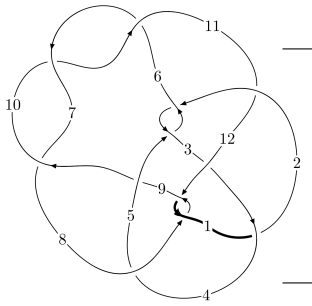
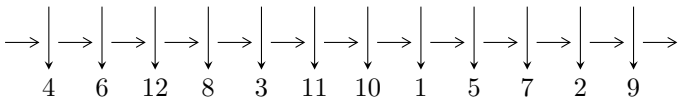
$12a_{0996}$ $(K12a_{0996})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.90960 \times 10^{415} u^{130} + 7.68931 \times 10^{415} u^{129} + \cdots + 1.61094 \times 10^{416} b + 3.02271 \times 10^{416},$$
$$- 4.21404 \times 10^{415} u^{130} + 1.31941 \times 10^{416} u^{129} + \cdots + 1.61094 \times 10^{416} a - 5.54652 \times 10^{416},$$
$$u^{131} - 4u^{130} + \cdots + 22u + 1 \rangle$$
$$I_2^u = \langle 216373794 u^{34} - 554380012 u^{33} + \cdots + 116673229 b + 126625703,$$
$$- 108358842 u^{34} - 18053119 u^{33} + \cdots + 116673229 a + 275607483,\ u^{35} - 3u^{34} + \cdots + 2u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 166 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. $\boldsymbol{I_1^u = \langle -1.91 \times 10^{415} u^{130} + 7.69 \times 10^{415} u^{129} + \cdots + 1.61 \times 10^{416} b + 3.02 \times 10^{416},\ -4.21 \times 10^{415} u^{130} + 1.32 \times 10^{416} u^{129} + \cdots + 1.61 \times 10^{416} a - 5.55 \times 10^{416},\ u^{131} - 4u^{130} + \cdots + 22u + 1 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.261588u^{130} - 0.819027u^{129} + \cdots - 50.5335u + 3.44302 \\ 0.118539u^{130} - 0.477317u^{129} + \cdots - 16.7988u - 1.87636 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.380127u^{130} - 1.29634u^{129} + \cdots - 67.3324u + 1.56667 \\ 0.118539u^{130} - 0.477317u^{129} + \cdots - 16.7988u - 1.87636 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.356584u^{130} + 1.38531u^{129} + \cdots - 13.6280u - 1.11146 \\ 0.218279u^{130} - 0.790506u^{129} + \cdots + 3.24429u - 0.106255 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.184006u^{130} + 0.867658u^{129} + \cdots - 5.65580u + 8.01711 \\ 0.290261u^{130} - 1.07440u^{129} + \cdots - 25.4372u - 2.43521 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0950145u^{130} + 0.502462u^{129} + \cdots - 27.1849u + 5.79044 \\ 0.244805u^{130} - 0.918752u^{129} + \cdots - 25.5390u - 2.43105 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.509084u^{130} - 1.80526u^{129} + \cdots - 73.2691u - 7.71707 \\ 0.0838838u^{130} - 0.379270u^{129} + \cdots + 5.47489u + 0.460265 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.104653u^{130} - 0.445112u^{129} + \cdots + 92.8686u + 1.67990 \\ 0.175747u^{130} - 0.633494u^{129} + \cdots - 14.5893u + 0.0235265 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.288423u^{130} - 0.981446u^{129} + \cdots + 236.582u - 18.0453$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{131} - 12u^{130} + \cdots - 72231u + 15709$
c_2, c_5	$u^{131} + 6u^{130} + \cdots + 24241u + 4453$
c_3	$u^{131} + 4u^{130} + \cdots + 3336u + 641$
c_4	$u^{131} + 4u^{130} + \cdots + 3298723u + 1083625$
c_6, c_7, c_{10}	$u^{131} - 4u^{130} + \cdots + 22u + 1$
c_8, c_{12}	$u^{131} + 39u^{129} + \cdots + 1108u + 389$
c_9	$u^{131} - 2u^{130} + \cdots + 4095541u + 816793$
c_{11}	$u^{131} - 12u^{130} + \cdots + 66370956u + 16737857$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{131} + 32y^{130} + \cdots + 12500700957y - 246772681$
c_2, c_5	$y^{131} + 92y^{130} + \cdots - 429065067y - 19829209$
c_3	$y^{131} + 4y^{130} + \cdots + 4354808y - 410881$
c_4	$y^{131} + 46y^{130} + \cdots - 65696003393271y - 1174243140625$
