = 0.459954 + 0.548916I$	$-3.75488 - 0.79756I$	0
$u = 1.103370 - 0.111328I$ $a = -0.00971 - 2.27977I$ $b = 0.459954 - 0.548916I$	$-3.75488 + 0.79756I$	0
$u = 1.094220 + 0.218141I$ $a = 0.86694 - 1.59283I$ $b = 0.807249 - 0.142085I$	$-0.612185 - 0.724132I$	0
$u = 1.094220 - 0.218141I$ $a = 0.86694 + 1.59283I$ $b = 0.807249 + 0.142085I$	$-0.612185 + 0.724132I$	0
$u = 0.157240 + 1.110290I$ $a = -0.110324 - 0.166987I$ $b = 1.169760 + 0.436291I$	$1.84863 + 7.63093I$	0
$u = 0.157240 - 1.110290I$ $a = -0.110324 + 0.166987I$ $b = 1.169760 - 0.436291I$	$1.84863 - 7.63093I$	0
$u = 0.834550 + 0.268312I$ $a = 0.553460 + 0.612766I$ $b = -0.371624 + 0.067577I$	$-1.40266 - 0.46426I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.834550 - 0.268312I$ $a = 0.553460 - 0.612766I$ $b = -0.371624 - 0.067577I$	$-1.40266 + 0.46426I$	0
$u = 1.138310 + 0.017075I$ $a = 0.91942 - 1.70196I$ $b = 1.69305 - 1.17482I$	$-6.39003 + 3.25066I$	0
$u = 1.138310 - 0.017075I$ $a = 0.91942 + 1.70196I$ $b = 1.69305 + 1.17482I$	$-6.39003 - 3.25066I$	0
$u = 1.142860 + 0.128567I$ $a = 0.22185 + 1.75605I$ $b = 0.19599 + 1.80667I$	$-5.17825 - 5.30127I$	0
$u = 1.142860 - 0.128567I$ $a = 0.22185 - 1.75605I$ $b = 0.19599 - 1.80667I$	$-5.17825 + 5.30127I$	0
$u = -1.158250 + 0.020836I$ $a = -0.08583 + 1.87683I$ $b = 1.161920 + 0.643909I$	$-8.02058 + 8.45569I$	0
$u = -1.158250 - 0.020836I$ $a = -0.08583 - 1.87683I$ $b = 1.161920 - 0.643909I$	$-8.02058 - 8.45569I$	0
$u = 1.15977$ $a = -1.40356$ $b = 0.492111$	-3.85647	0
$u = 0.530974 + 0.632952I$ $a = 0.224564 + 0.305269I$ $b = -0.608186 - 0.414278I$	$-1.54550 - 0.57882I$	0
$u = 0.530974 - 0.632952I$ $a = 0.224564 - 0.305269I$ $b = -0.608186 + 0.414278I$	$-1.54550 + 0.57882I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.175520+0.046030I$ $a=\ \ 0.057140-1.114490I$ $b=-1.292650-0.499292I$	$-8.20014+1.57315I$	0
$u=-1.175520-0.046030I$ $a=\ \ 0.057140+1.114490I$ $b=-1.292650+0.499292I$	$-8.20014-1.57315I$	0
$u=\ \ 0.036239+0.811904I$ $a=-0.126186+0.584919I$ $b=-0.247828+0.521765I$	$-2.49622-4.31640I$	0
$u=\ \ 0.036239-0.811904I$ $a=-0.126186-0.584919I$ $b=-0.247828-0.521765I$	$-2.49622+4.31640I$	0
$u=-1.168590+0.220171I$ $a=-0.550977+1.260230I$ $b=-0.796498+0.896199I$	$-5.33472+3.61289I$	0
$u=-1.168590-0.220171I$ $a=-0.550977-1.260230I$ $b=-0.796498-0.896199I$	$-5.33472-3.61289I$	0
$u=\ \ 1.065910+0.535700I$ $a=\ \ 0.26281+1.46778I$ $b=-1.025860+0.788200I$	$-3.22218-4.36249I$	0
