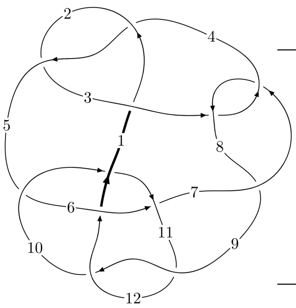
$12a_{0091}$ $(K12a_{0091})$



A knot diagram[1]

Linearized knot diagam

$$\to \underset{3}{\downarrow} \to \underset{5}{\downarrow} \to \underset{8}{\downarrow} \to \underset{2}{\downarrow} \to \underset{10}{\uparrow} \to \underset{11}{\downarrow} \to \underset{4}{\downarrow} \to \underset{7}{\uparrow} \to \underset{12}{\downarrow} \to \underset{1}{\uparrow} \to \underset{9}{\downarrow} \to \underset{6}{\downarrow} \to$$

Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.40905 \times 10^{271} u^{117} - 3.19731 \times 10^{271} u^{116} + \cdots + 1.57559 \times 10^{272} b - 8.05247 \times 10^{272}, \\
& 1.79454 \times 10^{272} u^{117} - 3.91278 \times 10^{272} u^{116} + \cdots + 3.15118 \times 10^{272} a - 5.43779 \times 10^{273}, \\
& u^{118} - 2u^{117} + \cdots - 160u + 32 \rangle \\
I_2^u = \langle & -2u^2 + b - u - 3,\ -5u^2 + a - 2u - 9,\ u^3 + u^2 + 2u + 1 \rangle
\end{aligned}$$

$$I_1^v = \langle a,\ v^4 + 12v^3 + 24v^2 + 29b + 21v + 45,\ v^5 + 3v^4 + 3v^3 + 8v^2 + v + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 126 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. $\boldsymbol{I_1^u = \langle 1.41 \times 10^{271} u^{117} - 3.20 \times 10^{271} u^{116} + \cdots + 1.58 \times 10^{272} b - 8.05 \times 10^{272},\ 1.79 \times 10^{272} u^{117} - 3.91 \times 10^{272} u^{116} + \cdots + 3.15 \times 10^{272} a - 5.44 \times 10^{273},\ u^{118} - 2u^{117} + \cdots - 160u + 32 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.569481u^{117} + 1.24169u^{116} + \cdots - 133.388u + 17.2564 \\ -0.0894301u^{117} + 0.202928u^{116} + \cdots - 39.7435u + 5.11076 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.373615u^{117} + 0.817065u^{116} + \cdots - 78.1427u + 10.4088 \\ -0.160556u^{117} + 0.336670u^{116} + \cdots - 52.1880u + 5.89092 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.255516u^{117} + 0.458821u^{116} + \cdots - 5.26560u - 0.632464 \\ 0.187447u^{117} - 0.419386u^{116} + \cdots + 67.1265u - 6.07320 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.321859u^{117} + 0.588545u^{116} + \cdots - 26.5015u - 3.74902 \\ -0.120061u^{117} + 0.303595u^{116} + \cdots - 65.4915u + 7.49794 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.381325u^{117} + 0.734164u^{116} + \cdots - 16.2430u - 2.30564 \\ -0.0732515u^{117} + 0.0465062u^{116} + \cdots + 69.4204u - 15.1813 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.161618u^{117} + 0.417138u^{116} + \cdots - 78.0186u + 13.7872 \\ 0.219707u^{117} - 0.317027u^{116} + \cdots - 61.7756u + 16.0928 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.305156u^{117} + 0.565775u^{116} + \cdots + 3.95305u - 5.31050 \\ -0.0281133u^{117} - 0.0595301u^{116} + \cdots + 84.6108u - 17.6725 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.287760u^{117} - 0.227055u^{116} + \cdots - 36.3944u + 24.9413$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{118} + 65u^{117} + \cdots + 172u + 1$
