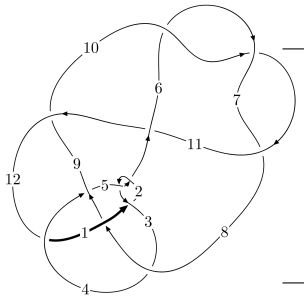
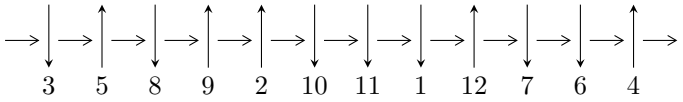
$12a_{0138}$ $(K12a_{0138})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 7.19471 \times 10^{73} u^{112} - 1.22414 \times 10^{74} u^{111} + \cdots + 1.80916 \times 10^{73} b + 6.97020 \times 10^{73}, \\ & - 1.81957 \times 10^{74} u^{112} + 3.28712 \times 10^{74} u^{111} + \cdots + 1.80916 \times 10^{73} a - 1.87404 \times 10^{74}, \\ & u^{113} - 3u^{112} + \cdots - 2u - 1 \rangle \\ I_2^u = \langle & b + a + 1,\ a^2 + 3a + 3,\ u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 115 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. $\boldsymbol{I_1^u = \langle 7.19 \times 10^{73} u^{112} - 1.22 \times 10^{74} u^{111} + \cdots + 1.81 \times 10^{73} b + 6.97 \times 10^{73},\ -1.82 \times 10^{74} u^{112} + 3.29 \times 10^{74} u^{111} + \cdots + 1.81 \times 10^{73} a - 1.87 \times 10^{74},\ u^{113} - 3u^{112} + \cdots - 2u - 1 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 10.0575u^{112} - 18.1693u^{111} + \cdots + 29.5396u + 10.3586 \\ -3.97683u^{112} + 6.76633u^{111} + \cdots - 13.0851u - 3.85273 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 21.7820u^{112} - 39.2061u^{111} + \cdots + 48.7260u + 19.4581 \\ -3.21144u^{112} + 5.39167u^{111} + \cdots - 11.0344u - 4.09903 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 18.8353u^{112} - 34.2427u^{111} + \cdots + 38.5483u + 15.7723 \\ -3.75718u^{112} + 6.19544u^{111} + \cdots - 11.7379u - 4.57583 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -2.58530u^{112} + 4.46215u^{111} + \cdots - 2.91973u - 2.46253 \\ 0.126934u^{112} - 0.107623u^{111} + \cdots - 0.558030u - 0.562200 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^7 + 4u^5 - 4u^3 \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 15.1071u^{112} - 28.0166u^{111} + \cdots + 31.2262u + 13.6875 \\ 6.59937u^{112} - 12.6329u^{111} + \cdots + 16.3813u + 4.92547 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -21.9603u^{112} + 39.6262u^{111} + \cdots - 14.3575u - 5.90643$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{113} + 48u^{112} + \cdots + 55u - 1$
c_2, c_5	$u^{113} + 2u^{112} + \cdots - 5u - 1$
c_3	$u^{113} + 60u^{111} + \cdots - 47u + 1$
c_4	$u^{113} + 2u^{112} + \cdots + 1009u + 347$
c_6, c_7, c_{10}	$u^{113} + 3u^{112} + \cdots - 2u + 1$
c_8	$u^{113} + 7u^{112} + \cdots + u^2 + 1$
c_9	$u^{113} + 23u^{112} + \cdots + 6255814u + 309047$
c_{11}	$u^{113} - 3u^{112} + \cdots + 1280u - 1088$
