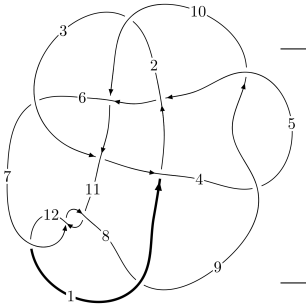
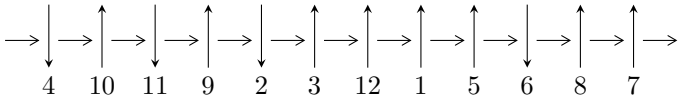
$12a_{1192}$ $(K12a_{1192})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -3.14046 \times 10^{797} u^{134} + 7.10704 \times 10^{797} u^{133} + \cdots + 1.10208 \times 10^{791} b + 1.52232 \times 10^{797}, \\ & 2.52302 \times 10^{798} u^{134} - 6.68142 \times 10^{798} u^{133} + \cdots + 1.10208 \times 10^{791} a + 4.59952 \times 10^{798}, \\ & u^{135} - 3u^{134} + \cdots + 34u - 1 \rangle \\ I_2^u = \langle & 226464710 u^{21} - 557699915 u^{20} + \cdots + 334625059 b + 512910644, \\ & 985188919589906 u^{21} - 1767028920893903 u^{20} + \cdots + 2608796188599443 a + 5274270817374945, \\ & u^{22} - 2u^{21} + \cdots + 7u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 157 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. $\boldsymbol{I_1^u = \langle -3.14 \times 10^{797} u^{134} + 7.11 \times 10^{797} u^{133} + \cdots + 1.10 \times 10^{791} b + 1.52 \times 10^{797},\ 2.52 \times 10^{798} u^{134} - 6.68 \times 10^{798} u^{133} + \cdots + 1.10 \times 10^{791} a + 4.60 \times 10^{798},\ u^{135} - 3u^{134} + \cdots + 34u - 1 \rangle}$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -2.28932 \times 10^7 u^{134} + 6.06254 \times 10^7 u^{133} + \cdots + 1.39248 \times 10^9 u - 4.17348 \times 10^7 \\ 2.84957 \times 10^6 u^{134} - 6.44874 \times 10^6 u^{133} + \cdots + 2.44178 \times 10^7 u - 1.38132 \times 10^6 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.00436 \times 10^7 u^{134} + 5.41767 \times 10^7 u^{133} + \cdots + 1.41690 \times 10^9 u - 4.31162 \times 10^7 \\ 2.84957 \times 10^6 u^{134} - 6.44874 \times 10^6 u^{133} + \cdots + 2.44178 \times 10^7 u - 1.38132 \times 10^6 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 773762. u^{134} - 2.08084 \times 10^6 u^{133} + \cdots - 6.02914 \times 10^7 u + 1.86749 \times 10^6 \\ -178328. u^{134} + 397315. u^{133} + \cdots + 4.37900 \times 10^6 u - 122221. \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -626624. u^{134} + 1.63753 \times 10^6 u^{133} + \cdots + 2.75411 \times 10^7 u - 759619. \\ 88780.4 u^{134} - 129429. u^{133} + \cdots + 5.71635 \times 10^6 u - 194638. \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2.34698 \times 10^7 u^{134} + 6.29580 \times 10^7 u^{133} + \cdots + 1.57488 \times 10^9 u - 4.76890 \times 10^7 \\ 2.42821 \times 10^6 u^{134} - 5.21868 \times 10^6 u^{133} + \cdots + 7.18985 \times 10^7 u - 2.87858 \times 10^6 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 145988. u^{134} - 489201. u^{133} + \cdots - 2.54112 \times 10^7 u + 819242. \\ -268209. u^{134} + 677536. u^{133} + \cdots + 1.88772 \times 10^7 u - 595757. \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 789912. u^{134} - 2.02803 \times 10^6 u^{133} + \cdots - 3.64636 \times 10^7 u + 1.03824 \times 10^6 \\ 18138.2 u^{134} - 140403. u^{133} + \cdots - 1.35309 \times 10^7 u + 443060. \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.40816 \times 10^7 u^{134} - 6.99553 \times 10^7 u^{133} + \cdots - 2.52277 \times 10^9 u + 7.88766 \times 10^7 \\ -7.24295 \times 10^6 u^{134} + 1.86957 \times 10^7 u^{133} + \cdots + 3.49936 \times 10^8 u - 1.01956 \times 10^7 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -8.35142 \times 10^6 u^{134} + 2.38578 \times 10^7 u^{133} + \cdots + 9.08734 \times 10^8 u - 2.87215 \times 10^7 \\ 1.60252 \times 10^6 u^{134} - 4.07114 \times 10^6 u^{133} + \cdots - 5.89469 \times 10^7 u + 1.59194 \times 10^6 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 1.04402 \times 10^7 u^{134} - 2.72921 \times 10^7 u^{133} + \cdots - 5.20718 \times 10^8 u + 1.50984 \times 10^7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{135} + 2u^{134} + \cdots - 28271u - 1457$
c_2	$u^{135} + 3u^{134} + \cdots - 10011u + 2809$
c_3	$u^{135} + u^{133} + \cdots + 378u - 49$
c_4, c_9	$u^{135} - 50u^{133} + \cdots + 1400u + 449$
c_5	$u^{135} - 3u^{134} + \cdots + 34u - 1$
c_6	$u^{135} - 4u^{134} + \cdots - 9766u - 1789$
c_7, c_{11}, c_{12}	$u^{135} + 58u^{133} + \cdots - u + 1$
c_8	$u^{135} - 27u^{133} + \cdots - 18053u + 20329$
c_{10}	$u^{135} - 3u^{134} + \cdots - 274u + 31$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{135} + 34y^{134} + \cdots + 1958158897y - 2122849$
c_2	$y^{135} - 33y^{134} + \cdots + 545632015y - 7890481$
c_3	$y^{135} + 2y^{134} + \cdots + 38416y - 2401$
c_4, c_9	$y^{135} - 100y^{134} + \cdots - 1149774y - 201601$
c_5	$y^{135} + 13y^{134} + \cdots + 52y - 1$
c_6	$y^{135} - 18y^{134} + \cdots + 159785912y - 3200521$
c_7, c_{11}, c_{12}	$y^{135} + 116y^{134} + \cdots + 173y - 1$
c_8	$y^{135} - 54y^{134} + \cdots + 68531901341y - 413268241$
c_{10}	$y^{135} - 15y^{134} + \cdots + 84314y - 961$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.113265 + 0.987669I$ $a = 0.681297 - 0.821913I$ $b = 0.117752 + 0.128516I$	$2.85172 + 4.49757I$	0
$u = 0.113265 - 0.987669I$ $a = 0.681297 + 0.821913I$ $b = 0.117752 - 0.128516I$	$2.85172 - 4.49757I$	0
$u = 0.860645 + 0.535066I$ $a = 0.441767 + 0.703810I$ $b = -1.340190 - 0.049080I$	$7.03467 + 0.12261I$	0
$u = 0.860645 - 0.535066I$ $a = 0.441767 - 0.703810I$ $b = -1.340190 + 0.049080I$	$7.03467 - 0.12261I$	0
$u = 0.735782 + 0.648575I$ $a = 0.980427 + 0.139573I$ $b = -0.760865 - 0.699325I$	$-4.21596 + 3.62972I$	0
$u = 0.735782 - 0.648575I$ $a = 0.980427 - 0.139573I$ $b = -0.760865 + 0.699325I$	$-4.21596 - 3.62972I$	0
$u = 0.814772 + 0.641752I$ $a = 0.470909 - 0.439347I$ $b = -0.016937 - 0.591112I$	$-1.19670 - 4.78867I$	0
$u = 0.814772 - 0.641752I$ $a = 0.470909 + 0.439347I$ $b = -0.016937 + 0.591112I$	$-1.19670 + 4.78867I$	0
$u = -1.037490 + 0.121745I$ $a = 0.664354 + 0.132282I$ $b = 0.680662 - 0.447198I$	$-7.16367 - 0.20216I$	0
$u = -1.037490 - 0.121745I$ $a = 0.664354 - 0.132282I$ $b = 0.680662 + 0.447198I$	$-7.16367 + 0.20216I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.025180+0.259325I$ $a=-0.259943-0.174105I$ $b=-0.143730-0.472481I$	$-2.40598+0.14159I$	0
$u=-1.025180-0.259325I$ $a=-0.259943+0.174105I$ $b=-0.143730+0.472481I$	$-2.40598-0.14159I$	0
$u=0.860643+0.635709I$ $a=-0.318139-0.091658I$ $b=0.147156+1.083470I$	$-8.47427-4.94689I$	0
$u=0.860643-0.635709I$ $a=-0.318139+0.091658I$ $b=0.147156-1.083470I$	$-8.47427+4.94689I$	0
$u=0.848167+0.677959I$ $a=0.059643-0.226540I$ $b=0.212499-0.913993I$	$-1.32260-5.18863I$	0
$u=0.848167-0.677959I$ $a=0.059643+0.226540I$ $b=0.212499+0.913993I$	$-1.32260+5.18863I$	0
$u=0.710926+0.574691I$ $a=-0.282155-0.857578I$ $b=1.272440+0.106550I$	$2.95940+4.07309I$	0
