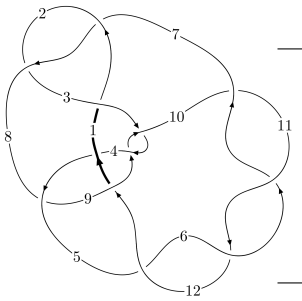
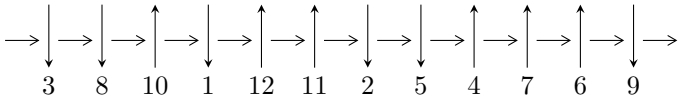
$12a_{0782}$ $(K12a_{0782})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2.11865 \times 10^{428} u^{94} - 1.08212 \times 10^{429} u^{93} + \cdots + 2.38307 \times 10^{427} b + 9.28828 \times 10^{427},$$
$$3.77418 \times 10^{428} u^{94} - 2.18208 \times 10^{429} u^{93} + \cdots + 2.38307 \times 10^{427} a + 4.03773 \times 10^{428},\ u^{95} - 6u^{94} + \cdots - 30u$$
$$I_2^u = \langle -26712 u^{19} - 136095 u^{18} + \cdots + 41267 b + 19242,$$
$$-97076 u^{19} - 295395 u^{18} + \cdots + 41267 a + 23990,\ u^{20} + 3u^{19} + \cdots - 3u^3 + 1\rangle$$

* 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. $\boldsymbol{I_1^u = \langle 2.12 \times 10^{428} u^{94} - 1.08 \times 10^{429} u^{93} + \cdots + 2.38 \times 10^{427} b + 9.29 \times 10^{427},\ 3.77 \times 10^{428} u^{94} - 2.18 \times 10^{429} u^{93} + \cdots + 2.38 \times 10^{427} a + 4.04 \times 10^{428},\ u^{95} - 6u^{94} + \cdots - 30u + 1 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -15.8375u^{94} + 91.5658u^{93} + \cdots + 24.0389u - 16.9434 \\ -8.89041u^{94} + 45.4085u^{93} + \cdots + 72.2169u - 3.89761 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -24.7279u^{94} + 136.974u^{93} + \cdots + 96.2557u - 20.8410 \\ -8.89041u^{94} + 45.4085u^{93} + \cdots + 72.2169u - 3.89761 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 6.52903u^{94} - 30.9088u^{93} + \cdots - 1287.55u + 60.5572 \\ 4.24134u^{94} - 26.0490u^{93} + \cdots + 899.845u - 36.4157 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 45.2454u^{94} - 254.396u^{93} + \cdots + 3003.20u - 103.906 \\ 20.5669u^{94} - 115.764u^{93} + \cdots + 1600.35u - 58.5354 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -25.8044u^{94} + 142.203u^{93} + \cdots + 184.186u - 24.2999 \\ -14.1864u^{94} + 74.6594u^{93} + \cdots - 192.744u + 5.26665 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 17.4039u^{94} - 102.619u^{93} + \cdots + 3770.93u - 153.901 \\ 35.8133u^{94} - 200.858u^{93} + \cdots + 2303.55u - 81.5877 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 61.6817u^{94} - 355.931u^{93} + \cdots + 5974.92u - 220.895 \\ 8.86630u^{94} - 48.4230u^{93} + \cdots + 165.604u - 2.28769 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 9.50913u^{94} - 73.9815u^{93} + \cdots + 6807.32u - 286.013 \\ 5.28830u^{94} - 29.8106u^{93} + \cdots + 261.607u - 7.96118 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -135.721u^{94} + 772.386u^{93} + \cdots - 9767.50u + 335.007 \\ -17.0754u^{94} + 96.2722u^{93} + \cdots - 790.075u + 25.1554 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 59.3924u^{94} - 339.420u^{93} + \cdots + 6474.19u - 259.078$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{95}+47u^{94}+\cdots+22027u+1849$
