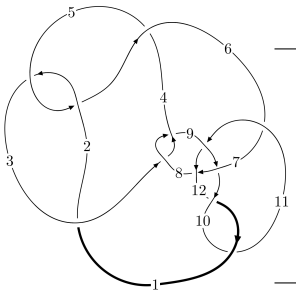
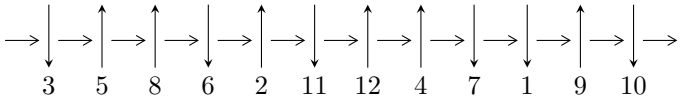
$12a_{0132}$ $(K12a_{0132})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 5.62500 \times 10^{507} u^{123} + 6.31929 \times 10^{507} u^{122} + \cdots + 2.55470 \times 10^{510} b - 2.21789 \times 10^{511},$$
$$- 6.08901 \times 10^{508} u^{123} - 1.58391 \times 10^{509} u^{122} + \cdots + 1.02188 \times 10^{511} a - 1.29482 \times 10^{512},$$
$$u^{124} + u^{123} + \cdots - 5120u + 1024 \rangle$$

$$I_1^v = \langle a,\ 1728v^9 + 4936v^8 + 9872v^7 - 12908v^6 - 24680v^5 + 34552v^4 + 91527v^3 - 4936v^2 + 3335b + 613,$$
$$v^{10} + 3v^9 + 6v^8 - 7v^7 - 16v^6 + 19v^5 + 58v^4 + 2v^3 - 7v^2 + v + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 134 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. $\boldsymbol{I_1^u = \langle 5.63 \times 10^{507} u^{123} + 6.32 \times 10^{507} u^{122} + \cdots + 2.55 \times 10^{510} b - 2.22 \times 10^{511},\ -6.09 \times 10^{508} u^{123} - 1.58 \times 10^{509} u^{122} + \cdots + 1.02 \times 10^{511} a - 1.29 \times 10^{512},\ u^{124} + u^{123} + \cdots - 5120u + 1024 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} 0.00595864u^{123} + 0.0155000u^{122} + \cdots + 16.8620u + 12.6709 \\ -0.00220183u^{123} - 0.00247360u^{122} + \cdots - 26.2981u + 8.68161 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0324749u^{123} - 0.0607838u^{122} + \cdots - 230.963u + 46.6844 \\ 0.00378830u^{123} + 0.00499386u^{122} + \cdots + 8.89055u - 5.72918 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0182618u^{123} + 0.0309327u^{122} + \cdots + 105.201u - 21.3586 \\ -0.00140036u^{123} - 0.00248372u^{122} + \cdots + 12.7388u - 3.20499 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.00690886u^{123} - 0.00829307u^{122} + \cdots - 79.1920u + 29.3712 \\ -0.00140036u^{123} - 0.00248372u^{122} + \cdots + 12.7388u - 3.20499 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.00816047u^{123} + 0.0179736u^{122} + \cdots + 43.1601u + 3.98933 \\ -0.00220183u^{123} - 0.00247360u^{122} + \cdots - 26.2981u + 8.68161 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0106337u^{123} - 0.0146047u^{122} + \cdots - 66.4407u + 24.7488 \\ 0.00372489u^{123} + 0.00631165u^{122} + \cdots - 12.7513u + 4.62242 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00761734u^{123} + 0.00955153u^{122} + \cdots + 44.0856u - 14.0585 \\ 0.0119599u^{123} + 0.0204629u^{122} + \cdots + 101.335u - 28.7078 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.00597755u^{123} - 0.00670190u^{122} + \cdots - 69.7496u + 25.3049 \\ -0.00252974u^{123} - 0.00392118u^{122} + \cdots + 5.72123u + 0.185587 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0208807u^{123} - 0.0235904u^{122} + \cdots - 165.877u + 74.8282$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{124} + 42u^{123} + \cdots + 2u + 1$
