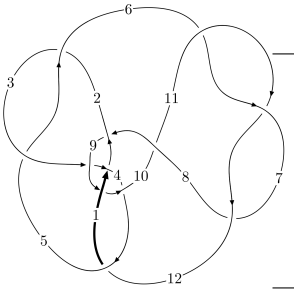
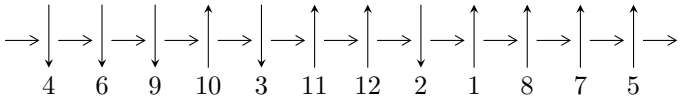
$12a_{0918}$ $(K12a_{0918})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u &= \langle -1.61929 \times 10^{286} u^{158} + 3.80106 \times 10^{286} u^{157} + \cdots + 1.62955 \times 10^{287} b - 5.38191 \times 10^{287}, \\ &\quad 2.14088 \times 10^{287} u^{158} - 1.53484 \times 10^{287} u^{157} + \cdots + 5.26470 \times 10^{287} a + 9.88848 \times 10^{287}, \\ &\quad u^{159} + u^{158} + \cdots - 92u + 21 \rangle \\ I_2^u &= \langle -20u^{31} + 59u^{30} + \cdots + b + 18,\ 15u^{31} - 43u^{30} + \cdots + a - 15,\ u^{32} - 4u^{31} + \cdots + 16u^2 + 1 \rangle \\ I_3^u &= \langle 2a^3 + a^2 + b + 5a - 3,\ a^4 + 2a^2 - 3a + 1,\ u + 1 \rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 195 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. $\boldsymbol{I_1^u = \langle -1.62 \times 10^{286} u^{158} + 3.80 \times 10^{286} u^{157} + \cdots + 1.63 \times 10^{287} b - 5.38 \times 10^{287},\ 2.14 \times 10^{287} u^{158} - 1.53 \times 10^{287} u^{157} + \cdots + 5.26 \times 10^{287} a + 9.89 \times 10^{287},\ u^{159} + u^{158} + \cdots - 92u + 21 \rangle}$

(i) Arc colorings

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

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

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

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

$$a_3 = \begin{pmatrix} -0.406648u^{158} + 0.291533u^{157} + \cdots - 1.00413u - 1.87826 \\ 0.0993705u^{158} - 0.233258u^{157} + \cdots - 19.1997u + 3.30269 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.307277u^{158} + 0.0582749u^{157} + \cdots - 20.2038u + 1.42443 \\ 0.0993705u^{158} - 0.233258u^{157} + \cdots - 19.1997u + 3.30269 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0964387u^{158} - 0.173603u^{157} + \cdots - 78.5154u + 12.5849 \\ 0.305530u^{158} + 0.139750u^{157} + \cdots + 7.38377u - 3.14302 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0972956u^{158} + 0.311974u^{157} + \cdots + 47.8778u - 9.68921 \\ 0.193512u^{158} - 0.201770u^{157} + \cdots - 33.9621u + 9.32314 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0386557u^{158} + 0.335671u^{157} + \cdots + 9.26981u + 6.53523 \\ 0.0211241u^{158} - 0.185844u^{157} + \cdots + 9.70779u - 5.49922 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0475849u^{158} + 0.215036u^{157} + \cdots + 49.7268u - 9.69616 \\ 0.197192u^{158} - 0.150861u^{157} + \cdots - 35.7867u + 9.69243 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.883281u^{158} + 0.157448u^{157} + \cdots - 191.867u + 45.9615$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{159} - 11u^{158} + \cdots - 136u + 48$
c_2, c_5	$u^{159} + 9u^{158} + \cdots + 9524u + 1463$
c_3	$u^{159} + 3u^{157} + \cdots - 349u - 31$
c_4	$u^{159} - 2u^{158} + \cdots + 576u - 64$
c_6, c_7, c_{11}	$u^{159} - u^{158} + \cdots - 92u - 21$
c_8	$u^{159} - 3u^{158} + \cdots - 104013506u - 14233459$
c_9	$u^{159} - 7u^{158} + \cdots + 113u - 7$
c_{10}	$u^{159} - 9u^{158} + \cdots + 3427840u + 1462272$
c_{12}	$u^{159} - 3u^{158} + \cdots + 35431u + 1013$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{159} + 3y^{158} + \cdots - 82112y - 2304$
c_2, c_5	$y^{159} + 89y^{158} + \cdots + 106035890y - 2140369$
c_3	$y^{159} + 6y^{158} + \cdots + 80199y - 961$
c_4	$y^{159} - 2y^{158} + \cdots + 368640y - 4096$
c_6, c_7, c_{11}	$y^{159} - 147y^{158} + \cdots - 13502y - 441$
c_8	$y^{159} + 21y^{158} + \cdots - 11556131041417374y - 202591355104681$
c_9	$y^{159} + y^{158} + \cdots + 4943y - 49$
c_{10}	$y^{159} - 3y^{158} + \cdots - 53018876444672y - 2138239401984$
c_{12}	$y^{159} - 5y^{158} + \cdots + 327496385y - 1026169$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.799273+0.595295I$ $a=\ \ 0.654341-0.752554I$ $b=-0.275980+1.122700I$	$3.52667+1.67894I$	0