c_{12}	$u^{113} + 11u^{112} + \cdots + 12u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{113} + 36y^{112} + \cdots + 3831y - 1$
c_2, c_5	$y^{113} + 48y^{112} + \cdots + 55y - 1$
c_3	$y^{113} + 120y^{112} + \cdots + 463y - 1$
c_4	$y^{113} + 128y^{112} + \cdots - 8247513y - 120409$
c_6, c_7, c_{10}	$y^{113} - 103y^{112} + \cdots - 2y - 1$
c_8	$y^{113} + 9y^{112} + \cdots - 2y - 1$
c_9	$y^{113} + 53y^{112} + \cdots - 1833344062454y - 95510048209$
c_{11}	$y^{113} - 17y^{112} + \cdots + 72743552y - 1183744$
c_{12}	$y^{113} + 15y^{112} + \cdots - 280y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.939909 + 0.317543I$ $a = 1.46055 - 0.18139I$ $b = -0.368917 + 0.830267I$	$-2.13808 - 1.37165I$	0
$u = 0.939909 - 0.317543I$ $a = 1.46055 + 0.18139I$ $b = -0.368917 - 0.830267I$	$-2.13808 + 1.37165I$	0
$u = 0.752167 + 0.473634I$ $a = 0.826598 + 0.274339I$ $b = -0.455174 - 0.969053I$	$-2.81213 + 1.98997I$	0
$u = 0.752167 - 0.473634I$ $a = 0.826598 - 0.274339I$ $b = -0.455174 + 0.969053I$	$-2.81213 - 1.98997I$	0
$u = -1.118790 + 0.027576I$ $a = -0.980417 - 0.453269I$ $b = 0.925019 + 0.474762I$	$0.74089 + 1.69233I$	0
$u = -1.118790 - 0.027576I$ $a = -0.980417 + 0.453269I$ $b = 0.925019 - 0.474762I$	$0.74089 - 1.69233I$	0
$u = 0.579977 + 0.611709I$ $a = 1.344920 + 0.261692I$ $b = -0.423750 + 0.967531I$	$-2.99500 - 3.68548I$	0
$u = 0.579977 - 0.611709I$ $a = 1.344920 - 0.261692I$ $b = -0.423750 - 0.967531I$	$-2.99500 + 3.68548I$	0
$u = 1.15862$ $a = 0.574458$ $b = 0.129833$	-1.97009	0
$u = 0.323055 + 0.768075I$ $a = 2.28499 - 0.15615I$ $b = -0.514948 + 0.996717I$	$-1.39021 - 6.40201I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.323055 - 0.768075I$ $a = 2.28499 + 0.15615I$ $b = -0.514948 - 0.996717I$	$-1.39021 + 6.40201I$	0
$u = -1.167310 + 0.082409I$ $a = -1.61291 - 0.08377I$ $b = 0.732275 + 1.080280I$	$-1.03203 + 4.35287I$	0
$u = -1.167310 - 0.082409I$ $a = -1.61291 + 0.08377I$ $b = 0.732275 - 1.080280I$	$-1.03203 - 4.35287I$	0
$u = 0.440456 + 0.694712I$ $a = 0.138212 + 0.304488I$ $b = -0.351572 - 0.923192I$	$-2.54432 - 0.78650I$	0
$u = 0.440456 - 0.694712I$ $a = 0.138212 - 0.304488I$ $b = -0.351572 + 0.923192I$	$-2.54432 + 0.78650I$	0
$u = -1.150760 + 0.263291I$ $a = 0.884861 - 0.795944I$ $b = -0.806370 + 0.549939I$	$1.48117 + 5.52965I$	0
$u = -1.150760 - 0.263291I$ $a = 0.884861 + 0.795944I$ $b = -0.806370 - 0.549939I$	$1.48117 - 5.52965I$	0
$u = -0.649038 + 0.499158I$ $a = 0.799156 - 0.174595I$ $b = -0.645108 + 1.123390I$	$-1.72359 - 10.60720I$	0