c_2, c_5	$u^{124} + 6u^{123} + \cdots + 2u + 1$
c_3, c_8	$u^{124} - u^{123} + \cdots + 5120u + 1024$
c_6	$u^{124} + 3u^{123} + \cdots - 376993u - 48793$
c_7	$u^{124} - 3u^{123} + \cdots + 1975u + 1031$
c_9	$u^{124} - 9u^{123} + \cdots - 3u + 1$
c_{10}, c_{12}	$u^{124} - 3u^{123} + \cdots - 17u + 1$
c_{11}	$u^{124} + 21u^{123} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{124} + 86y^{123} + \cdots - 1250y + 1$
c_2, c_5	$y^{124} + 42y^{123} + \cdots + 2y + 1$
c_3, c_8	$y^{124} - 55y^{123} + \cdots - 26214400y + 1048576$
c_6	$y^{124} + 83y^{123} + \cdots - 318551403169y + 2380756849$
c_7	$y^{124} + 131y^{123} + \cdots + 138554707y + 1062961$
c_9	$y^{124} - 21y^{123} + \cdots - 9y + 1$
c_{10}, c_{12}	$y^{124} - 85y^{123} + \cdots - 17y + 1$
c_{11}	$y^{124} + 3y^{123} + \cdots - 17y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.522189+0.849715I$ $a=\ 0.0863169+0.0937477I$ $b=\ 0.822352+1.127080I$	$-7.69575+7.07073I$	0
$u=-0.522189-0.849715I$ $a=\ 0.0863169-0.0937477I$ $b=\ 0.822352-1.127080I$	$-7.69575-7.07073I$	0
$u=-0.761135+0.655567I$ $a=\ 1.73888+1.08981I$ $b=\ 1.38408-0.94824I$	$-6.14991-0.54757I$	0
$u=-0.761135-0.655567I$ $a=\ 1.73888-1.08981I$ $b=\ 1.38408+0.94824I$	$-6.14991+0.54757I$	0
$u=\ 0.890683+0.466793I$ $a=\ 1.38896-0.33416I$ $b=\ 0.294252+0.387769I$	$-1.73197+2.72965I$	0
$u=\ 0.890683-0.466793I$ $a=\ 1.38896+0.33416I$ $b=\ 0.294252-0.387769I$	$-1.73197-2.72965I$	0
$u=\ 0.797869+0.557988I$ $a=-3.22687-0.82452I$ $b=-0.405742+0.130680I$	$-3.73679+2.23882I$	0
$u=\ 0.797869-0.557988I$ $a=-3.22687+0.82452I$ $b=-0.405742-0.130680I$	$-3.73679-2.23882I$	0
$u=-1.03358$ $a=\ 1.17878$ $b=\ 0.419420$	1.67471	0
$u=\ 0.152273+0.950799I$ $a=\ 0.439586+0.095214I$ $b=\ 0.352639-0.121692I$	$0.94696-2.64839I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.152273 - 0.950799I$ $a = 0.439586 - 0.095214I$ $b = 0.352639 + 0.121692I$	$0.94696 + 2.64839I$	0
$u = 0.111280 + 0.950958I$ $a = 0.0891030 - 0.0899186I$ $b = 0.632776 - 0.873813I$	$-4.19980 - 4.72472I$	0
$u = 0.111280 - 0.950958I$ $a = 0.0891030 + 0.0899186I$ $b = 0.632776 + 0.873813I$	$-4.19980 + 4.72472I$	0
$u = 0.402887 + 0.866992I$ $a = 0.0821980 + 0.0901132I$ $b = 0.214260 + 0.899169I$	$-7.15417 + 1.85942I$	0
$u = 0.402887 - 0.866992I$ $a = 0.0821980 - 0.0901132I$ $b = 0.214260 - 0.899169I$	$-7.15417 - 1.85942I$	0
$u = 0.280900 + 1.008390I$ $a = 0.391230 - 0.030549I$ $b = -1.077510 + 0.875402I$	$2.42925 - 1.41500I$	0