$u=-0.799273-0.595295I$ $a=\ \ 0.654341+0.752554I$ $b=-0.275980-1.122700I$	$3.52667-1.67894I$	0
$u=-0.834666+0.572919I$ $a=-0.119569+0.709332I$ $b=\ \ 0.401223-1.042960I$	$3.33713+2.17980I$	0
$u=-0.834666-0.572919I$ $a=-0.119569-0.709332I$ $b=\ \ 0.401223+1.042960I$	$3.33713-2.17980I$	0
$u=-0.965631+0.329670I$ $a=\ \ 0.760712-0.409889I$ $b=-0.535440+1.145240I$	$1.83061+2.86317I$	0
$u=-0.965631-0.329670I$ $a=\ \ 0.760712+0.409889I$ $b=-0.535440-1.145240I$	$1.83061-2.86317I$	0
$u=\ \ 0.788784+0.547825I$ $a=-0.440608-0.644316I$ $b=\ \ 0.578464+1.222480I$	$2.32567-11.12500I$	0
$u=\ \ 0.788784-0.547825I$ $a=-0.440608+0.644316I$ $b=\ \ 0.578464-1.222480I$	$2.32567+11.12500I$	0
$u=\ \ 0.920641+0.229633I$ $a=-0.082467-1.001120I$ $b=\ \ 0.673100+0.478718I$	$-0.75472+5.52736I$	0
$u=\ \ 0.920641-0.229633I$ $a=-0.082467+1.001120I$ $b=\ \ 0.673100-0.478718I$	$-0.75472-5.52736I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.040949 + 0.902867I$ $a = 0.164336 + 0.065527I$ $b = 0.314215 + 0.827992I$	$-2.89952 - 4.98326I$	0
$u = 0.040949 - 0.902867I$ $a = 0.164336 - 0.065527I$ $b = 0.314215 - 0.827992I$	$-2.89952 + 4.98326I$	0
$u = 1.088200 + 0.137242I$ $a = -0.131931 - 0.931019I$ $b = -0.697721 + 0.987501I$	$0.83807 + 4.08830I$	0
$u = 1.088200 - 0.137242I$ $a = -0.131931 + 0.931019I$ $b = -0.697721 - 0.987501I$	$0.83807 - 4.08830I$	0
$u = -0.311564 + 0.832969I$ $a = 1.258760 - 0.643598I$ $b = 0.498950 + 1.111460I$	$1.69592 - 7.05174I$	0
$u = -0.311564 - 0.832969I$ $a = 1.258760 + 0.643598I$ $b = 0.498950 - 1.111460I$	$1.69592 + 7.05174I$	0
$u = -1.089110 + 0.232449I$ $a = 0.69157 + 1.26424I$ $b = 0.452532 - 0.926610I$	$0.97576 + 2.58728I$	0
$u = -1.089110 - 0.232449I$ $a = 0.69157 - 1.26424I$ $b = 0.452532 + 0.926610I$	$0.97576 - 2.58728I$	0
$u = -0.334703 + 0.816865I$ $a = -0.851963 + 0.666394I$ $b = -0.387709 - 1.243550I$	$2.08281 - 6.54231I$	0
$u = -0.334703 - 0.816865I$ $a = -0.851963 - 0.666394I$ $b = -0.387709 + 1.243550I$	$2.08281 + 6.54231I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.079580+0.301484I$ $a=\ \ 0.826300-0.998104I$ $b=\ \ 0.314490+0.631256I$	$1.81628-0.95690I$	0
$u=-1.079580-0.301484I$ $a=\ \ 0.826300+0.998104I$ $b=\ \ 0.314490-0.631256I$	$1.81628+0.95690I$	0
$u=\ \ 0.318803+0.807507I$ $a=\ \ 1.30341+0.76194I$ $b=\ \ 0.64770-1.28553I$	$0.8176+15.8279I$	0
$u=\ \ 0.318803-0.807507I$ $a=\ \ 1.30341-0.76194I$ $b=\ \ 0.64770+1.28553I$	$0.8176-15.8279I$	0
$u=\ \ 1.164590+0.114608I$ $a=-0.165064-0.937360I$ $b=-1.070590+0.508490I$	$-0.88754+2.00188I$	0
$u=\ \ 1.164590-0.114608I$ $a=-0.165064+0.937360I$ $b=-1.070590-0.508490I$	$-0.88754-2.00188I$	0
$u=\ \ 1.168020+0.107285I$ $a=-0.472949-0.340663I$ $b=-0.135049-1.036230I$	$5.53395-3.26719I$	0
$u=\ \ 1.168020-0.107285I$ $a=-0.472949+0.340663I$ $b=-0.135049+1.036230I$	$5.53395+3.26719I$	0
$u=-1.145600+0.258752I$ $a=\ \ 0.469515+0.634234I$ $b=-0.410048+0.042409I$	$0.733678-0.678388I$	0
$u=-1.145600-0.258752I$ $a=\ \ 0.469515-0.634234I$ $b=-0.410048-0.042409I$	$0.733678+0.678388I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.767881 + 0.268194I$ $a = 0.158187 + 1.260450I$ $b = 0.891327 - 0.291243I$	$-0.58360 - 5.65390I$	0
$u = 0.767881 - 0.268194I$ $a = 0.158187 - 1.260450I$ $b = 0.891327 + 0.291243I$	$-0.58360 + 5.65390I$	0
$u = -1.157610 + 0.341316I$ $a = 0.718535 - 0.181945I$ $b = 0.336545 + 0.647623I$	$0.097145 - 0.964697I$	0
$u = -1.157610 - 0.341316I$ $a = 0.718535 + 0.181945I$ $b = 0.336545 - 0.647623I$	$0.097145 + 0.964697I$	0
$u = -0.090279 + 0.786792I$ $a = 0.310754 - 0.764533I$ $b = 0.267372 - 0.570974I$	$-3.15929 - 3.12621I$	0
$u = -0.090279 - 0.786792I$ $a = 0.310754 + 0.764533I$ $b = 0.267372 + 0.570974I$	$-3.15929 + 3.12621I$	0