c_2, c_7	$u^{95}+u^{94}+\cdots+107u+43$
c_3, c_9	$u^{95}+u^{94}+\cdots+3057u+677$
c_4	$u^{95}-6u^{94}+\cdots-30u+1$
c_5, c_6, c_{10} c_{11}	$u^{95}-u^{94}+\cdots+378u+43$
c_8	$u^{95}+4u^{94}+\cdots+2534u+649$
c_{12}	$u^{95}+3u^{94}+\cdots-54430u-10639$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{95} + 13y^{94} + \cdots - 54944849y - 3418801$
c_2, c_7	$y^{95} - 47y^{94} + \cdots + 22027y - 1849$
c_3, c_9	$y^{95} + 75y^{94} + \cdots - 16234519y - 458329$
c_4	$y^{95} - 8y^{94} + \cdots + 30y - 1$
c_5, c_6, c_{10} c_{11}	$y^{95} + 119y^{94} + \cdots - 54314y - 1849$
c_8	$y^{95} - 24y^{94} + \cdots + 11018672y - 421201$
c_{12}	$y^{95} - 41y^{94} + \cdots + 5892243774y - 113188321$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.289117+0.959904I$ $a=\ \ 0.247983-0.890243I$ $b=-0.444716+0.246446I$	$-0.95680+2.64726I$	0
$u=-0.289117-0.959904I$ $a=\ \ 0.247983+0.890243I$ $b=-0.444716-0.246446I$	$-0.95680-2.64726I$	0
$u=\ \ 0.994310+0.055911I$ $a=\ \ 0.783766-0.213159I$ $b=-0.87312+1.52848I$	$-13.5623-6.1465I$	0
$u=\ \ 0.994310-0.055911I$ $a=\ \ 0.783766+0.213159I$ $b=-0.87312-1.52848I$	$-13.5623+6.1465I$	0
$u=-0.720342+0.734951I$ $a=\ \ 1.182430+0.140111I$ $b=-1.49757-0.03566I$	$-9.78510+9.45959I$	0
$u=-0.720342-0.734951I$ $a=\ \ 1.182430-0.140111I$ $b=-1.49757+0.03566I$	$-9.78510-9.45959I$	0
$u=-0.964676+0.376723I$ $a=\ \ 0.691405+0.116066I$ $b=-0.522740-1.139190I$	$-3.29940+0.97709I$	0
$u=-0.964676-0.376723I$ $a=\ \ 0.691405-0.116066I$ $b=-0.522740+1.139190I$	$-3.29940-0.97709I$	0
$u=-0.460088+0.936654I$ $a=-0.477266+1.215140I$ $b=\ \ 0.745588-0.483057I$	$-9.39170+3.08813I$	0
$u=-0.460088-0.936654I$ $a=-0.477266-1.215140I$ $b=\ \ 0.745588+0.483057I$	$-9.39170-3.08813I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.904927 + 0.274763I$ $a = 1.023640 + 0.473666I$ $b = -0.567159 + 1.166250I$	$-3.73367 - 3.88567I$	0
$u = 0.904927 - 0.274763I$ $a = 1.023640 - 0.473666I$ $b = -0.567159 - 1.166250I$	$-3.73367 + 3.88567I$	0
$u = -1.035510 + 0.231678I$ $a = 0.861175 + 1.081130I$ $b = 0.327085 + 0.335473I$	$-11.24410 - 5.06256I$	0
$u = -1.035510 - 0.231678I$ $a = 0.861175 - 1.081130I$ $b = 0.327085 - 0.335473I$	$-11.24410 + 5.06256I$	0
$u = -0.668864 + 0.829081I$ $a = -0.984513 - 0.209552I$ $b = 1.202030 + 0.080693I$	$-0.93766 + 7.51485I$	0