$u = 0.280900 - 1.008390I$ $a = 0.391230 + 0.030549I$ $b = -1.077510 - 0.875402I$	$2.42925 + 1.41500I$	0
$u = 1.031570 + 0.216136I$ $a = 0.478722 + 0.364587I$ $b = -0.13582 + 1.68474I$	$2.05301 - 3.14695I$	0
$u = 1.031570 - 0.216136I$ $a = 0.478722 - 0.364587I$ $b = -0.13582 - 1.68474I$	$2.05301 + 3.14695I$	0
$u = -0.473625 + 0.808076I$ $a = 1.61929 + 1.80920I$ $b = 0.90344 - 1.17489I$	$-2.69231 + 4.85276I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.473625-0.808076I$ $a=\ \ 1.61929-1.80920I$ $b=\ \ 0.90344+1.17489I$	$-2.69231-4.85276I$	0
$u=-0.869219+0.624266I$ $a=-0.026699+1.149100I$ $b=\ \ 1.15222+1.28001I$	$-5.81970-4.41330I$	0
$u=-0.869219-0.624266I$ $a=-0.026699-1.149100I$ $b=\ \ 1.15222-1.28001I$	$-5.81970+4.41330I$	0
$u=\ \ 1.011480+0.407367I$ $a=\ \ 1.72293-0.53877I$ $b=\ \ 1.78222+0.59259I$	$-0.730807+0.398436I$	0
$u=\ \ 1.011480-0.407367I$ $a=\ \ 1.72293+0.53877I$ $b=\ \ 1.78222-0.59259I$	$-0.730807-0.398436I$	0
$u=-1.030000+0.366353I$ $a=\ \ 0.450444-0.294246I$ $b=-0.33214-1.71255I$	$1.53090-2.31840I$	0
$u=-1.030000-0.366353I$ $a=\ \ 0.450444+0.294246I$ $b=-0.33214+1.71255I$	$1.53090+2.31840I$	0
$u=-0.623007+0.656376I$ $a=\ \ 0.475591-0.097288I$ $b=-0.72278-1.27191I$	$-2.52436+2.17800I$	0
$u=-0.623007-0.656376I$ $a=\ \ 0.475591+0.097288I$ $b=-0.72278+1.27191I$	$-2.52436-2.17800I$	0
$u=\ \ 1.053460+0.334053I$ $a=-2.01750-0.15227I$ $b=-1.13686-0.92726I$	$2.86743+4.32090I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.053460 - 0.334053I$ $a = -2.01750 + 0.15227I$ $b = -1.13686 + 0.92726I$	$2.86743 - 4.32090I$	0
$u = -0.414510 + 1.030550I$ $a = 0.383786 - 0.005613I$ $b = -1.12283 - 1.02161I$	$1.80176 + 6.87033I$	0
$u = -0.414510 - 1.030550I$ $a = 0.383786 + 0.005613I$ $b = -1.12283 + 1.02161I$	$1.80176 - 6.87033I$	0
$u = -0.572881 + 0.659676I$ $a = 0.344044 - 0.599325I$ $b = -0.544766 + 0.047925I$	$1.20860 - 1.42458I$	0
$u = -0.572881 - 0.659676I$ $a = 0.344044 + 0.599325I$ $b = -0.544766 - 0.047925I$	$1.20860 + 1.42458I$	0
$u = 0.665383 + 0.564962I$ $a = 0.570587 + 0.554244I$ $b = 0.060268 - 0.573061I$	$-2.39931 + 1.48408I$	0
$u = 0.665383 - 0.564962I$ $a = 0.570587 - 0.554244I$ $b = 0.060268 + 0.573061I$	$-2.39931 - 1.48408I$	0
$u = -0.989470 + 0.558874I$ $a = -2.06439 - 0.45163I$ $b = -1.09167 + 1.19055I$	$-1.39443 - 6.91886I$	0
$u = -0.989470 - 0.558874I$ $a = -2.06439 + 0.45163I$ $b = -1.09167 - 1.19055I$	$-1.39443 + 6.91886I$	0
$u = 0.772728 + 0.361889I$ $a = 0.63020 - 1.27375I$ $b = 0.705390 - 1.112000I$	$-1.69027 + 2.64124I$	$0. - 7.32213I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.772728 - 0.361889I$ $a = 0.63020 + 1.27375I$ $b = 0.705390 + 1.112000I$	$-1.69027 - 2.64124I$	$0. + 7.32213I$