$u=\ \ 1.065910-0.535700I$ $a=\ \ 0.26281-1.46778I$ $b=-1.025860-0.788200I$	$-3.22218+4.36249I$	0
$u=-1.22576$ $a=-1.01823$ $b=-2.03524$	-7.61392	0
$u=-1.229930+0.175863I$ $a=-0.61442+1.59509I$ $b=-0.66953+1.49455I$	$-5.70033+3.64848I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.229930-0.175863I$ $a=-0.61442-1.59509I$ $b=-0.66953-1.49455I$	$-5.70033-3.64848I$	0
$u=-1.198130+0.360507I$ $a=\ \ 0.48307+1.57590I$ $b=\ \ 1.40506+0.91636I$	$-0.11264+5.91385I$	0
$u=-1.198130-0.360507I$ $a=\ \ 0.48307-1.57590I$ $b=\ \ 1.40506-0.91636I$	$-0.11264-5.91385I$	0
$u=-0.742890$ $a=\ \ 1.01419$ $b=\ \ 1.67101$	3.02186	0
$u=-0.586348+0.441635I$ $a=-0.34504+1.62898I$ $b=\ \ 0.214066-0.203261I$	$-1.17179+4.15296I$	0
$u=-0.586348-0.441635I$ $a=-0.34504-1.62898I$ $b=\ \ 0.214066+0.203261I$	$-1.17179-4.15296I$	0
$u=-0.119121+0.708028I$ $a=-0.095345+0.505809I$ $b=\ \ 1.239320-0.380272I$	$3.18902-1.94291I$	0
$u=-0.119121-0.708028I$ $a=-0.095345-0.505809I$ $b=\ \ 1.239320+0.380272I$	$3.18902+1.94291I$	0
$u=-1.214530+0.410822I$ $a=\ \ 0.126987-1.371560I$ $b=-1.247480-0.603820I$	$-4.20839+8.51329I$	0
$u=-1.214530-0.410822I$ $a=\ \ 0.126987+1.371560I$ $b=-1.247480+0.603820I$	$-4.20839-8.51329I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.714154 + 1.074430I$ $a = 0.715561 + 0.192223I$ $b = -0.947446 + 0.161518I$	$-1.86971 - 2.12951I$	0
$u = 0.714154 - 1.074430I$ $a = 0.715561 - 0.192223I$ $b = -0.947446 - 0.161518I$	$-1.86971 + 2.12951I$	0
$u = 1.246760 + 0.376459I$ $a = -0.24354 + 1.80084I$ $b = -0.846234 + 0.323241I$	$-4.43600 - 2.51207I$	0
$u = 1.246760 - 0.376459I$ $a = -0.24354 - 1.80084I$ $b = -0.846234 - 0.323241I$	$-4.43600 + 2.51207I$	0
$u = -1.213930 + 0.481250I$ $a = -0.40166 - 1.36719I$ $b = -1.209900 - 0.435379I$	$3.05232 + 7.60282I$	0
$u = -1.213930 - 0.481250I$ $a = -0.40166 + 1.36719I$ $b = -1.209900 + 0.435379I$	$3.05232 - 7.60282I$	0
$u = -0.201782 + 0.659839I$ $a = -0.117132 + 0.905608I$ $b = 1.275610 + 0.109948I$	$3.29232 + 1.21871I$	0
$u = -0.201782 - 0.659839I$ $a = -0.117132 - 0.905608I$ $b = 1.275610 - 0.109948I$	$3.29232 - 1.21871I$	0
$u = 1.287490 + 0.327049I$ $a = -0.768832 + 1.012340I$ $b = -1.233210 + 0.380204I$	$1.75057 - 1.55337I$	0
$u = 1.287490 - 0.327049I$ $a = -0.768832 - 1.012340I$ $b = -1.233210 - 0.380204I$	$1.75057 + 1.55337I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.346130+0.093012I$ $a=-0.424411+1.038860I$ $b=-0.284819+0.998234I$	$-7.24521+2.71118I$	0
