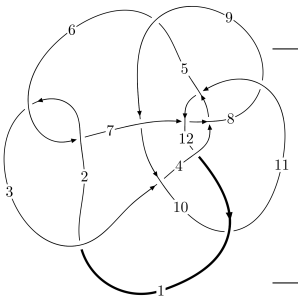
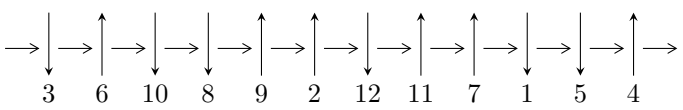
$12a_{0439}$ $(K12a_{0439})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5.09741 \times 10^{706} u^{198} - 3.08612 \times 10^{706} u^{197} + \cdots + 2.09580 \times 10^{706} b + 1.26886 \times 10^{709},$$
$$- 1.78590 \times 10^{709} u^{198} + 9.32188 \times 10^{708} u^{197} + \cdots + 2.91316 \times 10^{708} a + 1.59296 \times 10^{711},$$
$$u^{199} + 40u^{197} + \cdots - 886u - 139 \rangle$$
$$I_2^u = \langle 9.05599 \times 10^{16} u^{38} - 1.21944 \times 10^{17} u^{37} + \cdots + 1.56396 \times 10^{17} b - 8.41549 \times 10^{16},$$
$$1.35450 \times 10^{17} u^{38} + 1.15254 \times 10^{17} u^{37} + \cdots + 1.56396 \times 10^{17} a - 4.55146 \times 10^{17},\ u^{39} + u^{38} + \cdots - 2u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 238 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. $\boldsymbol{I_1^u = \langle -5.10 \times 10^{706} u^{198} - 3.09 \times 10^{706} u^{197} + \cdots + 2.10 \times 10^{706} b + 1.27 \times 10^{709},\ -1.79 \times 10^{709} u^{198} + 9.32 \times 10^{708} u^{197} + \cdots + 2.91 \times 10^{708} a + 1.59 \times 10^{711},\ u^{199} + 40 u^{197} + \cdots - 886 u - 139 \rangle}$

(i) Arc colorings

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

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

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

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

$$a_{10} = \begin{pmatrix} 6.13044u^{198} - 3.19992u^{197} + \cdots - 3739.45u - 546.816 \\ 2.43220u^{198} + 1.47253u^{197} + \cdots - 3493.24u - 605.430 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 4.17955u^{198} + 0.616113u^{197} + \cdots - 4122.45u - 662.313 \\ 1.45668u^{198} - 2.78421u^{197} + \cdots + 594.418u + 149.180 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} 4.09110u^{198} - 3.67876u^{197} + \cdots - 1327.70u - 134.756 \\ 1.44768u^{198} + 1.44308u^{197} + \cdots - 2495.03u - 443.280 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 3.69824u^{198} - 4.67245u^{197} + \cdots - 246.204u + 58.6142 \\ 2.43220u^{198} + 1.47253u^{197} + \cdots - 3493.24u - 605.430 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -4.00690u^{198} - 2.71923u^{197} + \cdots + 5508.41u + 933.641 \\ -0.755236u^{198} + 1.30418u^{197} + \cdots - 297.396u - 75.4139 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.736592u^{198} - 2.09312u^{197} + \cdots + 505.805u + 125.305 \\ -1.14676u^{198} + 0.921419u^{197} + \cdots + 564.378u + 70.9771 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -15.2221u^{198} + 2.57203u^{197} + \cdots + 12340.0u + 1899.53 \\ 2.28124u^{198} - 0.641223u^{197} + \cdots - 1770.10u - 274.405 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 21.1479u^{198} - 52.4779u^{197} + \cdots + 20179.0u + 4338.51$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{199} + 80u^{198} + \cdots - 682010u - 19321$
c_2, c_6	$u^{199} + 40u^{197} + \cdots - 886u + 139$
c_3	$u^{199} + 4u^{197} + \cdots - 15u + 2$
c_4	$u^{199} + 4u^{198} + \cdots - 43u + 7$
c_5	$u^{199} + u^{198} + \cdots + 3083941u - 3270107$
c_7	$u^{199} - 4u^{198} + \cdots - 48u + 1$
c_8	$u^{199} - 13u^{198} + \cdots + 67u + 1$
c_9	$u^{199} - 5u^{198} + \cdots - 35977u - 38728$
c_{10}	$u^{199} + 2u^{198} + \cdots - 73602u + 7609$
c_{11}	$u^{199} + 2u^{198} + \cdots - 81u + 4$
c_{12}	$u^{199} + 14u^{198} + \cdots + 7u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{199} + 84y^{198} + \cdots - 5691751490y - 373301041$
c_2, c_6	$y^{199} + 80y^{198} + \cdots - 682010y - 19321$
c_3	$y^{199} + 8y^{198} + \cdots + 809y - 4$
c_4	$y^{199} - 30y^{198} + \cdots - 41y - 49$
c_5	$y^{199} - 73y^{198} + \cdots + 323847798103351y - 10693599791449$
c_7	$y^{199} - 12y^{198} + \cdots + 64y - 1$
c_8	$y^{199} - 21y^{198} + \cdots + 205y - 1$
c_9	$y^{199} - 41y^{198} + \cdots + 110633557809y - 1499857984$
c_{10}	$y^{199} + 8y^{198} + \cdots - 4561096888y - 57896881$
c_{11}	$y^{199} + 6y^{198} + \cdots - 1495y - 16$
c_{12}	$y^{199} + 44y^{198} + \cdots - 2003y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.587023+0.809948I$ $a=-1.58919-1.33971I$ $b=-1.68634-0.71778I$	$3.11712-1.71695I$	0