c_2, c_4	$u^{118} - 7u^{117} + \cdots - 2u + 1$
c_3, c_7	$u^{118} + 2u^{117} + \cdots + 160u + 32$
c_5	$u^{118} + 67u^{116} + \cdots + 196401u + 29189$
c_6	$u^{118} + 4u^{117} + \cdots + 8634757u + 591517$
c_8	$u^{118} - 36u^{117} + \cdots - 20992u + 1024$
c_9, c_{11}	$u^{118} - 5u^{117} + \cdots + 143u - 1$
c_{10}	$u^{118} + 20u^{117} + \cdots + 156u + 8$
c_{12}	$u^{118} - 9u^{117} + \cdots + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{118} - 17y^{117} + \cdots - 21024y + 1$
c_2, c_4	$y^{118} - 65y^{117} + \cdots - 172y + 1$
c_3, c_7	$y^{118} + 36y^{117} + \cdots + 20992y + 1024$
c_5	$y^{118} + 134y^{117} + \cdots + 56845137931y + 851997721$
c_6	$y^{118} + 46y^{117} + \cdots - 9372454336793y + 349892361289$
c_8	$y^{118} + 84y^{117} + \cdots - 237633536y + 1048576$
c_9, c_{11}	$y^{118} - 91y^{117} + \cdots - 21455y + 1$
c_{10}	$y^{118} + 24y^{117} + \cdots - 6288y + 64$
c_{12}	$y^{118} - 25y^{117} + \cdots - 26y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.728017 + 0.694463I$ $a = 1.47342 + 0.86530I$ $b = 0.767924 + 0.400602I$	$-1.43969 - 2.21556I$	0
$u = -0.728017 - 0.694463I$ $a = 1.47342 - 0.86530I$ $b = 0.767924 - 0.400602I$	$-1.43969 + 2.21556I$	0
$u = 0.619537 + 0.765048I$ $a = 1.78016 + 0.17358I$ $b = 0.818692 + 0.835076I$	$-1.23232 - 1.59626I$	0
$u = 0.619537 - 0.765048I$ $a = 1.78016 - 0.17358I$ $b = 0.818692 - 0.835076I$	$-1.23232 + 1.59626I$	0
$u = -0.298455 + 0.934841I$ $a = 0.29656 - 1.43402I$ $b = -0.263877 + 0.281634I$	$-1.47083 + 5.17351I$	0
$u = -0.298455 - 0.934841I$ $a = 0.29656 + 1.43402I$ $b = -0.263877 - 0.281634I$	$-1.47083 - 5.17351I$	0
$u = 0.198124 + 0.953787I$ $a = -0.264398 + 0.390388I$ $b = 0.12045 - 2.76563I$	$0.04031 - 2.55048I$	0
$u = 0.198124 - 0.953787I$ $a = -0.264398 - 0.390388I$ $b = 0.12045 + 2.76563I$	$0.04031 + 2.55048I$	0
$u = -0.068591 + 0.971611I$ $a = -1.225790 + 0.651510I$ $b = 0.974512 - 0.440905I$	$-5.08436 + 4.73741I$	0
$u = -0.068591 - 0.971611I$ $a = -1.225790 - 0.651510I$ $b = 0.974512 + 0.440905I$	$-5.08436 - 4.73741I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.031110 + 0.197972I$ $a = -0.688682 - 0.721892I$ $b = -0.985148 - 0.601427I$	$-3.61891 - 7.05319I$	0
$u = -1.031110 - 0.197972I$ $a = -0.688682 + 0.721892I$ $b = -0.985148 + 0.601427I$	$-3.61891 + 7.05319I$	0
$u = 1.050710 + 0.063861I$ $a = -0.544435 - 0.438588I$ $b = -0.843272 - 0.325269I$	$-3.31472 - 2.51883I$	0
