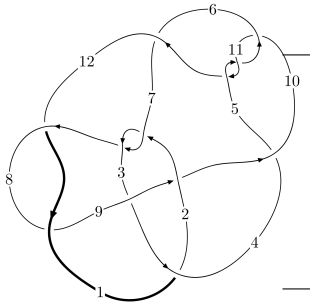
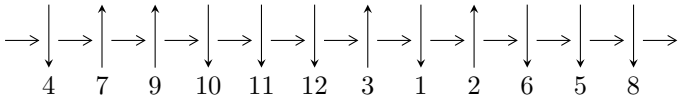
$12a_{1052}$ $(K12a_{1052})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 7.32033 \times 10^{90} u^{113} - 1.93522 \times 10^{90} u^{112} + \cdots + 6.70656 \times 10^{90} b + 1.59902 \times 10^{90},$$
$$3.53856 \times 10^{91} u^{113} - 2.33564 \times 10^{91} u^{112} + \cdots + 6.70656 \times 10^{90} a + 2.28699 \times 10^{92},\ u^{114} - u^{113} + \cdots + 17u$$
$$I_2^u = \langle u^{20} + 9u^{18} + \cdots + 6u^2 + b,\ u^{19} + u^{18} + \cdots + a + 1,\ u^{21} + 10u^{19} + \cdots + 3u^2 - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 135 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. $\boldsymbol{I_1^u = \langle 7.32 \times 10^{90} u^{113} - 1.94 \times 10^{90} u^{112} + \cdots + 6.71 \times 10^{90} b + 1.60 \times 10^{90},\ 3.54 \times 10^{91} u^{113} - 2.34 \times 10^{91} u^{112} + \cdots + 6.71 \times 10^{90} a + 2.29 \times 10^{92},\ u^{114} - u^{113} + \cdots + 17u - 1 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^5 - 2u^3 - u \\ -u^7 - 3u^5 - 2u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -5.27627u^{113} + 3.48262u^{112} + \cdots + 314.505u - 34.1008 \\ -1.09152u^{113} + 0.288557u^{112} + \cdots - 2.59648u - 0.238427 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -4.61041u^{113} + 3.67810u^{112} + \cdots + 314.574u - 33.6140 \\ -1.20888u^{113} - 0.656988u^{112} + \cdots - 18.5266u + 0.967100 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 4.25189u^{113} - 5.29865u^{112} + \cdots - 335.802u + 36.0515 \\ -1.87637u^{113} + 2.53372u^{112} + \cdots - 19.8731u + 1.91709 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -4.87644u^{113} + 4.31876u^{112} + \cdots + 334.488u - 35.6095 \\ -1.22567u^{113} - 0.772076u^{112} + \cdots - 22.9954u + 1.24478 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 4.47862u^{113} - 6.30012u^{112} + \cdots - 385.534u + 47.2150 \\ -0.612792u^{113} + 0.596277u^{112} + \cdots - 36.3318u + 4.07133 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3.96121u^{113} - 4.24884u^{112} + \cdots - 488.686u + 44.0315$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{114} - 13u^{113} + \cdots - 76092u + 7999$
c_2, c_7	$u^{114} - 33u^{112} + \cdots + 2u + 1$
c_3	$u^{114} - u^{113} + \cdots + 7u + 1$
c_4, c_6	$u^{114} + u^{113} + \cdots + 60449u - 3737$
c_5, c_{10}, c_{11}	$u^{114} - u^{113} + \cdots + 17u - 1$
c_8, c_{12}	$u^{114} - 40u^{112} + \cdots + 934u + 509$
c_9	$u^{114} + 3u^{113} + \cdots - 2304u + 416$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{114} - 41y^{113} + \cdots - 1109681576y + 63984001$