$u = -0.818440 + 0.227503I$ $a = -2.82221 + 0.73628I$ $b = -0.865751 + 0.851616I$	$0.462211 - 0.187148I$	$0. + 3.23998I$
$u = -0.818440 - 0.227503I$ $a = -2.82221 - 0.73628I$ $b = -0.865751 - 0.851616I$	$0.462211 + 0.187148I$	$0. - 3.23998I$
$u = -1.125240 + 0.301866I$ $a = 0.057941 - 1.051830I$ $b = -0.118948 + 0.739585I$	$3.08312 - 0.32521I$	0
$u = -1.125240 - 0.301866I$ $a = 0.057941 + 1.051830I$ $b = -0.118948 - 0.739585I$	$3.08312 + 0.32521I$	0
$u = -1.042560 + 0.521582I$ $a = 1.60410 + 0.63813I$ $b = 1.82232 - 0.76467I$	$-1.57172 - 5.89073I$	0
$u = -1.042560 - 0.521582I$ $a = 1.60410 - 0.63813I$ $b = 1.82232 + 0.76467I$	$-1.57172 + 5.89073I$	0
$u = -1.104320 + 0.436031I$ $a = 1.96749 - 0.16728I$ $b = 0.932441 - 0.941120I$	$-3.47353 - 5.02118I$	0
$u = -1.104320 - 0.436031I$ $a = 1.96749 + 0.16728I$ $b = 0.932441 + 0.941120I$	$-3.47353 + 5.02118I$	0
$u = -0.800951 + 0.123276I$ $a = -0.50824 + 3.34040I$ $b = -0.154570 - 0.369898I$	$-0.377994 - 0.348299I$	$-6.5840 - 17.4589I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.800951-0.123276I$ $a=-0.50824-3.34040I$ $b=-0.154570+0.369898I$	$-0.377994+0.348299I$	$-6.5840+17.4589I$
$u=1.122900+0.422857I$ $a=0.122336+0.898226I$ $b=-0.056448-0.778332I$	$2.44745+5.97053I$	0
$u=1.122900-0.422857I$ $a=0.122336-0.898226I$ $b=-0.056448+0.778332I$	$2.44745-5.97053I$	0
$u=-1.128670+0.439324I$ $a=-1.55399+1.04306I$ $b=-0.515617-0.382823I$	$2.30512-1.82489I$	0
$u=-1.128670-0.439324I$ $a=-1.55399-1.04306I$ $b=-0.515617+0.382823I$	$2.30512+1.82489I$	0
$u=0.263079+0.743277I$ $a=-2.35828+4.83736I$ $b=-0.206461-0.254708I$	$-1.07695-2.69734I$	$-3.0103-34.5307I$
$u=0.263079-0.743277I$ $a=-2.35828-4.83736I$ $b=-0.206461+0.254708I$	$-1.07695+2.69734I$	$-3.0103+34.5307I$
$u=1.091400+0.526029I$ $a=0.124055-0.849262I$ $b=0.99817-1.63936I$	$0.26862+4.52922I$	0
$u=1.091400-0.526029I$ $a=0.124055+0.849262I$ $b=0.99817+1.63936I$	$0.26862-4.52922I$	0
$u=0.358024+0.691040I$ $a=2.07004-2.16220I$ $b=0.700858+0.957251I$	$-1.89822+0.09517I$	$-4.80349+0.55423I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.358024 - 0.691040I$ $a = 2.07004 + 2.16220I$ $b = 0.700858 - 0.957251I$	$-1.89822 - 0.09517I$	$-4.80349 - 0.55423I$
$u = -0.548214 + 0.539086I$ $a = -0.21849 + 2.23693I$ $b = 1.049530 + 0.745594I$	$-3.12646 + 1.54964I$	$-7.31060 + 2.48742I$
$u = -0.548214 - 0.539086I$ $a = -0.21849 - 2.23693I$ $b = 1.049530 - 0.745594I$	$-3.12646 - 1.54964I$	$-7.31060 - 2.48742I$
$u = 1.134040 + 0.538784I$ $a = -1.66723 - 0.77821I$ $b = -0.575903 + 0.332609I$	$1.44662 + 7.51048I$	0
$u = 1.134040 - 0.538784I$ $a = -1.66723 + 0.77821I$ $b = -0.575903 - 0.332609I$	$1.44662 - 7.51048I$	0