$u = -0.211790 + 0.755920I$ $a = -1.189780 + 0.211965I$ $b = -0.66281 - 1.29058I$	$-0.46327 - 6.89398I$	0
$u = -0.211790 - 0.755920I$ $a = -1.189780 - 0.211965I$ $b = -0.66281 + 1.29058I$	$-0.46327 + 6.89398I$	0
$u = -0.654320 + 0.409082I$ $a = 0.167312 + 0.867181I$ $b = -0.242747 - 1.039940I$	$2.56240 - 2.58490I$	$10.69425 + 0.I$
$u = -0.654320 - 0.409082I$ $a = 0.167312 - 0.867181I$ $b = -0.242747 + 1.039940I$	$2.56240 + 2.58490I$	$10.69425 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.250992 + 0.726443I$ $a = 0.585723 + 0.489535I$ $b = 1.153520 + 0.281834I$	$-2.37858 + 9.47061I$	$0. - 8.12329I$
$u = 0.250992 - 0.726443I$ $a = 0.585723 - 0.489535I$ $b = 1.153520 - 0.281834I$	$-2.37858 - 9.47061I$	$0. + 8.12329I$
$u = 0.198555 + 0.737587I$ $a = 0.841334 + 0.969239I$ $b = 0.407659 - 0.757510I$	$-2.98906 - 1.75226I$	0
$u = 0.198555 - 0.737587I$ $a = 0.841334 - 0.969239I$ $b = 0.407659 + 0.757510I$	$-2.98906 + 1.75226I$	0
$u = -1.23638$ $a = 1.19932$ $b = -0.119129$	2.36933	0
$u = 1.152260 + 0.457534I$ $a = 0.470420 + 0.899795I$ $b = 0.446456 - 0.951171I$	$0.52773 + 9.79628I$	0
$u = 1.152260 - 0.457534I$ $a = 0.470420 - 0.899795I$ $b = 0.446456 + 0.951171I$	$0.52773 - 9.79628I$	0
$u = -1.222050 + 0.211477I$ $a = 0.22886 + 1.60032I$ $b = -1.076230 - 0.531457I$	$-0.21243 - 2.76227I$	0
$u = -1.222050 - 0.211477I$ $a = 0.22886 - 1.60032I$ $b = -1.076230 + 0.531457I$	$-0.21243 + 2.76227I$	0
$u = -0.321842 + 0.685356I$ $a = 1.44451 - 0.21818I$ $b = -0.055055 + 0.871285I$	$1.41713 - 1.34446I$	$6.49984 + 3.60403I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.321842-0.685356I$ $a=\ \ 1.44451+0.21818I$ $b=-0.055055-0.871285I$	$1.41713+1.34446I$	$6.49984-3.60403I$
$u=\ \ 0.286131+0.695148I$ $a=-1.56049-0.90920I$ $b=-0.65062+1.32692I$	$-0.20295+7.26883I$	$-2.50391-12.76607I$
$u=\ \ 0.286131-0.695148I$ $a=-1.56049+0.90920I$ $b=-0.65062-1.32692I$	$-0.20295-7.26883I$	$-2.50391+12.76607I$
$u=-0.214279+0.711402I$ $a=\ \ 0.727619-0.226998I$ $b=\ \ 0.619242-0.291900I$	$-0.67157-2.64961I$	$2.00000+6.28164I$
$u=-0.214279-0.711402I$ $a=\ \ 0.727619+0.226998I$ $b=\ \ 0.619242+0.291900I$	$-0.67157+2.64961I$	$2.00000-6.28164I$
$u=-0.479596+0.566435I$ $a=-0.036380+0.172804I$ $b=\ \ 0.436232-1.015990I$	$2.36325-0.02920I$	$8.14035+4.63595I$
$u=-0.479596-0.566435I$ $a=-0.036380-0.172804I$ $b=\ \ 0.436232+1.015990I$	$2.36325+0.02920I$	$8.14035-4.63595I$
$u=-0.435949+0.572076I$ $a=\ \ 1.62006-0.86038I$ $b=\ \ 0.585893+0.955562I$	$2.27343-3.90732I$	$9.31934+6.35993I$
$u=-0.435949-0.572076I$ $a=\ \ 1.62006+0.86038I$ $b=\ \ 0.585893-0.955562I$	$2.27343+3.90732I$	$9.31934-6.35993I$
$u=-0.171511+0.685651I$ $a=\ \ 1.68144-1.40388I$ $b=\ \ 0.336693+1.020650I$	$-1.71183-6.01014I$	$-2.05617+9.25308I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.171511-0.685651I$ $a=\ 1.68144+1.40388I$ $b=\ 0.336693-1.020650I$	$-1.71183+6.01014I$	$-2.05617-9.25308I$
$u=-0.130256+0.691140I$ $a=-0.632396-0.435664I$ $b=-0.701285-0.315380I$	$-2.28898-2.81780I$	$-3.69298+6.05931I$
$u=-0.130256-0.691140I$ $a=-0.632396+0.435664I$ $b=-0.701285+0.315380I$	$-2.28898+2.81780I$	$-3.69298-6.05931I$
$u=\ 0.364563+0.591898I$ $a=-0.90629-1.42302I$ $b=-0.643568+0.671849I$	$-1.77482+3.92949I$	$-3.83817-8.21365I$
$u=\ 0.364563-0.591898I$ $a=-0.90629+1.42302I$ $b=-0.643568-0.671849I$	$-1.77482-3.92949I$	$-3.83817+8.21365I$
$u=-1.232790+0.465501I$ $a=-0.366440+0.564724I$ $b=\ 0.116619-0.771707I$	$1.041220+0.137927I$	0
$u=-1.232790-0.465501I$ $a=-0.366440-0.564724I$ $b=\ 0.116619+0.771707I$	$1.041220-0.137927I$	0
$u=\ 0.585666+0.340842I$ $a=\ 0.770744+0.950438I$ $b=-0.528110-1.199570I$	$1.10473-3.57300I$	$1.47051+6.16602I$
$u=\ 0.585666-0.340842I$ $a=\ 0.770744-0.950438I$ $b=-0.528110+1.199570I$	$1.10473+3.57300I$	$1.47051-6.16602I$