c_2, c_7	$y^{114} - 66y^{113} + \cdots - 42y + 1$
c_3	$y^{114} + 11y^{113} + \cdots + 15y + 1$
c_4, c_6	$y^{114} - 85y^{113} + \cdots - 1006282569y + 13965169$
c_5, c_{10}, c_{11}	$y^{114} + 95y^{113} + \cdots - 89y + 1$
c_8, c_{12}	$y^{114} - 80y^{113} + \cdots - 10221668y + 259081$
c_9	$y^{114} + 13y^{113} + \cdots + 3856896y + 173056$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.887561+0.033463I$		
$a=$	$0.667047-0.840543I$	$-8.87011-0.11224I$	0
$b=$	$0.761693-0.542709I$		
$u=$	$0.887561-0.033463I$		
$a=$	$0.667047+0.840543I$	$-8.87011+0.11224I$	0
$b=$	$0.761693+0.542709I$		
$u=$	0.884055		
$a=$	1.57119	-8.83336	0
$b=$	1.32521		
$u=$	$0.861941+0.130288I$		
$a=$	$0.66446-2.36238I$	$-6.2381-13.5633I$	0
$b=$	$1.12530-1.26937I$		
$u=$	$0.861941-0.130288I$		
$a=$	$0.66446+2.36238I$	$-6.2381+13.5633I$	0
$b=$	$1.12530+1.26937I$		
$u=$	$-0.855647+0.157410I$		
$a=$	$-0.36775+1.65160I$	$-6.26667+4.41214I$	0
$b=$	$0.174619+1.137200I$		
$u=$	$-0.855647-0.157410I$		
$a=$	$-0.36775-1.65160I$	$-6.26667-4.41214I$	0
$b=$	$0.174619-1.137200I$		
$u=$	$-0.420494+1.077840I$		
$a=$	$-0.472262+0.757702I$	$-3.43938+0.18223I$	0
$b=$	$0.009418+1.138830I$		
$u=$	$-0.420494-1.077840I$		
$a=$	$-0.472262-0.757702I$	$-3.43938-0.18223I$	0
$b=$	$0.009418-1.138830I$		
$u=$	$-0.838651+0.073965I$		
$a=$	$0.35169+2.00996I$	$-9.16090+6.43907I$	0
$b=$	$0.986139+0.983905I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.838651-0.073965I$ $a=\ 0.35169-2.00996I$ $b=\ 0.986139-0.983905I$	$-9.16090-6.43907I$	0
$u=-0.836559+0.094115I$ $a=-1.11752-2.62098I$ $b=-1.21368-1.37230I$	$-2.01821+6.94038I$	0
$u=-0.836559-0.094115I$ $a=-1.11752+2.62098I$ $b=-1.21368+1.37230I$	$-2.01821-6.94038I$	0
$u=-0.034680+1.171200I$ $a=-1.05610+0.95379I$ $b=\ 1.114310-0.346505I$	$1.35481+2.41007I$	0
$u=-0.034680-1.171200I$ $a=-1.05610-0.95379I$ $b=\ 1.114310+0.346505I$	$1.35481-2.41007I$	0
$u=-0.799088+0.028521I$ $a=\ 1.61160-2.64644I$ $b=\ 1.34739-1.59685I$	$-5.95563+3.80586I$	$-11.44875-3.61947I$
$u=-0.799088-0.028521I$ $a=\ 1.61160+2.64644I$ $b=\ 1.34739+1.59685I$	$-5.95563-3.80586I$	$-11.44875+3.61947I$
$u=-0.631624+0.489717I$ $a=\ 0.972513+0.063768I$ $b=\ 0.544420-0.666919I$	$-1.07011-4.46542I$	$0.+4.95137I$
$u=-0.631624-0.489717I$ $a=\ 0.972513-0.063768I$ $b=\ 0.544420+0.666919I$	$-1.07011+4.46542I$	$0.-4.95137I$
$u=-0.194897+1.186990I$ $a=-0.384797+0.465226I$ $b=\ 0.374866-0.496573I$	$2.30672+2.64556I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.194897-1.186990I$ $a=-0.384797-0.465226I$ $b=\ \ 0.374866+0.496573I$	$2.30672-2.64556I$	0