$u=-0.587023-0.809948I$ $a=-1.58919+1.33971I$ $b=-1.68634+0.71778I$	$3.11712+1.71695I$	0
$u=0.498494+0.869106I$ $a=1.51301-0.12512I$ $b=-0.06660+1.91633I$	$-2.46657-1.63655I$	0
$u=0.498494-0.869106I$ $a=1.51301+0.12512I$ $b=-0.06660-1.91633I$	$-2.46657+1.63655I$	0
$u=0.846999+0.545832I$ $a=-1.30555+0.81965I$ $b=-1.58559+0.36312I$	$4.92626-3.40647I$	0
$u=0.846999-0.545832I$ $a=-1.30555-0.81965I$ $b=-1.58559-0.36312I$	$4.92626+3.40647I$	0
$u=0.460856+0.898481I$ $a=-2.31383-0.07866I$ $b=-0.58153-1.29075I$	$-2.56759+5.97714I$	0
$u=0.460856-0.898481I$ $a=-2.31383+0.07866I$ $b=-0.58153+1.29075I$	$-2.56759-5.97714I$	0
$u=0.658313+0.738587I$ $a=1.086630+0.630093I$ $b=-0.12798+1.62661I$	$3.69763-1.62018I$	0
$u=0.658313-0.738587I$ $a=1.086630-0.630093I$ $b=-0.12798-1.62661I$	$3.69763+1.62018I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.496193 + 0.885382I$ $a = -0.595402 - 0.418175I$ $b = 0.42150 - 1.71955I$	$-2.51095 + 5.65371I$	0
$u = 0.496193 - 0.885382I$ $a = -0.595402 + 0.418175I$ $b = 0.42150 + 1.71955I$	$-2.51095 - 5.65371I$	0
$u = -0.620370 + 0.810880I$ $a = 2.59463 + 1.02657I$ $b = 1.95146 - 1.71839I$	$1.92152 + 5.87036I$	0
$u = -0.620370 - 0.810880I$ $a = 2.59463 - 1.02657I$ $b = 1.95146 + 1.71839I$	$1.92152 - 5.87036I$	0
$u = -0.603665 + 0.824516I$ $a = 1.53484 - 0.22769I$ $b = 0.568051 + 0.304538I$	$0.829209 - 0.961634I$	0
$u = -0.603665 - 0.824516I$ $a = 1.53484 + 0.22769I$ $b = 0.568051 - 0.304538I$	$0.829209 + 0.961634I$	0
$u = -0.562447 + 0.796277I$ $a = -0.92089 - 1.49319I$ $b = -0.297810 + 0.803227I$	$0.711468 + 0.652990I$	0
$u = -0.562447 - 0.796277I$ $a = -0.92089 + 1.49319I$ $b = -0.297810 - 0.803227I$	$0.711468 - 0.652990I$	0
$u = 0.632151 + 0.738294I$ $a = 1.58039 + 0.00282I$ $b = 1.087880 - 0.551446I$	$2.49967 - 7.27688I$	0
$u = 0.632151 - 0.738294I$ $a = 1.58039 - 0.00282I$ $b = 1.087880 + 0.551446I$	$2.49967 + 7.27688I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.149466 + 1.023060I$ $a = -0.028958 + 0.371393I$ $b = -0.389972 - 1.267390I$	$-3.55097 + 5.84813I$	0
$u = 0.149466 - 1.023060I$ $a = -0.028958 - 0.371393I$ $b = -0.389972 + 1.267390I$	$-3.55097 - 5.84813I$	0
$u = 0.642200 + 0.719775I$ $a = -0.344194 + 1.050210I$ $b = -1.12875 + 1.12848I$	$3.38444 - 1.25481I$	0
$u = 0.642200 - 0.719775I$ $a = -0.344194 - 1.050210I$ $b = -1.12875 - 1.12848I$	$3.38444 + 1.25481I$	0
$u = 0.343751 + 0.893683I$ $a = 1.40662 - 0.56403I$ $b = 0.939545 + 0.438048I$	$-3.08732 - 0.74941I$	0
$u = 0.343751 - 0.893683I$ $a = 1.40662 + 0.56403I$ $b = 0.939545 - 0.438048I$	$-3.08732 + 0.74941I$	0
$u = -0.590646 + 0.860453I$ $a = 1.66359 + 1.64155I$ $b = 0.346971 - 0.404625I$	$0.72523 - 3.77033I$	0
$u = -0.590646 - 0.860453I$ $a = 1.66359 - 1.64155I$ $b = 0.346971 + 0.404625I$	$0.72523 + 3.77033I$	0
$u = -0.061841 + 1.043210I$ $a = 0.758876 + 0.278900I$ $b = -0.572943 + 0.413690I$	$-1.22030 - 2.21742I$	0
$u = -0.061841 - 1.043210I$ $a = 0.758876 - 0.278900I$ $b = -0.572943 - 0.413690I$	$-1.22030 + 2.21742I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.909196 + 0.515496I$ $a = 1.055940 - 0.828951I$ $b = 1.061930 - 0.732069I$	$1.33611 - 7.53363I$	0
$u = 0.909196 - 0.515496I$ $a = 1.055940 + 0.828951I$ $b = 1.061930 + 0.732069I$	$1.33611 + 7.53363I$	0
$u = 0.903016 + 0.546950I$ $a = -0.93396 + 1.12986I$ $b = -1.22277 + 1.21905I$	$3.79969 - 7.43778I$	0
$u = 0.903016 - 0.546950I$ $a = -0.93396 - 1.12986I$ $b = -1.22277 - 1.21905I$	$3.79969 + 7.43778I$	0
$u = -0.528333 + 0.781637I$ $a = -1.29996 + 1.74911I$ $b = -0.936537 - 0.153818I$	$1.79008 - 1.57341I$	0
$u = -0.528333 - 0.781637I$ $a = -1.29996 - 1.74911I$ $b = -0.936537 + 0.153818I$	$1.79008 + 1.57341I$	0
$u = -0.683586 + 0.811752I$ $a = 1.184380 + 0.118080I$ $b = 0.536595 - 0.235249I$	$0.61506 - 2.63528I$	0
$u = -0.683586 - 0.811752I$ $a = 1.184380 - 0.118080I$ $b = 0.536595 + 0.235249I$	$0.61506 + 2.63528I$	0
$u = -0.020954 + 0.937164I$ $a = 0.881295 - 0.424173I$ $b = -0.318603 + 0.788435I$	$-1.34068 - 1.86227I$	0