$u=\ 0.200680+0.637491I$ $a=-2.45642+0.15855I$ $b=-0.313088+1.184000I$	$2.97283+5.99388I$	$6.42755-8.84957I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.200680 - 0.637491I$ $a = -2.45642 - 0.15855I$ $b = -0.313088 - 1.184000I$	$2.97283 - 5.99388I$	$6.42755 + 8.84957I$
$u = 1.336350 + 0.088089I$ $a = 0.77234 + 2.29522I$ $b = -0.25297 - 1.60145I$	$7.87064 - 3.40592I$	0
$u = 1.336350 - 0.088089I$ $a = 0.77234 - 2.29522I$ $b = -0.25297 + 1.60145I$	$7.87064 + 3.40592I$	0
$u = -1.330760 + 0.168909I$ $a = -0.78433 + 2.83863I$ $b = -0.425765 - 1.152930I$	$3.75885 - 4.25333I$	0
$u = -1.330760 - 0.168909I$ $a = -0.78433 - 2.83863I$ $b = -0.425765 + 1.152930I$	$3.75885 + 4.25333I$	0
$u = 1.335890 + 0.172092I$ $a = 0.075362 + 0.650629I$ $b = -0.779588 - 0.974467I$	$3.82140 + 0.23328I$	0
$u = 1.335890 - 0.172092I$ $a = 0.075362 - 0.650629I$ $b = -0.779588 + 0.974467I$	$3.82140 - 0.23328I$	0
$u = 1.337140 + 0.226045I$ $a = 0.920513 - 0.672971I$ $b = -1.49738 - 0.24928I$	$0.75338 + 3.18644I$	0
$u = 1.337140 - 0.226045I$ $a = 0.920513 + 0.672971I$ $b = -1.49738 + 0.24928I$	$0.75338 - 3.18644I$	0
$u = 0.185771 + 0.615827I$ $a = 0.242210 - 0.402152I$ $b = -0.674946 - 0.678322I$	$-1.75602 - 1.14410I$	$-2.70905 + 3.41357I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.185771 - 0.615827I$ $a = 0.242210 + 0.402152I$ $b = -0.674946 + 0.678322I$	$-1.75602 + 1.14410I$	$-2.70905 - 3.41357I$
$u = 1.320050 + 0.336037I$ $a = -0.340469 + 0.295275I$ $b = 0.210092 + 0.543789I$	$1.25878 + 7.17293I$	0
$u = 1.320050 - 0.336037I$ $a = -0.340469 - 0.295275I$ $b = 0.210092 - 0.543789I$	$1.25878 - 7.17293I$	0
$u = 1.356050 + 0.157256I$ $a = -1.96433 - 2.89991I$ $b = -0.070463 + 0.895904I$	$4.84633 - 2.35882I$	0
$u = 1.356050 - 0.157256I$ $a = -1.96433 + 2.89991I$ $b = -0.070463 - 0.895904I$	$4.84633 + 2.35882I$	0
$u = -1.369450 + 0.145280I$ $a = -1.036070 + 0.881185I$ $b = -0.270195 + 0.271615I$	$4.76561 - 5.98459I$	0
$u = -1.369450 - 0.145280I$ $a = -1.036070 - 0.881185I$ $b = -0.270195 - 0.271615I$	$4.76561 + 5.98459I$	0
$u = 1.351390 + 0.270479I$ $a = -0.048448 - 0.646700I$ $b = -0.902681 + 0.438862I$	$2.40294 + 6.28854I$	0
$u = 1.351390 - 0.270479I$ $a = -0.048448 + 0.646700I$ $b = -0.902681 - 0.438862I$	$2.40294 - 6.28854I$	0
$u = 0.287478 + 0.545861I$ $a = 2.02886 + 0.08096I$ $b = 0.331670 - 1.272780I$	$4.08899 - 1.75406I$	$6.02942 - 0.78009I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.287478 - 0.545861I$ $a = 2.02886 - 0.08096I$ $b = 0.331670 + 1.272780I$	$4.08899 + 1.75406I$	$6.02942 + 0.78009I$
$u = -1.368080 + 0.225606I$ $a = 1.13965 + 0.97018I$ $b = -1.42897 + 0.21580I$	$1.13488 - 3.60883I$	0
$u = -1.368080 - 0.225606I$ $a = 1.13965 - 0.97018I$ $b = -1.42897 - 0.21580I$	$1.13488 + 3.60883I$	0
$u = 0.156361 + 0.590337I$ $a = -0.909143 - 1.010760I$ $b = -1.254360 - 0.266293I$	$-3.73265 + 0.64583I$	$-14.3996 - 3.2867I$
$u = 0.156361 - 0.590337I$ $a = -0.909143 + 1.010760I$ $b = -1.254360 + 0.266293I$	$-3.73265 - 0.64583I$	$-14.3996 + 3.2867I$
$u = -1.382100 + 0.159658I$ $a = 0.40621 - 2.75500I$ $b = -0.27264 + 1.41868I$	$9.38761 + 1.59220I$	0
$u = -1.382100 - 0.159658I$ $a = 0.40621 + 2.75500I$ $b = -0.27264 - 1.41868I$	$9.38761 - 1.59220I$	0
$u = -0.072608 + 0.602082I$ $a = -1.253030 + 0.070063I$ $b = -1.283910 + 0.307868I$	$-3.72634 - 0.20894I$	$-8.98173 - 0.59922I$
$u = -0.072608 - 0.602082I$ $a = -1.253030 - 0.070063I$ $b = -1.283910 - 0.307868I$	$-3.72634 + 0.20894I$	$-8.98173 + 0.59922I$
$u = 1.369520 + 0.270922I$ $a = 1.21441 + 2.78141I$ $b = 0.269286 - 1.108730I$	$3.18591 + 9.47700I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.369520 - 0.270922I$ $a = 1.21441 - 2.78141I$ $b = 0.269286 + 1.108730I$	$3.18591 - 9.47700I$	0
$u = -1.365110 + 0.295551I$ $a = 0.82503 - 1.91460I$ $b = 0.271144 + 0.950814I$	$1.94770 - 1.99435I$	0