$u=-1.346130-0.093012I$ $a=-0.424411-1.038860I$ $b=-0.284819-0.998234I$	$-7.24521-2.71118I$	0
$u=1.256950+0.549835I$ $a=0.193727-1.393470I$ $b=1.36822-0.77314I$	$-1.60499-13.40180I$	0
$u=1.256950-0.549835I$ $a=0.193727+1.393470I$ $b=1.36822+0.77314I$	$-1.60499+13.40180I$	0
$u=-0.300969+1.340690I$ $a=0.192114-0.208650I$ $b=-1.211350-0.431036I$	$-2.09713+12.66730I$	0
$u=-0.300969-1.340690I$ $a=0.192114+0.208650I$ $b=-1.211350+0.431036I$	$-2.09713-12.66730I$	0
$u=-1.286800+0.525371I$ $a=0.126633-1.213530I$ $b=-0.517404-0.556031I$	$-6.23413+9.08506I$	0
$u=-1.286800-0.525371I$ $a=0.126633+1.213530I$ $b=-0.517404+0.556031I$	$-6.23413-9.08506I$	0
$u=-0.475834+0.374162I$ $a=1.79148-0.41794I$ $b=0.336927+0.600944I$	$-5.88107+8.91166I$	0
$u=-0.475834-0.374162I$ $a=1.79148+0.41794I$ $b=0.336927-0.600944I$	$-5.88107-8.91166I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.382080 + 0.284573I$ $a = -0.12556 - 1.44107I$ $b = -0.11274 - 1.42408I$	$-11.5203 - 11.9060I$	0
$u = 1.382080 - 0.284573I$ $a = -0.12556 + 1.44107I$ $b = -0.11274 + 1.42408I$	$-11.5203 + 11.9060I$	0
$u = 1.41099 + 0.32694I$ $a = 0.79167 - 1.36801I$ $b = 1.077230 - 0.477025I$	$-1.85313 - 4.94493I$	0
$u = 1.41099 - 0.32694I$ $a = 0.79167 + 1.36801I$ $b = 1.077230 + 0.477025I$	$-1.85313 + 4.94493I$	0
$u = 1.42016 + 0.30725I$ $a = 0.076634 + 1.023840I$ $b = 0.317383 + 1.056200I$	$-11.76120 - 3.73889I$	0
$u = 1.42016 - 0.30725I$ $a = 0.076634 - 1.023840I$ $b = 0.317383 - 1.056200I$	$-11.76120 + 3.73889I$	0
$u = -1.38533 + 0.45833I$ $a = -0.26988 - 1.54224I$ $b = -1.25913 - 0.77998I$	$-3.42270 + 11.12110I$	0
$u = -1.38533 - 0.45833I$ $a = -0.26988 + 1.54224I$ $b = -1.25913 + 0.77998I$	$-3.42270 - 11.12110I$	0
$u = -0.336986 + 0.414236I$ $a = 1.13438 - 1.71290I$ $b = -0.674367 + 0.429281I$	$-1.42144 - 4.58216I$	$-3.65378 + 4.57244I$
$u = -0.336986 - 0.414236I$ $a = 1.13438 + 1.71290I$ $b = -0.674367 - 0.429281I$	$-1.42144 + 4.58216I$	$-3.65378 - 4.57244I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.38917+0.49444I$ $a=\ 0.34978+1.43405I$ $b=\ 1.191080+0.416776I$	$-2.56414+12.34190I$	0
$u=-1.38917-0.49444I$ $a=\ 0.34978-1.43405I$ $b=\ 1.191080-0.416776I$	$-2.56414-12.34190I$	0
$u=-1.46872+0.13574I$ $a=\ 0.710171+1.157920I$ $b=\ 0.441897+0.950718I$	$-10.28200-2.62507I$	0