$u=0.710926-0.574691I$ $a=-0.282155+0.857578I$ $b=1.272440-0.106550I$	$2.95940-4.07309I$	0
$u=0.128738+1.092980I$ $a=-0.806968+0.844363I$ $b=0.017274-0.240905I$	$-2.00528+8.19060I$	0
$u=0.128738-1.092980I$ $a=-0.806968-0.844363I$ $b=0.017274+0.240905I$	$-2.00528-8.19060I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.878025 + 0.682667I$ $a = 0.0989160 + 0.0321380I$ $b = -0.286693 + 1.141040I$	$0.88524 - 9.17691I$	0
$u = 0.878025 - 0.682667I$ $a = 0.0989160 - 0.0321380I$ $b = -0.286693 - 1.141040I$	$0.88524 + 9.17691I$	0
$u = 0.911251 + 0.645815I$ $a = -0.990686 + 0.211371I$ $b = 0.473487 + 0.411266I$	$1.185540 - 0.457183I$	0
$u = 0.911251 - 0.645815I$ $a = -0.990686 - 0.211371I$ $b = 0.473487 - 0.411266I$	$1.185540 + 0.457183I$	0
$u = 0.890705 + 0.676288I$ $a = -0.1125130 + 0.0812755I$ $b = 0.260466 - 1.253060I$	$-4.12583 - 13.09360I$	0
$u = 0.890705 - 0.676288I$ $a = -0.1125130 - 0.0812755I$ $b = 0.260466 + 1.253060I$	$-4.12583 + 13.09360I$	0
$u = -0.934348 + 0.645022I$ $a = -0.185324 + 0.039012I$ $b = 0.098649 + 0.688670I$	$-1.16160 + 2.57725I$	0
$u = -0.934348 - 0.645022I$ $a = -0.185324 - 0.039012I$ $b = 0.098649 - 0.688670I$	$-1.16160 - 2.57725I$	0
$u = 0.799173 + 0.822811I$ $a = -0.657863 - 0.921637I$ $b = 0.905784 - 0.455126I$	$-0.53257 - 5.18276I$	0
$u = 0.799173 - 0.822811I$ $a = -0.657863 + 0.921637I$ $b = 0.905784 + 0.455126I$	$-0.53257 + 5.18276I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.660710 + 0.950328I$ $a = 1.19143 + 1.65477I$ $b = -1.133570 - 0.027784I$	$2.08716 - 0.78439I$	0
$u = 0.660710 - 0.950328I$ $a = 1.19143 - 1.65477I$ $b = -1.133570 + 0.027784I$	$2.08716 + 0.78439I$	0
$u = -0.623782 + 0.982038I$ $a = 0.678990 - 0.252270I$ $b = -0.374041 - 0.523959I$	$-4.66604 + 0.74110I$	0
$u = -0.623782 - 0.982038I$ $a = 0.678990 + 0.252270I$ $b = -0.374041 + 0.523959I$	$-4.66604 - 0.74110I$	0
$u = -1.16597$ $a = -0.412747$ $b = -0.307790$	-2.56017	0
$u = 0.186140 + 0.793523I$ $a = -0.437472 + 0.818838I$ $b = -0.452905 + 0.004537I$	$0.169069 + 1.097840I$	0
$u = 0.186140 - 0.793523I$ $a = -0.437472 - 0.818838I$ $b = -0.452905 - 0.004537I$	$0.169069 - 1.097840I$	0
$u = -0.803504 + 0.082435I$ $a = -1.141540 + 0.487667I$ $b = -0.467619 + 0.786815I$	$-3.73244 + 5.75040I$	0
$u = -0.803504 - 0.082435I$ $a = -1.141540 - 0.487667I$ $b = -0.467619 - 0.786815I$	$-3.73244 - 5.75040I$	0
$u = 0.678524 + 0.985520I$ $a = -1.35158 - 1.53480I$ $b = 1.217240 - 0.015294I$	$6.10538 - 4.33414I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.678524 - 0.985520I$ $a = -1.35158 + 1.53480I$ $b = 1.217240 + 0.015294I$	$6.10538 + 4.33414I$	0
$u = 1.020550 + 0.649717I$ $a = -0.722942 - 0.650449I$ $b = 1.399820 - 0.017306I$	$3.40506 - 3.87432I$	0
$u = 1.020550 - 0.649717I$ $a = -0.722942 + 0.650449I$ $b = 1.399820 + 0.017306I$	$3.40506 + 3.87432I$	0
$u = -0.785539 + 0.032431I$ $a = 0.941492 - 0.659209I$ $b = 0.380737 - 0.768603I$	$0.73347 + 2.01678I$	0
$u = -0.785539 - 0.032431I$ $a = 0.941492 + 0.659209I$ $b = 0.380737 + 0.768603I$	$0.73347 - 2.01678I$	0
$u = -0.510870 + 1.115630I$ $a = -1.364050 + 0.190089I$ $b = 1.47571 + 0.55159I$	$2.83386 + 11.05840I$	0
$u = -0.510870 - 1.115630I$ $a = -1.364050 - 0.190089I$ $b = 1.47571 - 0.55159I$	$2.83386 - 11.05840I$	0