c_6, c_7, c_{10}	$y^{131} + 146y^{130} + \cdots + 98y - 1$
c_8, c_{12}	$y^{131} + 78y^{130} + \cdots - 4517088y - 151321$
c_9	$y^{131} + 54y^{130} + \cdots - 25212920648153y - 667150804849$
c_{11}	$y^{131} + 62y^{130} + \cdots - 5065648166473460y - 280155856952449$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.525467+0.747489I$ $a=-0.516254-1.030700I$ $b=-0.381455+1.127400I$	$1.78479+3.41105I$	0
$u=-0.525467-0.747489I$ $a=-0.516254+1.030700I$ $b=-0.381455-1.127400I$	$1.78479-3.41105I$	0
$u=-0.564328+0.700697I$ $a=1.37318+0.52817I$ $b=-0.225742-1.186250I$	$4.94780-1.67332I$	0
$u=-0.564328-0.700697I$ $a=1.37318-0.52817I$ $b=-0.225742+1.186250I$	$4.94780+1.67332I$	0
$u=0.880006+0.680875I$ $a=0.869328-0.763444I$ $b=0.234608+1.273540I$	$8.58616-2.59198I$	0
$u=0.880006-0.680875I$ $a=0.869328+0.763444I$ $b=0.234608-1.273540I$	$8.58616+2.59198I$	0
$u=-0.170306+1.106490I$ $a=0.874756-0.777817I$ $b=-0.547282+0.359701I$	$2.40346+1.11626I$	0
$u=-0.170306-1.106490I$ $a=0.874756+0.777817I$ $b=-0.547282-0.359701I$	$2.40346-1.11626I$	0
$u=0.844783+0.761981I$ $a=0.759295-0.891229I$ $b=0.460353+1.318470I$	$6.7866-14.3742I$	0
$u=0.844783-0.761981I$ $a=0.759295+0.891229I$ $b=0.460353-1.318470I$	$6.7866+14.3742I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.966463 + 0.629546I$ $a = -0.416587 + 0.605589I$ $b = -0.025810 - 1.320300I$	$8.31238 - 3.64670I$	0
$u = 0.966463 - 0.629546I$ $a = -0.416587 - 0.605589I$ $b = -0.025810 + 1.320300I$	$8.31238 + 3.64670I$	0
$u = 0.391545 + 0.745653I$ $a = 1.304230 - 0.411516I$ $b = -0.117901 + 0.935919I$	$3.53396 + 0.81367I$	0
$u = 0.391545 - 0.745653I$ $a = 1.304230 + 0.411516I$ $b = -0.117901 - 0.935919I$	$3.53396 - 0.81367I$	0
$u = 0.200353 + 0.815950I$ $a = 0.786898 + 0.633118I$ $b = 0.579221 - 1.006720I$	$5.44989 + 4.65781I$	0
$u = 0.200353 - 0.815950I$ $a = 0.786898 - 0.633118I$ $b = 0.579221 + 1.006720I$	$5.44989 - 4.65781I$	0
$u = -0.881524 + 0.774037I$ $a = 0.764216 + 0.836249I$ $b = 0.400954 - 1.240760I$	$2.91954 + 8.18653I$	0
$u = -0.881524 - 0.774037I$ $a = 0.764216 - 0.836249I$ $b = 0.400954 + 1.240760I$	$2.91954 - 8.18653I$	0
$u = 0.095734 + 1.183430I$ $a = 0.86236 + 1.27840I$ $b = -0.645368 - 0.667007I$	$2.96898 - 2.27833I$	0
$u = 0.095734 - 1.183430I$ $a = 0.86236 - 1.27840I$ $b = -0.645368 + 0.667007I$	$2.96898 + 2.27833I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.122440 + 0.412795I$ $a = -0.255003 + 0.355815I$ $b = 0.241394 - 1.207940I$	$5.60097 + 8.07537I$	0
$u = 1.122440 - 0.412795I$ $a = -0.255003 - 0.355815I$ $b = 0.241394 + 1.207940I$	$5.60097 - 8.07537I$	0
$u = -0.679368 + 0.423728I$ $a = -0.659617 - 0.405408I$ $b = -0.42833 + 1.38542I$	$4.07208 + 6.03852I$	0
$u = -0.679368 - 0.423728I$ $a = -0.659617 + 0.405408I$ $b = -0.42833 - 1.38542I$	$4.07208 - 6.03852I$	0
$u = 0.480287 + 0.635559I$ $a = 0.715445 - 0.177488I$ $b = 0.548545 + 0.327841I$	$3.95909 + 0.15415I$	0
$u = 0.480287 - 0.635559I$ $a = 0.715445 + 0.177488I$ $b = 0.548545 - 0.327841I$	$3.95909 - 0.15415I$	0
$u = 0.552318 + 0.563107I$ $a = 0.378960 + 0.091192I$ $b = 0.990789 - 0.041172I$	$2.72811 - 9.22751I$	0
$u = 0.552318 - 0.563107I$ $a = 0.378960 - 0.091192I$ $b = 0.990789 + 0.041172I$	$2.72811 + 9.22751I$	0
$u = -0.771525 + 0.142867I$ $a = 0.767470 - 0.017350I$ $b = 0.064087 - 0.934850I$	$-0.153105 + 0.774075I$	0