$u=-1.46872-0.13574I$ $a=\ 0.710171-1.157920I$ $b=\ 0.441897-0.950718I$	$-10.28200+2.62507I$	0
$u=-1.25214+0.79663I$ $a=-0.186292+0.406134I$ $b=\ 1.163230+0.325120I$	$-2.21685+0.93511I$	0
$u=-1.25214-0.79663I$ $a=-0.186292-0.406134I$ $b=\ 1.163230-0.325120I$	$-2.21685-0.93511I$	0
$u=-1.46287+0.28250I$ $a=\ 0.029871-1.060580I$ $b=\ 0.062869-1.043970I$	$-12.53470+3.74102I$	0
$u=-1.46287-0.28250I$ $a=\ 0.029871+1.060580I$ $b=\ 0.062869+1.043970I$	$-12.53470-3.74102I$	0
$u=\ 0.187016+0.472108I$ $a=\ 1.135900-0.469578I$ $b=-0.222276-0.738246I$	$-1.55739-1.34736I$	$0.+3.86805I$
$u=\ 0.187016-0.472108I$ $a=\ 1.135900+0.469578I$ $b=-0.222276+0.738246I$	$-1.55739+1.34736I$	$0.-3.86805I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 1.54306$ $a = -0.0359052$ $b = -0.532053$	-2.55057	0
$u = \ 0.120877 + 0.413849I$ $a = \ 1.57623 - 1.29730I$ $b = -0.414736 - 0.467210I$	$-1.76548 - 1.19017I$	$-0.85824 - 1.89707I$
$u = \ 0.120877 - 0.413849I$ $a = \ 1.57623 + 1.29730I$ $b = -0.414736 + 0.467210I$	$-1.76548 + 1.19017I$	$-0.85824 + 1.89707I$
$u = \ 1.57638$ $a = -0.0532773$ $b = -0.556987$	-2.55055	0
$u = \ 1.48784 + 0.55087I$ $a = -0.261986 + 1.309670I$ $b = -1.39096 + 0.70928I$	$-7.5728 - 19.1670I$	0
$u = \ 1.48784 - 0.55087I$ $a = -0.261986 - 1.309670I$ $b = -1.39096 - 0.70928I$	$-7.5728 + 19.1670I$	0
$u = -1.50316 + 0.61748I$ $a = \ 0.077035 + 1.089100I$ $b = \ 1.32119 + 0.56273I$	$-8.64758 + 9.46412I$	0
$u = -1.50316 - 0.61748I$ $a = \ 0.077035 - 1.089100I$ $b = \ 1.32119 - 0.56273I$	$-8.64758 - 9.46412I$	0
$u = -0.355419 + 0.080354I$ $a = -3.98036 + 0.84768I$ $b = -0.493569 - 0.369093I$	$-5.54920 + 1.34906I$	$-14.6358 - 4.1384I$
$u = -0.355419 - 0.080354I$ $a = -3.98036 - 0.84768I$ $b = -0.493569 + 0.369093I$	$-5.54920 - 1.34906I$	$-14.6358 + 4.1384I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.360112 + 0.005558I$ $a = 2.55211 - 0.30279I$ $b = 1.039370 - 0.838831I$	$-4.13686 + 3.45163I$	$-5.49726 - 5.58524I$
$u = 0.360112 - 0.005558I$ $a = 2.55211 + 0.30279I$ $b = 1.039370 + 0.838831I$	$-4.13686 - 3.45163I$	$-5.49726 + 5.58524I$
$u = 1.51317 + 0.64932I$ $a = 0.091146 - 1.056790I$ $b = 1.236540 - 0.634521I$	$-8.86473 - 9.77487I$	0
$u = 1.51317 - 0.64932I$ $a = 0.091146 + 1.056790I$ $b = 1.236540 + 0.634521I$	$-8.86473 + 9.77487I$	0
$u = -0.143869 + 0.315991I$ $a = 1.108900 - 0.097825I$ $b = 0.457080 - 0.375113I$	$0.965550 - 0.954442I$	$3.74033 + 2.94349I$