$u = -0.020954 - 0.937164I$ $a = 0.881295 + 0.424173I$ $b = -0.318603 - 0.788435I$	$-1.34068 + 1.86227I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.990322+0.386590I$ $a=-0.541205-0.218718I$ $b=-1.008540-0.647990I$	$3.79442+0.74559I$	0
$u=-0.990322-0.386590I$ $a=-0.541205+0.218718I$ $b=-1.008540+0.647990I$	$3.79442-0.74559I$	0
$u=\ \ 0.822165+0.675958I$ $a=-0.804779+0.999511I$ $b=-1.17868+0.86406I$	$4.37741-1.56681I$	0
$u=\ \ 0.822165-0.675958I$ $a=-0.804779-0.999511I$ $b=-1.17868-0.86406I$	$4.37741+1.56681I$	0
$u=\ \ 0.659960+0.836427I$ $a=-1.86090+1.25405I$ $b=-1.58923-0.47494I$	$4.99787+2.51806I$	0
$u=\ \ 0.659960-0.836427I$ $a=-1.86090-1.25405I$ $b=-1.58923+0.47494I$	$4.99787-2.51806I$	0
$u=-0.771458+0.739629I$ $a=-0.018917-0.968477I$ $b=-1.05175-0.97827I$	$2.00307+0.10648I$	0
$u=-0.771458-0.739629I$ $a=-0.018917+0.968477I$ $b=-1.05175+0.97827I$	$2.00307-0.10648I$	0
$u=-0.588008+0.893030I$ $a=-2.17133-1.59517I$ $b=-1.35961+0.98502I$	$2.84857-2.94529I$	0
$u=-0.588008-0.893030I$ $a=-2.17133+1.59517I$ $b=-1.35961-0.98502I$	$2.84857+2.94529I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.570985+0.906774I$ $a=-0.694018+0.218638I$ $b=-0.713608-0.767754I$	$0.34793-5.18437I$	0
$u=-0.570985-0.906774I$ $a=-0.694018-0.218638I$ $b=-0.713608+0.767754I$	$0.34793+5.18437I$	0
$u=\ \ 0.658854+0.845395I$ $a=-1.87984+1.39374I$ $b=-1.94893-0.25591I$	$5.01034+2.55559I$	0
$u=\ \ 0.658854-0.845395I$ $a=-1.87984-1.39374I$ $b=-1.94893+0.25591I$	$5.01034-2.55559I$	0
$u=-0.608109+0.883555I$ $a=\ \ 0.66362+2.24380I$ $b=\ \ 2.56158+1.36865I$	$1.69558-10.70180I$	0
$u=-0.608109-0.883555I$ $a=\ \ 0.66362-2.24380I$ $b=\ \ 2.56158-1.36865I$	$1.69558+10.70180I$	0
$u=\ \ 0.653791+0.854690I$ $a=-1.48897+1.23210I$ $b=-1.77676+0.21100I$	$4.94123+2.58044I$	0
$u=\ \ 0.653791-0.854690I$ $a=-1.48897-1.23210I$ $b=-1.77676-0.21100I$	$4.94123-2.58044I$	0
$u=\ \ 0.953294+0.506126I$ $a=\ \ 0.830014-0.476230I$ $b=\ \ 0.992565-0.707723I$	$6.30268-7.17836I$	0
$u=\ \ 0.953294-0.506126I$ $a=\ \ 0.830014+0.476230I$ $b=\ \ 0.992565+0.707723I$	$6.30268+7.17836I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.934446+0.541225I$ $a=\ \ 0.98237+1.07045I$ $b=\ \ 1.26260+1.08709I$	$2.6526+16.0081I$	0
$u=-0.934446-0.541225I$ $a=\ \ 0.98237-1.07045I$ $b=\ \ 1.26260-1.08709I$	$2.6526-16.0081I$	0
$u=-0.448284+0.802622I$ $a=-3.81061-0.88424I$ $b=-0.259964+0.074094I$	$-0.115145+0.383881I$	0
$u=-0.448284-0.802622I$ $a=-3.81061+0.88424I$ $b=-0.259964-0.074094I$	$-0.115145-0.383881I$	0
$u=-0.995013+0.423920I$ $a=-0.500120+0.268210I$ $b=-0.775931+0.427466I$	$2.99815-2.61513I$	0
$u=-0.995013-0.423920I$ $a=-0.500120-0.268210I$ $b=-0.775931-0.427466I$	$2.99815+2.61513I$	0
$u=-0.281288+1.045420I$ $a=-1.26420+0.80789I$ $b=\ \ 0.84805+1.42009I$	$-2.68220+5.10385I$	0
$u=-0.281288-1.045420I$ $a=-1.26420-0.80789I$ $b=\ \ 0.84805-1.42009I$	$-2.68220-5.10385I$	0
$u=\ \ 0.719597+0.811180I$ $a=\ \ 0.549367-1.006830I$ $b=\ \ 0.281201+0.223396I$	$4.02431-2.54852I$	0
$u=\ \ 0.719597-0.811180I$ $a=\ \ 0.549367+1.006830I$ $b=\ \ 0.281201-0.223396I$	$4.02431+2.54852I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.919286+0.576015I$ $a=\ \ 0.554530-0.057308I$ $b=\ \ 0.488048+0.041558I$	$1.43041-2.69383I$	0
$u=-0.919286-0.576015I$ $a=\ \ 0.554530+0.057308I$ $b=\ \ 0.488048-0.041558I$	$1.43041+2.69383I$	0
$u=-0.921915+0.573807I$ $a=\ \ 0.995271+0.514884I$ $b=\ \ 1.131810+0.242143I$	$6.84178-1.98192I$	0
$u=-0.921915-0.573807I$ $a=\ \ 0.995271-0.514884I$ $b=\ \ 1.131810-0.242143I$	$6.84178+1.98192I$	0
$u=-0.869885+0.654585I$ $a=-0.85023-1.35486I$ $b=-1.20035-0.96295I$	$3.26577+5.98379I$	0
$u=-0.869885-0.654585I$ $a=-0.85023+1.35486I$ $b=-1.20035+0.96295I$	$3.26577-5.98379I$	0
$u=-0.100601+1.084260I$ $a=-0.078295-0.749620I$ $b=\ \ 0.352517+1.361350I$	$-7.08852-2.97622I$	0
$u=-0.100601-1.084260I$ $a=-0.078295+0.749620I$ $b=\ \ 0.352517-1.361350I$	$-7.08852+2.97622I$	0
$u=\ \ 0.096998+1.091300I$ $a=-0.306956+0.072089I$ $b=\ \ 0.708218-0.969699I$	$-5.45560-2.16052I$	0
$u=\ \ 0.096998-1.091300I$ $a=-0.306956-0.072089I$ $b=\ \ 0.708218+0.969699I$	$-5.45560+2.16052I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.578477+0.933075I$ $a=-0.05534-1.96128I$ $b=-0.609940+0.233670I$	$1.23739-2.89267I$	0