$u = -0.771525 - 0.142867I$ $a = 0.767470 + 0.017350I$ $b = 0.064087 + 0.934850I$	$-0.153105 - 0.774075I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.547165+0.555129I$ $a=\ \ 0.537964-0.148403I$ $b=\ \ 0.781115+0.115429I$	$-0.59426+3.82728I$	0
$u=-0.547165-0.555129I$ $a=\ \ 0.537964+0.148403I$ $b=\ \ 0.781115-0.115429I$	$-0.59426-3.82728I$	0
$u=\ \ 0.407106+0.651459I$ $a=-0.94331+1.50803I$ $b=-0.49937-1.32345I$	$3.28754-6.16924I$	0
$u=\ \ 0.407106-0.651459I$ $a=-0.94331-1.50803I$ $b=-0.49937+1.32345I$	$3.28754+6.16924I$	0
$u=-0.449681+0.611284I$ $a=\ \ 0.39328+1.49025I$ $b=-0.049580-0.368450I$	$-0.777409-0.169873I$	0
$u=-0.449681-0.611284I$ $a=\ \ 0.39328-1.49025I$ $b=-0.049580+0.368450I$	$-0.777409+0.169873I$	0
$u=-0.254376+0.710473I$ $a=\ \ 0.028031-1.346890I$ $b=-0.652609+0.702636I$	$0.72715+3.59571I$	0
$u=-0.254376-0.710473I$ $a=\ \ 0.028031+1.346890I$ $b=-0.652609-0.702636I$	$0.72715-3.59571I$	0
$u=-0.202197+1.229300I$ $a=\ \ 0.522552-0.034197I$ $b=\ \ 0.326317+0.678215I$	$2.93516+1.86963I$	0
$u=-0.202197-1.229300I$ $a=\ \ 0.522552+0.034197I$ $b=\ \ 0.326317-0.678215I$	$2.93516-1.86963I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.232849+0.708648I$		
$a=$	$1.252010-0.593464I$	$3.55823+1.07562I$	0
$b=$	$0.113498+1.099530I$		
$u=$	$0.232849-0.708648I$		
$a=$	$1.252010+0.593464I$	$3.55823-1.07562I$	0
$b=$	$0.113498-1.099530I$		
$u=$	$-0.154782+1.255220I$		
$a=$	$0.301144-0.147595I$	$2.87541+2.07039I$	0
$b=$	$0.151261+0.356983I$		
$u=$	$-0.154782-1.255220I$		
$a=$	$0.301144+0.147595I$	$2.87541-2.07039I$	0
$b=$	$0.151261-0.356983I$		
$u=$	$0.559761+0.456833I$		
$a=$	$0.13149-1.64623I$	$2.36838+5.38591I$	0
$b=$	$0.413078+0.161006I$		
$u=$	$0.559761-0.456833I$		
$a=$	$0.13149+1.64623I$	$2.36838-5.38591I$	0
$b=$	$0.413078-0.161006I$		
$u=$	$0.654306+0.281817I$		
$a=$	$0.163571-0.924402I$	$2.76516-4.00070I$	0
$b=$	$0.323027-0.483952I$		
$u=$	$0.654306-0.281817I$		
$a=$	$0.163571+0.924402I$	$2.76516+4.00070I$	0
$b=$	$0.323027+0.483952I$		
$u=$	$-0.335606+1.263310I$		
$a=$	$1.21402+1.01275I$	$4.21785+4.80654I$	0
$b=$	$0.318585-1.047330I$		
$u=$	$-0.335606-1.263310I$		
$a=$	$1.21402-1.01275I$	$4.21785-4.80654I$	0
$b=$	$0.318585+1.047330I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.486105 + 0.386932I$ $a = -1.316180 + 0.151129I$ $b = -0.413118 - 1.231790I$	$2.35694 - 3.94596I$	$-12.00000 + 0.I$
$u = 0.486105 - 0.386932I$ $a = -1.316180 - 0.151129I$ $b = -0.413118 + 1.231790I$	$2.35694 + 3.94596I$	$-12.00000 + 0.I$
$u = 0.215248 + 1.395720I$ $a = -0.447921 - 0.320010I$ $b = 0.114724 - 0.585468I$	$8.07310 - 7.11989I$	0
$u = 0.215248 - 1.395720I$ $a = -0.447921 + 0.320010I$ $b = 0.114724 + 0.585468I$	$8.07310 + 7.11989I$	0
$u = -1.30548 + 0.54994I$ $a = -0.179299 - 0.558383I$ $b = 0.117233 + 1.157250I$	$1.78788 - 1.32616I$	0
$u = -1.30548 - 0.54994I$ $a = -0.179299 + 0.558383I$ $b = 0.117233 - 1.157250I$	$1.78788 + 1.32616I$	0
$u = -0.049316 + 0.564767I$ $a = 1.27988 + 0.93417I$ $b = 0.23935 - 1.43460I$	$7.79657 - 4.44788I$	$-1.03852 + 3.60025I$
$u = -0.049316 - 0.564767I$ $a = 1.27988 - 0.93417I$ $b = 0.23935 + 1.43460I$	$7.79657 + 4.44788I$	$-1.03852 - 3.60025I$
$u = -0.01958 + 1.46746I$ $a = 0.876230 - 0.142939I$ $b = -1.59124 + 0.17580I$	$4.31106 + 1.41186I$	0