$u = -0.143869 - 0.315991I$ $a = 1.108900 + 0.097825I$ $b = 0.457080 + 0.375113I$	$0.965550 + 0.954442I$	$3.74033 - 2.94349I$
$u = 0.338874$ $a = -0.0207160$ $b = -1.73162$	6.35658	-25.3790
$u = -1.67175$ $a = -0.904053$ $b = -0.716034$	-11.8882	0
$u = 0.194983$ $a = 9.11360$ $b = -1.16949$	-3.60281	-11.7920
$u = -1.69395 + 1.37615I$ $a = 0.000819 + 0.271572I$ $b = 0.822825 - 0.133596I$	$-3.82790 - 0.48478I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.69395-1.37615I$ $a=\ 0.000819-0.271572I$ $b=\ 0.822825+0.133596I$	$-3.82790+0.48478I$	0
$u=\ 2.28690$ $a=\ 0.150783$ $b=\ 1.15604$	-2.66586	0
$u=-3.04940$ $a=-0.196205$ $b=-1.25659$	-3.77751	0
$u=\ 3.32114$ $a=\ 0.122732$ $b=\ 0.903057$	-3.64594	0

II.

$\boldsymbol{I_2^u = \langle -8.33\times 10^{9}u^{16}-1.81\times 10^{10}u^{15}+\cdots+1.74\times 10^{9}b-8.62\times 10^{8},\ -1.15\times 10^{10}u^{16}-2.51\times 10^{10}u^{15}+\cdots+1.74\times 10^{9}a+6.46\times 10^{9},\ 3u^{17}+4u^{16}+\cdots-16u-1\rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 6.59046u^{16} + 14.4259u^{15} + \cdots + 56.1266u - 3.70957 \\ 4.78483u^{16} + 10.4027u^{15} + \cdots + 37.8580u + 0.494960 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -5.07002u^{16} - 11.9796u^{15} + \cdots - 31.2290u - 12.4771 \\ -5.52445u^{16} - 11.3550u^{15} + \cdots - 35.6602u - 4.90847 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 2.41342u^{16} + 5.34252u^{15} + \cdots + 23.6093u - 5.57677 \\ 6.24736u^{16} + 13.5305u^{15} + \cdots + 50.2414u + 1.19082 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 4.18857u^{16} + 9.61086u^{15} + \cdots + 30.0719u + 5.29306 \\ -2.84605u^{16} - 6.42074u^{15} + \cdots - 29.4982u - 0.908507 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.80562u^{16} + 4.02320u^{15} + \cdots + 18.2686u - 4.20453 \\ 4.78483u^{16} + 10.4027u^{15} + \cdots + 37.8580u + 0.494960 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -6.65471u^{16} - 14.0790u^{15} + \cdots - 52.0969u + 6.91624 \\ 2.59229u^{16} + 7.73731u^{15} + \cdots + 29.3720u + 4.60009 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -8.47661u^{16} - 19.8031u^{15} + \cdots - 59.2148u - 9.13343 \\ -2.20607u^{16} - 9.16522u^{15} + \cdots - 41.5756u - 4.21824 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 14.3557u^{16} + 32.5810u^{15} + \cdots + 100.315u + 12.5674 \\ 12.9964u^{16} + 28.1497u^{15} + \cdots + 93.9439u + 7.38297 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -\frac{44135623059}{1741200047}u^{16} - \frac{64701445676}{1741200047}u^{15} + \cdots - \frac{242491906287}{1741200047}u + \frac{30678284767}{1741200047}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{17} - 6u^{15} + \cdots - 22u - 4$