$u = -1.365110 - 0.295551I$ $a = 0.82503 + 1.91460I$ $b = 0.271144 - 0.950814I$	$1.94770 + 1.99435I$	0
$u = 1.396810 + 0.099721I$ $a = -0.176525 - 0.092513I$ $b = 0.612241 + 0.391261I$	$6.97211 + 1.72636I$	0
$u = 1.396810 - 0.099721I$ $a = -0.176525 + 0.092513I$ $b = 0.612241 - 0.391261I$	$6.97211 - 1.72636I$	0
$u = -1.379490 + 0.256508I$ $a = -1.88048 + 1.78681I$ $b = -0.403089 - 1.223300I$	$8.00556 - 9.26916I$	0
$u = -1.379490 - 0.256508I$ $a = -1.88048 - 1.78681I$ $b = -0.403089 + 1.223300I$	$8.00556 + 9.26916I$	0
$u = -1.403520 + 0.086431I$ $a = -0.497455 - 0.628849I$ $b = 0.981614 - 0.222678I$	$5.71530 + 4.79848I$	0
$u = -1.403520 - 0.086431I$ $a = -0.497455 + 0.628849I$ $b = 0.981614 + 0.222678I$	$5.71530 - 4.79848I$	0
$u = -1.391830 + 0.201064I$ $a = -0.93217 + 2.23738I$ $b = 0.22876 - 1.66694I$	$9.66378 - 7.08739I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.391830-0.201064I$ $a=-0.93217-2.23738I$ $b=\ \ 0.22876+1.66694I$	$9.66378+7.08739I$	0
$u=-1.386000+0.246655I$ $a=\ \ 0.921726-0.266770I$ $b=-0.785839+0.498129I$	$3.30331-2.00372I$	0
$u=-1.386000-0.246655I$ $a=\ \ 0.921726+0.266770I$ $b=-0.785839-0.498129I$	$3.30331+2.00372I$	0
$u=-1.39993+0.21353I$ $a=\ \ 1.17608-2.01178I$ $b=\ \ 0.50864+1.36234I$	$9.46503-1.05151I$	0
$u=-1.39993-0.21353I$ $a=\ \ 1.17608+2.01178I$ $b=\ \ 0.50864-1.36234I$	$9.46503+1.05151I$	0
$u=\ \ 1.38973+0.28573I$ $a=-0.215171+0.305291I$ $b=\ \ 0.803425+0.224199I$	$4.43971+6.27448I$	0
$u=\ \ 1.38973-0.28573I$ $a=-0.215171-0.305291I$ $b=\ \ 0.803425-0.224199I$	$4.43971-6.27448I$	0
$u=\ \ 1.38660+0.30322I$ $a=-0.90903-2.01619I$ $b=-0.71453+1.39926I$	$4.61255+10.72160I$	0
$u=\ \ 1.38660-0.30322I$ $a=-0.90903+2.01619I$ $b=-0.71453-1.39926I$	$4.61255-10.72160I$	0
$u=\ \ 1.41466+0.12761I$ $a=\ \ 0.25482-2.27671I$ $b=-0.071824+1.276080I$	$8.86441+4.13680I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41466 - 0.12761I$ $a = 0.25482 + 2.27671I$ $b = -0.071824 - 1.276080I$	$8.86441 - 4.13680I$	0
$u = -1.40230 + 0.28947I$ $a = -0.799094 - 0.602129I$ $b = 1.269700 - 0.233757I$	$2.88682 - 13.15910I$	0
$u = -1.40230 - 0.28947I$ $a = -0.799094 + 0.602129I$ $b = 1.269700 + 0.233757I$	$2.88682 + 13.15910I$	0
$u = -1.42930 + 0.12679I$ $a = 0.99232 - 2.26659I$ $b = -0.355357 + 1.353570I$	$7.30600 + 1.91757I$	0
$u = -1.42930 - 0.12679I$ $a = 0.99232 + 2.26659I$ $b = -0.355357 - 1.353570I$	$7.30600 - 1.91757I$	0
$u = -1.41558 + 0.27321I$ $a = -0.99899 + 2.49915I$ $b = -0.66005 - 1.41457I$	$5.23264 - 10.79800I$	0
$u = -1.41558 - 0.27321I$ $a = -0.99899 - 2.49915I$ $b = -0.66005 + 1.41457I$	$5.23264 + 10.79800I$	0
$u = 1.42343 + 0.26174I$ $a = 1.41395 + 1.31316I$ $b = 0.103083 - 0.897993I$	$6.99165 + 4.78322I$	0
$u = 1.42343 - 0.26174I$ $a = 1.41395 - 1.31316I$ $b = 0.103083 + 0.897993I$	$6.99165 - 4.78322I$	0
$u = 1.43411 + 0.20911I$ $a = 0.73448 + 1.85336I$ $b = 0.724979 - 1.032690I$	$8.20112 + 6.72484I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.43411 - 0.20911I$ $a = 0.73448 - 1.85336I$ $b = 0.724979 + 1.032690I$	$8.20112 - 6.72484I$	0
$u = -0.498633 + 0.231913I$ $a = 0.676707 - 0.369974I$ $b = 0.235110 - 0.126078I$	$1.125340 - 0.507072I$	$7.32472 + 1.80737I$
$u = -0.498633 - 0.231913I$ $a = 0.676707 + 0.369974I$ $b = 0.235110 + 0.126078I$	$1.125340 + 0.507072I$	$7.32472 - 1.80737I$
$u = 1.44415 + 0.18611I$ $a = -0.50108 - 1.52574I$ $b = 0.395517 + 1.192830I$	$8.50916 + 2.66886I$	0
$u = 1.44415 - 0.18611I$ $a = -0.50108 + 1.52574I$ $b = 0.395517 - 1.192830I$	$8.50916 - 2.66886I$	0
$u = 0.265097 + 0.456539I$ $a = -0.609248 - 0.288943I$ $b = 0.10567 + 1.51534I$	$4.39118 + 4.54039I$	$5.47207 - 10.36562I$
$u = 0.265097 - 0.456539I$ $a = -0.609248 + 0.288943I$ $b = 0.10567 - 1.51534I$	$4.39118 - 4.54039I$	$5.47207 + 10.36562I$