$u=\ \ 0.302875+1.165030I$ $a=\ \ 0.338380+0.916390I$ $b=\ \ 0.332156+1.047030I$	$-0.924303-0.501252I$	0
$u=\ \ 0.302875-1.165030I$ $a=\ \ 0.338380-0.916390I$ $b=\ \ 0.332156-1.047030I$	$-0.924303+0.501252I$	0
$u=\ \ 0.433363+1.126810I$ $a=-0.937304-0.439869I$ $b=-1.00068-1.24442I$	$-3.18527+8.92336I$	0
$u=\ \ 0.433363-1.126810I$ $a=-0.937304+0.439869I$ $b=-1.00068+1.24442I$	$-3.18527-8.92336I$	0
$u=-0.559272+0.553878I$ $a=\ \ 0.046469-0.925572I$ $b=-0.781859-0.851553I$	$-0.82179+8.69014I$	$-4.00000-9.28919I$
$u=-0.559272-0.553878I$ $a=\ \ 0.046469+0.925572I$ $b=-0.781859+0.851553I$	$-0.82179-8.69014I$	$-4.00000+9.28919I$
$u=-0.772600+0.037228I$ $a=\ \ 0.61904+1.35329I$ $b=\ \ 0.011448+0.359945I$	$-1.70108+1.04212I$	$-5.52078-1.15687I$
$u=-0.772600-0.037228I$ $a=\ \ 0.61904-1.35329I$ $b=\ \ 0.011448-0.359945I$	$-1.70108-1.04212I$	$-5.52078+1.15687I$
$u=\ \ 0.764051+0.115411I$ $a=\ \ 0.31036+2.12630I$ $b=-0.446089+1.030000I$	$-4.09501-3.38991I$	$-10.58127+2.23573I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.764051 - 0.115411I$ $a = 0.31036 - 2.12630I$ $b = -0.446089 - 1.030000I$	$-4.09501 + 3.38991I$	$-10.58127 - 2.23573I$
$u = 0.769870$ $a = 0.648054$ $b = 1.32831$	-0.697644	-8.68980
$u = 0.762064 + 0.089577I$ $a = -0.30317 + 2.09043I$ $b = -0.339727 + 0.412420I$	$-2.72396 - 5.39723I$	$-4.97222 + 8.97168I$
$u = 0.762064 - 0.089577I$ $a = -0.30317 - 2.09043I$ $b = -0.339727 - 0.412420I$	$-2.72396 + 5.39723I$	$-4.97222 - 8.97168I$
$u = -0.385495 + 1.171350I$ $a = 1.341730 - 0.444799I$ $b = 1.04075 - 1.34482I$	$1.28099 - 2.53613I$	0
$u = -0.385495 - 1.171350I$ $a = 1.341730 + 0.444799I$ $b = 1.04075 + 1.34482I$	$1.28099 + 2.53613I$	0
$u = 0.283143 + 1.201940I$ $a = 0.55050 + 1.52618I$ $b = 0.168272 + 0.232893I$	$0.62179 + 1.60000I$	0
$u = 0.283143 - 1.201940I$ $a = 0.55050 - 1.52618I$ $b = 0.168272 - 0.232893I$	$0.62179 - 1.60000I$	0
$u = 0.756287 + 0.034907I$ $a = -0.01534 + 2.83346I$ $b = -0.55058 + 1.35141I$	$-4.02624 - 3.05369I$	$-8.42676 + 2.90164I$
$u = 0.756287 - 0.034907I$ $a = -0.01534 - 2.83346I$ $b = -0.55058 - 1.35141I$	$-4.02624 + 3.05369I$	$-8.42676 - 2.90164I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.368655 + 0.653613I$ $a = 0.362791 + 0.342465I$ $b = 0.315800 + 0.964205I$	$-2.18652 + 0.53327I$	$-7.37777 + 1.33068I$
$u = 0.368655 - 0.653613I$ $a = 0.362791 - 0.342465I$ $b = 0.315800 - 0.964205I$	$-2.18652 - 0.53327I$	$-7.37777 - 1.33068I$
$u = -0.389371 + 1.194790I$ $a = -0.417451 + 0.445391I$ $b = -0.900074 + 1.060790I$	$-5.71894 - 2.02281I$	0