$u = -0.668864 - 0.829081I$ $a = -0.984513 + 0.209552I$ $b = 1.202030 - 0.080693I$	$-0.93766 - 7.51485I$	0
$u = 0.927854 + 0.110516I$ $a = -0.751235 - 0.065614I$ $b = 0.73470 - 1.39916I$	$-5.20284 - 5.28701I$	0
$u = 0.927854 - 0.110516I$ $a = -0.751235 + 0.065614I$ $b = 0.73470 + 1.39916I$	$-5.20284 + 5.28701I$	0
$u = -0.958848 + 0.490910I$ $a = -0.934638 + 0.178527I$ $b = 0.903421 + 0.646140I$	$-3.06403 + 1.76286I$	0
$u = -0.958848 - 0.490910I$ $a = -0.934638 - 0.178527I$ $b = 0.903421 - 0.646140I$	$-3.06403 - 1.76286I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.345722+0.851089I$ $a=-1.033130-0.722887I$ $b=\ \ 0.456443+0.763853I$	$0.13024+2.18300I$	0
$u=-0.345722-0.851089I$ $a=-1.033130+0.722887I$ $b=\ \ 0.456443-0.763853I$	$0.13024-2.18300I$	0
$u=-0.280938+1.045430I$ $a=\ \ 0.66353+1.42921I$ $b=-0.109739-0.905737I$	$-0.03198+3.42317I$	0
$u=-0.280938-1.045430I$ $a=\ \ 0.66353-1.42921I$ $b=-0.109739+0.905737I$	$-0.03198-3.42317I$	0
$u=\ \ 0.292505+0.842148I$ $a=-0.839759+0.369119I$ $b=\ \ 0.760407+0.174654I$	$2.37641+0.47115I$	0
$u=\ \ 0.292505-0.842148I$ $a=-0.839759-0.369119I$ $b=\ \ 0.760407-0.174654I$	$2.37641-0.47115I$	0
$u=-1.065600+0.308081I$ $a=-0.679248-0.343845I$ $b=\ \ 0.59924+1.40120I$	$-11.60630+0.90409I$	0
$u=-1.065600-0.308081I$ $a=-0.679248+0.343845I$ $b=\ \ 0.59924-1.40120I$	$-11.60630-0.90409I$	0
$u=-0.883069$ $a=\ \ 0.647690$ $b=-0.352931$	-1.80352	0
$u=\ \ 0.671202+0.561115I$ $a=-1.45085+0.08625I$ $b=\ \ 1.116020+0.035605I$	$-7.48014-4.78255I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.671202 - 0.561115I$ $a = -1.45085 - 0.08625I$ $b = 1.116020 - 0.035605I$	$-7.48014 + 4.78255I$	0
$u = -0.259215 + 1.102920I$ $a = -0.67085 - 1.72442I$ $b = 0.078689 + 1.097050I$	$-7.87333 + 3.80259I$	0
$u = -0.259215 - 1.102920I$ $a = -0.67085 + 1.72442I$ $b = 0.078689 - 1.097050I$	$-7.87333 - 3.80259I$	0
$u = -0.586307 + 0.973561I$ $a = 0.695896 + 0.316974I$ $b = -0.745228 - 0.093350I$	$1.69308 + 4.33267I$	0
$u = -0.586307 - 0.973561I$ $a = 0.695896 - 0.316974I$ $b = -0.745228 + 0.093350I$	$1.69308 - 4.33267I$	0
$u = -0.983002 + 0.573098I$ $a = 1.138440 - 0.219507I$ $b = -1.173070 - 0.648972I$	$-11.15500 + 2.05012I$	0
$u = -0.983002 - 0.573098I$ $a = 1.138440 + 0.219507I$ $b = -1.173070 + 0.648972I$	$-11.15500 - 2.05012I$	0
$u = 1.110710 + 0.290968I$ $a = -1.135840 - 0.546865I$ $b = 0.390635 - 0.902935I$	$-9.35548 - 3.78734I$	0
$u = 1.110710 - 0.290968I$ $a = -1.135840 + 0.546865I$ $b = 0.390635 + 0.902935I$	$-9.35548 + 3.78734I$	0