$u=-0.578477-0.933075I$ $a=-0.05534+1.96128I$ $b=-0.609940-0.233670I$	$1.23739+2.89267I$	0
$u=-0.336700+0.834532I$ $a=-1.51926+0.10324I$ $b=-0.972806-0.071124I$	$-1.082410+0.899782I$	0
$u=-0.336700-0.834532I$ $a=-1.51926-0.10324I$ $b=-0.972806+0.071124I$	$-1.082410-0.899782I$	0
$u=-0.473881+0.996220I$ $a=-1.45036-1.59974I$ $b=-0.382568+0.334719I$	$-0.79368-4.06439I$	0
$u=-0.473881-0.996220I$ $a=-1.45036+1.59974I$ $b=-0.382568-0.334719I$	$-0.79368+4.06439I$	0
$u=0.698963+0.868631I$ $a=0.832514+0.402891I$ $b=0.683726-0.093355I$	$3.85198+7.95726I$	0
$u=0.698963-0.868631I$ $a=0.832514-0.402891I$ $b=0.683726+0.093355I$	$3.85198-7.95726I$	0
$u=0.623330+0.933576I$ $a=1.45294-1.78732I$ $b=0.868859+0.632142I$	$1.90027+12.20740I$	0
$u=0.623330-0.933576I$ $a=1.45294+1.78732I$ $b=0.868859-0.632142I$	$1.90027-12.20740I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.633179 + 0.937215I$ $a = -1.65702 + 0.54779I$ $b = -0.80884 - 1.40149I$	$2.73126 + 6.25215I$	0
$u = 0.633179 - 0.937215I$ $a = -1.65702 - 0.54779I$ $b = -0.80884 + 1.40149I$	$2.73126 - 6.25215I$	0
$u = 0.644745 + 0.930208I$ $a = -0.943083 - 0.630831I$ $b = 0.40294 - 1.71943I$	$3.11954 + 6.69528I$	0
$u = 0.644745 - 0.930208I$ $a = -0.943083 + 0.630831I$ $b = 0.40294 + 1.71943I$	$3.11954 - 6.69528I$	0
$u = -0.974229 + 0.584194I$ $a = -0.656953 - 0.923649I$ $b = -0.967247 - 0.848773I$	$1.72442 + 6.09978I$	0
$u = -0.974229 - 0.584194I$ $a = -0.656953 + 0.923649I$ $b = -0.967247 + 0.848773I$	$1.72442 - 6.09978I$	0
$u = 1.055110 + 0.429485I$ $a = 0.422158 + 0.296048I$ $b = 0.727731 + 0.318262I$	$1.92221 + 10.60750I$	0
$u = 1.055110 - 0.429485I$ $a = 0.422158 - 0.296048I$ $b = 0.727731 - 0.318262I$	$1.92221 - 10.60750I$	0
$u = -0.536477 + 1.005950I$ $a = 2.12761 + 1.42557I$ $b = 2.11632 - 1.52235I$	$-1.13266 - 11.41410I$	0
$u = -0.536477 - 1.005950I$ $a = 2.12761 - 1.42557I$ $b = 2.11632 + 1.52235I$	$-1.13266 + 11.41410I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.14415$ $a = 0.119041$ $b = -0.196758$	-0.903372	0
$u = 0.132240 + 1.155810I$ $a = 0.581359 + 0.294362I$ $b = -0.036109 - 0.707916I$	$-4.95291 - 0.22997I$	0
$u = 0.132240 - 1.155810I$ $a = 0.581359 - 0.294362I$ $b = -0.036109 + 0.707916I$	$-4.95291 + 0.22997I$	0
$u = 0.494971 + 1.058120I$ $a = 1.098070 - 0.756564I$ $b = 0.979710 + 0.497752I$	$-4.41896 + 3.70827I$	0
$u = 0.494971 - 1.058120I$ $a = 1.098070 + 0.756564I$ $b = 0.979710 - 0.497752I$	$-4.41896 - 3.70827I$	0
$u = -0.325748 + 0.760944I$ $a = 1.79807 + 0.18800I$ $b = -0.573986 - 0.330431I$	$1.21179 - 0.93043I$	0
$u = -0.325748 - 0.760944I$ $a = 1.79807 - 0.18800I$ $b = -0.573986 + 0.330431I$	$1.21179 + 0.93043I$	0
$u = 0.142948 + 1.164400I$ $a = -0.035491 - 0.900567I$ $b = -0.315716 + 1.201180I$	$-6.19601 - 5.43268I$	0
$u = 0.142948 - 1.164400I$ $a = -0.035491 + 0.900567I$ $b = -0.315716 - 1.201180I$	$-6.19601 + 5.43268I$	0
$u = -0.819035 + 0.112270I$ $a = -0.584444 - 0.656663I$ $b = -0.734617 - 0.439386I$	$0.209233 - 0.809305I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.819035-0.112270I$ $a=-0.584444+0.656663I$ $b=-0.734617+0.439386I$	$0.209233+0.809305I$	0
$u=-0.774068+0.882259I$ $a=-1.270780+0.080920I$ $b=-0.74689+1.43417I$	$1.60578-5.87975I$	0
$u=-0.774068-0.882259I$ $a=-1.270780-0.080920I$ $b=-0.74689-1.43417I$	$1.60578+5.87975I$	0
$u=0.656017+0.501047I$ $a=1.69049-1.11485I$ $b=1.271000-0.419809I$	$-0.71373-3.76782I$	0
$u=0.656017-0.501047I$ $a=1.69049+1.11485I$ $b=1.271000+0.419809I$	$-0.71373+3.76782I$	0
$u=-0.406749+0.709171I$ $a=1.48423+2.29301I$ $b=2.42992+0.50999I$	$0.05227+7.35625I$	0
$u=-0.406749-0.709171I$ $a=1.48423-2.29301I$ $b=2.42992-0.50999I$	$0.05227-7.35625I$	0
$u=-0.518733+1.063920I$ $a=1.046840+0.107180I$ $b=-0.060957-0.302359I$	$-0.40684-2.72153I$	0
$u=-0.518733-1.063920I$ $a=1.046840-0.107180I$ $b=-0.060957+0.302359I$	$-0.40684+2.72153I$	0
$u=-0.652205+0.487440I$ $a=1.12187+1.15781I$ $b=0.482523+0.927800I$	$-2.40134-1.35613I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.652205-0.487440I$ $a=\ 1.12187-1.15781I$ $b=\ 0.482523-0.927800I$	$-2.40134+1.35613I$	0