$u = -0.01958 - 1.46746I$ $a = 0.876230 + 0.142939I$ $b = -1.59124 - 0.17580I$	$4.31106 - 1.41186I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.07702 + 1.46951I$ $a = 0.54741 - 2.08870I$ $b = -0.081825 + 1.282690I$	$7.80979 + 2.38491I$	0
$u = 0.07702 - 1.46951I$ $a = 0.54741 + 2.08870I$ $b = -0.081825 - 1.282690I$	$7.80979 - 2.38491I$	0
$u = 0.09417 + 1.47358I$ $a = -0.327220 + 0.975715I$ $b = -0.819353 - 0.984384I$	$7.47427 - 5.33931I$	0
$u = 0.09417 - 1.47358I$ $a = -0.327220 - 0.975715I$ $b = -0.819353 + 0.984384I$	$7.47427 + 5.33931I$	0
$u = -0.10879 + 1.48397I$ $a = 0.34271 + 2.41275I$ $b = 0.027694 - 1.134690I$	$4.90605 + 2.62766I$	0
$u = -0.10879 - 1.48397I$ $a = 0.34271 - 2.41275I$ $b = 0.027694 + 1.134690I$	$4.90605 - 2.62766I$	0
$u = -0.195535 + 0.462414I$ $a = -3.15314 - 2.03501I$ $b = -0.151584 + 1.319220I$	$7.40603 + 5.36191I$	$1.35055 - 6.94425I$
$u = -0.195535 - 0.462414I$ $a = -3.15314 + 2.03501I$ $b = -0.151584 - 1.319220I$	$7.40603 - 5.36191I$	$1.35055 + 6.94425I$
$u = -0.07278 + 1.49703I$ $a = 0.1331470 - 0.0366763I$ $b = -0.944038 + 0.310529I$	$5.50497 + 0.88667I$	0
$u = -0.07278 - 1.49703I$ $a = 0.1331470 + 0.0366763I$ $b = -0.944038 - 0.310529I$	$5.50497 - 0.88667I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.08477 + 1.50677I$ $a = -0.10017 - 2.91395I$ $b = 0.080506 + 1.145760I$	$9.92277 - 7.96764I$	0
$u = 0.08477 - 1.50677I$ $a = -0.10017 + 2.91395I$ $b = 0.080506 - 1.145760I$	$9.92277 + 7.96764I$	0
$u = 0.14044 + 1.51388I$ $a = -0.40585 + 1.86069I$ $b = -0.61460 - 1.46923I$	$8.75421 - 6.14519I$	0
$u = 0.14044 - 1.51388I$ $a = -0.40585 - 1.86069I$ $b = -0.61460 + 1.46923I$	$8.75421 + 6.14519I$	0
$u = -0.00720 + 1.52348I$ $a = 1.067230 + 0.234317I$ $b = -1.52493 - 0.14494I$	$5.01790 - 1.06490I$	0
$u = -0.00720 - 1.52348I$ $a = 1.067230 - 0.234317I$ $b = -1.52493 + 0.14494I$	$5.01790 + 1.06490I$	0
$u = -0.19909 + 1.51292I$ $a = -0.33633 - 1.96696I$ $b = -0.56930 + 1.64569I$	$10.46230 + 9.15030I$	0
$u = -0.19909 - 1.51292I$ $a = -0.33633 + 1.96696I$ $b = -0.56930 - 1.64569I$	$10.46230 - 9.15030I$	0
$u = 0.424862 + 0.187704I$ $a = -0.79025 - 1.39071I$ $b = -0.419498 - 0.958810I$	$1.82455 - 3.76967I$	$-11.75678 + 7.09571I$
$u = 0.424862 - 0.187704I$ $a = -0.79025 + 1.39071I$ $b = -0.419498 + 0.958810I$	$1.82455 + 3.76967I$	$-11.75678 - 7.09571I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.06958+1.53861I$ $a=-0.94463-2.22813I$ $b=-0.33669+1.37547I$	$14.2564+6.3702I$	0
$u=-0.06958-1.53861I$ $a=-0.94463+2.22813I$ $b=-0.33669-1.37547I$	$14.2564-6.3702I$	0
$u=-0.446360+0.102208I$ $a=2.83776+0.86119I$ $b=0.108364-0.708821I$	$-0.719730+0.828371I$	$-13.9889-7.7855I$
$u=-0.446360-0.102208I$ $a=2.83776-0.86119I$ $b=0.108364+0.708821I$	$-0.719730-0.828371I$	$-13.9889+7.7855I$
$u=-0.16340+1.55068I$ $a=-0.429415+0.142778I$ $b=1.183210+0.024159I$	$6.44424+6.40666I$	0
$u=-0.16340-1.55068I$ $a=-0.429415-0.142778I$ $b=1.183210-0.024159I$	$6.44424-6.40666I$	0
$u=0.13859+1.55371I$ $a=-0.119292-0.402432I$ $b=0.917518+0.228641I$	$11.22590-2.06972I$	0
$u=0.13859-1.55371I$ $a=-0.119292+0.402432I$ $b=0.917518-0.228641I$	$11.22590+2.06972I$	0
$u=0.00146+1.56096I$ $a=0.04824+1.96992I$ $b=0.54559-1.68239I$	$15.0869-4.3684I$	0