$u = -0.389371 - 1.194790I$ $a = -0.417451 - 0.445391I$ $b = -0.900074 - 1.060790I$	$-5.71894 + 2.02281I$	0
$u = -0.312733 + 1.245960I$ $a = -0.788461 + 0.880942I$ $b = 0.226218 + 0.195802I$	$2.01023 + 2.87194I$	0
$u = -0.312733 - 1.245960I$ $a = -0.788461 - 0.880942I$ $b = 0.226218 - 0.195802I$	$2.01023 - 2.87194I$	0
$u = 0.033169 + 1.286540I$ $a = -0.475286 + 0.111459I$ $b = 0.45164 + 1.73582I$	$2.83720 - 3.54184I$	0
$u = 0.033169 - 1.286540I$ $a = -0.475286 - 0.111459I$ $b = 0.45164 - 1.73582I$	$2.83720 + 3.54184I$	0
$u = 0.019067 + 1.288260I$ $a = -0.86674 - 1.65349I$ $b = 0.859718 - 0.367698I$	$6.84727 - 0.41254I$	0
$u = 0.019067 - 1.288260I$ $a = -0.86674 + 1.65349I$ $b = 0.859718 + 0.367698I$	$6.84727 + 0.41254I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.348064+1.245640I$ $a=\ \ 1.07973-2.09369I$ $b=-1.44236-1.42499I$	$-2.19698+0.32673I$	0
$u=-0.348064-1.245640I$ $a=\ \ 1.07973+2.09369I$ $b=-1.44236+1.42499I$	$-2.19698-0.32673I$	0
$u=\ \ 0.314287+1.257980I$ $a=\ \ 0.98429+1.16072I$ $b=\ \ 0.39966+1.57679I$	$-0.241377-0.796662I$	0
$u=\ \ 0.314287-1.257980I$ $a=\ \ 0.98429-1.16072I$ $b=\ \ 0.39966-1.57679I$	$-0.241377+0.796662I$	0
$u=\ \ 0.446966+1.234100I$ $a=-0.288788-0.032285I$ $b=-0.433345-0.625329I$	$-5.16161-4.65132I$	0
$u=\ \ 0.446966-1.234100I$ $a=-0.288788+0.032285I$ $b=-0.433345+0.625329I$	$-5.16161+4.65132I$	0
$u=\ \ 0.329032+1.273180I$ $a=\ \ 0.672769+0.766233I$ $b=-1.335070-0.128239I$	$3.25821-3.96182I$	0
$u=\ \ 0.329032-1.273180I$ $a=\ \ 0.672769-0.766233I$ $b=-1.335070+0.128239I$	$3.25821+3.96182I$	0
$u=\ \ 0.118691+1.310740I$ $a=-1.86300+0.21647I$ $b=\ \ 0.590937-0.530944I$	$1.60694-5.76070I$	0
$u=\ \ 0.118691-1.310740I$ $a=-1.86300-0.21647I$ $b=\ \ 0.590937+0.530944I$	$1.60694+5.76070I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.040353+1.316630I$ $a=\ \ 1.193600+0.254814I$ $b=-0.664084-0.488787I$	$4.67481+1.79142I$	0
$u=-0.040353-1.316630I$ $a=\ \ 1.193600-0.254814I$ $b=-0.664084+0.488787I$	$4.67481-1.79142I$	0
$u=-0.350707+1.289720I$ $a=-1.49684+0.06917I$ $b=-1.26736+1.75060I$	$-1.84646+7.94723I$	0
$u=-0.350707-1.289720I$ $a=-1.49684-0.06917I$ $b=-1.26736-1.75060I$	$-1.84646-7.94723I$	0
$u=-0.336746+1.293450I$ $a=-0.125394-1.215930I$ $b=-0.148005-0.510473I$	$2.45095+5.04973I$	0
$u=-0.336746-1.293450I$ $a=-0.125394+1.215930I$ $b=-0.148005+0.510473I$	$2.45095-5.04973I$	0
$u=\ \ 0.329752+1.298790I$ $a=-1.46795-1.54358I$ $b=\ \ 0.74460-1.22192I$	$0.15037-6.98175I$	0
$u=\ \ 0.329752-1.298790I$ $a=-1.46795+1.54358I$ $b=\ \ 0.74460+1.22192I$	$0.15037+6.98175I$	0