$u = 1.050710 - 0.063861I$ $a = -0.544435 + 0.438588I$ $b = -0.843272 + 0.325269I$	$-3.31472 + 2.51883I$	0
$u = -0.272135 + 1.025000I$ $a = 0.308053 + 0.319914I$ $b = -0.256239 - 0.968837I$	$3.78308 + 0.01802I$	0
$u = -0.272135 - 1.025000I$ $a = 0.308053 - 0.319914I$ $b = -0.256239 + 0.968837I$	$3.78308 - 0.01802I$	0
$u = -0.735517 + 0.778817I$ $a = -0.61695 - 1.66149I$ $b = -0.955699 - 0.607070I$	$-4.73869 - 0.40842I$	0
$u = -0.735517 - 0.778817I$ $a = -0.61695 + 1.66149I$ $b = -0.955699 + 0.607070I$	$-4.73869 + 0.40842I$	0
$u = 0.107153 + 1.069730I$ $a = -0.597452 + 0.680996I$ $b = -0.573835 - 0.928627I$	$4.36870 - 2.02817I$	0
$u = 0.107153 - 1.069730I$ $a = -0.597452 - 0.680996I$ $b = -0.573835 + 0.928627I$	$4.36870 + 2.02817I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.781234+0.740647I$ $a=-0.934177-0.255699I$ $b=-1.238870-0.360891I$	$-10.10770+4.91047I$	0
$u=-0.781234-0.740647I$ $a=-0.934177+0.255699I$ $b=-1.238870+0.360891I$	$-10.10770-4.91047I$	0
$u=0.073380+0.920134I$ $a=1.340470-0.353995I$ $b=0.22772+2.02067I$	$0.35506-1.51453I$	0
$u=0.073380-0.920134I$ $a=1.340470+0.353995I$ $b=0.22772-2.02067I$	$0.35506+1.51453I$	0
$u=0.149078+1.079460I$ $a=-0.299400+0.181175I$ $b=-0.577685-0.021582I$	$2.39623-2.35738I$	0
$u=0.149078-1.079460I$ $a=-0.299400-0.181175I$ $b=-0.577685+0.021582I$	$2.39623+2.35738I$	0
$u=0.774685+0.781985I$ $a=-1.34750+0.88167I$ $b=-1.62710+0.76393I$	$-10.59630+3.65695I$	0
$u=0.774685-0.781985I$ $a=-1.34750-0.88167I$ $b=-1.62710-0.76393I$	$-10.59630-3.65695I$	0
$u=0.671146+0.874204I$ $a=-2.53705-1.93340I$ $b=0.07171-3.51471I$	$-2.69730-2.59523I$	0
$u=0.671146-0.874204I$ $a=-2.53705+1.93340I$ $b=0.07171+3.51471I$	$-2.69730+2.59523I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.733283 + 0.829346I$ $a = 1.083570 - 0.004026I$ $b = 0.983747 + 0.467908I$	$-5.24563 + 0.71971I$	0
$u = -0.733283 - 0.829346I$ $a = 1.083570 + 0.004026I$ $b = 0.983747 - 0.467908I$	$-5.24563 - 0.71971I$	0
$u = -0.860621 + 0.704440I$ $a = 1.75129 + 0.01594I$ $b = 0.994519 - 0.476642I$	$-4.58238 - 2.28560I$	0
$u = -0.860621 - 0.704440I$ $a = 1.75129 - 0.01594I$ $b = 0.994519 + 0.476642I$	$-4.58238 + 2.28560I$	0
$u = -0.813787 + 0.761771I$ $a = -2.92793 + 2.83260I$ $b = -0.01957 + 3.55757I$	$-6.47446 - 1.37228I$	0
$u = -0.813787 - 0.761771I$ $a = -2.92793 - 2.83260I$ $b = -0.01957 - 3.55757I$	$-6.47446 + 1.37228I$	0
$u = 0.735658 + 0.847408I$ $a = -2.02367 + 0.59992I$ $b = -0.878692 - 0.438850I$	$-4.87783 - 3.64446I$	0
$u = 0.735658 - 0.847408I$ $a = -2.02367 - 0.59992I$ $b = -0.878692 + 0.438850I$	$-4.87783 + 3.64446I$	0