$u = 0.681057 + 1.025040I$ $a = 1.53228 + 1.46961I$ $b = -1.301120 + 0.030364I$	$2.19055 - 7.83743I$	0
$u = 0.681057 - 1.025040I$ $a = 1.53228 - 1.46961I$ $b = -1.301120 - 0.030364I$	$2.19055 + 7.83743I$	0
$u = -0.073348 + 0.759587I$ $a = 1.246890 - 0.118228I$ $b = -0.901737 - 0.733105I$	$-3.99845 + 2.94185I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.073348-0.759587I$ $a=\ \ 1.246890+0.118228I$ $b=-0.901737+0.733105I$	$-3.99845-2.94185I$	0
$u=\ \ 0.912685+0.858631I$ $a=\ \ 1.111190+0.646654I$ $b=-1.41862+0.63862I$	$2.99572-9.83715I$	0
$u=\ \ 0.912685-0.858631I$ $a=\ \ 1.111190-0.646654I$ $b=-1.41862-0.63862I$	$2.99572+9.83715I$	0
$u=\ \ 0.831410+0.945844I$ $a=\ \ 1.14521+0.96231I$ $b=-1.230520+0.303803I$	$3.62248-4.82319I$	0
$u=\ \ 0.831410-0.945844I$ $a=\ \ 1.14521-0.96231I$ $b=-1.230520-0.303803I$	$3.62248+4.82319I$	0
$u=\ \ 0.917156+0.871492I$ $a=-1.134320-0.697525I$ $b=\ \ 1.45016-0.55058I$	$7.24059-6.04896I$	0
$u=\ \ 0.917156-0.871492I$ $a=-1.134320+0.697525I$ $b=\ \ 1.45016+0.55058I$	$7.24059+6.04896I$	0
$u=-1.046830+0.725594I$ $a=\ \ 0.174384+0.160697I$ $b=-0.021593-0.786204I$	$-5.93701+5.64897I$	0
$u=-1.046830-0.725594I$ $a=\ \ 0.174384-0.160697I$ $b=-0.021593+0.786204I$	$-5.93701-5.64897I$	0
$u=-0.721562+0.021417I$ $a=-0.644609-0.958208I$ $b=-0.247591-0.780861I$	$-2.57014+1.53232I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.721562-0.021417I$ $a=-0.644609+0.958208I$ $b=-0.247591+0.780861I$	$-2.57014-1.53232I$	0
$u=\ \ 0.929589+0.881602I$ $a=\ \ 1.157520+0.737711I$ $b=-1.49770+0.45656I$	$3.68767-2.32017I$	0
$u=\ \ 0.929589-0.881602I$ $a=\ \ 1.157520-0.737711I$ $b=-1.49770-0.45656I$	$3.68767+2.32017I$	0
$u=-0.502642+1.183090I$ $a=\ \ 1.336180-0.212783I$ $b=-1.43852-0.47946I$	$7.84531+6.66728I$	0
$u=-0.502642-1.183090I$ $a=\ \ 1.336180+0.212783I$ $b=-1.43852+0.47946I$	$7.84531-6.66728I$	0
$u=\ \ 0.699073+0.049555I$ $a=-1.275360-0.108678I$ $b=\ \ 1.93131+0.11380I$	$-0.22719+3.29859I$	0
$u=\ \ 0.699073-0.049555I$ $a=-1.275360+0.108678I$ $b=\ \ 1.93131-0.11380I$	$-0.22719-3.29859I$	0
$u=\ \ 0.683748$ $a=\ \ 1.24296$ $b=-1.90909$	3.79367	0
$u=-0.110721+0.664716I$ $a=-0.514735+0.543579I$ $b=-0.167940+0.470048I$	$0.47299+1.56799I$	0
$u=-0.110721-0.664716I$ $a=-0.514735-0.543579I$ $b=-0.167940-0.470048I$	$0.47299-1.56799I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.596828 + 0.214125I$ $a = 1.125620 + 0.434099I$ $b = -1.55864 - 0.29454I$	$-1.55194 - 1.67041I$	0
$u = 0.596828 - 0.214125I$ $a = 1.125620 - 0.434099I$ $b = -1.55864 + 0.29454I$	$-1.55194 + 1.67041I$	0
$u = 0.800502 + 1.124610I$ $a = -1.63963 - 0.88238I$ $b = 1.370820 - 0.229139I$	$0.63178 - 3.54694I$	0
$u = 0.800502 - 1.124610I$ $a = -1.63963 + 0.88238I$ $b = 1.370820 + 0.229139I$	$0.63178 + 3.54694I$	0
$u = -0.461632 + 1.303820I$ $a = -1.282790 + 0.227613I$ $b = 1.350970 + 0.392320I$	$5.30500 + 1.88337I$	0
$u = -0.461632 - 1.303820I$ $a = -1.282790 - 0.227613I$ $b = 1.350970 - 0.392320I$	$5.30500 - 1.88337I$	0
$u = 0.469438 + 0.290431I$ $a = 2.55695 - 0.63671I$ $b = -0.490292 + 0.172982I$	$-2.89562 + 3.73771I$	0
$u = 0.469438 - 0.290431I$ $a = 2.55695 + 0.63671I$ $b = -0.490292 - 0.172982I$	$-2.89562 - 3.73771I$	0
$u = 0.529864$ $a = -1.16214$ $b = -1.36030$	7.03558	0