$u=\ \ 0.417386+1.276610I$ $a=-0.557000+0.889935I$ $b=-1.338270-0.222985I$	$-4.86969-4.65741I$	0
$u=\ \ 0.417386-1.276610I$ $a=-0.557000-0.889935I$ $b=-1.338270+0.222985I$	$-4.86969+4.65741I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.274471+1.318860I$ $a=-0.644135+0.621966I$ $b=\ \ 1.059720-0.139345I$	$3.34166+3.14281I$	0
$u=-0.274471-1.318860I$ $a=-0.644135-0.621966I$ $b=\ \ 1.059720+0.139345I$	$3.34166-3.14281I$	0
$u=\ \ 0.405592+1.294220I$ $a=\ \ 0.256254+1.094430I$ $b=-1.014100+0.529729I$	$-4.73797-4.73329I$	0
$u=\ \ 0.405592-1.294220I$ $a=\ \ 0.256254-1.094430I$ $b=-1.014100-0.529729I$	$-4.73797+4.73329I$	0
$u=\ \ 0.180288+1.348920I$ $a=\ \ 0.047717-1.084830I$ $b=\ \ 1.069820+0.119273I$	$8.05571-1.71787I$	0
$u=\ \ 0.180288-1.348920I$ $a=\ \ 0.047717+1.084830I$ $b=\ \ 1.069820-0.119273I$	$8.05571+1.71787I$	0
$u=-0.030908+1.363840I$ $a=\ \ 1.25211-0.87845I$ $b=-0.814496-0.347039I$	$6.34340+3.23650I$	0
$u=-0.030908-1.363840I$ $a=\ \ 1.25211+0.87845I$ $b=-0.814496+0.347039I$	$6.34340-3.23650I$	0
$u=\ \ 0.330308+1.325050I$ $a=-0.53730-1.74794I$ $b=\ \ 0.419800-0.520125I$	$1.71717-9.35311I$	0
$u=\ \ 0.330308-1.325050I$ $a=-0.53730+1.74794I$ $b=\ \ 0.419800+0.520125I$	$1.71717+9.35311I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.373340+1.320330I$ $a=\ \ 1.21371-1.55752I$ $b=-1.042950-0.908818I$	$-4.79616+10.79540I$	0
$u=-0.373340-1.320330I$ $a=\ \ 1.21371+1.55752I$ $b=-1.042950+0.908818I$	$-4.79616-10.79540I$	0
$u=\ \ 0.108689+1.371010I$ $a=\ \ 1.061600+0.206574I$ $b=-1.33473+0.73220I$	$8.86434-5.29938I$	0
$u=\ \ 0.108689-1.371010I$ $a=\ \ 1.061600-0.206574I$ $b=-1.33473-0.73220I$	$8.86434+5.29938I$	0
$u=-0.370406+1.333370I$ $a=-0.93236+1.98221I$ $b=\ \ 1.33934+1.36558I$	$2.46011+11.28260I$	0
$u=-0.370406-1.333370I$ $a=-0.93236-1.98221I$ $b=\ \ 1.33934-1.36558I$	$2.46011-11.28260I$	0
$u=-0.603702+0.119908I$ $a=-0.568367-0.079694I$ $b=-0.984828+0.073067I$	$-1.118330-0.146384I$	$-7.95111-0.77273I$
$u=-0.603702-0.119908I$ $a=-0.568367+0.079694I$ $b=-0.984828-0.073067I$	$-1.118330+0.146384I$	$-7.95111+0.77273I$
$u=\ \ 0.328033+1.346520I$ $a=-1.25207-1.10692I$ $b=\ \ 0.527323-1.006500I$	$0.51996-7.34154I$	0
$u=\ \ 0.328033-1.346520I$ $a=-1.25207+1.10692I$ $b=\ \ 0.527323+1.006500I$	$0.51996+7.34154I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.416646 + 0.435532I$ $a = 0.260901 - 1.084610I$ $b = 0.979372 - 0.738723I$	$3.22241 - 3.59528I$	$0.10104 + 7.41453I$
$u = 0.416646 - 0.435532I$ $a = 0.260901 + 1.084610I$ $b = 0.979372 + 0.738723I$	$3.22241 + 3.59528I$	$0.10104 - 7.41453I$