$u = -0.916744 + 0.664952I$ $a = -1.17136 - 0.96980I$ $b = -1.45365 - 0.84782I$	$-6.64707 - 7.57494I$	0
$u = -0.916744 - 0.664952I$ $a = -1.17136 + 0.96980I$ $b = -1.45365 + 0.84782I$	$-6.64707 + 7.57494I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.303072 + 1.095470I$ $a = -1.100800 - 0.632360I$ $b = -0.735767 + 0.867376I$	$3.47785 + 6.81881I$	0
$u = -0.303072 - 1.095470I$ $a = -1.100800 + 0.632360I$ $b = -0.735767 - 0.867376I$	$3.47785 - 6.81881I$	0
$u = 0.810779 + 0.816732I$ $a = -1.74709 + 1.34427I$ $b = -0.916937 - 0.534062I$	$-8.95504 - 0.66716I$	0
$u = 0.810779 - 0.816732I$ $a = -1.74709 - 1.34427I$ $b = -0.916937 + 0.534062I$	$-8.95504 + 0.66716I$	0
$u = 0.644423 + 0.956924I$ $a = -0.709447 + 1.104300I$ $b = -1.000890 + 0.308103I$	$-0.60803 - 3.39602I$	0
$u = 0.644423 - 0.956924I$ $a = -0.709447 - 1.104300I$ $b = -1.000890 - 0.308103I$	$-0.60803 + 3.39602I$	0
$u = -0.198711 + 0.822369I$ $a = 1.68065 - 0.08745I$ $b = 1.216710 + 0.098619I$	$-2.78527 + 1.67495I$	$-10.83994 - 4.29836I$
$u = -0.198711 - 0.822369I$ $a = 1.68065 + 0.08745I$ $b = 1.216710 - 0.098619I$	$-2.78527 - 1.67495I$	$-10.83994 + 4.29836I$
$u = 0.727212 + 0.897879I$ $a = 1.51064 - 0.77162I$ $b = 0.879797 - 0.240211I$	$-4.72140 - 1.92715I$	0
$u = 0.727212 - 0.897879I$ $a = 1.51064 + 0.77162I$ $b = 0.879797 + 0.240211I$	$-4.72140 + 1.92715I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.724796+0.910439I$ $a=-1.28567-1.26945I$ $b=-0.772714+0.572474I$	$-4.99704+4.83893I$	0
$u=-0.724796-0.910439I$ $a=-1.28567+1.26945I$ $b=-0.772714-0.572474I$	$-4.99704-4.83893I$	0
$u=0.862419+0.782346I$ $a=0.856451-0.055709I$ $b=0.861279-0.560956I$	$-8.89092+3.50469I$	0
$u=0.862419-0.782346I$ $a=0.856451+0.055709I$ $b=0.861279+0.560956I$	$-8.89092-3.50469I$	0
$u=0.472880+1.066790I$ $a=0.462968-0.015933I$ $b=-0.078264+0.992701I$	$2.15836-4.75591I$	0
$u=0.472880-1.066790I$ $a=0.462968+0.015933I$ $b=-0.078264-0.992701I$	$2.15836+4.75591I$	0
$u=0.912938+0.730651I$ $a=1.55514-0.90395I$ $b=0.923328-0.483625I$	$-4.65732+6.45566I$	0
$u=0.912938-0.730651I$ $a=1.55514+0.90395I$ $b=0.923328+0.483625I$	$-4.65732-6.45566I$	0
$u=0.985084+0.643042I$ $a=-0.634652+0.233698I$ $b=-0.940660+0.350537I$	$-5.92496-1.10467I$	0
$u=0.985084-0.643042I$ $a=-0.634652-0.233698I$ $b=-0.940660-0.350537I$	$-5.92496+1.10467I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.776224 + 0.271739I$ $a = 1.092310 + 0.739985I$ $b = 0.249569 + 0.782908I$	$-0.309232 + 0.257103I$	$-3.98318 - 1.23273I$
$u = 0.776224 - 0.271739I$ $a = 1.092310 - 0.739985I$ $b = 0.249569 - 0.782908I$	$-0.309232 - 0.257103I$	$-3.98318 + 1.23273I$
$u = -0.711606 + 0.943046I$ $a = 1.90118 - 0.15709I$ $b = 1.16281 - 0.91465I$	$-4.23917 + 5.93059I$	0