$u=\ 0.580144+1.048040I$ $a=\ 1.042630-0.448048I$ $b=\ 0.704061-0.017918I$	$-2.21685+7.36855I$	0
$u=\ 0.580144-1.048040I$ $a=\ 1.042630+0.448048I$ $b=\ 0.704061+0.017918I$	$-2.21685-7.36855I$	0
$u=-0.606100+1.035030I$ $a=\ 2.04022+0.36650I$ $b=\ 0.753479-1.037390I$	$-3.93491-3.57221I$	0
$u=-0.606100-1.035030I$ $a=\ 2.04022-0.36650I$ $b=\ 0.753479+1.037390I$	$-3.93491+3.57221I$	0
$u=\ 0.612745+1.036130I$ $a=\ 1.77461-1.04728I$ $b=\ 1.55574+0.80237I$	$-2.22119+8.74334I$	0
$u=\ 0.612745-1.036130I$ $a=\ 1.77461+1.04728I$ $b=\ 1.55574-0.80237I$	$-2.22119-8.74334I$	0
$u=\ 0.586291+1.063180I$ $a=-1.95604+0.43883I$ $b=-0.473434-0.832514I$	$-3.36399+12.69470I$	0
$u=\ 0.586291-1.063180I$ $a=-1.95604-0.43883I$ $b=-0.473434+0.832514I$	$-3.36399-12.69470I$	0
$u=\ 0.436186+1.135290I$ $a=\ 0.079641-0.771582I$ $b=\ 0.948864-0.502118I$	$-4.93828+3.97153I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.436186 - 1.135290I$ $a = 0.079641 + 0.771582I$ $b = 0.948864 + 0.502118I$	$-4.93828 - 3.97153I$	0
$u = -0.509061 + 1.112290I$ $a = -0.786178 - 0.717168I$ $b = -0.834473 + 0.702001I$	$-2.74425 - 3.73381I$	0
$u = -0.509061 - 1.112290I$ $a = -0.786178 + 0.717168I$ $b = -0.834473 - 0.702001I$	$-2.74425 + 3.73381I$	0
$u = -0.078686 + 1.230370I$ $a = 0.353511 - 0.548016I$ $b = -0.669027 + 1.101440I$	$-3.05290 - 5.61055I$	0
$u = -0.078686 - 1.230370I$ $a = 0.353511 + 0.548016I$ $b = -0.669027 - 1.101440I$	$-3.05290 + 5.61055I$	0
$u = 0.701197 + 1.022910I$ $a = -1.64033 + 0.62459I$ $b = -1.16033 - 1.13139I$	$3.29494 + 7.28281I$	0
$u = 0.701197 - 1.022910I$ $a = -1.64033 - 0.62459I$ $b = -1.16033 + 1.13139I$	$3.29494 - 7.28281I$	0
$u = 0.670130 + 0.357060I$ $a = -1.278520 + 0.496013I$ $b = -0.144080 + 0.913155I$	$-1.46750 - 7.86430I$	0
$u = 0.670130 - 0.357060I$ $a = -1.278520 - 0.496013I$ $b = -0.144080 - 0.913155I$	$-1.46750 + 7.86430I$	0
$u = 0.903010 + 0.867407I$ $a = 0.528322 + 0.540129I$ $b = 0.111293 + 0.970320I$	$-0.45579 - 2.42834I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.903010 - 0.867407I$ $a = 0.528322 - 0.540129I$ $b = 0.111293 - 0.970320I$	$-0.45579 + 2.42834I$	0
$u = 0.370614 + 0.644606I$ $a = 0.65995 + 1.53359I$ $b = -0.128410 + 0.962676I$	$-1.95455 - 2.36210I$	0
$u = 0.370614 - 0.644606I$ $a = 0.65995 - 1.53359I$ $b = -0.128410 - 0.962676I$	$-1.95455 + 2.36210I$	0
$u = 0.730918 + 0.131824I$ $a = 0.707255 + 0.483671I$ $b = -0.241380 + 0.263146I$	$-0.33528 - 2.93827I$	0
$u = 0.730918 - 0.131824I$ $a = 0.707255 - 0.483671I$ $b = -0.241380 - 0.263146I$	$-0.33528 + 2.93827I$	0
$u = -0.369043 + 1.203420I$ $a = 0.235789 - 0.689913I$ $b = -0.654025 - 0.575662I$	$-3.90113 - 4.77340I$	0
$u = -0.369043 - 1.203420I$ $a = 0.235789 + 0.689913I$ $b = -0.654025 + 0.575662I$	$-3.90113 + 4.77340I$	0
$u = 0.174921 + 1.255570I$ $a = 0.080589 + 0.127463I$ $b = -0.191125 - 0.852419I$	$-6.03914 + 4.31875I$	0
$u = 0.174921 - 1.255570I$ $a = 0.080589 - 0.127463I$ $b = -0.191125 + 0.852419I$	$-6.03914 - 4.31875I$	0
$u = 0.129716 + 0.720044I$ $a = -2.46408 + 1.07944I$ $b = 0.582398 + 0.293413I$	$-0.90024 - 8.13282I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.129716 - 0.720044I$ $a = -2.46408 - 1.07944I$ $b = 0.582398 - 0.293413I$	$-0.90024 + 8.13282I$	0
$u = -0.046459 + 1.269990I$ $a = -0.039537 + 0.149383I$ $b = 0.469410 - 0.801625I$	$-5.41246 - 5.33440I$	0
$u = -0.046459 - 1.269990I$ $a = -0.039537 - 0.149383I$ $b = 0.469410 + 0.801625I$	$-5.41246 + 5.33440I$	0
$u = -0.720588 + 1.047990I$ $a = -1.84960 - 0.40853I$ $b = -1.29697 + 1.22025I$	$2.04066 - 11.89410I$	0
$u = -0.720588 - 1.047990I$ $a = -1.84960 + 0.40853I$ $b = -1.29697 - 1.22025I$	$2.04066 + 11.89410I$	0
$u = 0.669946 + 1.082210I$ $a = -1.31391 + 1.08929I$ $b = -1.68468 - 0.71041I$	$3.29253 + 9.06022I$	0
$u = 0.669946 - 1.082210I$ $a = -1.31391 - 1.08929I$ $b = -1.68468 + 0.71041I$	$3.29253 - 9.06022I$	0
$u = 0.083635 + 1.274680I$ $a = -0.289326 - 0.331523I$ $b = 0.695250 + 0.993807I$	$-4.4445 + 13.9098I$	0
$u = 0.083635 - 1.274680I$ $a = -0.289326 + 0.331523I$ $b = 0.695250 - 0.993807I$	$-4.4445 - 13.9098I$	0