$u = 0.379205 + 1.357300I$ $a = 1.07109 + 1.73396I$ $b = -1.21519 + 1.25837I$	$-1.5579 - 18.0236I$	0
$u = 0.379205 - 1.357300I$ $a = 1.07109 - 1.73396I$ $b = -1.21519 - 1.25837I$	$-1.5579 + 18.0236I$	0
$u = -0.37524 + 1.37204I$ $a = 0.967313 - 0.718309I$ $b = -0.307967 - 1.103800I$	$-1.44531 + 8.84515I$	0
$u = -0.37524 - 1.37204I$ $a = 0.967313 + 0.718309I$ $b = -0.307967 + 1.103800I$	$-1.44531 - 8.84515I$	0
$u = -0.13255 + 1.42840I$ $a = -0.916140 + 0.104632I$ $b = 1.063870 + 0.779304I$	$5.55804 + 10.90110I$	0
$u = -0.13255 - 1.42840I$ $a = -0.916140 - 0.104632I$ $b = 1.063870 - 0.779304I$	$5.55804 - 10.90110I$	0
$u = 0.487522 + 0.286146I$ $a = 1.23842 + 1.37284I$ $b = -0.489413 + 0.866012I$	$-3.26040 - 3.77688I$	$-9.45106 + 6.46344I$
$u = 0.487522 - 0.286146I$ $a = 1.23842 - 1.37284I$ $b = -0.489413 - 0.866012I$	$-3.26040 + 3.77688I$	$-9.45106 - 6.46344I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.438175 + 0.317808I$ $a = -1.65447 + 0.85222I$ $b = -0.798715 - 0.331573I$	$2.97321 + 0.57316I$	$0.65978 + 1.46059I$
$u = \quad 0.438175 - 0.317808I$ $a = -1.65447 - 0.85222I$ $b = -0.798715 + 0.331573I$	$2.97321 - 0.57316I$	$0.65978 - 1.46059I$
$u = -0.135646 + 0.515904I$ $a = -0.69934 + 1.68522I$ $b = \quad 0.741027 + 0.101363I$	$0.66930 + 2.73386I$	$-0.07956 - 6.07456I$
$u = -0.135646 - 0.515904I$ $a = -0.69934 - 1.68522I$ $b = \quad 0.741027 - 0.101363I$	$0.66930 - 2.73386I$	$-0.07956 + 6.07456I$
$u = -0.530416$ $a = -0.298864$ $b = -0.599772$	-1.23397	-8.01990
$u = \quad 0.02591 + 1.46972I$ $a = \quad 0.162162 + 0.238122I$ $b = -0.217407 - 0.693830I$	$4.73023 - 0.42053I$	0
$u = \quad 0.02591 - 1.46972I$ $a = \quad 0.162162 - 0.238122I$ $b = -0.217407 + 0.693830I$	$4.73023 + 0.42053I$	0
$u = -0.16103 + 1.46411I$ $a = -0.095768 - 0.559743I$ $b = -0.537984 + 0.322029I$	$5.32575 - 1.73856I$	0
$u = -0.16103 - 1.46411I$ $a = -0.095768 + 0.559743I$ $b = -0.537984 - 0.322029I$	$5.32575 + 1.73856I$	0
$u = -0.238747 + 0.339224I$ $a = -0.919861 + 0.508205I$ $b = \quad 0.271657 + 0.619291I$	$-0.297429 + 0.992589I$	$-5.42028 - 6.49573I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.238747-0.339224I$ $a=-0.919861-0.508205I$ $b=\ \ 0.271657-0.619291I$	$-0.297429-0.992589I$	$-5.42028+6.49573I$
$u=\ \ 0.154183+0.111813I$ $a=\ \ 3.03466-2.70612I$ $b=-0.547828-1.159590I$	$-1.43517-2.95501I$	$-9.6375+11.3747I$
$u=\ \ 0.154183-0.111813I$ $a=\ \ 3.03466+2.70612I$ $b=-0.547828+1.159590I$	$-1.43517+2.95501I$	$-9.6375-11.3747I$
$u=\ \ 0.116826$ $a=-12.1443$ $b=-0.822751$	2.72265	12.9620

II.