$u = -1.152000 + 0.039647I$ $a = -0.722058 - 0.475056I$ $b = -0.076023 - 0.384783I$	$-3.37674 - 2.78375I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.152000-0.039647I$ $a=-0.722058+0.475056I$ $b=-0.076023+0.384783I$	$-3.37674+2.78375I$	0
$u=0.501415+0.649342I$ $a=1.240930-0.257663I$ $b=-0.968639-0.104841I$	$0.59827-2.85627I$	0
$u=0.501415-0.649342I$ $a=1.240930+0.257663I$ $b=-0.968639+0.104841I$	$0.59827+2.85627I$	0
$u=0.971469+0.866417I$ $a=1.43450-0.30255I$ $b=-0.28159+1.42485I$	$-18.0405-6.3079I$	0
$u=0.971469-0.866417I$ $a=1.43450+0.30255I$ $b=-0.28159-1.42485I$	$-18.0405+6.3079I$	0
$u=1.076390+0.734224I$ $a=-1.213520+0.008244I$ $b=0.246608-1.273080I$	$-8.70092-4.69865I$	0
$u=1.076390-0.734224I$ $a=-1.213520-0.008244I$ $b=0.246608+1.273080I$	$-8.70092+4.69865I$	0
$u=0.005021+0.677987I$ $a=2.14658+1.03569I$ $b=-0.504060-0.709244I$	$-6.31275+2.09871I$	$0.46926-2.25158I$
$u=0.005021-0.677987I$ $a=2.14658-1.03569I$ $b=-0.504060+0.709244I$	$-6.31275-2.09871I$	$0.46926+2.25158I$
$u=0.426863+0.431697I$ $a=-2.28395-2.76519I$ $b=0.469197-1.010660I$	$-10.94880-7.65283I$	$-5.22797+11.06490I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.426863 - 0.431697I$ $a = -2.28395 + 2.76519I$ $b = 0.469197 + 1.010660I$	$-10.94880 + 7.65283I$	$-5.22797 - 11.06490I$
$u = -0.57480 + 1.29543I$ $a = 0.450516 + 0.332022I$ $b = -0.416072 - 1.184950I$	$-4.33687 + 0.29946I$	0
$u = -0.57480 - 1.29543I$ $a = 0.450516 - 0.332022I$ $b = -0.416072 + 1.184950I$	$-4.33687 - 0.29946I$	0
$u = 0.481464 + 0.319780I$ $a = 0.89697 + 2.60290I$ $b = -0.359298 + 1.076130I$	$-3.23096 - 6.09113I$	$-3.77113 + 12.10008I$
$u = 0.481464 - 0.319780I$ $a = 0.89697 - 2.60290I$ $b = -0.359298 - 1.076130I$	$-3.23096 + 6.09113I$	$-3.77113 - 12.10008I$
$u = -0.16641 + 1.41807I$ $a = 0.098862 - 0.226912I$ $b = -0.161596 - 0.347833I$	$-1.34120 + 2.57391I$	0
$u = -0.16641 - 1.41807I$ $a = 0.098862 + 0.226912I$ $b = -0.161596 + 0.347833I$	$-1.34120 - 2.57391I$	0
$u = 0.63328 + 1.29448I$ $a = 0.237064 - 0.603765I$ $b = 0.07138 + 1.63295I$	$-16.8400 - 0.1881I$	0
$u = 0.63328 - 1.29448I$ $a = 0.237064 + 0.603765I$ $b = 0.07138 - 1.63295I$	$-16.8400 + 0.1881I$	0
$u = 0.470623 + 0.153489I$ $a = 0.84615 - 1.99787I$ $b = 0.161106 - 1.169670I$	$-2.10008 - 3.17693I$	$-1.78235 + 1.84660I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.470623 - 0.153489I$ $a = 0.84615 + 1.99787I$ $b = 0.161106 + 1.169670I$	$-2.10008 + 3.17693I$	$-1.78235 - 1.84660I$
$u = -1.22924 + 0.89403I$ $a = 0.498695 + 0.194874I$ $b = -0.162574 - 1.065220I$	$-3.52126 + 0.24217I$	0