$u = 0.344740 + 0.390293I$ $a = -1.72327 - 0.24169I$ $b = 0.878378 + 0.276977I$	$1.35773 + 0.40457I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.344740 - 0.390293I$ $a = -1.72327 + 0.24169I$ $b = 0.878378 - 0.276977I$	$1.35773 - 0.40457I$	0
$u = -1.40182 + 0.50475I$ $a = 0.284184 - 0.156581I$ $b = -0.257910 + 0.452313I$	$-7.52635 - 1.31708I$	0
$u = -1.40182 - 0.50475I$ $a = 0.284184 + 0.156581I$ $b = -0.257910 - 0.452313I$	$-7.52635 + 1.31708I$	0
$u = 0.503171$ $a = -2.21926$ $b = 0.480106$	1.41870	0
$u = 0.486858 + 0.085186I$ $a = 1.21334 - 1.01776I$ $b = 1.364470 - 0.044561I$	$3.13961 - 3.99137I$	0
$u = 0.486858 - 0.085186I$ $a = 1.21334 + 1.01776I$ $b = 1.364470 + 0.044561I$	$3.13961 + 3.99137I$	0
$u = -0.275357 + 0.399472I$ $a = -0.710038 - 0.048106I$ $b = 0.28906 + 1.52856I$	$-2.14973 - 3.95479I$	0
$u = -0.275357 - 0.399472I$ $a = -0.710038 + 0.048106I$ $b = 0.28906 - 1.52856I$	$-2.14973 + 3.95479I$	0
$u = -1.52435 + 0.22367I$ $a = 0.117445 - 0.241361I$ $b = -1.108240 + 0.089113I$	$-1.16386 - 4.86473I$	0
$u = -1.52435 - 0.22367I$ $a = 0.117445 + 0.241361I$ $b = -1.108240 - 0.089113I$	$-1.16386 + 4.86473I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.362839 + 0.269339I$ $a = 2.79234 + 1.35593I$ $b = -0.991695 + 0.163221I$	$-0.22669 - 2.60398I$	0
$u = 0.362839 - 0.269339I$ $a = 2.79234 - 1.35593I$ $b = -0.991695 - 0.163221I$	$-0.22669 + 2.60398I$	0
$u = 0.338930 + 0.289852I$ $a = -4.08673 - 0.82274I$ $b = 0.887315 - 0.344786I$	$-6.41630 - 3.14888I$	0
$u = 0.338930 - 0.289852I$ $a = -4.08673 + 0.82274I$ $b = 0.887315 + 0.344786I$	$-6.41630 + 3.14888I$	0
$u = 0.92378 + 1.26757I$ $a = 1.58647 + 0.46046I$ $b = -1.320130 + 0.299456I$	$3.28131 - 6.19403I$	0
$u = 0.92378 - 1.26757I$ $a = 1.58647 - 0.46046I$ $b = -1.320130 - 0.299456I$	$3.28131 + 6.19403I$	0
$u = 0.343464 + 0.238468I$ $a = 3.08122 + 2.78974I$ $b = -1.129430 + 0.275369I$	$0.24224 - 2.31217I$	0
$u = 0.343464 - 0.238468I$ $a = 3.08122 - 2.78974I$ $b = -1.129430 - 0.275369I$	$0.24224 + 2.31217I$	0
$u = 0.322592 + 0.244871I$ $a = -4.07120 - 2.96942I$ $b = 1.113020 - 0.360653I$	$3.03257 - 6.25979I$	0
$u = 0.322592 - 0.244871I$ $a = -4.07120 + 2.96942I$ $b = 1.113020 + 0.360653I$	$3.03257 + 6.25979I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.312254 + 0.250197I$ $a = 4.65999 + 2.92666I$ $b = -1.101000 + 0.406042I$	$-1.71326 - 10.24910I$	0
$u = 0.312254 - 0.250197I$ $a = 4.65999 - 2.92666I$ $b = -1.101000 - 0.406042I$	$-1.71326 + 10.24910I$	0
$u = -0.202439 + 0.340795I$ $a = 0.509371 - 0.027146I$ $b = 0.08907 - 1.55180I$	$2.41676 - 0.62131I$	0
$u = -0.202439 - 0.340795I$ $a = 0.509371 + 0.027146I$ $b = 0.08907 + 1.55180I$	$2.41676 + 0.62131I$	0
$u = 0.87476 + 1.34957I$ $a = -1.69051 - 0.33048I$ $b = 1.305540 - 0.348736I$	$-1.76191 - 9.75342I$	0
$u = 0.87476 - 1.34957I$ $a = -1.69051 + 0.33048I$ $b = 1.305540 + 0.348736I$	$-1.76191 + 9.75342I$	0
$u = -1.63933$ $a = -0.190694$ $b = 1.10899$	3.00275	0
$u = 0.336086 + 0.129857I$ $a = -0.381444 - 0.278567I$ $b = 1.63989 - 0.17981I$	$2.25999 - 0.00832I$	0
$u = 0.336086 - 0.129857I$ $a = -0.381444 + 0.278567I$ $b = 1.63989 + 0.17981I$	$2.25999 + 0.00832I$	0
$u = -1.17641 + 1.15970I$ $a = 1.295170 - 0.463740I$ $b = -1.47542 - 0.52017I$	$1.2734 + 19.2521I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.17641-1.15970I$ $a=\ \ 1.295170+0.463740I$ $b=-1.47542+0.52017I$	$1.2734-19.2521I$	0