$\boldsymbol{I_2^u = \langle u^{20}+9u^{18}+\cdots+6u^2+b,\ u^{19}+u^{18}+\cdots+a+1,\ u^{21}+10u^{19}+\cdots+3u^2-1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^2+1 \\ u^4+2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^5-2u^3-u \\ -u^7-3u^5-2u^3+u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{19}-u^{18}+\cdots-7u-1 \\ -u^{20}-9u^{18}+\cdots-3u^3-6u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^3+2u \\ u^3+u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^{18}-9u^{16}+\cdots-7u-1 \\ -u^{20}-u^{19}+\cdots-8u^2+1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2u^{19}+u^{18}+\cdots+5u+4 \\ u^{19}+9u^{17}+\cdots+2u-1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{18}-9u^{16}+\cdots-8u-2 \\ -u^{20}-9u^{18}+\cdots-6u^2+u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{20}-u^{19}+\cdots+9u+3 \\ -u^{20}-u^{19}+\cdots+5u^2+2u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= u^{20}+5u^{19}+6u^{18}+43u^{17}+8u^{16}+148u^{15}-24u^{14}+234u^{13}-92u^{12}+92u^{11}-106u^{10}-199u^9-13u^8-203u^7+70u^6+56u^5+43u^4+91u^3-12u^2-19u-15$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21} - 6u^{19} + \cdots + 9u - 1$
c_2	$u^{21} + u^{20} + \cdots + u + 1$
c_3	$u^{21} + 2u^{19} + \cdots - u^2 - 1$
c_4, c_6	$u^{21} - 6u^{19} + \cdots + 2u + 1$
c_5	$u^{21} + 10u^{19} + \cdots - 3u^2 + 1$
c_7	$u^{21} - u^{20} + \cdots + u - 1$
c_8	$u^{21} - u^{20} + \cdots + u - 1$
c_9	$u^{21} + u^{19} + \cdots - 2u^2 - 1$
c_{10}, c_{11}	$u^{21} + 10u^{19} + \cdots + 3u^2 - 1$
c_{12}	$u^{21} + u^{20} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} - 12y^{20} + \cdots + 5y - 1$
c_2, c_7	$y^{21} - 21y^{20} + \cdots + 19y - 1$
c_3	$y^{21} + 4y^{20} + \cdots - 2y - 1$
c_4, c_6	$y^{21} - 12y^{20} + \cdots + 2y - 1$
c_5, c_{10}, c_{11}	$y^{21} + 20y^{20} + \cdots + 6y - 1$
c_8, c_{12}	$y^{21} - 19y^{20} + \cdots + 21y - 1$
c_9	$y^{21} + 2y^{20} + \cdots - 4y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.904293$ $a = -1.42467$ $b = -1.18397$	-8.48711	5.04120
$u = -0.076972 + 1.189930I$ $a = 1.006270 - 0.805513I$ $b = -0.565251 + 1.149290I$	$1.39138 + 3.54794I$	$-6.10052 - 7.16362I$
$u = -0.076972 - 1.189930I$ $a = 1.006270 + 0.805513I$ $b = -0.565251 - 1.149290I$	$1.39138 - 3.54794I$	$-6.10052 + 7.16362I$
$u = -0.760358 + 0.100576I$ $a = -0.65190 + 2.51046I$ $b = 0.052448 + 1.117880I$	$-3.83535 + 4.58464I$	$-8.80266 - 6.89397I$
$u = -0.760358 - 0.100576I$ $a = -0.65190 - 2.51046I$ $b = 0.052448 - 1.117880I$	$-3.83535 - 4.58464I$	$-8.80266 + 6.89397I$
$u = -0.296928 + 1.197740I$ $a = -0.76878 + 1.67924I$ $b = 0.080602 + 1.224810I$	$-0.520443 - 0.759678I$	$-5.59489 + 3.00147I$
$u = -0.296928 - 1.197740I$ $a = -0.76878 - 1.67924I$ $b = 0.080602 - 1.224810I$	$-0.520443 + 0.759678I$	$-5.59489 - 3.00147I$
$u = 0.709431$ $a = 0.0961397$ $b = 1.08690$	0.407384	0.329430
$u = 0.289693 + 1.282470I$ $a = 0.990631 + 0.460119I$ $b = -1.100200 - 0.092788I$	$4.40522 - 3.60581I$	$4.85190 + 2.94987I$