c_2	$3(3u^{17} + 8u^{16} + \cdots + 4u - 1)$
c_3	$u^{17} + u^{16} + \cdots - 2u + 1$
c_4	$u^{17} - 6u^{15} + \cdots - 22u + 4$
c_5	$3(3u^{17} - 4u^{16} + \cdots + u + 1)$
c_6	$u^{17} - u^{16} + \cdots + u + 1$
c_7	$u^{17} - u^{16} + \cdots - 2u - 1$
c_8	$3(3u^{17} + 4u^{16} + \cdots - 16u - 1)$
c_9	$u^{17} + u^{15} + \cdots + 2u - 3$
c_{10}	$u^{17} + 3u^{16} + \cdots + 2u + 1$
c_{11}	$u^{17} + u^{16} + \cdots + u - 1$
c_{12}	$3(3u^{17} - 4u^{16} + \cdots - 16u + 1)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{17} - 12y^{16} + \cdots + 284y - 16$
c_2	$9(9y^{17} + 26y^{16} + \cdots + 74y - 1)$
c_3, c_7	$y^{17} - 9y^{16} + \cdots + 38y - 1$
c_5	$9(9y^{17} - 10y^{16} + \cdots + 11y - 1)$
c_6, c_{11}	$y^{17} - 17y^{16} + \cdots + 21y - 1$
c_8, c_{12}	$9(9y^{17} - 106y^{16} + \cdots + 306y - 1)$
c_9	$y^{17} + 2y^{16} + \cdots - 74y - 9$
c_{10}	$y^{17} - 7y^{16} + \cdots + 18y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.913531+0.295989I$ $a=\ \ 0.05718-2.22519I$ $b=-0.99919-1.13289I$	$-2.73995+5.58973I$	$-14.7195-14.9292I$
$u=-0.913531-0.295989I$ $a=\ \ 0.05718+2.22519I$ $b=-0.99919+1.13289I$	$-2.73995-5.58973I$	$-14.7195+14.9292I$
$u=\ \ 0.746198+0.579697I$ $a=-1.020710-0.703074I$ $b=\ \ 0.438436+0.114984I$	$-2.58933-1.24010I$	$-9.21646-2.49910I$
$u=\ \ 0.746198-0.579697I$ $a=-1.020710+0.703074I$ $b=\ \ 0.438436-0.114984I$	$-2.58933+1.24010I$	$-9.21646+2.49910I$
$u=\ \ 1.054940+0.314274I$ $a=-0.020580-1.222030I$ $b=\ \ 1.038410-0.263660I$	$0.034757-1.211170I$	$-4.04369+1.08267I$
$u=\ \ 1.054940-0.314274I$ $a=-0.020580+1.222030I$ $b=\ \ 1.038410+0.263660I$	$0.034757+1.211170I$	$-4.04369-1.08267I$
$u=\ \ 0.842327$ $a=-2.65102$ $b=-0.864123$	-4.72379	-24.4970
$u=-1.179030+0.129434I$ $a=\ \ 0.94657-1.63283I$ $b=\ \ 0.91663-1.58966I$	$-6.18205+4.62803I$	$-10.22173-9.23794I$
$u=-1.179030-0.129434I$ $a=\ \ 0.94657+1.63283I$ $b=\ \ 0.91663+1.58966I$	$-6.18205-4.62803I$	$-10.22173+9.23794I$
$u=\ \ 0.763614$ $a=\ \ 0.801355$ $b=\ \ 1.65928$	2.89359	-30.9950

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.181555 + 1.240140I$ $a = \ 0.498622 - 0.394070I$ $b = -1.081840 + 0.185413I$	$-3.19961 - 0.80486I$	$-5.40834 - 0.45526I$