$u=-1.19294+1.16591I$ $a=-1.254690+0.475690I$ $b=\ \ 1.45705+0.47955I$	$6.3093+14.8659I$	0
$u=-1.19294-1.16591I$ $a=-1.254690-0.475690I$ $b=\ \ 1.45705-0.47955I$	$6.3093-14.8659I$	0
$u=\ \ 1.18514+1.17389I$ $a=-1.267050-0.397142I$ $b=\ \ 1.290960-0.216214I$	$1.86116-2.77062I$	0
$u=\ \ 1.18514-1.17389I$ $a=-1.267050+0.397142I$ $b=\ \ 1.290960+0.216214I$	$1.86116+2.77062I$	0
$u=-1.13145+1.26344I$ $a=-1.165930+0.305011I$ $b=\ \ 1.228230+0.527242I$	$-5.09173+10.54550I$	0
$u=-1.13145-1.26344I$ $a=-1.165930-0.305011I$ $b=\ \ 1.228230-0.527242I$	$-5.09173-10.54550I$	0
$u=-1.21691+1.18703I$ $a=\ \ 1.193710-0.467388I$ $b=-1.41042-0.43323I$	$3.78055+10.12250I$	0
$u=-1.21691-1.18703I$ $a=\ \ 1.193710+0.467388I$ $b=-1.41042+0.43323I$	$3.78055-10.12250I$	0
$u=-0.217959+0.166660I$ $a=-0.247276-0.156307I$ $b=-0.25796+2.20317I$	$-1.09460+2.31317I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.217959-0.166660I$ $a=-0.247276+0.156307I$ $b=-0.25796-2.20317I$	$-1.09460-2.31317I$	0
$u=-1.25697+1.37495I$ $a=1.051380-0.356693I$ $b=-1.209610-0.338013I$	$2.32572+8.44135I$	0
$u=-1.25697-1.37495I$ $a=1.051380+0.356693I$ $b=-1.209610+0.338013I$	$2.32572-8.44135I$	0
$u=-0.86300+1.68735I$ $a=-1.116060+0.354188I$ $b=1.234540+0.011606I$	$4.78255-0.53248I$	0
$u=-0.86300-1.68735I$ $a=-1.116060-0.354188I$ $b=1.234540-0.011606I$	$4.78255+0.53248I$	0
$u=-1.00979+1.62268I$ $a=1.088610-0.410789I$ $b=-1.260780+0.094495I$	$7.02452-5.50032I$	0
$u=-1.00979-1.62268I$ $a=1.088610+0.410789I$ $b=-1.260780-0.094495I$	$7.02452+5.50032I$	0
$u=-1.11095+1.59740I$ $a=-1.051960+0.439884I$ $b=1.247420-0.167333I$	$1.78899-9.96196I$	0
$u=-1.11095-1.59740I$ $a=-1.051960-0.439884I$ $b=1.247420+0.167333I$	$1.78899+9.96196I$	0
$u=-0.70369+1.89807I$ $a=1.044730-0.301941I$ $b=-0.949065-0.069035I$	$-4.58178+0.03823I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.70369-1.89807I$ $a=\ \ 1.044730+0.301941I$ $b=-0.949065+0.069035I$	$-4.58178-0.03823I$	0
$u=-1.25665+1.72125I$ $a=-0.999151+0.289074I$ $b=\ \ 1.100490+0.226136I$	$3.01340+3.13778I$	0
$u=-1.25665-1.72125I$ $a=-0.999151-0.289074I$ $b=\ \ 1.100490-0.226136I$	$3.01340-3.13778I$	0
$u=\ \ 1.45520+1.64495I$ $a=\ \ 1.245450+0.114137I$ $b=-1.171840+0.197209I$	$-4.71671-1.25527I$	0
$u=\ \ 1.45520-1.64495I$ $a=\ \ 1.245450-0.114137I$ $b=-1.171840-0.197209I$	$-4.71671+1.25527I$	0

II. $\boldsymbol{I_2^u = \langle 2.26\times10^8 u^{21} - 5.58\times10^8 u^{20} + \cdots + 3.35\times10^8 b + 5.13\times10^8,\ 9.85\times10^{14} u^{21} - 1.77\times10^{15} u^{20} + \cdots + 2.61\times10^{15} a + 5.27\times10^{15},\ u^{22} - 2u^{21} + \cdots + 7u + 1\rangle}$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -0.377641u^{21} + 0.677335u^{20} + \cdots - 7.00407u - 2.02173 \\ -0.676772u^{21} + 1.66664u^{20} + \cdots - 10.7165u - 1.53279 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.05441u^{21} + 2.34398u^{20} + \cdots - 17.7206u - 3.55452 \\ -0.676772u^{21} + 1.66664u^{20} + \cdots - 10.7165u - 1.53279 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.581818u^{21} + 1.35182u^{20} + \cdots - 8.88851u - 0.373159 \\ -0.229973u^{21} + 0.606745u^{20} + \cdots - 1.92712u + 0.581844 