$u = 0.289693 - 1.282470I$ $a = 0.990631 - 0.460119I$ $b = -1.100200 + 0.092788I$	$4.40522 + 3.60581I$	$4.85190 - 2.94987I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.099228 + 1.315090I$ $a = -0.22166 - 1.47776I$ $b = 0.782001 - 0.220049I$	$6.69676 - 1.50889I$	$0.02014 + 3.74098I$
$u = 0.099228 - 1.315090I$ $a = -0.22166 + 1.47776I$ $b = 0.782001 + 0.220049I$	$6.69676 + 1.50889I$	$0.02014 - 3.74098I$
$u = 0.434962 + 1.273550I$ $a = 0.565779 - 0.772032I$ $b = 1.163530 + 0.233492I$	$-4.53652 - 4.78275I$	$7.22141 + 6.57103I$
$u = 0.434962 - 1.273550I$ $a = 0.565779 + 0.772032I$ $b = 1.163530 - 0.233492I$	$-4.53652 + 4.78275I$	$7.22141 - 6.57103I$
$u = -0.329270 + 1.336270I$ $a = 1.24760 - 1.14044I$ $b = -0.172630 - 1.063930I$	$0.69087 + 8.53235I$	$-3.78246 - 8.49503I$
$u = -0.329270 - 1.336270I$ $a = 1.24760 + 1.14044I$ $b = -0.172630 + 1.063930I$	$0.69087 - 8.53235I$	$-3.78246 + 8.49503I$
$u = -0.06876 + 1.45018I$ $a = -0.153482 + 0.129522I$ $b = -0.156384 - 0.514490I$	$4.68874 - 1.20750I$	$-5.08024 + 4.24177I$
$u = -0.06876 - 1.45018I$ $a = -0.153482 - 0.129522I$ $b = -0.156384 + 0.514490I$	$4.68874 + 1.20750I$	$-5.08024 - 4.24177I$
$u = -0.261219 + 0.323597I$ $a = 1.004950 - 0.044950I$ $b = 0.358070 + 0.842385I$	$-1.23671 - 2.41016I$	$-4.09983 - 1.07265I$
$u = -0.261219 - 0.323597I$ $a = 1.004950 + 0.044950I$ $b = 0.358070 - 0.842385I$	$-1.23671 + 2.41016I$	$-4.09983 + 1.07265I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.325517$		
$a = -4.71029$	2.46145	-18.6360
$b = -0.787304$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{21}-6u^{19}+\cdots+9u-1)(u^{114}-13u^{113}+\cdots-76092u+7999)$
c_2	$(u^{21}+u^{20}+\cdots+u+1)(u^{114}-33u^{112}+\cdots+2u+1)$
c_3	$(u^{21}+2u^{19}+\cdots-u^2-1)(u^{114}-u^{113}+\cdots+7u+1)$
c_4, c_6	$(u^{21}-6u^{19}+\cdots+2u+1)(u^{114}+u^{113}+\cdots+60449u-3737)$
c_5	$(u^{21}+10u^{19}+\cdots-3u^2+1)(u^{114}-u^{113}+\cdots+17u-1)$
c_7	$(u^{21}-u^{20}+\cdots+u-1)(u^{114}-33u^{112}+\cdots+2u+1)$
c_8	$(u^{21}-u^{20}+\cdots+u-1)(u^{114}-40u^{112}+\cdots+934u+509)$
c_9	$(u^{21}+u^{19}+\cdots-2u^2-1)(u^{114}+3u^{113}+\cdots-2304u+416)$
c_{10}, c_{11}	$(u^{21}+10u^{19}+\cdots+3u^2-1)(u^{114}-u^{113}+\cdots+17u-1)$
c_{12}	$(u^{21}+u^{20}+\cdots+u+1)(u^{114}-40u^{112}+\cdots+934u+509)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{21} - 12y^{20} + \cdots + 5y - 1)$ $\cdot (y^{114} - 41y^{113} + \cdots - 1109681576y + 63984001)$
c_2, c_7	$(y^{21} - 21y^{20} + \cdots + 19y - 1)(y^{114} - 66y^{113} + \cdots - 42y + 1)$
c_3	$(y^{21} + 4y^{20} + \cdots - 2y - 1)(y^{114} + 11y^{113} + \cdots + 15y + 1)$
c_4, c_6	$(y^{21} - 12y^{20} + \cdots + 2y - 1)$ $\cdot (y^{114} - 85y^{113} + \cdots - 1006282569y + 13965169)$
c_5, c_{10}, c_{11}	$(y^{21} + 20y^{20} + \cdots + 6y - 1)(y^{114} + 95y^{113} + \cdots - 89y + 1)$
c_8, c_{12}	$(y^{21} - 19y^{20} + \cdots + 21y - 1)$ $\cdot (y^{114} - 80y^{113} + \cdots - 10221668y + 259081)$
c_9	$(y^{21} + 2y^{20} + \cdots - 4y - 1)(y^{114} + 13y^{113} + \cdots + 3856896y + 173056)$