$u = -1.22924 - 0.89403I$ $a = 0.498695 - 0.194874I$ $b = -0.162574 + 1.065220I$	$-3.52126 - 0.24217I$	0
$u = -1.08638 + 1.07371I$ $a = -0.743525 - 0.138471I$ $b = 0.413995 + 1.178270I$	$-0.71653 + 3.86741I$	0
$u = -1.08638 - 1.07371I$ $a = -0.743525 + 0.138471I$ $b = 0.413995 - 1.178270I$	$-0.71653 - 3.86741I$	0
$u = -1.10562 + 1.07856I$ $a = 0.925228 + 0.207336I$ $b = -0.482928 - 1.283410I$	$-3.13830 + 8.02376I$	0
$u = -1.10562 - 1.07856I$ $a = 0.925228 - 0.207336I$ $b = -0.482928 + 1.283410I$	$-3.13830 - 8.02376I$	0
$u = -1.10479 + 1.09357I$ $a = -1.048780 - 0.298417I$ $b = 0.53126 + 1.37393I$	$-11.7724 + 10.6064I$	0
$u = -1.10479 - 1.09357I$ $a = -1.048780 + 0.298417I$ $b = 0.53126 - 1.37393I$	$-11.7724 - 10.6064I$	0
$u = 0.427563 + 0.067044I$ $a = -1.72094 - 0.04130I$ $b = 0.19085 - 1.52986I$	$-6.20830 + 1.24493I$	$-11.68136 - 0.65851I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.427563 - 0.067044I$ $a = -1.72094 + 0.04130I$ $b = 0.19085 + 1.52986I$	$-6.20830 - 1.24493I$	$-11.68136 + 0.65851I$
$u = 0.355675 + 0.207652I$ $a = 1.56513 - 1.07893I$ $b = -0.32861 + 2.05152I$	$-16.2010 + 0.7832I$	$-17.0479 + 0.5823I$
$u = 0.355675 - 0.207652I$ $a = 1.56513 + 1.07893I$ $b = -0.32861 - 2.05152I$	$-16.2010 - 0.7832I$	$-17.0479 - 0.5823I$
$u = 1.21695 + 1.09079I$ $a = 0.995083 - 0.184335I$ $b = -0.62985 + 1.48106I$	$-14.6050 - 16.6598I$	0
$u = 1.21695 - 1.09079I$ $a = 0.995083 + 0.184335I$ $b = -0.62985 - 1.48106I$	$-14.6050 + 16.6598I$	0
$u = 1.46702 + 0.73223I$ $a = 0.683592 + 0.065915I$ $b = -0.040154 + 1.129080I$	$-4.43466 - 1.20428I$	0
$u = 1.46702 - 0.73223I$ $a = 0.683592 - 0.065915I$ $b = -0.040154 - 1.129080I$	$-4.43466 + 1.20428I$	0
$u = -0.136891 + 0.322702I$ $a = -2.60789 + 0.71307I$ $b = 0.269010 + 0.682992I$	$0.385020 + 1.267230I$	$3.97029 - 5.44435I$
$u = -0.136891 - 0.322702I$ $a = -2.60789 - 0.71307I$ $b = 0.269010 - 0.682992I$	$0.385020 - 1.267230I$	$3.97029 + 5.44435I$
$u = -1.25254 + 1.07390I$ $a = -0.362692 - 0.428942I$ $b = -0.028944 + 1.230660I$	$-11.96400 - 2.23884I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.25254-1.07390I$ $a=-0.362692+0.428942I$ $b=-0.028944-1.230660I$	$-11.96400+2.23884I$	0
$u=1.25127+1.12817I$ $a=-0.849440+0.130050I$ $b=0.52648-1.42248I$	$-5.7110-13.5269I$	0
$u=1.25127-1.12817I$ $a=-0.849440-0.130050I$ $b=0.52648+1.42248I$	$-5.7110+13.5269I$	0
$u=0.221687+0.111443I$ $a=-6.26482+0.66732I$ $b=0.199795+0.664032I$	$-6.58989-2.82612I$	$-5.29343+0.17006I$
$u=0.221687-0.111443I$ $a=-6.26482-0.66732I$ $b=0.199795-0.664032I$	$-6.58989+2.82612I$	$-5.29343-0.17006I$