$u = -0.649038 - 0.499158I$ $a = 0.799156 + 0.174595I$ $b = -0.645108 - 1.123390I$	$-1.72359 + 10.60720I$	0
$u = -0.341872 + 0.735602I$ $a = 2.63336 - 0.13250I$ $b = -0.663628 - 1.137570I$	$-0.6241 + 14.8733I$	$0. - 10.48364I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.341872-0.735602I$ $a=\ \ 2.63336+0.13250I$ $b=-0.663628+1.137570I$	$-0.6241-14.8733I$	$0.+10.48364I$
$u=\ \ 1.191890+0.019067I$ $a=-4.44997+2.27032I$ $b=\ \ 0.534866-0.855939I$	$-2.14131-2.15135I$	0
$u=\ \ 1.191890-0.019067I$ $a=-4.44997-2.27032I$ $b=\ \ 0.534866+0.855939I$	$-2.14131+2.15135I$	0
$u=-0.325971+0.717414I$ $a=\ \ 1.00912-1.43916I$ $b=-0.916275+0.452303I$	$1.46474+9.07915I$	$0.-7.02875I$
$u=-0.325971-0.717414I$ $a=\ \ 1.00912+1.43916I$ $b=-0.916275-0.452303I$	$1.46474-9.07915I$	$0.+7.02875I$
$u=-1.182760+0.306456I$ $a=\ \ 1.92843-0.18354I$ $b=-0.652135-1.054830I$	$-0.04028+10.99740I$	0
$u=-1.182760-0.306456I$ $a=\ \ 1.92843+0.18354I$ $b=-0.652135+1.054830I$	$-0.04028-10.99740I$	0
$u=-0.627370+0.450096I$ $a=\ \ 1.102860-0.068589I$ $b=-0.866470-0.442386I$	$0.32647-5.01240I$	$-2.00000+1.72974I$
$u=-0.627370-0.450096I$ $a=\ \ 1.102860+0.068589I$ $b=-0.866470+0.442386I$	$0.32647+5.01240I$	$-2.00000-1.72974I$
$u=-0.011515+0.764522I$ $a=\ \ 1.78598-1.34153I$ $b=-0.631765+1.016450I$	$3.55207-7.10523I$	$1.72920+7.58809I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.011515-0.764522I$ $a=\ 1.78598+1.34153I$ $b=-0.631765-1.016450I$	$3.55207+7.10523I$	$1.72920-7.58809I$
$u=-0.357793+0.666831I$ $a=-1.078110-0.253263I$ $b=-0.030920+1.288310I$	$-4.91041+6.36723I$	$-6.53571-8.04968I$
$u=-0.357793-0.666831I$ $a=-1.078110+0.253263I$ $b=-0.030920-1.288310I$	$-4.91041-6.36723I$	$-6.53571+8.04968I$
$u=\ 1.208510+0.330567I$ $a=\ 0.440418+0.637304I$ $b=-0.601288-0.975849I$	$-0.20340+3.14702I$	0
$u=\ 1.208510-0.330567I$ $a=\ 0.440418-0.637304I$ $b=-0.601288+0.975849I$	$-0.20340-3.14702I$	0
$u=\ 0.255939+0.693140I$ $a=\ 0.783379+1.097760I$ $b=-0.343556-0.527140I$	$-0.04039-2.38375I$	$-1.98371+5.90852I$
$u=\ 0.255939-0.693140I$ $a=\ 0.783379-1.097760I$ $b=-0.343556+0.527140I$	$-0.04039+2.38375I$	$-1.98371-5.90852I$
$u=-0.051929+0.725337I$ $a=\ 2.13698+0.72891I$ $b=-0.735643-0.596633I$	$4.81430-1.88544I$	$4.72473+1.60361I$
$u=-0.051929-0.725337I$ $a=\ 2.13698-0.72891I$ $b=-0.735643+0.596633I$	$4.81430+1.88544I$	$4.72473-1.60361I$
$u=-1.269840+0.138595I$ $a=-0.220884+0.428106I$ $b=\ 0.189644+1.136810I$	$-4.83804+4.63939I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.269840-0.138595I$ $a=-0.220884-0.428106I$ $b=\ \ 0.189644-1.136810I$	$-4.83804-4.63939I$	0