$u = -1.107310 + 0.608690I$ $a = 0.039119 + 0.838470I$ $b = 1.12965 + 1.66104I$	$-0.73749 - 10.18020I$	0
$u = -1.107310 - 0.608690I$ $a = 0.039119 - 0.838470I$ $b = 1.12965 - 1.66104I$	$-0.73749 + 10.18020I$	0
$u = 0.487128 + 1.185850I$ $a = 0.0890273 - 0.0979403I$ $b = 1.019830 - 0.928370I$	$-1.27305 - 6.74434I$	0
$u = 0.487128 - 1.185850I$ $a = 0.0890273 + 0.0979403I$ $b = 1.019830 + 0.928370I$	$-1.27305 + 6.74434I$	0
$u = -0.037445 + 0.711656I$ $a = 1.07301 - 5.25738I$ $b = -0.041771 + 0.373326I$	$-0.80831 - 2.19531I$	$-22.6702 + 11.0897I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.037445-0.711656I$ $a=\ 1.07301+5.25738I$ $b=-0.041771-0.373326I$	$-0.80831+2.19531I$	$-22.6702-11.0897I$
$u=-1.122670+0.656209I$ $a=\ 1.82218+0.36853I$ $b=\ 1.06382-1.08588I$	$-5.82157-12.73140I$	0
$u=-1.122670-0.656209I$ $a=\ 1.82218-0.36853I$ $b=\ 1.06382+1.08588I$	$-5.82157+12.73140I$	0
$u=-0.577754+1.177690I$ $a=\ 0.0872278+0.0983051I$ $b=\ 1.06457+0.99987I$	$-2.19410+12.52910I$	0
$u=-0.577754-1.177690I$ $a=\ 0.0872278-0.0983051I$ $b=\ 1.06457-0.99987I$	$-2.19410-12.52910I$	0
$u=\ 1.202970+0.528332I$ $a=\ 1.72596-0.05863I$ $b=\ 1.05629+0.94904I$	$-0.88277+9.86930I$	0
$u=\ 1.202970-0.528332I$ $a=\ 1.72596+0.05863I$ $b=\ 1.05629-0.94904I$	$-0.88277-9.86930I$	0
$u=\ 1.338550+0.060961I$ $a=-1.200800+0.491892I$ $b=-1.37664+0.39891I$	$8.48525-3.48002I$	0
$u=\ 1.338550-0.060961I$ $a=-1.200800-0.491892I$ $b=-1.37664-0.39891I$	$8.48525+3.48002I$	0
$u=-1.334290+0.165279I$ $a=-1.090250-0.544164I$ $b=-1.337840-0.272471I$	$8.29858-2.50158I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.334290-0.165279I$ $a=-1.090250+0.544164I$ $b=-1.337840+0.272471I$	$8.29858+2.50158I$	0
$u=-0.622883+0.196411I$ $a=0.0851403+0.0910220I$ $b=0.52188+1.34588I$	$-5.55367+1.98303I$	$3.60934+5.15894I$
$u=-0.622883-0.196411I$ $a=0.0851403-0.0910220I$ $b=0.52188-1.34588I$	$-5.55367-1.98303I$	$3.60934-5.15894I$
$u=-1.012920+0.889662I$ $a=-0.185216-0.296205I$ $b=-0.519688+0.071470I$	$1.05796-1.60667I$	0
$u=-1.012920-0.889662I$ $a=-0.185216+0.296205I$ $b=-0.519688-0.071470I$	$1.05796+1.60667I$	0
$u=0.543833+0.354658I$ $a=1.57825+1.71039I$ $b=-0.317225+0.358191I$	$0.00137-2.90749I$	$3.98420+0.02765I$
$u=0.543833-0.354658I$ $a=1.57825-1.71039I$ $b=-0.317225-0.358191I$	$0.00137+2.90749I$	$3.98420-0.02765I$
$u=1.340500+0.172751I$ $a=0.427491-0.594295I$ $b=0.420976-0.390169I$	$-2.35592-4.60181I$	0
$u=1.340500-0.172751I$ $a=0.427491+0.594295I$ $b=0.420976+0.390169I$	$-2.35592+4.60181I$	0
$u=1.216000+0.593726I$ $a=-1.62065+0.32100I$ $b=-1.36191-1.20877I$	$5.38445+7.13126I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.216000 - 0.593726I$ $a = -1.62065 - 0.32100I$ $b = -1.36191 + 1.20877I$	$5.38445 - 7.13126I$	0