$u=1.30422+1.23689I$ $a=0.641285-0.114442I$ $b=-0.37853+1.37706I$	$-3.00402-8.54591I$	0
$u=1.30422-1.23689I$ $a=0.641285+0.114442I$ $b=-0.37853-1.37706I$	$-3.00402+8.54591I$	0
$u=0.0974839+0.1009380I$ $a=6.53790+0.14587I$ $b=-0.280215-0.524506I$	$0.188702-1.373040I$	$1.57614+4.30040I$
$u=0.0974839-0.1009380I$ $a=6.53790-0.14587I$ $b=-0.280215+0.524506I$	$0.188702+1.373040I$	$1.57614-4.30040I$
$u=1.32927+1.32418I$ $a=0.297328-0.413174I$ $b=0.251344+1.216280I$	$-14.1998+7.5723I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.32927-1.32418I$		
$a=$	$0.297328+0.413174I$	$-14.1998-7.5723I$	0
$b=$	$0.251344-1.216280I$		
$u=$	$1.15816+1.50493I$		
$a=$	$-0.404891+0.251702I$	$-6.30515-3.27171I$	0
$b=$	$0.17621-1.41765I$		
$u=$	$1.15816-1.50493I$		
$a=$	$-0.404891-0.251702I$	$-6.30515+3.27171I$	0
$b=$	$0.17621+1.41765I$		
$u=$	$1.57110+1.12346I$		
$a=$	$-0.428088+0.171106I$	$-5.81046+3.88421I$	0
$b=$	$-0.112599-1.159780I$		
$u=$	$1.57110-1.12346I$		
$a=$	$-0.428088-0.171106I$	$-5.81046-3.88421I$	0
$b=$	$-0.112599+1.159780I$		

II.

$\boldsymbol{I_2^u = \langle -2.67\times 10^4 u^{19} - 1.36\times 10^5 u^{18} + \cdots + 4.13\times 10^4 b + 1.92\times 10^4,\ -9.71\times 10^4 u^{19} - 2.95\times 10^5 u^{18} + \cdots + 4.13\times 10^4 a + 2.40\times 10^4,\ u^{20} + 3u^{19} + \cdots - 3u^3 + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2.35239u^{19} + 7.15814u^{18} + \cdots - 0.282647u - 0.581336 \\ 0.647297u^{19} + 3.29791u^{18} + \cdots - 0.981438u - 0.466281 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2.99968u^{19} + 10.4561u^{18} + \cdots - 1.26409u - 1.04762 \\ 0.647297u^{19} + 3.29791u^{18} + \cdots - 0.981438u - 0.466281 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.498340u^{19} + 2.01844u^{18} + \cdots - 1.77614u + 0.556789 \\ 0.498340u^{19} + 1.01844u^{18} + \cdots + 1.22386u - 0.443211 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.05845u^{19} - 3.15359u^{18} + \cdots - 0.767175u - 1.21935 \\ 0.0217607u^{19} - 0.964378u^{18} + \cdots + 2.78065u + 0.0584486 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.71638u^{19} + 8.43551u^{18} + \cdots + 1.08830u - 0.946640 \\ 0.951414u^{19} + 4.72225u^{18} + \cdots - 1.34543u - 0.651659 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.946640u^{19} - 5.55630u^{18} + \cdots + 4.42426u - 1.08830 \\ 0.704364u^{19} + 1.75881u^{18} + \cdots + 0.935517u + 0.698137 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -2.00928u^{19} - 5.79470u^{18} + \cdots - 3.01112u - 3.01825 \\ u^{19} + 3u^{18} + \cdots - 3u^2 