$u=-0.514108+0.503712I$ $a=\ \ 1.036330-0.361962I$ $b=-0.073302-1.239800I$	$-5.57728-2.46347I$	$-8.69302+1.29328I$
$u=-0.514108-0.503712I$ $a=\ \ 1.036330+0.361962I$ $b=-0.073302+1.239800I$	$-5.57728+2.46347I$	$-8.69302-1.29328I$
$u=\ \ 1.257620+0.290271I$ $a=\ \ 1.63911+0.39912I$ $b=-0.669510+0.656393I$	$0.76639-1.79202I$	0
$u=\ \ 1.257620-0.290271I$ $a=\ \ 1.63911-0.39912I$ $b=-0.669510-0.656393I$	$0.76639+1.79202I$	0
$u=-0.300733+0.634297I$ $a=-2.69044+0.24594I$ $b=\ \ 0.652286+1.200950I$	$0.19992+6.60671I$	$0.07217-12.10916I$
$u=-0.300733-0.634297I$ $a=-2.69044-0.24594I$ $b=\ \ 0.652286-1.200950I$	$0.19992-6.60671I$	$0.07217+12.10916I$
$u=\ \ 1.297840+0.027388I$ $a=\ \ 1.04790-1.63196I$ $b=\ \ 0.286338-0.747497I$	$-3.22613-1.48459I$	0
$u=\ \ 1.297840-0.027388I$ $a=\ \ 1.04790+1.63196I$ $b=\ \ 0.286338+0.747497I$	$-3.22613+1.48459I$	0
$u=\ \ 0.234136+0.628805I$ $a=\ \ 0.318271+0.979558I$ $b=\ \ 0.027002-0.471357I$	$-0.07346-2.33823I$	$-3.38006+5.78977I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.234136 - 0.628805I$ $a = 0.318271 - 0.979558I$ $b = 0.027002 + 0.471357I$	$-0.07346 + 2.33823I$	$-3.38006 - 5.78977I$
$u = -0.253157 + 0.618984I$ $a = -2.34577 + 0.07324I$ $b = 0.933553 + 0.670622I$	$2.57361 + 4.20982I$	$6.47955 - 9.14983I$
$u = -0.253157 - 0.618984I$ $a = -2.34577 - 0.07324I$ $b = 0.933553 - 0.670622I$	$2.57361 - 4.20982I$	$6.47955 + 9.14983I$
$u = 0.310571 + 0.587049I$ $a = -4.65059 - 1.98552I$ $b = 0.509350 - 0.916675I$	$-0.38515 - 3.92427I$	$1.8807 - 17.6364I$
$u = 0.310571 - 0.587049I$ $a = -4.65059 + 1.98552I$ $b = 0.509350 + 0.916675I$	$-0.38515 + 3.92427I$	$1.8807 + 17.6364I$
$u = -0.215249 + 0.601538I$ $a = -1.05368 + 1.43755I$ $b = 0.901782 - 0.257745I$	$2.97908 + 0.86642I$	$8.54734 - 2.47415I$
$u = -0.215249 - 0.601538I$ $a = -1.05368 - 1.43755I$ $b = 0.901782 + 0.257745I$	$2.97908 - 0.86642I$	$8.54734 + 2.47415I$
$u = 0.258441 + 0.568603I$ $a = -0.24006 - 3.99969I$ $b = 0.492878 + 0.781115I$	$0.063611 + 0.181588I$	$-10.94547 - 7.12456I$
$u = 0.258441 - 0.568603I$ $a = -0.24006 + 3.99969I$ $b = 0.492878 - 0.781115I$	$0.063611 - 0.181588I$	$-10.94547 + 7.12456I$
$u = 0.449623 + 0.413218I$ $a = 0.972889 - 0.131299I$ $b = -0.283957 + 0.017994I$	$-1.09683 - 0.93427I$	$-5.40273 + 3.78636I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.449623 - 0.413218I$ $a = 0.972889 + 0.131299I$ $b = -0.283957 - 0.017994I$	$-1.09683 + 0.93427I$	$-5.40273 - 3.78636I$