$u=0.00146-1.56096I$ $a=0.04824-1.96992I$ $b=0.54559+1.68239I$	$15.0869+4.3684I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.11268 + 1.55807I$ $a = -0.123134 - 0.718412I$ $b = -0.467042 + 0.185434I$	$9.27779 + 3.03828I$	0
$u = 0.11268 - 1.55807I$ $a = -0.123134 + 0.718412I$ $b = -0.467042 - 0.185434I$	$9.27779 - 3.03828I$	0
$u = 0.16375 + 1.55556I$ $a = -0.636134 - 0.231500I$ $b = 1.371360 + 0.046679I$	$9.8171 - 11.8228I$	0
$u = 0.16375 - 1.55556I$ $a = -0.636134 + 0.231500I$ $b = 1.371360 - 0.046679I$	$9.8171 + 11.8228I$	0
$u = -0.179859 + 0.392484I$ $a = 0.33913 + 1.63340I$ $b = -0.421805 - 0.084508I$	$-0.693141 - 0.239546I$	$-13.64098 + 0.46101I$
$u = -0.179859 - 0.392484I$ $a = 0.33913 - 1.63340I$ $b = -0.421805 + 0.084508I$	$-0.693141 + 0.239546I$	$-13.64098 - 0.46101I$
$u = 0.298681 + 0.305306I$ $a = 2.10049 - 4.70701I$ $b = 0.255646 + 0.924205I$	$3.68947 - 6.65430I$	$-6.6298 + 13.2899I$
$u = 0.298681 - 0.305306I$ $a = 2.10049 + 4.70701I$ $b = 0.255646 - 0.924205I$	$3.68947 + 6.65430I$	$-6.6298 - 13.2899I$
$u = 0.02719 + 1.57899I$ $a = 0.21494 - 1.76058I$ $b = 0.47957 + 1.43896I$	$11.30710 + 0.37254I$	0
$u = 0.02719 - 1.57899I$ $a = 0.21494 + 1.76058I$ $b = 0.47957 - 1.43896I$	$11.30710 - 0.37254I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.398552+0.086514I$ $a=\ \ 0.138522-0.636070I$ $b=-0.916128-0.213738I$	$-0.89681-1.14101I$	$-16.6958+4.1360I$
$u=-0.398552-0.086514I$ $a=\ \ 0.138522+0.636070I$ $b=-0.916128+0.213738I$	$-0.89681+1.14101I$	$-16.6958-4.1360I$
$u=\ \ 0.11971+1.59075I$ $a=-0.23225+2.23406I$ $b=-0.52769-1.55163I$	$10.91940-8.12628I$	0
$u=\ \ 0.11971-1.59075I$ $a=-0.23225-2.23406I$ $b=-0.52769+1.55163I$	$10.91940+8.12628I$	0
$u=-0.12383+1.60412I$ $a=\ \ 0.92637+1.54070I$ $b=\ \ 0.092457-1.155070I$	$12.81460+0.70744I$	0
$u=-0.12383-1.60412I$ $a=\ \ 0.92637-1.54070I$ $b=\ \ 0.092457+1.155070I$	$12.81460-0.70744I$	0
$u=\ \ 0.294346+0.248668I$ $a=\ \ 1.90504-0.04589I$ $b=-0.419725+1.092290I$	$2.04540+3.46709I$	$-11.53743-3.43649I$
$u=\ \ 0.294346-0.248668I$ $a=\ \ 1.90504+0.04589I$ $b=-0.419725-1.092290I$	$2.04540-3.46709I$	$-11.53743+3.43649I$
$u=\ \ 0.09145+1.61279I$ $a=\ \ 0.620412-1.262540I$ $b=\ \ 0.301152+0.975293I$	$11.63010-0.87027I$	0
$u=\ \ 0.09145-1.61279I$ $a=\ \ 0.620412+1.262540I$ $b=\ \ 0.301152-0.975293I$	$11.63010+0.87027I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.15234+1.61468I$ $a=-0.15422-1.93329I$ $b=-0.51779+1.45393I$	$9.77845+5.95718I$	0
$u=-0.15234-1.61468I$ $a=-0.15422+1.93329I$ $b=-0.51779-1.45393I$	$9.77845-5.95718I$	0
$u=0.00633+1.62262I$ $a=-0.03722+1.52155I$ $b=0.75800-1.32709I$	$13.9268+4.1788I$	0
$u=0.00633-1.62262I$ $a=-0.03722-1.52155I$ $b=0.75800+1.32709I$	$13.9268-4.1788I$	0
$u=0.28371+1.60451I$ $a=0.71771-1.71135I$ $b=0.43010+1.36925I$	$16.0935-6.8733I$	0
$u=0.28371-1.60451I$ $a=0.71771+1.71135I$ $b=0.43010-1.36925I$	$16.0935+6.8733I$	0
$u=0.270101+0.251756I$ $a=-0.125875+1.155490I$ $b=-0.959335-0.083260I$	$-1.07413-0.92579I$	$-15.2282+7.1977I$
$u=0.270101-0.251756I$ $a=-0.125875-1.155490I$ $b=-0.959335+0.083260I$	$-1.07413+0.92579I$	$-15.2282-7.1977I$
$u=0.30549+1.62589I$ $a=-0.51328+1.68940I$ $b=-0.19698-1.51663I$	$15.7871-8.3497I$	0
$u=0.30549-1.62589I$ $a=-0.51328-1.68940I$ $b=-0.19698+1.51663I$	$15.7871+8.3497I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.27141 + 1.63294I$ $a = 0.49033 - 1.83101I$ $b = 0.58276 + 1.47182I$	$14.6938 - 18.5735I$	0
