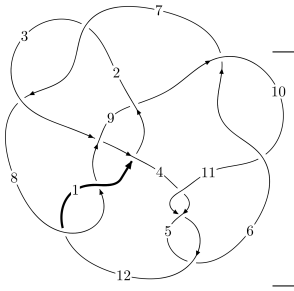
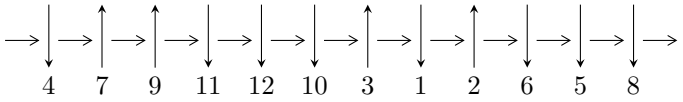
$12a_{1060}$ $(K12a_{1060})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -2.57346 \times 10^{89} u^{110} + 1.88636 \times 10^{89} u^{109} + \cdots + 1.74794 \times 10^{88} b + 1.38329 \times 10^{89}, \\
&\quad - 1.32168 \times 10^{89} u^{110} + 1.72858 \times 10^{89} u^{109} + \cdots + 1.74794 \times 10^{88} a + 4.52966 \times 10^{89}, \\
&\quad u^{111} - 2u^{110} + \cdots - 17u + 1 \rangle \\
I_2^u &= \langle u^{20} - u^{19} + \cdots + b - u,\ -u^{20} + 10u^{18} + \cdots + a + 1, \\
&\quad u^{21} - 10u^{19} + 42u^{17} - 92u^{15} + 99u^{13} - 14u^{11} - u^{10} - 78u^9 + 5u^8 + 60u^7 - 9u^6 + 9u^5 + 6u^4 - 18u^3 - 1 \rangle \\
I_3^u &= \langle b,\ a + 1,\ u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 133 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. $\boldsymbol{I_1^u = \langle -2.57 \times 10^{89} u^{110} + 1.89 \times 10^{89} u^{109} + \cdots + 1.75 \times 10^{88} b + 1.38 \times 10^{89},\ -1.32 \times 10^{89} u^{110} + 1.73 \times 10^{89} u^{109} + \cdots + 1.75 \times 10^{88} a + 4.53 \times 10^{89},\ u^{111} - 2u^{110} + \cdots - 17u + 1 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 7.56139u^{110} - 9.88923u^{109} + \cdots + 305.838u - 25.9143 \\ 14.7228u^{110} - 10.7919u^{109} + \cdots + 165.490u - 7.91382 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.131615u^{110} + 1.70010u^{109} + \cdots - 107.174u + 6.20078 \\ -8.70767u^{110} + 7.11868u^{109} + \cdots - 150.414u + 11.0406 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 3.79909u^{110} - 4.42765u^{109} + \cdots + 61.8715u - 3.31532 \\ 10.8836u^{110} - 8.05693u^{109} + \cdots + 113.483u - 5.21542 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 3.46413u^{110} - 1.77921u^{109} + \cdots - 21.8214u - 0.849966 \\ 0.698222u^{110} - 0.237275u^{109} + \cdots - 24.5823u + 3.29697 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.676351u^{110} + 1.22744u^{109} + \cdots - 101.879u + 5.95117 \\ -5.00556u^{110} + 4.25267u^{109} + \cdots - 104.692u + 8.32936 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ u^8 - 2u^6 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -13.5527u^{110} + 17.8532u^{109} + \cdots - 506.209u + 43.1001$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{111} - 16u^{110} + \cdots + 15u + 1$
c_2, c_7	$u^{111} - u^{110} + \cdots + 2080u - 1879$
c_3	$u^{111} - u^{110} + \cdots - 49u - 5$
c_4, c_5, c_{11}	$u^{111} - 2u^{110} + \cdots - 17u + 1$
c_6, c_{10}	$u^{111} + 3u^{110} + \cdots - 42277u + 3245$
c_8, c_{12}	$u^{111} - u^{110} + \cdots - 882u + 271$
c_9	$u^{111} + 2u^{110} + \cdots - 123711u + 123383$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{111} - 4y^{110} + \cdots + 567y - 1$