$u = 0.342240 + 0.503546I$ $a = -0.76992 + 2.58082I$ $b = 0.455400 + 0.907374I$	$-0.692652 + 0.747510I$	$11.9814 + 9.3471I$
$u = 0.342240 - 0.503546I$ $a = -0.76992 - 2.58082I$ $b = 0.455400 - 0.907374I$	$-0.692652 - 0.747510I$	$11.9814 - 9.3471I$
$u = 1.388180 + 0.206751I$ $a = 0.197810 - 0.570262I$ $b = 0.878563 + 0.906512I$	$-3.29106 - 0.71548I$	0
$u = 1.388180 - 0.206751I$ $a = 0.197810 + 0.570262I$ $b = 0.878563 - 0.906512I$	$-3.29106 + 0.71548I$	0
$u = 1.389330 + 0.229302I$ $a = 0.032086 - 1.016630I$ $b = 0.985524 + 0.169001I$	$-2.15273 - 3.89237I$	0
$u = 1.389330 - 0.229302I$ $a = 0.032086 + 1.016630I$ $b = 0.985524 - 0.169001I$	$-2.15273 + 3.89237I$	0
$u = -1.395280 + 0.228734I$ $a = 0.022173 - 0.456532I$ $b = 0.318153 + 0.529929I$	$-5.25575 + 5.40772I$	0
$u = -1.395280 - 0.228734I$ $a = 0.022173 + 0.456532I$ $b = 0.318153 - 0.529929I$	$-5.25575 - 5.40772I$	0
$u = -1.40251 + 0.22262I$ $a = 0.20905 + 2.11697I$ $b = 0.515171 - 0.727283I$	$-5.25799 + 2.73945I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.40251-0.22262I$ $a=\ 0.20905-2.11697I$ $b=\ 0.515171+0.727283I$	$-5.25799-2.73945I$	0
$u=\ 1.40136+0.23957I$ $a=-1.22459-0.93674I$ $b=\ 0.982381-0.722917I$	$-2.71907-7.34999I$	0
$u=\ 1.40136-0.23957I$ $a=-1.22459+0.93674I$ $b=\ 0.982381+0.722917I$	$-2.71907+7.34999I$	0
$u=\ 1.41292+0.18059I$ $a=\ 0.524545+1.034890I$ $b=\ 0.524820+1.235330I$	$-6.26506+1.08823I$	0
$u=\ 1.41292-0.18059I$ $a=\ 0.524545-1.034890I$ $b=\ 0.524820-1.235330I$	$-6.26506-1.08823I$	0
$u=-0.170323+0.538397I$ $a=-0.88005+2.08855I$ $b=\ 0.766888-0.937064I$	$1.75629-1.99035I$	$5.16557+2.88568I$
$u=-0.170323-0.538397I$ $a=-0.88005-2.08855I$ $b=\ 0.766888+0.937064I$	$1.75629+1.99035I$	$5.16557-2.88568I$
$u=-1.42218+0.20369I$ $a=-0.34383-2.55067I$ $b=\ 0.444068-0.949016I$	$-6.33252+1.92115I$	0
$u=-1.42218-0.20369I$ $a=-0.34383+2.55067I$ $b=\ 0.444068+0.949016I$	$-6.33252-1.92115I$	0
$u=-1.42009+0.23097I$ $a=-3.25951+2.43167I$ $b=\ 0.517759+0.941725I$	$-5.93096+6.95191I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.42009-0.23097I$ $a=-3.25951-2.43167I$ $b=\ \ 0.517759-0.941725I$	$-5.93096-6.95191I$	0
$u=\ \ 1.41833+0.24594I$ $a=-1.85416-1.51461I$ $b=\ \ 0.656040-1.242250I$	$-5.30356-9.83245I$	0
$u=\ \ 1.41833-0.24594I$ $a=-1.85416+1.51461I$ $b=\ \ 0.656040+1.242250I$	$-5.30356+9.83245I$	0
$u=-1.41588+0.27350I$ $a=\ \ 0.329476-0.665678I$ $b=-0.512649+0.438397I$	$-5.41815+5.90992I$	0