$u = 0.27141 - 1.63294I$ $a = 0.49033 + 1.83101I$ $b = 0.58276 - 1.47182I$	$14.6938 + 18.5735I$	0
$u = -0.28144 + 1.63293I$ $a = 0.53157 + 1.73016I$ $b = 0.55641 - 1.39824I$	$10.8234 + 12.5374I$	0
$u = -0.28144 - 1.63293I$ $a = 0.53157 - 1.73016I$ $b = 0.55641 + 1.39824I$	$10.8234 - 12.5374I$	0
$u = -0.330231$ $a = 0.862570$ $b = -0.276272$	-0.666297	-15.1140
$u = -0.23702 + 1.75688I$ $a = -0.25300 - 1.51117I$ $b = -0.270666 + 1.273020I$	$10.39850 + 4.90574I$	0
$u = -0.23702 - 1.75688I$ $a = -0.25300 + 1.51117I$ $b = -0.270666 - 1.273020I$	$10.39850 - 4.90574I$	0
$u = 0.45924 + 1.79309I$ $a = -0.417393 + 1.264210I$ $b = -0.061216 - 1.224550I$	$12.50850 + 1.60896I$	0
$u = 0.45924 - 1.79309I$ $a = -0.417393 - 1.264210I$ $b = -0.061216 + 1.224550I$	$12.50850 - 1.60896I$	0
$u = -0.0431067 + 0.0361683I$ $a = 5.78437 - 2.79900I$ $b = -1.172340 - 0.229616I$	$-1.05060 - 1.12049I$	$-28.1733 + 9.5439I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.0431067-0.0361683I$		
$a=\ \ 5.78437+2.79900I$	$-1.05060+1.12049I$	$-28.1733-9.5439I$
$b=-1.172340+0.229616I$		

II.

$\boldsymbol{I_2^u = \langle 2.16\times 10^8 u^{34} - 5.54\times 10^8 u^{33} + \cdots + 1.17\times 10^8 b + 1.27\times 10^8,\ -1.08\times 10^8 u^{34} - 1.81\times 10^7 u^{33} + \cdots + 1.17\times 10^8 a + 2.76\times 10^8,\ u^{35} - 3u^{34} + \cdots + 2u - 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.928738u^{34} + 0.154732u^{33} + \cdots + 2.69354u - 2.36222 \\ -1.85453u^{34} + 4.75156u^{33} + \cdots + 1.08009u - 1.08530 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.925790u^{34} + 4.90629u^{33} + \cdots + 3.77363u - 3.44752 \\ -1.85453u^{34} + 4.75156u^{33} + \cdots + 1.08009u - 1.08530 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0519270u^{34} + 6.58517u^{33} + \cdots + 3.83234u - 4.04395 \\ 0.167589u^{34} + 1.63749u^{33} + \cdots + 0.645476u - 1.19399 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.343407u^{34} + 2.46362u^{33} + \cdots + 2.85450u - 0.908133 \\ -0.850583u^{34} + 1.28594u^{33} + \cdots - 0.248907u - 0.834372 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.660538u^{34} - 1.00200u^{33} + \cdots + 1.52551u - 1.65720 \\ -1.35302u^{34} - 0.0611587u^{33} + \cdots - 4.07804u + 1.70703 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.925790u^{34} + 4.90629u^{33} + \cdots + 1.77363u - 2.44752 \\ 0.0766093u^{34} + 0.190531u^{33} + \cdots - 2.48948u + 0.359106 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.350461u^{34} - 4.07651u^{33} + \cdots - 3.34045u + 2.61944 \\ 1.46993u^{34} - 6.05091u^{33} + \cdots - 4.38886u + 0.665278 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{219364424}{116673229}u^{34} + \frac{511779779}{116673229}u^{33} + \cdots + \frac{5220911812}{116673229}u - \frac{82727589}{116673229}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{35} - 3u^{34} + \cdots + u - 1$
c_2	$u^{35} - 13u^{34} + \cdots + 55u - 5$
c_3	$u^{35} - 3u^{34} + \cdots + 4u + 1$
c_4	$u^{35} + 3u^{34} + \cdots - u - 1$
c_5	$u^{35} + 13u^{34} + \cdots + 55u + 5$
c_6, c_7	$u^{35} - 3u^{34} + \cdots + 2u - 1$
c_8	$u^{35} + 3u^{34} + \cdots - 26u^2 - 5$
c_9	$u^{35} + u^{34} + \cdots + 17u + 5$