$u = -1.261230 + 0.502325I$ $a = 1.062930 + 0.358933I$ $b = 0.620231 - 0.433308I$	$5.08524 - 2.34478I$	0
$u = -1.261230 - 0.502325I$ $a = 1.062930 - 0.358933I$ $b = 0.620231 + 0.433308I$	$5.08524 + 2.34478I$	0
$u = 1.237370 + 0.593454I$ $a = 1.064950 - 0.419824I$ $b = 0.590970 + 0.515301I$	$4.15621 + 8.24899I$	0
$u = 1.237370 - 0.593454I$ $a = 1.064950 + 0.419824I$ $b = 0.590970 - 0.515301I$	$4.15621 - 8.24899I$	0
$u = -1.203630 + 0.665473I$ $a = -1.58877 - 0.42920I$ $b = -1.35457 + 1.29679I$	$4.30507 - 12.99410I$	0
$u = -1.203630 - 0.665473I$ $a = -1.58877 + 0.42920I$ $b = -1.35457 - 1.29679I$	$4.30507 + 12.99410I$	0
$u = 0.605995 + 0.116615I$ $a = 0.0855743 + 0.0908465I$ $b = 0.380380 + 1.325520I$	$-5.48389 + 6.66654I$	$5.37950 - 9.94095I$
$u = 0.605995 - 0.116615I$ $a = 0.0855743 - 0.0908465I$ $b = 0.380380 - 1.325520I$	$-5.48389 - 6.66654I$	$5.37950 + 9.94095I$
$u = 1.181600 + 0.767106I$ $a = -0.578829 - 0.010468I$ $b = -0.364094 - 0.535351I$	$-4.64464 + 4.28743I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.181600 - 0.767106I$ $a = -0.578829 + 0.010468I$ $b = -0.364094 + 0.535351I$	$-4.64464 - 4.28743I$	0
$u = 0.84560 + 1.16938I$ $a = 0.021562 + 0.167398I$ $b = -0.432638 + 0.258240I$	$-0.61080 - 4.13411I$	0
$u = 0.84560 - 1.16938I$ $a = 0.021562 - 0.167398I$ $b = -0.432638 - 0.258240I$	$-0.61080 + 4.13411I$	0
$u = -1.20560 + 0.80402I$ $a = -0.691714 - 0.240354I$ $b = -0.687438 + 0.614652I$	$2.31904 - 5.54243I$	0
$u = -1.20560 - 0.80402I$ $a = -0.691714 + 0.240354I$ $b = -0.687438 - 0.614652I$	$2.31904 + 5.54243I$	0
$u = 1.25024 + 0.73843I$ $a = 1.53837 - 0.40008I$ $b = 1.20147 + 1.08806I$	$1.23211 + 13.59160I$	0
$u = 1.25024 - 0.73843I$ $a = 1.53837 + 0.40008I$ $b = 1.20147 - 1.08806I$	$1.23211 - 13.59160I$	0
$u = -1.22576 + 0.78665I$ $a = 1.53180 + 0.48591I$ $b = 1.20414 - 1.13799I$	$-0.0610 - 19.5513I$	0
$u = -1.22576 - 0.78665I$ $a = 1.53180 - 0.48591I$ $b = 1.20414 + 1.13799I$	$-0.0610 + 19.5513I$	0
$u = 1.19592 + 0.83461I$ $a = -0.754460 + 0.225245I$ $b = -0.665998 - 0.723271I$	$0.91583 + 11.46570I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.19592 - 0.83461I$ $a = -0.754460 - 0.225245I$ $b = -0.665998 + 0.723271I$	$0.91583 - 11.46570I$	0
$u = -1.46133$ $a = 0.591265$ $b = 0.500107$	1.32843	0
$u = -0.07430 + 1.46227I$ $a = 0.1088840 - 0.0314711I$ $b = 0.470050 - 0.134106I$	$0.47580 - 3.10935I$	0
$u = -0.07430 - 1.46227I$ $a = 0.1088840 + 0.0314711I$ $b = 0.470050 + 0.134106I$	$0.47580 + 3.10935I$	0
$u = 0.467577 + 0.174362I$ $a = 5.08174 - 2.70674I$ $b = 0.498582 - 0.379667I$	$-2.27737 + 2.37996I$	$6.22895 - 4.88387I$