$u=-1.41588-0.27350I$ $a=\ \ 0.329476+0.665678I$ $b=-0.512649-0.438397I$	$-5.41815-5.90992I$	0
$u=-1.43811+0.15525I$ $a=\ \ 0.504046+0.022616I$ $b=-0.539058-0.039985I$	$-7.11566+3.06003I$	0
$u=-1.43811-0.15525I$ $a=\ \ 0.504046-0.022616I$ $b=-0.539058+0.039985I$	$-7.11566-3.06003I$	0
$u=-0.398416+0.372308I$ $a=\ \ 0.101682-0.109041I$ $b=\ \ 0.571816-1.141880I$	$-0.63076-3.31553I$	$-3.36731+5.22677I$
$u=-0.398416-0.372308I$ $a=\ \ 0.101682+0.109041I$ $b=\ \ 0.571816+1.141880I$	$-0.63076+3.31553I$	$-3.36731-5.22677I$
$u=\ \ 1.43515+0.27776I$ $a=\ \ 0.055806+1.047710I$ $b=-0.943067-0.441627I$	$-4.17674-12.70210I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.43515 - 0.27776I$ $a = 0.055806 - 1.047710I$ $b = -0.943067 + 0.441627I$	$-4.17674 + 12.70210I$	0
$u = 1.44154 + 0.25402I$ $a = -1.11991 - 1.00625I$ $b = -0.037074 - 1.326310I$	$-10.6833 - 9.7329I$	0
$u = 1.44154 - 0.25402I$ $a = -1.11991 + 1.00625I$ $b = -0.037074 + 1.326310I$	$-10.6833 + 9.7329I$	0
$u = 1.46055 + 0.12957I$ $a = 0.241626 + 0.379269I$ $b = -0.862769 + 0.364248I$	$-6.29480 + 3.09263I$	0
$u = 1.46055 - 0.12957I$ $a = 0.241626 - 0.379269I$ $b = -0.862769 - 0.364248I$	$-6.29480 - 3.09263I$	0
$u = 1.45869 + 0.17183I$ $a = 0.85005 + 1.43397I$ $b = -0.133037 + 1.269100I$	$-11.87960 + 0.03386I$	0
$u = 1.45869 - 0.17183I$ $a = 0.85005 - 1.43397I$ $b = -0.133037 - 1.269100I$	$-11.87960 - 0.03386I$	0
$u = -1.44081 + 0.29762I$ $a = 1.91997 - 0.94342I$ $b = -0.536367 - 1.027970I$	$-7.04207 + 10.26620I$	0
$u = -1.44081 - 0.29762I$ $a = 1.91997 + 0.94342I$ $b = -0.536367 + 1.027970I$	$-7.04207 - 10.26620I$	0
$u = 1.44413 + 0.28396I$ $a = 2.04970 + 1.30197I$ $b = -0.668248 + 1.151520I$	$-6.3507 - 18.5832I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.44413 - 0.28396I$ $a = 2.04970 - 1.30197I$ $b = -0.668248 - 1.151520I$	$-6.3507 + 18.5832I$	0
$u = -1.47202 + 0.09733I$ $a = 0.561177 + 0.898504I$ $b = -0.393349 + 1.066740I$	$-9.91084 - 0.41010I$	0
$u = -1.47202 - 0.09733I$ $a = 0.561177 - 0.898504I$ $b = -0.393349 - 1.066740I$	$-9.91084 + 0.41010I$	0
$u = -1.46861 + 0.24755I$ $a = -0.266045 + 0.691177I$ $b = -0.284580 + 0.961432I$	$-8.69432 + 4.18913I$	0
$u = -1.46861 - 0.24755I$ $a = -0.266045 - 0.691177I$ $b = -0.284580 - 0.961432I$	$-8.69432 - 4.18913I$	0
$u = 1.48401 + 0.12840I$ $a = 0.317785 - 0.970044I$ $b = -0.615816 - 1.140620I$	$-8.61039 + 8.53738I$	0
$u = 1.48401 - 0.12840I$ $a = 0.317785 + 0.970044I$ $b = -0.615816 + 1.140620I$	$-8.61039 - 8.53738I$	0