c_2, c_7	$y^{111} - 85y^{110} + \cdots + 140050328y - 3530641$
c_3	$y^{111} - y^{110} + \cdots + 881y - 25$
c_4, c_5, c_{11}	$y^{111} - 92y^{110} + \cdots + 81y - 1$
c_6, c_{10}	$y^{111} + 87y^{110} + \cdots + 1070147809y - 10530025$
c_8, c_{12}	$y^{111} - 63y^{110} + \cdots + 624538y - 73441$
c_9	$y^{111} - 34y^{110} + \cdots + 1350344005825y - 15223364689$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.081166+0.904115I$ $a=-0.344352+0.904100I$ $b=-0.205252+0.162622I$	$7.50937+0.87155I$	0
$u=-0.081166-0.904115I$ $a=-0.344352-0.904100I$ $b=-0.205252-0.162622I$	$7.50937-0.87155I$	0
$u=-0.121934+0.870862I$ $a=-0.96469-1.31541I$ $b=-1.313980+0.103964I$	$6.3847+13.3757I$	0
$u=-0.121934-0.870862I$ $a=-0.96469+1.31541I$ $b=-1.313980-0.103964I$	$6.3847-13.3757I$	0
$u=0.154867+0.858936I$ $a=-0.632403+0.871576I$ $b=-0.954252-0.565366I$	$7.30644-4.30172I$	0
$u=0.154867-0.858936I$ $a=-0.632403-0.871576I$ $b=-0.954252+0.565366I$	$7.30644+4.30172I$	0
$u=-0.028698+0.855465I$ $a=-0.428888-0.916164I$ $b=-0.819599-0.897102I$	$7.25427+3.69556I$	0
$u=-0.028698-0.855465I$ $a=-0.428888+0.916164I$ $b=-0.819599+0.897102I$	$7.25427-3.69556I$	0
$u=0.091469+0.844247I$ $a=-1.35317-0.57053I$ $b=-0.863472-0.322494I$	$9.30952-6.81701I$	0
$u=0.091469-0.844247I$ $a=-1.35317+0.57053I$ $b=-0.863472+0.322494I$	$9.30952+6.81701I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.084410 + 0.417528I$ $a = 0.442236 - 0.588081I$ $b = 1.139120 + 0.401544I$	$4.45379 - 0.29837I$	0
$u = 1.084410 - 0.417528I$ $a = 0.442236 + 0.588081I$ $b = 1.139120 - 0.401544I$	$4.45379 + 0.29837I$	0
$u = 0.080213 + 0.812540I$ $a = 0.73148 - 1.41337I$ $b = 1.282600 + 0.337159I$	$1.52000 - 6.82635I$	$0. + 6.98056I$
$u = 0.080213 - 0.812540I$ $a = 0.73148 + 1.41337I$ $b = 1.282600 - 0.337159I$	$1.52000 + 6.82635I$	$0. - 6.98056I$
$u = -0.025621 + 0.814330I$ $a = 1.019490 - 0.056681I$ $b = 0.598997 - 0.234326I$	$4.98734 + 2.15996I$	0
$u = -0.025621 - 0.814330I$ $a = 1.019490 + 0.056681I$ $b = 0.598997 + 0.234326I$	$4.98734 - 2.15996I$	0
$u = -0.526631 + 0.615019I$ $a = -0.47851 - 1.41722I$ $b = -0.547739 - 0.056493I$	$0.59594 - 4.27717I$	0
$u = -0.526631 - 0.615019I$ $a = -0.47851 + 1.41722I$ $b = -0.547739 + 0.056493I$	$0.59594 + 4.27717I$	0
$u = -1.179560 + 0.191654I$ $a = -0.551352 - 0.599227I$ $b = -0.158132 - 0.269581I$	$-1.82003 + 0.41789I$	0
$u = -1.179560 - 0.191654I$ $a = -0.551352 + 0.599227I$ $b = -0.158132 + 0.269581I$	$-1.82003 - 0.41789I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.012361 + 0.800991I$ $a = -0.442197 - 1.094450I$ $b = -1.60146 + 0.33849I$	$6.98387 - 0.56475I$	$1.87354 + 0.I$