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.373186u^{21} - 0.910033u^{20} + \cdots + 8.01554u + 1.35048 \\ 0.132199u^{21} - 0.298631u^{20} + \cdots + 1.90195u - 0.564981 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.326188u^{21} + 0.455830u^{20} + \cdots - 7.59571u - 2.25688 \\ -0.465189u^{21} + 1.05072u^{20} + \cdots - 8.42288u - 1.10110 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.418156u^{21} - 1.06629u^{20} + \cdots + 6.62668u - 0.0000263286 \\ -u^{21} + 2u^{20} + \cdots - 21u - 6 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0449705u^{21} + 0.156252u^{20} + \cdots + 1.38886u + 0.350502 \\ 0.188183u^{21} - 0.459541u^{20} + \cdots + 4.69956u - 0.418182 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.433073u^{21} + 0.939557u^{20} + \cdots - 5.99303u - 2.07041 \\ -0.558323u^{21} + 1.09696u^{20} + \cdots - 12.7767u - 3.04369 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.473084u^{21} + 1.37781u^{20} + \cdots - 2.45238u - 1.73187 \\ -0.476167u^{21} + 1.12092u^{20} + \cdots - 4.82451u - 2.60346 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{60866341304196}{153458599329379}u^{21} - \frac{479435274998982}{153458599329379}u^{20} + \cdots + \frac{6478241749602019}{153458599329379}u - \frac{2197273513792900}{153458599329379}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{22} - 9u^{21} + \cdots - 10u + 1$
c_2	$u^{22} - 2u^{20} + \cdots + 7u^2 - 1$
c_3	$u^{22} + u^{21} + \cdots - u - 1$
c_4	$u^{22} + u^{21} + \cdots + u + 1$
c_5	$u^{22} - 2u^{21} + \cdots + 7u + 1$
c_6	$u^{22} + 3u^{21} + \cdots + 5u - 1$
c_7	$u^{22} - u^{21} + \cdots + 4u + 1$
c_8	$u^{22} + u^{21} + \cdots + 8u + 1$
c_9	$u^{22} - u^{21} + \cdots - u + 1$
c_{10}	$u^{22} - u^{20} + \cdots - u - 1$
c_{11}, c_{12}	$u^{22} + u^{21} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{22} + 15y^{21} + \cdots + 8y + 1$
c_2	$y^{22} - 4y^{21} + \cdots - 14y + 1$
c_3	$y^{22} + 7y^{21} + \cdots + 5y + 1$
c_4, c_9	$y^{22} - 15y^{21} + \cdots - 17y + 1$
c_5	$y^{22} + 6y^{21} + \cdots - 7y + 1$
c_6	$y^{22} + 7y^{21} + \cdots - 19y + 1$
c_7, c_{11}, c_{12}	$y^{22} + 21y^{21} + \cdots - 16y + 1$
c_8	$y^{22} - y^{21} + \cdots - 20y + 1$
c_{10}	$y^{22} - 2y^{21} + \cdots - 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.610688 + 0.899266I$ $a = 1.68686 + 1.30594I$ $b = -1.267650 + 0.300180I$	$1.63595 - 3.21289I$	$7.43582 + 4.24859I$
$u = 0.610688 - 0.899266I$ $a = 1.68686 - 1.30594I$ $b = -1.267650 - 0.300180I$	$1.63595 + 3.21289I$	$7.43582 - 4.24859I$
$u = -1.14268$ $a = 1.19157$ $b = -0.353364$	0.859611	-8.31100
$u = -0.852113 + 0.090198I$ $a = -1.342800 + 0.203503I$ $b = 0.144235 - 0.425856I$	$-3.50623 - 4.36104I$	$-1.80000 + 5.50101I$
$u = -0.852113 - 0.090198I$ $a = -1.342800 - 0.203503I$ $b = 0.144235 + 0.425856I$	$-3.50623 + 4.36104I$	$-1.80000 - 5.50101I$
$u = 0.296269 + 1.128580I$ $a = 2.14710 + 0.36131I$ $b = -1.159870 + 0.357343I$	$-0.49345 - 10.08610I$	$5.75501 + 9.28202I$
$u = 0.296269 - 1.128580I$ $a = 2.14710 - 0.36131I$ $b = -1.159870 - 0.357343I$	$-0.49345 + 10.08610I$	$5.75501 - 9.28202I$
$u = 0.475357 + 1.101410I$ $a = -1.89493 - 0.70101I$ $b = 1.196890 - 0.319730I$	$4.47343 - 6.37770I$	$10.78853 + 8.74826I$