$u = -0.711606 - 0.943046I$ $a = 1.90118 + 0.15709I$ $b = 1.16281 + 0.91465I$	$-4.23917 - 5.93059I$	0
$u = -0.794840 + 0.119506I$ $a = 1.29874 + 0.92905I$ $b = 0.493015 + 0.736937I$	$0.07573 - 2.96723I$	$-4.49491 + 6.86660I$
$u = -0.794840 - 0.119506I$ $a = 1.29874 - 0.92905I$ $b = 0.493015 - 0.736937I$	$0.07573 + 2.96723I$	$-4.49491 - 6.86660I$
$u = 0.733804 + 0.958544I$ $a = 1.90707 - 1.27205I$ $b = 1.50062 + 0.92394I$	$-10.05150 - 9.36822I$	0
$u = 0.733804 - 0.958544I$ $a = 1.90707 + 1.27205I$ $b = 1.50062 - 0.92394I$	$-10.05150 + 9.36822I$	0
$u = -0.699988 + 0.988293I$ $a = -1.85535 - 0.53512I$ $b = -0.956731 + 0.555562I$	$-0.57207 + 7.69896I$	0
$u = -0.699988 - 0.988293I$ $a = -1.85535 + 0.53512I$ $b = -0.956731 - 0.555562I$	$-0.57207 - 7.69896I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.768945 + 0.945881I$ $a = 1.136450 - 0.171730I$ $b = 1.071270 - 0.564160I$	$-8.55225 - 5.26015I$	0
$u = 0.768945 - 0.945881I$ $a = 1.136450 + 0.171730I$ $b = 1.071270 + 0.564160I$	$-8.55225 + 5.26015I$	0
$u = 0.012968 + 0.778903I$ $a = 1.19691 + 1.18340I$ $b = 0.0861568 + 0.1023830I$	$-0.57888 - 1.37786I$	$-5.42870 + 3.04988I$
$u = 0.012968 - 0.778903I$ $a = 1.19691 - 1.18340I$ $b = 0.0861568 - 0.1023830I$	$-0.57888 + 1.37786I$	$-5.42870 - 3.04988I$
$u = -0.750545 + 0.978963I$ $a = -2.01195 + 2.33917I$ $b = 0.13730 + 3.60565I$	$-5.80691 + 7.24580I$	0
$u = -0.750545 - 0.978963I$ $a = -2.01195 - 2.33917I$ $b = 0.13730 - 3.60565I$	$-5.80691 - 7.24580I$	0
$u = 0.263851 + 1.206760I$ $a = -0.019525 - 0.492723I$ $b = 0.851831 + 0.809494I$	$1.35608 - 6.83479I$	0
$u = 0.263851 - 1.206760I$ $a = -0.019525 + 0.492723I$ $b = 0.851831 - 0.809494I$	$1.35608 + 6.83479I$	0
$u = -0.731217 + 1.003590I$ $a = 0.864596 + 0.997578I$ $b = 0.952600 - 0.489311I$	$-9.30286 + 0.82367I$	0
$u = -0.731217 - 1.003590I$ $a = 0.864596 - 0.997578I$ $b = 0.952600 + 0.489311I$	$-9.30286 - 0.82367I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.001560 + 0.754879I$ $a = -1.22169 + 1.10354I$ $b = -1.50099 + 0.97923I$	$-9.7168 + 12.3498I$	0
$u = 1.001560 - 0.754879I$ $a = -1.22169 - 1.10354I$ $b = -1.50099 - 0.97923I$	$-9.7168 - 12.3498I$	0
$u = 0.782873 + 0.988188I$ $a = -1.31012 + 0.94588I$ $b = -0.784230 - 0.690147I$	$-8.24534 - 9.62498I$	0
$u = 0.782873 - 0.988188I$ $a = -1.31012 - 0.94588I$ $b = -0.784230 + 0.690147I$	$-8.24534 + 9.62498I$	0
$u = -0.748734 + 1.026430I$ $a = -1.01991 - 1.11785I$ $b = -1.189720 - 0.298360I$	$-3.58852 + 8.27941I$	0
$u = -0.748734 - 1.026430I$ $a = -1.01991 + 1.11785I$ $b = -1.189720 + 0.298360I$	$-3.58852 - 8.27941I$	0
$u = -0.417041 + 1.205090I$ $a = 0.471414 + 0.602822I$ $b = 1.007400 - 0.960901I$	$-0.01476 + 12.20380I$	0