$u = 0.012361 - 0.800991I$ $a = -0.442197 + 1.094450I$ $b = -1.60146 - 0.33849I$	$6.98387 + 0.56475I$	$1.87354 + 0.I$
$u = 0.025664 + 0.796748I$ $a = -1.23003 + 1.38707I$ $b = -1.250320 + 0.348318I$	$2.91600 - 3.82224I$	$0. + 4.16476I$
$u = 0.025664 - 0.796748I$ $a = -1.23003 - 1.38707I$ $b = -1.250320 - 0.348318I$	$2.91600 + 3.82224I$	$0. - 4.16476I$
$u = -0.524571 + 0.585182I$ $a = 1.51013 + 0.68318I$ $b = 1.199700 - 0.103549I$	$0.56437 + 8.53514I$	$-4.00000 - 8.97660I$
$u = -0.524571 - 0.585182I$ $a = 1.51013 - 0.68318I$ $b = 1.199700 + 0.103549I$	$0.56437 - 8.53514I$	$-4.00000 + 8.97660I$
$u = 1.215450 + 0.034160I$ $a = -0.655743 - 0.538750I$ $b = -0.82287 - 1.17849I$	$-4.37066 - 2.85132I$	0
$u = 1.215450 - 0.034160I$ $a = -0.655743 + 0.538750I$ $b = -0.82287 + 1.17849I$	$-4.37066 + 2.85132I$	0
$u = -1.142310 + 0.441405I$ $a = 0.741922 + 0.868519I$ $b = 0.759050 - 0.116604I$	$3.25745 - 8.68324I$	0
$u = -1.142310 - 0.441405I$ $a = 0.741922 - 0.868519I$ $b = 0.759050 + 0.116604I$	$3.25745 + 8.68324I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.230730 + 0.129770I$ $a = 0.847427 + 0.283143I$ $b = 1.58411 - 1.41763I$	$-3.36757 - 4.77773I$	0
$u = 1.230730 - 0.129770I$ $a = 0.847427 - 0.283143I$ $b = 1.58411 + 1.41763I$	$-3.36757 + 4.77773I$	0
$u = 1.175080 + 0.397243I$ $a = -0.586512 - 0.763040I$ $b = -1.220310 + 0.097965I$	$5.98708 + 2.35229I$	0
$u = 1.175080 - 0.397243I$ $a = -0.586512 + 0.763040I$ $b = -1.220310 - 0.097965I$	$5.98708 - 2.35229I$	0
$u = 1.190270 + 0.350522I$ $a = -0.790578 + 0.647954I$ $b = -1.292380 - 0.473108I$	$-1.87331 + 2.61985I$	0
$u = 1.190270 - 0.350522I$ $a = -0.790578 - 0.647954I$ $b = -1.292380 + 0.473108I$	$-1.87331 - 2.61985I$	0
$u = 1.25185$ $a = 0.708215$ $b = 6.74388$	-0.842109	0
$u = -0.129040 + 0.730302I$ $a = 1.05885 + 1.38972I$ $b = 0.986008 + 0.154802I$	$1.16972 + 3.02941I$	$0.581656 - 0.502191I$
$u = -0.129040 - 0.730302I$ $a = 1.05885 - 1.38972I$ $b = 0.986008 - 0.154802I$	$1.16972 - 3.02941I$	$0.581656 + 0.502191I$
$u = -1.273620 + 0.076602I$ $a = -0.344736 - 0.467111I$ $b = 0.378767 + 0.209717I$	$-1.89161 + 0.63320I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.273620-0.076602I$ $a=-0.344736+0.467111I$ $b=\ \ 0.378767-0.209717I$	$-1.89161-0.63320I$	0
$u=-0.052261+0.719313I$ $a=\ \ 0.56144+1.85689I$ $b=\ \ 0.362230+0.199391I$	$0.82057+2.54626I$	$-3.60718-1.85382I$
$u=-0.052261-0.719313I$ $a=\ \ 0.56144-1.85689I$ $b=\ \ 0.362230-0.199391I$	$0.82057-2.54626I$	$-3.60718+1.85382I$
$u=-1.193200+0.465317I$ $a=-0.743332+0.064065I$ $b=-1.140780-0.292617I$	$4.08896+4.00061I$	0
$u=-1.193200-0.465317I$ $a=-0.743332-0.064065I$ $b=-1.140780+0.292617I$	$4.08896-4.00061I$	0
$u=\ \ 1.279440+0.124995I$ $a=-0.161902-0.194584I$ $b=-0.565355-1.026320I$	$-4.72872-2.56138I$	0