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.240265u^{19} + 2.98309u^{18} + \cdots - 8.26183u + 2.76000 \\ -1.05513u^{19} - 3.19047u^{18} + \cdots - 0.214893u - 1.33293 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 4.42492u^{19} + 12.7758u^{18} + \cdots + 5.13325u + 3.68919 \\ -1.43638u^{19} - 3.87469u^{18} + \cdots - 2.43420u + 0.732135 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{2093}{1423}u^{19} + \frac{15200}{1423}u^{18} + \cdots - \frac{14211}{1423}u - \frac{3810}{1423}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} - 10u^{19} + \cdots - 13u + 1$
c_2	$u^{20} - 5u^{18} + \cdots + u + 1$
c_3	$u^{20} + 10u^{18} + \cdots + u + 1$
c_4	$u^{20} + 3u^{19} + \cdots - 3u^3 + 1$
c_5, c_6	$u^{20} + 14u^{18} + \cdots + 2u + 1$
c_7	$u^{20} - 5u^{18} + \cdots - u + 1$
c_8	$u^{20} - u^{19} + \cdots - 2u + 1$
c_9	$u^{20} + 10u^{18} + \cdots - u + 1$
c_{10}, c_{11}	$u^{20} + 14u^{18} + \cdots - 2u + 1$
c_{12}	$u^{20} - 4u^{19} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20} + 10y^{19} + \cdots + 7y + 1$
c_2, c_7	$y^{20} - 10y^{19} + \cdots - 13y + 1$
c_3, c_9	$y^{20} + 20y^{19} + \cdots + 17y + 1$
c_4	$y^{20} + y^{19} + \cdots - 6y^2 + 1$
c_5, c_6, c_{10} c_{11}	$y^{20} + 28y^{19} + \cdots + 24y + 1$
c_8	$y^{20} - 3y^{19} + \cdots + 2y + 1$
c_{12}	$y^{20} - 12y^{19} + \cdots - 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.354216+0.910702I$ $a=-0.83992-1.29403I$ $b=\ \ 0.112283+0.669508I$	$0.55730+3.17204I$	$5.96809-4.30599I$
$u=-0.354216-0.910702I$ $a=-0.83992+1.29403I$ $b=\ \ 0.112283-0.669508I$	$0.55730-3.17204I$	$5.96809+4.30599I$
$u=\ \ 0.940886+0.013452I$ $a=\ \ 0.401603+0.846607I$ $b=-0.485223+1.103280I$	$-3.89387-5.07290I$	$-6.24968+7.07745I$
$u=\ \ 0.940886-0.013452I$ $a=\ \ 0.401603-0.846607I$ $b=-0.485223-1.103280I$	$-3.89387+5.07290I$	$-6.24968-7.07745I$
$u=-1.086910+0.143350I$ $a=\ \ 0.988461-0.625648I$ $b=-0.481788-0.523177I$	$-8.60982+3.31110I$	$-3.02160-0.26217I$
$u=-1.086910-0.143350I$ $a=\ \ 0.988461+0.625648I$ $b=-0.481788+0.523177I$	$-8.60982-3.31110I$	$-3.02160+0.26217I$
$u=\ \ 0.831705+0.757532I$ $a=-0.545903+0.048817I$ $b=\ \ 0.26159-1.41773I$	$-5.34600-2.40154I$	$-6.23549+2.82365I$
$u=\ \ 0.831705-0.757532I$ $a=-0.545903-0.048817I$ $b=\ \ 0.26159+1.41773I$	$-5.34600+2.40154I$	$-6.23549-2.82365I$
$u=-1.124410+0.373073I$ $a=-0.734596+0.227076I$ $b=\ \ 0.546149+0.748639I$	$-2.02296+1.85750I$	$0.15205-3.47247I$
$u=-1.124410-0.373073I$ $a=-0.734596-0.227076I$ $b=\ \ 0.546149-0.748639I$	$-2.02296-1.85750I$	$0.15205+3.47247I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.335386+0.673441I$ $a=\ \ 1.89916+2.10509I$ $b=-0.117754-0.611933I$	$-6.16437+3.50843I$	$1.04098-7.63550I$