$u = -0.417041 - 1.205090I$ $a = 0.471414 - 0.602822I$ $b = 1.007400 + 0.960901I$	$-0.01476 - 12.20380I$	0
$u = -1.038270 + 0.766425I$ $a = -0.598289 - 0.452558I$ $b = -0.917401 - 0.570045I$	$-8.92357 - 3.87422I$	0
$u = -1.038270 - 0.766425I$ $a = -0.598289 + 0.452558I$ $b = -0.917401 + 0.570045I$	$-8.92357 + 3.87422I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.781779 + 1.035930I$ $a = -1.89500 + 0.43707I$ $b = -1.048240 - 0.529654I$	$-3.69576 - 12.71000I$	0
$u = 0.781779 - 1.035930I$ $a = -1.89500 - 0.43707I$ $b = -1.048240 + 0.529654I$	$-3.69576 + 12.71000I$	0
$u = -0.097281 + 1.296230I$ $a = -0.447675 + 0.135304I$ $b = 0.493133 + 0.312801I$	$2.08823 - 3.26218I$	0
$u = -0.097281 - 1.296230I$ $a = -0.447675 - 0.135304I$ $b = 0.493133 - 0.312801I$	$2.08823 + 3.26218I$	0
$u = -0.758282 + 1.060240I$ $a = 1.79769 + 0.86896I$ $b = 1.47421 - 1.04423I$	$-5.4260 + 13.7420I$	0
$u = -0.758282 - 1.060240I$ $a = 1.79769 - 0.86896I$ $b = 1.47421 + 1.04423I$	$-5.4260 - 13.7420I$	0
$u = -0.618650 + 0.289740I$ $a = 0.95959 - 1.70942I$ $b = 0.633734 - 0.186169I$	$-3.65232 - 1.86079I$	$-14.7972 + 4.0060I$
$u = -0.618650 - 0.289740I$ $a = 0.95959 + 1.70942I$ $b = 0.633734 + 0.186169I$	$-3.65232 + 1.86079I$	$-14.7972 - 4.0060I$
$u = 0.788712 + 1.087860I$ $a = 0.910152 - 0.577301I$ $b = 0.839179 + 0.652694I$	$-4.55475 - 5.33983I$	0
$u = 0.788712 - 1.087860I$ $a = 0.910152 + 0.577301I$ $b = 0.839179 - 0.652694I$	$-4.55475 + 5.33983I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.826836 + 1.074140I$ $a = 1.98937 - 0.70799I$ $b = 1.54362 + 1.09495I$	$-8.6750 - 19.0243I$	0
$u = 0.826836 - 1.074140I$ $a = 1.98937 + 0.70799I$ $b = 1.54362 - 1.09495I$	$-8.6750 + 19.0243I$	0
$u = 0.069434 + 0.626267I$ $a = 1.23586 - 2.19265I$ $b = -0.358586 + 0.688989I$	$-1.32642 + 1.43233I$	$0.36847 - 1.82515I$
$u = 0.069434 - 0.626267I$ $a = 1.23586 + 2.19265I$ $b = -0.358586 - 0.688989I$	$-1.32642 - 1.43233I$	$0.36847 + 1.82515I$
$u = -0.847758 + 1.083770I$ $a = 1.135320 + 0.479648I$ $b = 0.916105 - 0.765861I$	$-7.87653 + 10.72040I$	0
$u = -0.847758 - 1.083770I$ $a = 1.135320 - 0.479648I$ $b = 0.916105 + 0.765861I$	$-7.87653 - 10.72040I$	0
$u = 0.315350 + 1.371310I$ $a = -0.243774 - 0.304828I$ $b = 0.467941 - 0.015413I$	$1.32897 - 2.54365I$	0
$u = 0.315350 - 1.371310I$ $a = -0.243774 + 0.304828I$ $b = 0.467941 + 0.015413I$	$1.32897 + 2.54365I$	0
$u = 0.560432$ $a = 1.21967$ $b = 0.286322$	-1.12206	-9.21340
$u = 0.551319 + 0.060131I$ $a = 2.81769 - 9.33403I$ $b = 1.77180 - 2.09281I$	$-2.75296 + 0.06291I$	$-75.7664 - 36.6206I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.551319 - 0.060131I$ $a = 2.81769 + 9.33403I$ $b = 1.77180 + 2.09281I$	$-2.75296 - 0.06291I$	$-75.7664 + 36.6206I$