$u=\ \ 1.279440-0.124995I$ $a=-0.161902+0.194584I$ $b=-0.565355+1.026320I$	$-4.72872+2.56138I$	0
$u=-1.292750+0.034714I$ $a=\ \ 1.015070-0.528316I$ $b=\ \ 3.98562-0.36189I$	$-5.84342+3.49242I$	0
$u=-1.292750-0.034714I$ $a=\ \ 1.015070+0.528316I$ $b=\ \ 3.98562+0.36189I$	$-5.84342-3.49242I$	0
$u=-1.260740+0.296765I$ $a=-0.974598-0.581114I$ $b=-1.86237-1.41018I$	$-2.94268+1.10354I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.260740-0.296765I$ $a=-0.974598+0.581114I$ $b=-1.86237+1.41018I$	$-2.94268-1.10354I$	0
$u=1.249570+0.345703I$ $a=0.603798-0.930670I$ $b=-0.138375-0.619119I$	$-0.866061-0.293007I$	0
$u=1.249570-0.345703I$ $a=0.603798+0.930670I$ $b=-0.138375+0.619119I$	$-0.866061+0.293007I$	0
$u=-1.245970+0.359010I$ $a=0.251361-0.577708I$ $b=0.535194-0.101397I$	$1.21676+2.06299I$	0
$u=-1.245970-0.359010I$ $a=0.251361+0.577708I$ $b=0.535194+0.101397I$	$1.21676-2.06299I$	0
$u=1.261040+0.349927I$ $a=-0.733629-0.044182I$ $b=-3.33029+2.29901I$	$3.11498-3.57845I$	0
$u=1.261040-0.349927I$ $a=-0.733629+0.044182I$ $b=-3.33029-2.29901I$	$3.11498+3.57845I$	0
$u=-1.246320+0.399264I$ $a=0.508156+0.407138I$ $b=-0.756437+0.263088I$	$3.48869+0.80412I$	0
$u=-1.246320-0.399264I$ $a=0.508156-0.407138I$ $b=-0.756437-0.263088I$	$3.48869-0.80412I$	0
$u=-1.279340+0.353280I$ $a=0.525220+0.477688I$ $b=0.562776-1.283690I$	$2.96533+4.72137I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.279340-0.353280I$ $a=\ \ 0.525220-0.477688I$ $b=\ \ 0.562776+1.283690I$	$2.96533-4.72137I$	0
$u=-1.288410+0.349720I$ $a=-1.044060+0.445837I$ $b=-2.76410-1.24036I$	$-1.17957+7.95243I$	0
$u=-1.288410-0.349720I$ $a=-1.044060-0.445837I$ $b=-2.76410+1.24036I$	$-1.17957-7.95243I$	0
$u=\ \ 1.286620+0.362863I$ $a=\ \ 0.215037+0.603548I$ $b=\ \ 1.142380+0.534124I$	$0.90063-6.39648I$	0
$u=\ \ 1.286620-0.362863I$ $a=\ \ 0.215037-0.603548I$ $b=\ \ 1.142380-0.534124I$	$0.90063+6.39648I$	0
$u=\ \ 1.293240+0.390759I$ $a=-0.647394-0.092804I$ $b=-0.62304+1.60161I$	$3.13563-8.16662I$	0
$u=\ \ 1.293240-0.390759I$ $a=-0.647394+0.092804I$ $b=-0.62304-1.60161I$	$3.13563+8.16662I$	0
$u=\ \ 1.316370+0.314217I$ $a=\ \ 1.066920-0.099320I$ $b=\ \ 2.70014-1.07266I$	$-3.50013-6.30583I$	0
$u=\ \ 1.316370-0.314217I$ $a=\ \ 1.066920+0.099320I$ $b=\ \ 2.70014+1.07266I$	$-3.50013+6.30583I$	0
$u=-1.357420+0.123005I$ $a=\ \ 0.055884-0.790870I$ $b=\ \ 0.219826-1.339850I$	$-1.79691+5.42824I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.357420-0.123005I$ $a=\ 0.055884+0.790870I$ $b=\ 0.219826+1.339850I$	$-1.79691-5.42824I$	0
$u=-1.361100+0.084061I$ $a=-0.889472+0.178559I$ $b=-4.43462-0.05589I$	$-8.65164+5.28818I$	0
$u=-1.361100-0.084061I$ $a=-0.889472-0.178559I$ $b=-4.43462+0.05589I$	$-8.65164-5.28818I$	0