$u = -1.49411 + 0.17396I$ $a = 0.808586 - 1.159040I$ $b = -0.424875 - 1.041320I$	$-9.76386 + 6.40779I$	0
$u = -1.49411 - 0.17396I$ $a = 0.808586 + 1.159040I$ $b = -0.424875 + 1.041320I$	$-9.76386 - 6.40779I$	0
$u = -0.379605 + 0.069470I$ $a = 0.480908 + 0.316543I$ $b = 0.705236 - 0.554147I$	$1.26265 - 1.49033I$	$1.18213 + 3.24989I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.379605-0.069470I$		
$a=\ 0.480908-0.316543I$	$1.26265+1.49033I$	$1.18213-3.24989I$
$b=\ 0.705236+0.554147I$		
$u=\ 0.200253+0.310690I$		
$a=\ 0.97283+1.24513I$	$-0.52263-2.65559I$	$2.07624+6.94674I$
$b=\ 0.413444-0.932626I$		
$u=\ 0.200253-0.310690I$		
$a=\ 0.97283-1.24513I$	$-0.52263+2.65559I$	$2.07624-6.94674I$
$b=\ 0.413444+0.932626I$		

II. $I_2^u = \langle b+a+1,\ a^2+3a+3,\ u-1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a \\ -a-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 2a+4 \\ -a-2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a+2 \\ -a-2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a+2 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a+3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.50000 + 0.86603I$ $b = 0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-3.00000 + 3.46410I$
$u = 1.00000$ $a = -1.50000 - 0.86603I$ $b = 0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-3.00000 - 3.46410I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^{113}+48u^{112}+\cdots+55u-1)$
c_2	$(u^2+u+1)(u^{113}+2u^{112}+\cdots-5u-1)$
c_3	$(u^2-u+1)(u^{113}+60u^{111}+\cdots-47u+1)$
c_4	$(u^2-u+1)(u^{113}+2u^{112}+\cdots+1009u+347)$
c_5	$(u^2-u+1)(u^{113}+2u^{112}+\cdots-5u-1)$
c_6, c_7	$((u-1)^2)(u^{113}+3u^{112}+\cdots-2u+1)$
c_8	$((u-1)^2)(u^{113}+7u^{112}+\cdots+u^2+1)$
c_9	$((u-1)^2)(u^{113}+23u^{112}+\cdots+6255814u+309047)$
c_{10}	$((u+1)^2)(u^{113}+3u^{112}+\cdots-2u+1)$
c_{11}	$u^2(u^{113}-3u^{112}+\cdots+1280u-1088)$
c_{12}	$u^2(u^{113}+11u^{112}+\cdots+12u+4)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)(y^{113}+36y^{112}+\cdots+3831y-1)$
c_2, c_5	$(y^2+y+1)(y^{113}+48y^{112}+\cdots+55y-1)$
c_3	$(y^2+y+1)(y^{113}+120y^{112}+\cdots+463y-1)$
c_4	$(y^2+y+1)(y^{113}+128y^{112}+\cdots-8247513y-120409)$
c_6, c_7, c_{10}	$((y-1)^2)(y^{113}-103y^{112}+\cdots-2y-1)$
c_8	$((y-1)^2)(y^{113}+9y^{112}+\cdots-2y-1)$
c_9	$((y-1)^2)(y^{113}+53y^{112}+\cdots-1.83334\times10^{12}y-9.55100\times10^{10})$
c_{11}	$y^2(y^{113}-17y^{112}+\cdots+7.27436\times10^7y-1183744)$
c_{12}	$y^2(y^{113}+15y^{112}+\cdots-280y-16)$