$u = -0.645134 + 1.103660I$ $a = 0.840114 + 0.342302I$ $b = 0.253909 - 0.584809I$	$-0.11849 - 2.99605I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.645134-1.103660I$ $a=\ \ 0.840114-0.342302I$ $b=\ \ 0.253909+0.584809I$	$-0.11849+2.99605I$	0
$u=\ \ 0.697284+1.100430I$ $a=-1.87029+0.66597I$ $b=-1.23061-1.45189I$	$2.10417+13.33660I$	0
$u=\ \ 0.697284-1.100430I$ $a=-1.87029-0.66597I$ $b=-1.23061+1.45189I$	$2.10417-13.33660I$	0
$u=-0.715297+1.089710I$ $a=\ \ 1.100850+0.700153I$ $b=\ \ 1.183900-0.542998I$	$5.25622-4.02391I$	0
$u=-0.715297-1.089710I$ $a=\ \ 1.100850-0.700153I$ $b=\ \ 1.183900+0.542998I$	$5.25622+4.02391I$	0
$u=\ \ 0.688063+1.112900I$ $a=\ \ 1.53538-0.66200I$ $b=\ \ 1.15825+0.94992I$	$-0.48794+13.40880I$	0
$u=\ \ 0.688063-1.112900I$ $a=\ \ 1.53538+0.66200I$ $b=\ \ 1.15825-0.94992I$	$-0.48794-13.40880I$	0
$u=\ \ 0.788843+1.051160I$ $a=-1.041660-0.320707I$ $b=-0.233913-1.170150I$	$-1.20517+8.87252I$	0
$u=\ \ 0.788843-1.051160I$ $a=-1.041660+0.320707I$ $b=-0.233913+1.170150I$	$-1.20517-8.87252I$	0
$u=-0.705884+1.115510I$ $a=\ \ 1.75355+0.68517I$ $b=\ \ 1.29657-1.31892I$	$0.8816-22.0225I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.705884-1.115510I$ $a=\ 1.75355-0.68517I$ $b=\ 1.29657+1.31892I$	$0.8816+22.0225I$	0
$u=\ 0.702289+1.131120I$ $a=\ 1.28109-0.73104I$ $b=\ 0.972882+0.954863I$	$4.38530+13.21880I$	0
$u=\ 0.702289-1.131120I$ $a=\ 1.28109+0.73104I$ $b=\ 0.972882-0.954863I$	$4.38530-13.21880I$	0
$u=-0.731919+1.117800I$ $a=-1.41866-0.39658I$ $b=-1.05318+1.10371I$	$0.04421-12.32480I$	0
$u=-0.731919-1.117800I$ $a=-1.41866+0.39658I$ $b=-1.05318-1.10371I$	$0.04421+12.32480I$	0
$u=\ 0.477148+0.415373I$ $a=\ 1.92142-0.16951I$ $b=\ 0.282478+0.389393I$	$-0.50053-2.77991I$	0
$u=\ 0.477148-0.415373I$ $a=\ 1.92142+0.16951I$ $b=\ 0.282478-0.389393I$	$-0.50053+2.77991I$	0
$u=-0.733634+1.161840I$ $a=-0.977557-0.611646I$ $b=-0.90929+1.10042I$	$1.49933-7.01834I$	0
$u=-0.733634-1.161840I$ $a=-0.977557+0.611646I$ $b=-0.90929-1.10042I$	$1.49933+7.01834I$	0
$u=-0.104305+0.606428I$ $a=\ 1.72133-1.78526I$ $b=\ 0.548143+0.207186I$	$-0.44844-3.09239I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.104305-0.606428I$ $a=\ 1.72133+1.78526I$ $b=\ 0.548143-0.207186I$	$-0.44844+3.09239I$	0
$u=-0.794996+1.138120I$ $a=-0.325607-0.177451I$ $b=-0.477461+0.272951I$	$0.75558-3.93033I$	0
$u=-0.794996-1.138120I$ $a=-0.325607+0.177451I$ $b=-0.477461-0.272951I$	$0.75558+3.93033I$	0
$u=\ 0.577555+0.000067I$ $a=\ 1.41017-0.40604I$ $b=\ 0.658094-0.330138I$	$-1.87945+0.13137I$	$-6.52149+1.04741I$
$u=\ 0.577555-0.000067I$ $a=\ 1.41017+0.40604I$ $b=\ 0.658094+0.330138I$	$-1.87945-0.13137I$	$-6.52149-1.04741I$
$u=-0.212379+0.509259I$ $a=\ 0.591841-0.588134I$ $b=-1.201120+0.022464I$	$1.66021-0.72481I$	$2.22114+8.06695I$
$u=-0.212379-0.509259I$ $a=\ 0.591841+0.588134I$ $b=-1.201120-0.022464I$	$1.66021+0.72481I$	$2.22114-8.06695I$
$u=-0.08817+1.47826I$ $a=-0.057736+0.228676I$ $b=\ 0.269496-0.405544I$	$-0.92075-4.32147I$	0
$u=-0.08817-1.47826I$ $a=-0.057736-0.228676I$ $b=\ 0.269496+0.405544I$	$-0.92075+4.32147I$	0
$u=-0.466959+0.174782I$ $a=\ 0.633574-0.853875I$ $b=-0.421017+0.466313I$	$1.65525-1.24404I$	$4.13029+5.42299I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.466959-0.174782I$ $a=\ \ 0.633574+0.853875I$ $b=-0.421017-0.466313I$	$1.65525+1.24404I$	$4.13029-5.42299I$
$u=\ \ 0.47847+1.44805I$ $a=-0.235573-0.047788I$ $b=\ \ 0.228616-0.091297I$	$-1.25126-4.05311I$	0
$u=\ \ 0.47847-1.44805I$ $a=-0.235573+0.047788I$ $b=\ \ 0.228616+0.091297I$	$-1.25126+4.05311I$	0
$u=\ \ 0.047844+0.445677I$ $a=\ \ 2.64006-1.30389I$ $b=\ \ 0.029955+0.412976I$	$-0.47819-2.68826I$	$-4.79750+5.35071I$
$u=\ \ 0.047844-0.445677I$ $a=\ \ 2.64006+1.30389I$ $b=\ \ 0.029955-0.412976I$	$-0.47819+2.68826I$	$-4.79750-5.35071I$
$u=-0.388600+0.092474I$ $a=\ \ 2.46158+1.76333I$ $b=\ \ 1.39257+0.63922I$	$0.41611+7.61484I$	$-1.36664-4.97718I$
$u=-0.388600-0.092474I$ $a=\ \ 2.46158-1.76333I$ $b=\ \ 1.39257-0.63922I$	$0.41611-7.61484I$	$-1.36664+4.97718I$
$u=-0.293834+0.248176I$ $a=\ \ 0.885922+0.378506I$ $b=-1.007290+0.281564I$	$1.89027-0.92433I$	$-0.278063+0.650610I$
$u=-0.293834-0.248176I$ $a=\ \ 0.885922-0.378506I$ $b=-1.007290-0.281564I$	$1.89027+0.92433I$	$-0.278063-0.650610I$

II.