$u=-1.354580+0.206679I$ $a=\ 0.753347+0.206126I$ $b=\ 3.12215+1.39177I$	$-7.16797+1.58311I$	0
$u=-1.354580-0.206679I$ $a=\ 0.753347-0.206126I$ $b=\ 3.12215-1.39177I$	$-7.16797-1.58311I$	0
$u=-1.322880+0.358837I$ $a=\ 0.959315-0.094899I$ $b=\ 3.52906+1.42336I$	$-2.87719+11.04810I$	0
$u=-1.322880-0.358837I$ $a=\ 0.959315+0.094899I$ $b=\ 3.52906-1.42336I$	$-2.87719-11.04810I$	0
$u=\ 0.527747+0.332177I$ $a=\ 0.694115+0.501497I$ $b=\ 1.059300+0.321123I$	$3.19985+0.32140I$	$1.59922+2.05291I$
$u=\ 0.527747-0.332177I$ $a=\ 0.694115-0.501497I$ $b=\ 1.059300-0.321123I$	$3.19985-0.32140I$	$1.59922-2.05291I$
$u=\ 1.341820+0.311397I$ $a=\ 1.028620+0.219802I$ $b=\ 2.94137-1.00859I$	$-3.46066-6.81605I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.341820 - 0.311397I$ $a = 1.028620 - 0.219802I$ $b = 2.94137 + 1.00859I$	$-3.46066 + 6.81605I$	0
$u = 1.380850 + 0.001402I$ $a = -1.002190 + 0.099681I$ $b = -3.63865 + 0.11066I$	$-7.48663 + 0.05717I$	0
$u = 1.380850 - 0.001402I$ $a = -1.002190 - 0.099681I$ $b = -3.63865 - 0.11066I$	$-7.48663 - 0.05717I$	0
$u = -0.618101 + 0.029425I$ $a = -1.74047 + 0.02330I$ $b = -0.535160 - 0.050220I$	$-1.53250 + 0.00940I$	$-7.61099 + 0.23089I$
$u = -0.618101 - 0.029425I$ $a = -1.74047 - 0.02330I$ $b = -0.535160 + 0.050220I$	$-1.53250 - 0.00940I$	$-7.61099 - 0.23089I$
$u = -1.332360 + 0.374895I$ $a = -0.013321 + 0.926101I$ $b = -0.998412 + 0.993180I$	$4.84444 + 11.19960I$	0
$u = -1.332360 - 0.374895I$ $a = -0.013321 - 0.926101I$ $b = -0.998412 - 0.993180I$	$4.84444 - 11.19960I$	0
$u = 0.387681 + 0.471766I$ $a = 0.94998 + 1.12985I$ $b = 0.192196 - 0.091930I$	$3.65065 - 3.48280I$	$1.08914 + 6.57604I$
$u = 0.387681 - 0.471766I$ $a = 0.94998 - 1.12985I$ $b = 0.192196 + 0.091930I$	$3.65065 + 3.48280I$	$1.08914 - 6.57604I$
$u = 1.331550 + 0.416484I$ $a = 0.431825 - 0.390425I$ $b = 0.625797 - 0.534575I$	$3.09221 - 5.59637I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.331550 - 0.416484I$ $a = 0.431825 + 0.390425I$ $b = 0.625797 + 0.534575I$	$3.09221 + 5.59637I$	0
$u = 0.239442 + 0.553403I$ $a = 0.29215 - 1.63161I$ $b = 0.814891 + 0.000066I$	$-2.15238 + 1.18175I$	$-5.85912 + 1.80919I$
$u = 0.239442 - 0.553403I$ $a = 0.29215 + 1.63161I$ $b = 0.814891 - 0.000066I$	$-2.15238 - 1.18175I$	$-5.85912 - 1.80919I$
$u = 1.354290 + 0.385786I$ $a = -1.013040 - 0.215829I$ $b = -3.22338 + 1.21261I$	$1.7439 - 17.8882I$	0
$u = 1.354290 - 0.385786I$ $a = -1.013040 + 0.215829I$ $b = -3.22338 - 1.21261I$	$1.7439 + 17.8882I$	0
$u = -1.37149 + 0.37859I$ $a = -0.688647 + 0.081503I$ $b = -2.89193 - 0.66737I$	$2.49624 + 8.75887I$	0
$u = -1.37149 - 0.37859I$ $a = -0.688647 - 0.081503I$ $b = -2.89193 + 0.66737I$	$2.49624 - 8.75887I$	0