$u = -1.44253 + 0.32040I$ $a = 0.95994 - 2.16725I$ $b = 0.66728 + 1.34561I$	$6.4467 - 19.9152I$	0
$u = -1.44253 - 0.32040I$ $a = 0.95994 + 2.16725I$ $b = 0.66728 - 1.34561I$	$6.4467 + 19.9152I$	0
$u = 1.44201 + 0.33238I$ $a = 1.04232 + 1.86273I$ $b = 0.538860 - 1.182240I$	$7.29386 + 11.26600I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.44201 - 0.33238I$ $a = 1.04232 - 1.86273I$ $b = 0.538860 + 1.182240I$	$7.29386 - 11.26600I$	0
$u = 1.44792 + 0.32031I$ $a = -0.83095 - 2.00003I$ $b = -0.403517 + 1.354990I$	$7.78199 + 10.65610I$	0
$u = 1.44792 - 0.32031I$ $a = -0.83095 + 2.00003I$ $b = -0.403517 - 1.354990I$	$7.78199 - 10.65610I$	0
$u = -1.46623 + 0.22801I$ $a = -0.35046 + 2.00234I$ $b = -0.520060 - 0.833912I$	$4.17918 - 6.96018I$	0
$u = -1.46623 - 0.22801I$ $a = -0.35046 - 2.00234I$ $b = -0.520060 + 0.833912I$	$4.17918 + 6.96018I$	0
$u = -1.54158 + 0.06730I$ $a = -0.48637 + 1.93480I$ $b = 0.423099 - 1.272070I$	$10.20780 + 9.30854I$	0
$u = -1.54158 - 0.06730I$ $a = -0.48637 - 1.93480I$ $b = 0.423099 + 1.272070I$	$10.20780 - 9.30854I$	0
$u = -0.005487 + 0.448891I$ $a = -2.54974 - 0.62221I$ $b = -0.568904 + 0.992243I$	$-0.54033 + 2.01867I$	$-2.68262 - 3.08744I$
$u = -0.005487 - 0.448891I$ $a = -2.54974 + 0.62221I$ $b = -0.568904 - 0.992243I$	$-0.54033 - 2.01867I$	$-2.68262 + 3.08744I$
$u = 1.58971 + 0.03349I$ $a = 0.19891 + 1.82666I$ $b = 0.022223 - 1.145830I$	$11.83510 + 0.31664I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.58971 - 0.03349I$ $a = 0.19891 - 1.82666I$ $b = 0.022223 + 1.145830I$	$11.83510 - 0.31664I$	0
$u = 0.233535 + 0.310327I$ $a = 0.01580 + 1.99878I$ $b = -0.192951 - 1.356770I$	$4.22259 - 3.55617I$	$11.75571 - 4.38189I$
$u = 0.233535 - 0.310327I$ $a = 0.01580 - 1.99878I$ $b = -0.192951 + 1.356770I$	$4.22259 + 3.55617I$	$11.75571 + 4.38189I$
$u = 0.281817 + 0.265812I$ $a = 1.043980 + 0.163916I$ $b = -0.629326 - 0.360289I$	$-1.37561 - 0.94145I$	$-2.52295 + 1.00632I$
$u = 0.281817 - 0.265812I$ $a = 1.043980 - 0.163916I$ $b = -0.629326 + 0.360289I$	$-1.37561 + 0.94145I$	$-2.52295 - 1.00632I$
$u = 1.61353 + 0.03083I$ $a = 0.01106 - 1.76492I$ $b = 0.135699 + 1.074040I$	$11.79000 - 0.33406I$	0
$u = 1.61353 - 0.03083I$ $a = 0.01106 + 1.76492I$ $b = 0.135699 - 1.074040I$	$11.79000 + 0.33406I$	0
$u = -0.044735 + 0.337560I$ $a = -6.29736 + 0.56249I$ $b = 0.048607 - 0.637881I$	$0.20790 + 4.29893I$	$2.06844 + 3.27592I$
$u = -0.044735 - 0.337560I$ $a = -6.29736 - 0.56249I$ $b = 0.048607 + 0.637881I$	$0.20790 - 4.29893I$	$2.06844 - 3.27592I$

II. $I_2^u = \langle -20u^{31} + 59u^{30} + \cdots + b + 18,\ 15u^{31} - 43u^{30} + \cdots + a - 15,\ u^{32} - 4u^{31} + \cdots + 16u^2 + 1 \rangle$

(i) Arc colorings

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

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

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

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

$$a_3 = \begin{pmatrix} -15u^{31} + 43u^{30} + \cdots + 3u + 15 \\ 20u^{31} - 59u^{30} + \cdots - 9u - 18 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 5u^{31} - 16u^{30} + \cdots - 6u - 3 \\ 20u^{31} - 59u^{30} + \cdots - 9u - 18 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 50u^{31} - 135u^{30} + \cdots - 11u - 38 \\ -12u^{31} + 27u^{30} + \cdots - 3u + 4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 20u^{31} - 40u^{30} + \cdots - 14u - 7 \\ -20u^{31} + 46u^{30} + \cdots + 9u + 14 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 40u^{31} - 104u^{30} + \cdots - 41u - 32 \\ -32u^{31} + 82u^{30} + \cdots + 17u + 25 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 2u^{31} + 4u^{30} + \cdots - 7u + 5 \\ -u^{31} - 2u^{30} + \cdots + u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -131u^{31} + 354u^{30} + 1641u^{29} - 4684u^{28} - 9391u^{27} + 27382u^{26} + 33163u^{25} - 91574u^{24} - 82869u^{23} + 186844u^{22} + 157052u^{21} - 218430u^{20} - 224559u^{19} + 81246u^{18} + 216620u^{17} + 149426u^{16} - 90371u^{15} - 233798u^{14} - 67401u^{13} + 96549u^{12} + 108708u^{11} + 51286u^{10} - 39137u^9 - 53047u^8 - 10210u^7 + 1070u^6 + 6176u^5 + 6250u^4 + 450u^3 + 1554u^2 + 34u + 90$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 6u^{31} + \cdots - 27u + 13$