$u = \ 0.181555 - 1.240140I$ $a = \ 0.498622 + 0.394070I$ $b = -1.081840 - 0.185413I$	$-3.19961 + 0.80486I$	$-5.40834 + 0.45526I$
$u = -1.226920 + 0.580299I$ $a = -0.32346 + 1.45584I$ $b = \ 1.047740 + 0.581256I$	$-5.68701 + 11.27440I$	$-6.54116 - 9.94911I$
$u = -1.226920 - 0.580299I$ $a = -0.32346 - 1.45584I$ $b = \ 1.047740 - 0.581256I$	$-5.68701 - 11.27440I$	$-6.54116 + 9.94911I$
$u = \ 1.38320$ $a = \ 0.246004$ $b = -0.607791$	-4.09024	-12.0430
$u = -1.59091$ $a = -0.752505$ $b = -0.216513$	-12.5077	-15.3590
$u = -0.0579860$ $a = -6.91908$ $b = -1.69121$	6.51659	24.9000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{17}-6u^{15}+\cdots-22u-4)(u^{124}+3u^{123}+\cdots+44u+4)$
c_2	$9(3u^{17}+8u^{16}+\cdots+4u-1)(3u^{124}-7u^{123}+\cdots-30u-1)$
c_3	$(u^{17}+u^{16}+\cdots-2u+1)(u^{124}+2u^{123}+\cdots+6u+1)$
c_4	$(u^{17}-6u^{15}+\cdots-22u+4)(u^{124}+3u^{123}+\cdots+44u+4)$
c_5	$9(3u^{17}-4u^{16}+\cdots+u+1)(3u^{124}+13u^{123}+\cdots+1185u+161)$
c_6	$(u^{17}-u^{16}+\cdots+u+1)(u^{124}-45u^{122}+\cdots-513u-31)$
c_7	$(u^{17}-u^{16}+\cdots-2u-1)(u^{124}+2u^{123}+\cdots+6u+1)$
c_8	$9(3u^{17}+4u^{16}+\cdots-16u-1)(3u^{124}-u^{123}+\cdots+11348u+1759)$
c_9	$(u^{17}+u^{15}+\cdots+2u-3)(u^{124}-u^{123}+\cdots-1188544u-211971)$
c_{10}	$(u^{17}+3u^{16}+\cdots+2u+1)(u^{124}+2u^{123}+\cdots-48068u-4247)$
c_{11}	$(u^{17}+u^{16}+\cdots+u-1)(u^{124}-45u^{122}+\cdots-513u-31)$
c_{12}	$9(3u^{17}-4u^{16}+\cdots-16u+1)(3u^{124}-u^{123}+\cdots+11348u+1759)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{17} - 12y^{16} + \cdots + 284y - 16)(y^{124} - 97y^{123} + \cdots + 544y + 16)$
c_2	$81(9y^{17} + 26y^{16} + \cdots + 74y - 1)(9y^{124} - 235y^{123} + \cdots - 228y + 1)$
c_3, c_7	$(y^{17} - 9y^{16} + \cdots + 38y - 1)(y^{124} - 66y^{123} + \cdots - 200y + 1)$
c_5	$81(9y^{17} - 10y^{16} + \cdots + 11y - 1)$ $\cdot (9y^{124} - 235y^{123} + \cdots + 463375y + 25921)$
c_6, c_{11}	$(y^{17} - 17y^{16} + \cdots + 21y - 1)(y^{124} - 90y^{123} + \cdots - 403847y + 961)$
c_8, c_{12}	$81(9y^{17} - 106y^{16} + \cdots + 306y - 1)$ $\cdot (9y^{124} - 1087y^{123} + \cdots - 208079860y + 3094081)$
c_9	$(y^{17} + 2y^{16} + \cdots - 74y - 9)$ $\cdot (y^{124} + 29y^{123} + \cdots + 896206404524y + 44931704841)$
c_{10}	$(y^{17} - 7y^{16} + \cdots + 18y - 1)$ $\cdot (y^{124} - 44y^{123} + \cdots - 1625831284y + 18037009)$