$u = 0.467577 - 0.174362I$ $a = 5.08174 + 2.70674I$ $b = 0.498582 + 0.379667I$	$-2.27737 - 2.37996I$	$6.22895 + 4.88387I$
$u = 1.49416 + 0.19380I$ $a = 1.127830 + 0.253505I$ $b = 1.080230 + 0.458190I$	$6.82559 + 8.92441I$	0
$u = 1.49416 - 0.19380I$ $a = 1.127830 - 0.253505I$ $b = 1.080230 - 0.458190I$	$6.82559 - 8.92441I$	0
$u = -1.50310 + 0.10971I$ $a = 1.049690 - 0.283454I$ $b = 1.024120 - 0.354423I$	$7.06445 - 2.67846I$	0
$u = -1.50310 - 0.10971I$ $a = 1.049690 + 0.283454I$ $b = 1.024120 + 0.354423I$	$7.06445 + 2.67846I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.042812+0.461983I$ $a=\ \ 0.607968-0.141210I$ $b=-0.483667+0.704865I$	$-0.05266-1.50098I$	$-0.02197+4.29764I$
$u=-0.042812-0.461983I$ $a=\ \ 0.607968+0.141210I$ $b=-0.483667-0.704865I$	$-0.05266+1.50098I$	$-0.02197-4.29764I$
$u=\ \ 0.356191+0.267829I$ $a=\ \ 3.24304-0.81630I$ $b=\ \ 0.893142+0.274911I$	$-2.56232-0.10384I$	$-4.50255-2.19281I$
$u=\ \ 0.356191-0.267829I$ $a=\ \ 3.24304+0.81630I$ $b=\ \ 0.893142-0.274911I$	$-2.56232+0.10384I$	$-4.50255+2.19281I$

II. $\boldsymbol{I_1^v = \langle a,\ 1728v^9 + 4936v^8 + \cdots + 3335b + 613,\ v^{10} + 3v^9 + \cdots + v + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ -0.518141v^9 - 1.48006v^8 + \cdots + 1.48006v^2 - 0.183808 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -0.462969v^9 - 1.33373v^8 + \cdots + 1.33373v^2 - 1.81379 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.462969v^9 - 1.33373v^8 + \cdots + 1.33373v^2 - 0.813793 \\ 1.14783v^9 + 3.29565v^8 + \cdots - 3.29565v^2 + 1.75652 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.684858v^9 - 1.96192v^8 + \cdots + 1.96192v^2 - 0.942729 \\ 1.14783v^9 + 3.29565v^8 + \cdots - 3.29565v^2 + 1.75652 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.518141v^9 + 1.48006v^8 + \cdots - 1.48006v^2 + 0.183808 \\ -0.518141v^9 - 1.48006v^8 + \cdots + 1.48006v^2 - 0.183808 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.684858v^9 + 1.96192v^8 + \cdots - 1.96192v^2 + 0.942729 \\ -1.14783v^9 - 3.29565v^8 + \cdots + 3.29565v^2 - 1.75652 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.0737631v^9 + 0.147526v^8 + \cdots + 5.22189v + 0.331634 \\ -0.147826v^9 - 0.295652v^8 + \cdots - 7v - 0.756522 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.832684v^9 - 2.38801v^8 + \cdots + v - 1.09055 \\ 1.14783v^9 + 3.29565v^8 + \cdots - 3.29565v^2 + 1.75652 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{3569}{3335}v^9 + \frac{11338}{3335}v^8 + \frac{24271}{3335}v^7 - \frac{19009}{3335}v^6 - \frac{11425}{667}v^5 + \frac{47611}{3335}v^4 + \frac{210931}{3335}v^3 + \frac{62177}{3335}v^2 + \frac{151}{23}v - \frac{27686}{3335}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$(u^2-u+1)^5$