c_{10}	$u^{35} + 3u^{34} + \cdots + 2u + 1$
c_{11}	$u^{35} + u^{34} + \cdots + 36u - 5$
c_{12}	$u^{35} - 3u^{34} + \cdots + 26u^2 + 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{35} - 9y^{34} + \cdots + 25y - 1$
c_2, c_5	$y^{35} + 19y^{34} + \cdots - 315y - 25$
c_3	$y^{35} - 9y^{34} + \cdots + 12y - 1$
c_4	$y^{35} + y^{34} + \cdots - 19y - 1$
c_6, c_7, c_{10}	$y^{35} + 41y^{34} + \cdots - 18y - 1$
c_8, c_{12}	$y^{35} + 17y^{34} + \cdots - 260y - 25$
c_9	$y^{35} + 21y^{34} + \cdots + 239y - 25$
c_{11}	$y^{35} + 5y^{34} + \cdots - 144y - 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.122145 + 1.004060I$ $a = 1.10104 - 1.31634I$ $b = -0.478762 + 1.079080I$	$3.87342 + 2.99839I$	$-4.47816 - 6.39745I$
$u = 0.122145 - 1.004060I$ $a = 1.10104 + 1.31634I$ $b = -0.478762 - 1.079080I$	$3.87342 - 2.99839I$	$-4.47816 + 6.39745I$
$u = 1.022900 + 0.445739I$ $a = 0.224069 - 0.270475I$ $b = -0.107188 + 1.109310I$	$1.33723 + 0.96225I$	$-10.20506 + 1.20335I$
$u = 1.022900 - 0.445739I$ $a = 0.224069 + 0.270475I$ $b = -0.107188 - 1.109310I$	$1.33723 - 0.96225I$	$-10.20506 - 1.20335I$
$u = 0.051151 + 1.158520I$ $a = 0.902479 + 0.773211I$ $b = -0.776451 - 0.477602I$	$1.98933 - 1.53831I$	$-15.6685 + 4.6367I$
$u = 0.051151 - 1.158520I$ $a = 0.902479 - 0.773211I$ $b = -0.776451 + 0.477602I$	$1.98933 + 1.53831I$	$-15.6685 - 4.6367I$
$u = 0.240903 + 1.211540I$ $a = -1.32604 + 0.91222I$ $b = -0.376764 - 1.035040I$	$4.03059 - 5.14210I$	$-12.0000 + 12.7056I$
$u = 0.240903 - 1.211540I$ $a = -1.32604 - 0.91222I$ $b = -0.376764 + 1.035040I$	$4.03059 + 5.14210I$	$-12.0000 - 12.7056I$
$u = 0.131244 + 1.256450I$ $a = -0.655224 + 0.387240I$ $b = -0.281083 + 0.598820I$	$2.56530 - 1.95141I$	$-19.9036 + 4.0958I$
$u = 0.131244 - 1.256450I$ $a = -0.655224 - 0.387240I$ $b = -0.281083 - 0.598820I$	$2.56530 + 1.95141I$	$-19.9036 - 4.0958I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.488132 + 0.522037I$ $a = -0.74810 + 2.18187I$ $b = -0.064447 - 0.734888I$	$-0.161826 - 0.010723I$	$-3.32308 + 1.40241I$
$u = 0.488132 - 0.522037I$ $a = -0.74810 - 2.18187I$ $b = -0.064447 + 0.734888I$	$-0.161826 + 0.010723I$	$-3.32308 - 1.40241I$
$u = 0.418014 + 0.569996I$ $a = -1.002590 + 0.800897I$ $b = -0.493707 - 1.282760I$	$2.93762 - 4.85759I$	$-6.91178 + 6.85657I$
$u = 0.418014 - 0.569996I$ $a = -1.002590 - 0.800897I$ $b = -0.493707 + 1.282760I$	$2.93762 + 4.85759I$	$-6.91178 - 6.85657I$
$u = 0.123340 + 1.320410I$ $a = 0.245699 + 0.170225I$ $b = -0.660906 + 0.143798I$	$2.21573 - 2.00607I$	$-12.00000 + 0.I$
$u = 0.123340 - 1.320410I$ $a = 0.245699 - 0.170225I$ $b = -0.660906 - 0.143798I$	$2.21573 + 2.00607I$	$-12.00000 + 0.I$
$u = -0.142168 + 1.376570I$ $a = 0.031076 - 0.659163I$ $b = 0.246715 - 0.603133I$	$7.81251 + 7.81096I$	0
$u = -0.142168 - 1.376570I$ $a = 0.031076 + 0.659163I$ $b = 0.246715 + 0.603133I$	$7.81251 - 7.81096I$	0
$u = -0.527923 + 0.200119I$ $a = -1.57895 - 0.13839I$ $b = -0.095477 + 1.328750I$	$6.40361 + 5.10941I$	$-7.24097 - 5.59956I$
$u = -0.527923 - 0.200119I$ $a = -1.57895 + 0.13839I$ $b = -0.095477 - 1.328750I$	$6.40361 - 5.10941I$	$-7.24097 + 5.59956I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.01292 + 1.52144I$ $a = 1.027380 - 0.222140I$ $b = -1.60803 + 0.21423I$	$5.47553 + 0.82226I$	0