$u = 0.475357 - 1.101410I$ $a = -1.89493 + 0.70101I$ $b = 1.196890 + 0.319730I$	$4.47343 + 6.37770I$	$10.78853 - 8.74826I$
$u = -1.165630 + 0.335659I$ $a = 0.132755 + 0.585923I$ $b = 0.508114 - 0.224487I$	$-6.76370 - 1.30514I$	$1.42098 + 4.04280I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.165630-0.335659I$ $a=\ \ 0.132755-0.585923I$ $b=\ \ 0.508114+0.224487I$	$-6.76370+1.30514I$	$1.42098-4.04280I$
$u=-1.24067$ $a=-0.249583$ $b=-0.440434$	-2.37767	26.4560
$u=\ \ 1.007900+0.839742I$ $a=-0.815452-1.030280I$ $b=\ \ 1.273710-0.191539I$	$1.83569-6.02008I$	$4.13492+6.19150I$
$u=\ \ 1.007900-0.839742I$ $a=-0.815452+1.030280I$ $b=\ \ 1.273710+0.191539I$	$1.83569+6.02008I$	$4.13492-6.19150I$
$u=\ \ 0.131479+0.444132I$ $a=\ \ 0.945924+0.252263I$ $b=-1.45553+0.71114I$	$2.25069-0.18646I$	$23.6184+15.1122I$
$u=\ \ 0.131479-0.444132I$ $a=\ \ 0.945924-0.252263I$ $b=-1.45553-0.71114I$	$2.25069+0.18646I$	$23.6184-15.1122I$
$u=-0.194625+0.133995I$ $a=-0.807012-0.989793I$ $b=\ \ 0.69622-1.72352I$	$-1.15068+2.23575I$	$-25.3801+5.9771I$
$u=-0.194625-0.133995I$ $a=-0.807012+0.989793I$ $b=\ \ 0.69622+1.72352I$	$-1.15068-2.23575I$	$-25.3801-5.9771I$
$u=\ \ 0.96386+1.50863I$ $a=\ \ 1.147130+0.432178I$ $b=-1.158450+0.203165I$	$3.45672-2.88063I$	$11.33769+1.61474I$
$u=\ \ 0.96386-1.50863I$ $a=\ \ 1.147130-0.432178I$ $b=-1.158450-0.203165I$	$3.45672+2.88063I$	$11.33769-1.61474I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.91849 + 1.85068I$ $a = -1.170580 - 0.039047I$ $b = 1.119230 - 0.193683I$	$-4.26926 - 1.06311I$	$7.61642 + 3.12981I$
$u = 0.91849 - 1.85068I$ $a = -1.170580 + 0.039047I$ $b = 1.119230 + 0.193683I$	$-4.26926 + 1.06311I$	$7.61642 - 3.12981I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{22}-9u^{21}+\cdots-10u+1)(u^{135}+2u^{134}+\cdots-28271u-1457)$
c_2	$(u^{22}-2u^{20}+\cdots+7u^2-1)(u^{135}+3u^{134}+\cdots-10011u+2809)$
c_3	$(u^{22}+u^{21}+\cdots-u-1)(u^{135}+u^{133}+\cdots+378u-49)$
c_4	$(u^{22}+u^{21}+\cdots+u+1)(u^{135}-50u^{133}+\cdots+1400u+449)$
c_5	$(u^{22}-2u^{21}+\cdots+7u+1)(u^{135}-3u^{134}+\cdots+34u-1)$
c_6	$(u^{22}+3u^{21}+\cdots+5u-1)(u^{135}-4u^{134}+\cdots-9766u-1789)$
c_7	$(u^{22}-u^{21}+\cdots+4u+1)(u^{135}+58u^{133}+\cdots-u+1)$
c_8	$(u^{22}+u^{21}+\cdots+8u+1)(u^{135}-27u^{133}+\cdots-18053u+20329)$
c_9	$(u^{22}-u^{21}+\cdots-u+1)(u^{135}-50u^{133}+\cdots+1400u+449)$
c_{10}	$(u^{22}-u^{20}+\cdots-u-1)(u^{135}-3u^{134}+\cdots-274u+31)$
c_{11}, c_{12}	$(u^{22}+u^{21}+\cdots-4u+1)(u^{135}+58u^{133}+\cdots-u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{22}+15y^{21}+\cdots+8y+1)$ $\cdot(y^{135}+34y^{134}+\cdots+1958158897y-2122849)$
c_2	$(y^{22}-4y^{21}+\cdots-14y+1)$ $\cdot(y^{135}-33y^{134}+\cdots+545632015y-7890481)$
c_3	$(y^{22}+7y^{21}+\cdots+5y+1)(y^{135}+2y^{134}+\cdots+38416y-2401)$
c_4, c_9	$(y^{22}-15y^{21}+\cdots-17y+1)$ $\cdot(y^{135}-100y^{134}+\cdots-1149774y-201601)$
c_5	$(y^{22}+6y^{21}+\cdots-7y+1)(y^{135}+13y^{134}+\cdots+52y-1)$
c_6	$(y^{22}+7y^{21}+\cdots-19y+1)$ $\cdot(y^{135}-18y^{134}+\cdots+159785912y-3200521)$
c_7, c_{11}, c_{12}	$(y^{22}+21y^{21}+\cdots-16y+1)(y^{135}+116y^{134}+\cdots+173y-1)$
c_8	$(y^{22}-y^{21}+\cdots-20y+1)$ $\cdot(y^{135}-54y^{134}+\cdots+68531901341y-413268241)$
c_{10}	$(y^{22}-2y^{21}+\cdots-5y+1)(y^{135}-15y^{134}+\cdots+84314y-961)$