$u=-0.335386-0.673441I$ $a=\ \ 1.89916-2.10509I$ $b=-0.117754+0.611933I$	$-6.16437-3.50843I$	$1.04098+7.63550I$
$u=\ \ 0.075229+0.691605I$ $a=\ \ 0.314256-1.001560I$ $b=\ \ 0.17170+1.96088I$	$-15.7703-1.0203I$	$-1.42896+8.09833I$
$u=\ \ 0.075229-0.691605I$ $a=\ \ 0.314256+1.001560I$ $b=\ \ 0.17170-1.96088I$	$-15.7703+1.0203I$	$-1.42896-8.09833I$
$u=-0.840408+1.000340I$ $a=\ \ 0.391400+0.249495I$ $b=-0.484708-1.165360I$	$-4.50713-0.43448I$	$-8.00022+4.48441I$
$u=-0.840408-1.000340I$ $a=\ \ 0.391400-0.249495I$ $b=-0.484708+1.165360I$	$-4.50713+0.43448I$	$-8.00022-4.48441I$
$u=\ \ 0.657334+0.200921I$ $a=\ \ 0.02446+1.99194I$ $b=\ \ 0.583165+0.888157I$	$-11.41920+6.77394I$	$-8.69980-4.47672I$
$u=\ \ 0.657334-0.200921I$ $a=\ \ 0.02446-1.99194I$ $b=\ \ 0.583165-0.888157I$	$-11.41920-6.77394I$	$-8.69980+4.47672I$
$u=-0.26383+1.56148I$ $a=\ \ 0.101075+0.499810I$ $b=-0.105421-0.774841I$	$-2.04126+2.70464I$	$-9.52536-4.18246I$
$u=-0.26383-1.56148I$ $a=\ \ 0.101075-0.499810I$ $b=-0.105421+0.774841I$	$-2.04126-2.70464I$	$-9.52536+4.18246I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{20}-10u^{19}+\cdots-13u+1)(u^{95}+47u^{94}+\cdots+22027u+1849)$
c_2	$(u^{20}-5u^{18}+\cdots+u+1)(u^{95}+u^{94}+\cdots+107u+43)$
c_3	$(u^{20}+10u^{18}+\cdots+u+1)(u^{95}+u^{94}+\cdots+3057u+677)$
c_4	$(u^{20}+3u^{19}+\cdots-3u^3+1)(u^{95}-6u^{94}+\cdots-30u+1)$
c_5, c_6	$(u^{20}+14u^{18}+\cdots+2u+1)(u^{95}-u^{94}+\cdots+378u+43)$
c_7	$(u^{20}-5u^{18}+\cdots-u+1)(u^{95}+u^{94}+\cdots+107u+43)$
c_8	$(u^{20}-u^{19}+\cdots-2u+1)(u^{95}+4u^{94}+\cdots+2534u+649)$
c_9	$(u^{20}+10u^{18}+\cdots-u+1)(u^{95}+u^{94}+\cdots+3057u+677)$
c_{10}, c_{11}	$(u^{20}+14u^{18}+\cdots-2u+1)(u^{95}-u^{94}+\cdots+378u+43)$
c_{12}	$(u^{20}-4u^{19}+\cdots-4u+1)(u^{95}+3u^{94}+\cdots-54430u-10639)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{20}+10y^{19}+\cdots+7y+1)$ $\cdot(y^{95}+13y^{94}+\cdots-54944849y-3418801)$
c_2, c_7	$(y^{20}-10y^{19}+\cdots-13y+1)(y^{95}-47y^{94}+\cdots+22027y-1849)$
c_3, c_9	$(y^{20}+20y^{19}+\cdots+17y+1)$ $\cdot(y^{95}+75y^{94}+\cdots-16234519y-458329)$
c_4	$(y^{20}+y^{19}+\cdots-6y^2+1)(y^{95}-8y^{94}+\cdots+30y-1)$
c_5, c_6, c_{10} c_{11}	$(y^{20}+28y^{19}+\cdots+24y+1)(y^{95}+119y^{94}+\cdots-54314y-1849)$
c_8	$(y^{20}-3y^{19}+\cdots+2y+1)(y^{95}-24y^{94}+\cdots+1.10187\times10^7y-421201)$
c_{12}	$(y^{20}-12y^{19}+\cdots-12y+1)$ $\cdot(y^{95}-41y^{94}+\cdots+5892243774y-113188321)$