$\boldsymbol{I_2^u = \langle 9.06\times 10^{16}u^{38} - 1.22\times 10^{17}u^{37} + \cdots + 1.56\times 10^{17}b - 8.42\times 10^{16},\ 1.35\times 10^{17}u^{38} + 1.15\times 10^{17}u^{37} + \cdots + 1.56\times 10^{17}a - 4.55\times 10^{17},\ u^{39} + u^{38} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_{10} = \begin{pmatrix} -0.866070u^{38} - 0.736938u^{37} + \cdots - 6.80506u + 2.91022 \\ -0.579043u^{38} + 0.779716u^{37} + \cdots - 4.03407u + 0.538089 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 5.73300u^{38} + 7.64002u^{37} + \cdots + 10.9718u - 6.00054 \\ -1.12707u^{38} - 1.87872u^{37} + \cdots + 6.82400u - 2.73875 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -0.775483u^{38} - 0.417280u^{37} + \cdots - 8.14134u + 3.78707 \\ -0.377559u^{38} + 0.322158u^{37} + \cdots - 1.43248u - 0.295340 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.287027u^{38} - 1.51665u^{37} + \cdots - 2.77099u + 2.37213 \\ -0.579043u^{38} + 0.779716u^{37} + \cdots - 4.03407u + 0.538089 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 4.30570u^{38} + 6.03459u^{37} + \cdots + 3.25846u - 3.35952 \\ 1.72875u^{38} + 2.84691u^{37} + \cdots + 3.80190u - 0.130367 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -5.25878u^{38} - 6.95998u^{37} + \cdots - 4.99855u + 0.0171614 \\ 2.08263u^{38} + 2.66427u^{37} + \cdots + 8.23459u - 1.02588 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -12.4685u^{38} - 17.3458u^{37} + \cdots - 24.8644u + 10.4690 \\ -0.502592u^{38} + 0.589356u^{37} + \cdots - 5.92810u + 2.19848 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{4803840043044346925}{156395693545893133}u^{38} - \frac{1753117040714795653}{156395693545893133}u^{37} + \cdots - \frac{12089496314433794131}{156395693545893133}u + \frac{9535750477461201133}{156395693545893133}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{39} - 19u^{38} + \cdots - 10u + 1$
c_2	$u^{39} - u^{38} + \cdots - 2u - 1$
c_3	$u^{39} + 3u^{38} + \cdots + 11u + 1$
c_4	$u^{39} + u^{38} + \cdots + 5u - 1$
c_5	$u^{39} + 2u^{38} + \cdots + 7u + 1$
c_6	$u^{39} + u^{38} + \cdots - 2u + 1$
c_7	$u^{39} + u^{38} + \cdots - 20u + 1$
c_8	$u^{39} + 14u^{38} + \cdots - 3u + 1$
c_9	$u^{39} - 10u^{38} + \cdots + 3u - 1$
c_{10}	$u^{39} - 7u^{38} + \cdots - 14u^2 - 1$
c_{11}	$u^{39} + u^{38} + \cdots + 4u - 1$
c_{12}	$u^{39} - u^{38} + \cdots + 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{39}+7y^{38}+\cdots+38y-1$
c_2, c_6	$y^{39}+19y^{38}+\cdots-10y-1$
c_3	$y^{39}+11y^{38}+\cdots+19y-1$
c_4	$y^{39}-11y^{38}+\cdots-y-1$
c_5	$y^{39}-14y^{38}+\cdots-13y-1$
c_7	$y^{39}-17y^{38}+\cdots+24y-1$
c_8	$y^{39}-22y^{38}+\cdots+29y-1$
c_9	$y^{39}-26y^{38}+\cdots+43y-1$
c_{10}	$y^{39}-9y^{38}+\cdots-28y-1$
c_{11}	$y^{39}-15y^{38}+\cdots-10y-1$
c_{12}	$y^{39}-5y^{38}+\cdots-43y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.870830 + 0.476456I$ $a = -0.713386 + 0.340307I$ $b = -1.040010 + 0.661553I$	$3.49710 - 0.71542I$	$-1.46862 - 2.15085I$
$u = \quad 0.870830 - 0.476456I$ $a = -0.713386 - 0.340307I$ $b = -1.040010 - 0.661553I$	$3.49710 + 0.71542I$	$-1.46862 + 2.15085I$
$u = -0.967543$ $a = -0.631749$ $b = -0.709021$	-0.507455	-0.0283450
$u = -0.651551 + 0.698870I$ $a = -0.036221 + 0.674810I$ $b = \quad 1.170490 + 0.546457I$	$1.15776 - 9.29905I$	$0.85647 + 8.27487I$
$u = -0.651551 - 0.698870I$ $a = -0.036221 - 0.674810I$ $b = \quad 1.170490 - 0.546457I$	$1.15776 + 9.29905I$	$0.85647 - 8.27487I$
$u = -0.647578 + 0.850568I$ $a = -2.15223 - 1.73958I$ $b = -2.32276 + 0.22195I$	$4.26232 - 2.52080I$	$2.77214 + 3.68658I$
$u = -0.647578 - 0.850568I$ $a = -2.15223 + 1.73958I$ $b = -2.32276 - 0.22195I$	$4.26232 + 2.52080I$	$2.77214 - 3.68658I$
$u = \quad 0.520900 + 0.754246I$ $a = -0.79539 - 1.55170I$ $b = -0.920437 + 0.112268I$	$1.74607 + 1.53182I$	$-47.5884 + 7.1760I$
$u = \quad 0.520900 - 0.754246I$ $a = -0.79539 + 1.55170I$ $b = -0.920437 - 0.112268I$	$1.74607 - 1.53182I$	$-47.5884 - 7.1760I$
$u = \quad 0.435558 + 0.797901I$ $a = \quad 3.55641 - 0.65211I$ $b = \quad 0.233985 + 0.042520I$	$-0.135907 - 0.403424I$	$-92.1840 + 56.8072I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.435558 - 0.797901I$ $a = 3.55641 + 0.65211I$ $b = 0.233985 - 0.042520I$	$-0.135907 + 0.403424I$	$-92.1840 - 56.8072I$
$u = -0.913448 + 0.600242I$ $a = -0.782789 - 1.068380I$ $b = -1.021490 - 0.914154I$	$2.49573 + 6.10598I$	$2.13027 - 6.91041I$
$u = -0.913448 - 0.600242I$ $a = -0.782789 + 1.068380I$ $b = -1.021490 + 0.914154I$	$2.49573 - 6.10598I$	$2.13027 + 6.91041I$
$u = -0.492713 + 0.736261I$ $a = 2.49713 + 1.57094I$ $b = 2.04432 - 0.00165I$	$0.63231 + 6.96419I$	$3.27363 - 3.57185I$
$u = -0.492713 - 0.736261I$ $a = 2.49713 - 1.57094I$ $b = 2.04432 + 0.00165I$	$0.63231 - 6.96419I$	$3.27363 + 3.57185I$