c_2	$u^{32} - 10u^{31} + \cdots - 4u + 1$
c_3	$u^{32} + 7u^{30} + \cdots + 7u^2 + 1$
c_4	$u^{32} + 7u^{30} + \cdots + 7u^2 + 1$
c_5	$u^{32} + 10u^{31} + \cdots + 4u + 1$
c_6, c_7	$u^{32} - 4u^{31} + \cdots + 16u^2 + 1$
c_8	$u^{32} - 5u^{30} + \cdots + 31u + 11$
c_9	$u^{32} - 2u^{31} + \cdots + 4u^2 + 1$
c_{10}	$u^{32} - 12u^{31} + \cdots - 60u + 13$
c_{11}	$u^{32} + 4u^{31} + \cdots + 16u^2 + 1$
c_{12}	$u^{32} - 2u^{31} + \cdots + 19u + 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} - 12y^{31} + \cdots - 1145y + 169$
c_2, c_5	$y^{32} + 16y^{31} + \cdots + 30y + 1$
c_3	$y^{32} + 14y^{31} + \cdots + 14y + 1$
c_4	$y^{32} + 14y^{31} + \cdots + 14y + 1$
c_6, c_7, c_{11}	$y^{32} - 34y^{31} + \cdots + 32y + 1$
c_8	$y^{32} - 10y^{31} + \cdots - 1027y + 121$
c_9	$y^{32} - 10y^{31} + \cdots + 8y + 1$
c_{10}	$y^{32} - 10y^{31} + \cdots + 4746y + 169$
c_{12}	$y^{32} - 18y^{31} + \cdots + 211y + 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.861640+0.468739I$ $a=\ \ 0.363509-0.746447I$ $b=-0.358296+1.062330I$	$2.64681+1.99924I$	$3.61618-3.48799I$
$u=-0.861640-0.468739I$ $a=\ \ 0.363509+0.746447I$ $b=-0.358296-1.062330I$	$2.64681-1.99924I$	$3.61618+3.48799I$
$u=-0.026632+0.805242I$ $a=-0.619416+0.243843I$ $b=-0.034090+0.577005I$	$-2.72500-3.69960I$	$1.92797+6.47534I$
$u=-0.026632-0.805242I$ $a=-0.619416-0.243843I$ $b=-0.034090-0.577005I$	$-2.72500+3.69960I$	$1.92797-6.47534I$
$u=-0.257026+0.757824I$ $a=-1.299650+0.554795I$ $b=-0.480312-1.217370I$	$0.75948-6.31169I$	$2.15440+6.84456I$
$u=-0.257026-0.757824I$ $a=-1.299650-0.554795I$ $b=-0.480312+1.217370I$	$0.75948+6.31169I$	$2.15440-6.84456I$
$u=-1.228020+0.172790I$ $a=\ \ 0.334623+1.073300I$ $b=-1.089250-0.283327I$	$0.02951-1.84558I$	$0.-1.45891I$
$u=-1.228020-0.172790I$ $a=\ \ 0.334623-1.073300I$ $b=-1.089250+0.283327I$	$0.02951+1.84558I$	$0.+1.45891I$
$u=-1.198040+0.413084I$ $a=-0.695527+0.683737I$ $b=-0.158705-0.670021I$	$0.913593-0.672379I$	$3.52422+0.I$
$u=-1.198040-0.413084I$ $a=-0.695527-0.683737I$ $b=-0.158705+0.670021I$	$0.913593+0.672379I$	$3.52422+0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.287660 + 0.116722I$ $a = 1.19451 + 1.07056I$ $b = 0.281845 + 0.555734I$	$3.87178 - 3.05491I$	$0. + 4.56445I$
$u = 1.287660 - 0.116722I$ $a = 1.19451 - 1.07056I$ $b = 0.281845 - 0.555734I$	$3.87178 + 3.05491I$	$0. - 4.56445I$
$u = 1.286940 + 0.325599I$ $a = -0.299249 - 0.093826I$ $b = 0.043940 - 0.506237I$	$1.35179 + 7.74092I$	$0. - 11.65600I$
$u = 1.286940 - 0.325599I$ $a = -0.299249 + 0.093826I$ $b = 0.043940 + 0.506237I$	$1.35179 - 7.74092I$	$0. + 11.65600I$
$u = -1.368980 + 0.106143I$ $a = 0.08312 + 1.82802I$ $b = 0.008286 - 1.393460I$	$8.39128 - 5.19633I$	0
$u = -1.368980 - 0.106143I$ $a = 0.08312 - 1.82802I$ $b = 0.008286 + 1.393460I$	$8.39128 + 5.19633I$	0
$u = 1.374480 + 0.132731I$ $a = 0.85632 + 2.78141I$ $b = -0.19284 - 1.49164I$	$8.65686 - 2.22377I$	0
$u = 1.374480 - 0.132731I$ $a = 0.85632 - 2.78141I$ $b = -0.19284 + 1.49164I$	$8.65686 + 2.22377I$	0
$u = 1.364470 + 0.221317I$ $a = 1.047440 - 0.907916I$ $b = -1.47085 - 0.17329I$	$1.52291 + 3.59714I$	0
$u = 1.364470 - 0.221317I$ $a = 1.047440 + 0.907916I$ $b = -1.47085 + 0.17329I$	$1.52291 - 3.59714I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.134904+0.559272I$ $a=-1.213990+0.693389I$ $b=-1.316650+0.176268I$	$-3.28801-0.73142I$	$5.05008+9.17474I$