c_2	$(u^2+u+1)^5$
c_3, c_8	u^{10}
c_6, c_{10}	$(u^5+u^4-2u^3-u^2+u-1)^2$
c_7	$(u^5-u^4+2u^3-u^2+u-1)^2$
c_9	$(u^5+3u^4+4u^3+u^2-u-1)^2$
c_{11}	$(u^5+u^4+2u^3+u^2+u+1)^2$
c_{12}	$(u^5-u^4-2u^3+u^2+u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2+y+1)^5$
c_3, c_8	y^{10}
c_6, c_{10}, c_{12}	$(y^5-5y^4+8y^3-3y^2-y-1)^2$
c_7, c_{11}	$(y^5+3y^4+4y^3+y^2-y-1)^2$
c_9	$(y^5-y^4+8y^3-3y^2+3y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=-1.38814+0.78973I$ $a=0$ $b=-0.339110+0.822375I$	$-0.32910-3.56046I$	$-2.01870+9.75023I$
$v=-1.38814-0.78973I$ $a=0$ $b=-0.339110-0.822375I$	$-0.32910+3.56046I$	$-2.01870-9.75023I$
$v=1.37799+0.80730I$ $a=0$ $b=-0.339110+0.822375I$	$-0.329100+0.499304I$	$-1.95395-0.91636I$
$v=1.37799-0.80730I$ $a=0$ $b=-0.339110-0.822375I$	$-0.329100-0.499304I$	$-1.95395+0.91636I$
$v=0.294694+0.220725I$ $a=0$ $b=0.455697-1.200150I$	$-5.87256-2.37095I$	$-6.85700+6.98324I$
$v=0.294694-0.220725I$ $a=0$ $b=0.455697+1.200150I$	$-5.87256+2.37095I$	$-6.85700-6.98324I$
$v=-0.338500+0.144851I$ $a=0$ $b=0.455697-1.200150I$	$-5.87256-6.43072I$	$-9.93110+1.72471I$
$v=-0.338500-0.144851I$ $a=0$ $b=0.455697+1.200150I$	$-5.87256+6.43072I$	$-9.93110-1.72471I$
$v=-1.44605+2.50463I$ $a=0$ $b=0.766826$	$-2.40108+2.02988I$	$2.76075+3.67600I$
$v=-1.44605-2.50463I$ $a=0$ $b=0.766826$	$-2.40108-2.02988I$	$2.76075-3.67600I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$((u^2-u+1)^5)(u^{124}+42u^{123}+\cdots+2u+1)$
c_2	$((u^2+u+1)^5)(u^{124}+6u^{123}+\cdots+2u+1)$
c_3, c_8	$u^{10}(u^{124}-u^{123}+\cdots+5120u+1024)$
c_5	$((u^2-u+1)^5)(u^{124}+6u^{123}+\cdots+2u+1)$
c_6	$((u^5+u^4-2u^3-u^2+u-1)^2)(u^{124}+3u^{123}+\cdots-376993u-48793)$
c_7	$((u^5-u^4+2u^3-u^2+u-1)^2)(u^{124}-3u^{123}+\cdots+1975u+1031)$
c_9	$((u^5+3u^4+4u^3+u^2-u-1)^2)(u^{124}-9u^{123}+\cdots-3u+1)$
c_{10}	$((u^5+u^4-2u^3-u^2+u-1)^2)(u^{124}-3u^{123}+\cdots-17u+1)$
c_{11}	$((u^5+u^4+2u^3+u^2+u+1)^2)(u^{124}+21u^{123}+\cdots+3u+1)$
c_{12}	$((u^5-u^4-2u^3+u^2+u+1)^2)(u^{124}-3u^{123}+\cdots-17u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^5)(y^{124}+86y^{123}+\cdots-1250y+1)$
c_2, c_5	$((y^2+y+1)^5)(y^{124}+42y^{123}+\cdots+2y+1)$
c_3, c_8	$y^{10}(y^{124}-55y^{123}+\cdots-2.62144\times10^7y+1048576)$
c_6	$(y^5-5y^4+8y^3-3y^2-y-1)^2$ $\cdot(y^{124}+83y^{123}+\cdots-318551403169y+2380756849)$
c_7	$(y^5+3y^4+4y^3+y^2-y-1)^2$ $\cdot(y^{124}+131y^{123}+\cdots+138554707y+1062961)$
c_9	$((y^5-y^4+8y^3-3y^2+3y-1)^2)(y^{124}-21y^{123}+\cdots-9y+1)$
c_{10}, c_{12}	$((y^5-5y^4+8y^3-3y^2-y-1)^2)(y^{124}-85y^{123}+\cdots-17y+1)$
c_{11}	$((y^5+3y^4+4y^3+y^2-y-1)^2)(y^{124}+3y^{123}+\cdots-17y+1)$