$u = 0.01292 - 1.52144I$ $a = 1.027380 + 0.222140I$ $b = -1.60803 - 0.21423I$	$5.47553 - 0.82226I$	0
$u = -0.13874 + 1.53102I$ $a = -0.53702 - 2.29118I$ $b = -0.27753 + 1.51654I$	$12.6081 + 7.3569I$	0
$u = -0.13874 - 1.53102I$ $a = -0.53702 + 2.29118I$ $b = -0.27753 - 1.51654I$	$12.6081 - 7.3569I$	0
$u = 0.452585$ $a = -0.885508$ $b = -0.583264$	-1.90141	-21.3700
$u = -0.409627 + 0.190953I$ $a = -2.95073 - 1.76263I$ $b = 0.220485 + 0.768433I$	$3.57544 - 5.92199I$	$-6.82039 + 2.97842I$
$u = -0.409627 - 0.190953I$ $a = -2.95073 + 1.76263I$ $b = 0.220485 - 0.768433I$	$3.57544 + 5.92199I$	$-6.82039 - 2.97842I$
$u = 0.13268 + 1.58332I$ $a = -0.19383 + 2.00083I$ $b = -0.60242 - 1.54121I$	$10.31210 - 6.95058I$	0
$u = 0.13268 - 1.58332I$ $a = -0.19383 - 2.00083I$ $b = -0.60242 + 1.54121I$	$10.31210 + 6.95058I$	0
$u = -0.27950 + 1.61581I$ $a = 0.457954 + 1.185000I$ $b = 0.191754 - 1.165930I$	$11.39260 - 1.40260I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.27950-1.61581I$ $a=\ \ 0.457954-1.185000I$ $b=\ \ 0.191754+1.165930I$	$11.39260+1.40260I$	0
$u=\ \ 0.056565+0.286434I$ $a=-0.272945-0.201557I$ $b=-1.278180+0.247560I$	$-0.883230+1.048200I$	$12.6366+7.8894I$
$u=\ \ 0.056565-0.286434I$ $a=-0.272945+0.201557I$ $b=-1.278180-0.247560I$	$-0.883230-1.048200I$	$12.6366-7.8894I$
$u=-0.02833+1.72895I$ $a=\ \ 0.21848-1.60370I$ $b=\ \ 0.233629+1.080700I$	$11.00330-3.51278I$	0
$u=-0.02833-1.72895I$ $a=\ \ 0.21848+1.60370I$ $b=\ \ 0.233629-1.080700I$	$11.00330+3.51278I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{35}-3u^{34}+\cdots+u-1)(u^{131}-12u^{130}+\cdots-72231u+15709)$
c_2	$(u^{35}-13u^{34}+\cdots+55u-5)(u^{131}+6u^{130}+\cdots+24241u+4453)$
c_3	$(u^{35}-3u^{34}+\cdots+4u+1)(u^{131}+4u^{130}+\cdots+3336u+641)$
c_4	$(u^{35}+3u^{34}+\cdots-u-1)(u^{131}+4u^{130}+\cdots+3298723u+1083625)$
c_5	$(u^{35}+13u^{34}+\cdots+55u+5)(u^{131}+6u^{130}+\cdots+24241u+4453)$
c_6, c_7	$(u^{35}-3u^{34}+\cdots+2u-1)(u^{131}-4u^{130}+\cdots+22u+1)$
c_8	$(u^{35}+3u^{34}+\cdots-26u^2-5)(u^{131}+39u^{129}+\cdots+1108u+389)$
c_9	$(u^{35}+u^{34}+\cdots+17u+5)(u^{131}-2u^{130}+\cdots+4095541u+816793)$
c_{10}	$(u^{35}+3u^{34}+\cdots+2u+1)(u^{131}-4u^{130}+\cdots+22u+1)$
c_{11}	$(u^{35}+u^{34}+\cdots+36u-5)$ $\cdot(u^{131}-12u^{130}+\cdots+66370956u+16737857)$
c_{12}	$(u^{35}-3u^{34}+\cdots+26u^2+5)(u^{131}+39u^{129}+\cdots+1108u+389)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{35} - 9y^{34} + \cdots + 25y - 1)$ $\cdot (y^{131} + 32y^{130} + \cdots + 12500700957y - 246772681)$
c_2, c_5	$(y^{35} + 19y^{34} + \cdots - 315y - 25)$ $\cdot (y^{131} + 92y^{130} + \cdots - 429065067y - 19829209)$
c_3	$(y^{35} - 9y^{34} + \cdots + 12y - 1)(y^{131} + 4y^{130} + \cdots + 4354808y - 410881)$
c_4	$(y^{35} + y^{34} + \cdots - 19y - 1)$ $\cdot (y^{131} + 46y^{130} + \cdots - 65696003393271y - 1174243140625)$
c_6, c_7, c_{10}	$(y^{35} + 41y^{34} + \cdots - 18y - 1)(y^{131} + 146y^{130} + \cdots + 98y - 1)$
c_8, c_{12}	$(y^{35} + 17y^{34} + \cdots - 260y - 25)$ $\cdot (y^{131} + 78y^{130} + \cdots - 4517088y - 151321)$
c_9	$(y^{35} + 21y^{34} + \cdots + 239y - 25)$ $\cdot (y^{131} + 54y^{130} + \cdots - 25212920648153y - 667150804849)$
c_{11}	$(y^{35} + 5y^{34} + \cdots - 144y - 25)$ $\cdot (y^{131} + 62y^{130} + \cdots - 5065648166473460y - 280155856952449)$