$u = -0.534537 + 0.985306I$ $a = 1.60455 + 1.93776I$ $b = 1.88255 - 0.54288I$	$-0.24312 - 11.16120I$	$0.96720 + 10.72526I$
$u = -0.534537 - 0.985306I$ $a = 1.60455 - 1.93776I$ $b = 1.88255 + 0.54288I$	$-0.24312 + 11.16120I$	$0.96720 - 10.72526I$
$u = 0.364896 + 1.064660I$ $a = 0.364628 - 1.308300I$ $b = 0.138734 + 0.393419I$	$-0.80682 + 3.74346I$	$8.42333 - 4.15244I$
$u = 0.364896 - 1.064660I$ $a = 0.364628 + 1.308300I$ $b = 0.138734 - 0.393419I$	$-0.80682 - 3.74346I$	$8.42333 + 4.15244I$
$u = 0.694819 + 0.900847I$ $a = -0.646205 + 0.757330I$ $b = -0.380030 - 0.233144I$	$0.89506 + 3.33220I$	$0.58600 - 5.75419I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.694819 - 0.900847I$ $a = -0.646205 - 0.757330I$ $b = -0.380030 + 0.233144I$	$0.89506 - 3.33220I$	$0.58600 + 5.75419I$
$u = 0.110331 + 1.146440I$ $a = -0.192409 + 0.352822I$ $b = -0.264819 - 1.066650I$	$-4.53928 + 4.91392I$	$-5.42383 - 6.67943I$
$u = 0.110331 - 1.146440I$ $a = -0.192409 - 0.352822I$ $b = -0.264819 + 1.066650I$	$-4.53928 - 4.91392I$	$-5.42383 + 6.67943I$
$u = 0.291085 + 1.124440I$ $a = -0.488936 - 0.312702I$ $b = 0.250825 - 0.994610I$	$-4.41072 + 5.00573I$	$-9.20733 - 9.53125I$
$u = 0.291085 - 1.124440I$ $a = -0.488936 + 0.312702I$ $b = 0.250825 + 0.994610I$	$-4.41072 - 5.00573I$	$-9.20733 + 9.53125I$
$u = 0.207601 + 0.804222I$ $a = 1.81971 + 0.29851I$ $b = -0.00086 + 1.64182I$	$-3.16772 - 3.01532I$	$-8.05356 + 5.17690I$
$u = 0.207601 - 0.804222I$ $a = 1.81971 - 0.29851I$ $b = -0.00086 - 1.64182I$	$-3.16772 + 3.01532I$	$-8.05356 - 5.17690I$
$u = -0.405321 + 1.176170I$ $a = -0.032063 - 0.923986I$ $b = -0.993926 - 0.380377I$	$-4.41843 - 4.30892I$	$-5.22034 + 4.18736I$
$u = -0.405321 - 1.176170I$ $a = -0.032063 + 0.923986I$ $b = -0.993926 + 0.380377I$	$-4.41843 + 4.30892I$	$-5.22034 - 4.18736I$
$u = -0.716274 + 1.089810I$ $a = -1.62924 - 0.42834I$ $b = -1.08454 + 1.16956I$	$0.96799 - 12.11690I$	$0. + 9.74768I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.716274-1.089810I$ $a=-1.62924+0.42834I$ $b=-1.08454-1.16956I$	$0.96799+12.11690I$	$0.-9.74768I$
$u=0.754323+1.101500I$ $a=-1.093150+0.504736I$ $b=-0.95415-1.13696I$	$1.64982+6.81506I$	$12.10593+0.I$
$u=0.754323-1.101500I$ $a=-1.093150-0.504736I$ $b=-0.95415+1.13696I$	$1.64982-6.81506I$	$12.10593+0.I$
$u=-0.25920+1.41058I$ $a=-0.263362+0.022030I$ $b=0.356284+0.298320I$	$-1.15175+4.19464I$	0
$u=-0.25920-1.41058I$ $a=-0.263362-0.022030I$ $b=0.356284-0.298320I$	$-1.15175-4.19464I$	0
$u=-0.129413+0.497977I$ $a=1.12038-1.07742I$ $b=-1.271170-0.481004I$	$1.66726+0.07529I$	$2.23070+0.83702I$
$u=-0.129413-0.497977I$ $a=1.12038+1.07742I$ $b=-1.271170+0.481004I$	$1.66726-0.07529I$	$2.23070-0.83702I$
$u=0.483463+0.062902I$ $a=0.67845-1.57305I$ $b=-0.468478-0.113231I$	$0.15606+2.54818I$	$7.96642-2.18314I$
$u=0.483463-0.062902I$ $a=0.67845+1.57305I$ $b=-0.468478+0.113231I$	$0.15606-2.54818I$	$7.96642+2.18314I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{39}-19u^{38}+\cdots-10u+1)(u^{199}+80u^{198}+\cdots-682010u-19321)$
c_2	$(u^{39}-u^{38}+\cdots-2u-1)(u^{199}+40u^{197}+\cdots-886u+139)$
c_3	$(u^{39}+3u^{38}+\cdots+11u+1)(u^{199}+4u^{197}+\cdots-15u+2)$
c_4	$(u^{39}+u^{38}+\cdots+5u-1)(u^{199}+4u^{198}+\cdots-43u+7)$
c_5	$(u^{39}+2u^{38}+\cdots+7u+1)(u^{199}+u^{198}+\cdots+3083941u-3270107)$
c_6	$(u^{39}+u^{38}+\cdots-2u+1)(u^{199}+40u^{197}+\cdots-886u+139)$
c_7	$(u^{39}+u^{38}+\cdots-20u+1)(u^{199}-4u^{198}+\cdots-48u+1)$
c_8	$(u^{39}+14u^{38}+\cdots-3u+1)(u^{199}-13u^{198}+\cdots+67u+1)$
c_9	$(u^{39}-10u^{38}+\cdots+3u-1)(u^{199}-5u^{198}+\cdots-35977u-38728)$
c_{10}	$(u^{39}-7u^{38}+\cdots-14u^2-1)(u^{199}+2u^{198}+\cdots-73602u+7609)$
c_{11}	$(u^{39}+u^{38}+\cdots+4u-1)(u^{199}+2u^{198}+\cdots-81u+4)$
c_{12}	$(u^{39}-u^{38}+\cdots+7u+1)(u^{199}+14u^{198}+\cdots+7u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{39}+7y^{38}+\cdots+38y-1)$ $\cdot(y^{199}+84y^{198}+\cdots-5691751490y-373301041)$
c_2, c_6	$(y^{39}+19y^{38}+\cdots-10y-1)(y^{199}+80y^{198}+\cdots-682010y-19321)$
c_3	$(y^{39}+11y^{38}+\cdots+19y-1)(y^{199}+8y^{198}+\cdots+809y-4)$
c_4	$(y^{39}-11y^{38}+\cdots-y-1)(y^{199}-30y^{198}+\cdots-41y-49)$
c_5	$(y^{39}-14y^{38}+\cdots-13y-1)$ $\cdot(y^{199}-73y^{198}+\cdots+323847798103351y-10693599791449)$
c_7	$(y^{39}-17y^{38}+\cdots+24y-1)(y^{199}-12y^{198}+\cdots+64y-1)$
c_8	$(y^{39}-22y^{38}+\cdots+29y-1)(y^{199}-21y^{198}+\cdots+205y-1)$
c_9	$(y^{39}-26y^{38}+\cdots+43y-1)$ $\cdot(y^{199}-41y^{198}+\cdots+110633557809y-1499857984)$
c_{10}	$(y^{39}-9y^{38}+\cdots-28y-1)$ $\cdot(y^{199}+8y^{198}+\cdots-4561096888y-57896881)$
c_{11}	$(y^{39}-15y^{38}+\cdots-10y-1)(y^{199}+6y^{198}+\cdots-1495y-16)$
c_{12}	$(y^{39}-5y^{38}+\cdots-43y-1)(y^{199}+44y^{198}+\cdots-2003y-1)$