$u=-0.134904-0.559272I$ $a=-1.213990-0.693389I$ $b=-1.316650-0.176268I$	$-3.28801+0.73142I$	$5.05008-9.17474I$
$u=-1.42112+0.16795I$ $a=1.22623-2.39996I$ $b=0.277752+0.775180I$	$5.49898-6.77249I$	0
$u=-1.42112-0.16795I$ $a=1.22623+2.39996I$ $b=0.277752-0.775180I$	$5.49898+6.77249I$	0
$u=1.40572+0.29478I$ $a=-1.11898-2.14076I$ $b=-0.51898+1.33280I$	$6.05365+10.10780I$	0
$u=1.40572-0.29478I$ $a=-1.11898+2.14076I$ $b=-0.51898-1.33280I$	$6.05365-10.10780I$	0
$u=0.158693+0.367701I$ $a=4.90037+2.48601I$ $b=0.247489-0.661068I$	$0.20241+4.71909I$	$1.9025-15.0884I$
$u=0.158693-0.367701I$ $a=4.90037-2.48601I$ $b=0.247489+0.661068I$	$0.20241-4.71909I$	$1.9025+15.0884I$
$u=1.65881+0.03507I$ $a=0.06888+1.63362I$ $b=-0.135107-0.986476I$	$11.57400-0.54117I$	0
$u=1.65881-0.03507I$ $a=0.06888-1.63362I$ $b=-0.135107+0.986476I$	$11.57400+0.54117I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.040420+0.281790I$		
$a=\ \ 2.17180-0.91958I$	$3.88795+3.82857I$	$-3.00373-6.33267I$
$b=-0.104235+1.404030I$		
$u=-0.040420-0.281790I$		
$a=\ \ 2.17180+0.91958I$	$3.88795-3.82857I$	$-3.00373+6.33267I$
$b=-0.104235-1.404030I$		

III. $I_3^u = \langle 2a^3 + a^2 + b + 5a - 3,\ a^4 + 2a^2 - 3a + 1,\ u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5a^3 + a^2 + 11a - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=\ \ 0.570696+0.107280I$ $b=-0.500000-0.866025I$	$1.64493-2.02988I$	$1.42268+1.82047I$
$u=-1.00000$ $a=\ \ 0.570696-0.107280I$ $b=-0.500000+0.866025I$	$1.64493+2.02988I$	$1.42268-1.82047I$
$u=-1.00000$ $a=-0.57070+1.62477I$ $b=-0.500000-0.866025I$	$1.64493-2.02988I$	$7.07732+2.50966I$
$u=-1.00000$ $a=-0.57070-1.62477I$ $b=-0.500000+0.866025I$	$1.64493+2.02988I$	$7.07732-2.50966I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^4(u^{32}-6u^{31}+\cdots-27u+13)(u^{159}-11u^{158}+\cdots-136u+48)$
c_2	$((u^2-u+1)^2)(u^{32}-10u^{31}+\cdots-4u+1)$ $\cdot(u^{159}+9u^{158}+\cdots+9524u+1463)$
c_3	$(u^4+u^3-u^2-u+1)(u^{32}+7u^{30}+\cdots+7u^2+1)$ $\cdot(u^{159}+3u^{157}+\cdots-349u-31)$
c_4	$(u^4+u^3-u^2-u+1)(u^{32}+7u^{30}+\cdots+7u^2+1)$ $\cdot(u^{159}-2u^{158}+\cdots+576u-64)$
c_5	$((u^2+u+1)^2)(u^{32}+10u^{31}+\cdots+4u+1)$ $\cdot(u^{159}+9u^{158}+\cdots+9524u+1463)$
c_6, c_7	$((u+1)^4)(u^{32}-4u^{31}+\cdots+16u^2+1)(u^{159}-u^{158}+\cdots-92u-21)$
c_8	$(u^4+2u^3+2u^2+u+1)(u^{32}-5u^{30}+\cdots+31u+11)$ $\cdot(u^{159}-3u^{158}+\cdots-104013506u-14233459)$
c_9	$(u^4+2u^3+2u^2+u+1)(u^{32}-2u^{31}+\cdots+4u^2+1)$ $\cdot(u^{159}-7u^{158}+\cdots+113u-7)$
c_{10}	$u^4(u^{32}-12u^{31}+\cdots-60u+13)$ $\cdot(u^{159}-9u^{158}+\cdots+3427840u+1462272)$
c_{11}	$((u-1)^4)(u^{32}+4u^{31}+\cdots+16u^2+1)(u^{159}-u^{158}+\cdots-92u-21)$
c_{12}	$((u^2+u+1)^2)(u^{32}-2u^{31}+\cdots+19u+11)$ $\cdot(u^{159}-3u^{158}+\cdots+35431u+1013)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^4(y^{32}-12y^{31}+\cdots-1145y+169)$ $\cdot(y^{159}+3y^{158}+\cdots-82112y-2304)$
c_2, c_5	$((y^2+y+1)^2)(y^{32}+16y^{31}+\cdots+30y+1)$ $\cdot(y^{159}+89y^{158}+\cdots+106035890y-2140369)$
c_3	$(y^4-3y^3+5y^2-3y+1)(y^{32}+14y^{31}+\cdots+14y+1)$ $\cdot(y^{159}+6y^{158}+\cdots+80199y-961)$
c_4	$(y^4-3y^3+5y^2-3y+1)(y^{32}+14y^{31}+\cdots+14y+1)$ $\cdot(y^{159}-2y^{158}+\cdots+368640y-4096)$
c_6, c_7, c_{11}	$((y-1)^4)(y^{32}-34y^{31}+\cdots+32y+1)$ $\cdot(y^{159}-147y^{158}+\cdots-13502y-441)$
c_8	$(y^4+2y^2+3y+1)(y^{32}-10y^{31}+\cdots-1027y+121)$ $\cdot(y^{159}+21y^{158}+\cdots-11556131041417374y-202591355104681)$
c_9	$(y^4+2y^2+3y+1)(y^{32}-10y^{31}+\cdots+8y+1)$ $\cdot(y^{159}+y^{158}+\cdots+4943y-49)$
c_{10}	$y^4(y^{32}-10y^{31}+\cdots+4746y+169)$ $\cdot(y^{159}-3y^{158}+\cdots-53018876444672y-2138239401984)$
c_{12}	$((y^2+y+1)^2)(y^{32}-18y^{31}+\cdots+211y+121)$ $\cdot(y^{159}-5y^{158}+\cdots+327496385y-1026169)$