$u = 0.092826 + 0.524249I$ $a = 1.64965 + 0.99766I$ $b = 0.113197 + 0.496895I$	$-0.66149 - 1.45734I$	$-4.35229 + 4.44056I$
$u = 0.092826 - 0.524249I$ $a = 1.64965 - 0.99766I$ $b = 0.113197 - 0.496895I$	$-0.66149 + 1.45734I$	$-4.35229 - 4.44056I$
$u = -0.283170 + 0.423021I$ $a = 2.19250 - 8.03202I$ $b = -1.021710 - 0.189739I$	$-4.15362 + 0.40167I$	$-9.52783 - 9.14652I$
$u = -0.283170 - 0.423021I$ $a = 2.19250 + 8.03202I$ $b = -1.021710 + 0.189739I$	$-4.15362 - 0.40167I$	$-9.52783 + 9.14652I$
$u = -0.022040 + 0.452263I$ $a = -1.229100 - 0.307457I$ $b = -1.51825 - 0.19954I$	$-7.21260 - 4.35579I$	$4.39844 + 1.29194I$
$u = -0.022040 - 0.452263I$ $a = -1.229100 + 0.307457I$ $b = -1.51825 + 0.19954I$	$-7.21260 + 4.35579I$	$4.39844 - 1.29194I$
$u = 0.287194$ $a = 3.48628$ $b = 1.33135$	-2.30286	-1.96350

II. $\boldsymbol{I^u_2 = \langle -2u^2 + b - u - 3,\ -5u^2 + a - 2u - 9,\ u^3 + u^2 + 2u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 5u^2+2u+9 \\ 2u^2+u+3 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 4u^2+2u+8 \\ u^2+u+3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 5u^2+2u+9 \\ 2u^2+u+3 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ -u^2-u-1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -16u^2-7u-27 \\ -5u^2-2u-9 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^2-1 \\ -u^2-u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -53u^2 - 32u - 104$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = \quad 0.258045 - 0.197115I$ $b = -0.539798 + 0.182582I$	$1.37919 + 2.82812I$	$-9.0124 - 12.0277I$
$u = -0.215080 - 1.307140I$ $a = \quad 0.258045 + 0.197115I$ $b = -0.539798 - 0.182582I$	$1.37919 - 2.82812I$	$-9.0124 + 12.0277I$
$u = -0.569840$ $a = \quad 9.48391$ $b = \quad 3.07960$	-2.75839	-102.980

III. $\boldsymbol{I_1^v = \langle a,\ v^4+12v^3+24v^2+29b+21v+45,\ v^5+3v^4+3v^3+8v^2+v+1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -0.0344828v^4 - 0.413793v^3 + \cdots - 0.724138v - 1.55172 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.0344828v^4 + 0.413793v^3 + \cdots + 0.724138v + 1.55172 \\ -0.0344828v^4 - 0.413793v^3 + \cdots - 0.724138v - 1.55172 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.137931v^4 - 0.655172v^3 + \cdots - 1.89655v - 1.20690 \\ 0.137931v^4 + 0.655172v^3 + \cdots + 1.89655v + 2.20690 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -0.137931v^4 - 0.655172v^3 + \cdots - 1.89655v - 2.20690 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.310345v^4 - 0.724138v^3 + \cdots - 2.51724v + 0.0344828 \\ v^4 + 3v^3 + 3v^2 + 8v + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.310345v^4 + 0.724138v^3 + \cdots + 2.51724v - 0.0344828 \\ -v^4 - 3v^3 - 3v^2 - 8v - 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.310345v^4 - 0.724138v^3 + \cdots - 1.51724v + 0.0344828 \\ v^4 + 3v^3 + 3v^2 + 8v + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{65}{29}v^4 + \frac{142}{29}v^3 + \frac{81}{29}v^2 + \frac{437}{29}v - \frac{613}{29}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=-0.01014+1.59703I$ $a=\quad 0$ $b=\quad 0.309916+0.549911I$	$-1.97403-1.53058I$	$-13.4575+4.4032I$
$v=-0.01014-1.59703I$ $a=\quad 0$ $b=\quad 0.309916-0.549911I$	$-1.97403+1.53058I$	$-13.4575-4.4032I$
$v=-0.043806+0.365575I$ $a=\quad 0$ $b=-1.41878-0.21917I$	$-7.51750-4.40083I$	$-22.0438+5.2094I$
$v=-0.043806-0.365575I$ $a=\quad 0$ $b=-1.41878+0.21917I$	$-7.51750+4.40083I$	$-22.0438-5.2094I$
$v=-2.89210$ $a=\quad 0$ $b=\quad 1.21774$	-4.04602	-2.99730

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^3-u^2+2u-1)(u^{118}+65u^{117}+\cdots+172u+1)$
c_2	$((u-1)^5)(u^3+u^2-1)(u^{118}-7u^{117}+\cdots-2u+1)$
c_3	$u^5(u^3-u^2+2u-1)(u^{118}+2u^{117}+\cdots+160u+32)$
c_4	$((u+1)^5)(u^3-u^2+1)(u^{118}-7u^{117}+\cdots-2u+1)$
c_5	$(u^3-2u^2-3u-1)(u^5-u^4+2u^3-u^2+u-1)$ $\cdot(u^{118}+67u^{116}+\cdots+196401u+29189)$
c_6	$(u^3-2u^2-3u-1)(u^5+u^4-2u^3-u^2+u-1)$ $\cdot(u^{118}+4u^{117}+\cdots+8634757u+591517)$
c_7	$u^5(u^3+u^2+2u+1)(u^{118}+2u^{117}+\cdots+160u+32)$
c_8	$u^5(u^3-3u^2+2u+1)(u^{118}-36u^{117}+\cdots-20992u+1024)$
c_9	$((u-1)^3)(u^5+u^4+\cdots+u-1)(u^{118}-5u^{117}+\cdots+143u-1)$
c_{10}	$u^3(u^5-u^4+\cdots+u-1)(u^{118}+20u^{117}+\cdots+156u+8)$
c_{11}	$((u+1)^3)(u^5-u^4+\cdots+u+1)(u^{118}-5u^{117}+\cdots+143u-1)$
c_{12}	$(u^3+3u^2+2u-1)(u^5+3u^4+4u^3+u^2-u-1)$ $\cdot(u^{118}-9u^{117}+\cdots+2u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^5)(y^3+3y^2+2y-1)(y^{118}-17y^{117}+\cdots-21024y+1)$
c_2, c_4	$((y-1)^5)(y^3-y^2+2y-1)(y^{118}-65y^{117}+\cdots-172y+1)$
c_3, c_7	$y^5(y^3+3y^2+2y-1)(y^{118}+36y^{117}+\cdots+20992y+1024)$
c_5	$(y^3-10y^2+5y-1)(y^5+3y^4+4y^3+y^2-y-1)$ $\cdot(y^{118}+134y^{117}+\cdots+56845137931y+851997721)$
c_6	$(y^3-10y^2+5y-1)(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot(y^{118}+46y^{117}+\cdots-9372454336793y+349892361289)$
c_8	$y^5(y^3-5y^2+10y-1)(y^{118}+84y^{117}+\cdots-2.37634\times10^8y+1048576)$
c_9, c_{11}	$(y-1)^3(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot(y^{118}-91y^{117}+\cdots-21455y+1)$
c_{10}	$y^3(y^5+3y^4+\cdots-y-1)(y^{118}+24y^{117}+\cdots-6288y+64)$
c_{12}	$(y^3-5y^2+10y-1)(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot(y^{118}-25y^{117}+\cdots-26y+1)$