$u = 1.42545 + 0.14891I$ $a = 0.929723 + 0.271581I$ $b = 3.68084 - 0.20743I$	$-5.71189 - 10.93540I$	0
$u = 1.42545 - 0.14891I$ $a = 0.929723 - 0.271581I$ $b = 3.68084 + 0.20743I$	$-5.71189 + 10.93540I$	0
$u = 0.449955 + 0.306106I$ $a = -2.03754 + 0.58119I$ $b = -1.245410 - 0.306755I$	$-3.08409 - 4.01496I$	$-8.48201 + 7.35166I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.449955 - 0.306106I$ $a = -2.03754 - 0.58119I$ $b = -1.245410 + 0.306755I$	$-3.08409 + 4.01496I$	$-8.48201 - 7.35166I$
$u = -0.105666 + 0.512091I$ $a = \ 0.97329 + 1.87270I$ $b = \ 0.490136 + 0.627445I$	$0.52426 + 2.56205I$	$0.27637 - 5.10765I$
$u = -0.105666 - 0.512091I$ $a = \ 0.97329 - 1.87270I$ $b = \ 0.490136 - 0.627445I$	$0.52426 - 2.56205I$	$0.27637 + 5.10765I$
$u = \ 1.47079 + 0.14608I$ $a = -0.745847 + 0.294962I$ $b = -2.71132 + 0.77604I$	$-5.95978 + 1.70857I$	0
$u = \ 1.47079 - 0.14608I$ $a = -0.745847 - 0.294962I$ $b = -2.71132 - 0.77604I$	$-5.95978 - 1.70857I$	0
$u = -1.50434$ $a = \ 0.492040$ $b = \ 2.97475$	-3.63276	0
$u = -0.225847 + 0.327044I$ $a = -0.800511 + 0.558951I$ $b = -0.020085 + 0.267612I$	$-0.235196 + 0.938220I$	$-4.68352 - 7.13050I$
$u = -0.225847 - 0.327044I$ $a = -0.800511 - 0.558951I$ $b = -0.020085 - 0.267612I$	$-0.235196 - 0.938220I$	$-4.68352 + 7.13050I$
$u = \ 0.151934 + 0.115584I$ $a = \ 6.77942 - 0.80780I$ $b = \ 0.686578 - 0.179927I$	$-1.43186 - 2.95721I$	$-9.1241 + 11.4688I$
$u = \ 0.151934 - 0.115584I$ $a = \ 6.77942 + 0.80780I$ $b = \ 0.686578 + 0.179927I$	$-1.43186 + 2.95721I$	$-9.1241 - 11.4688I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.119052$		
$a = -5.01443$	2.72207	12.4830
$b = \quad 1.98261$		

II.

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

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{20} - 10u^{18} + \cdots - 3u - 1 \\ -u^{20} + u^{19} + \cdots - 6u^2 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{19} + u^{18} + \cdots + 5u + 2 \\ -u^{20} + 3u^{19} + \cdots - u + 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{19} + 9u^{17} + \cdots + 3u + 1 \\ -2u^{20} - u^{19} + \cdots + u - 1 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{20} + u^{19} + \cdots + 6u + 2 \\ u^{20} + 3u^{19} + \cdots + 6u^2 + 2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{19} + u^{18} + \cdots + 5u + 3 \\ 3u^{19} + u^{18} + \cdots - u + 2 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ u^8 - 2u^6 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= -12u^{19} - 2u^{18} + 100u^{17} + 17u^{16} - 336u^{15} - 58u^{14} + 535u^{13} + 92u^{12} - 271u^{11} - 41u^{10} - 324u^9 - 56u^8 + 442u^7 + 40u^6 - 28u^5 + 46u^4 - 134u^3 - 32u^2 + 12u - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21} - 2u^{19} + \cdots - 6u + 1$
c_2	$u^{21} + u^{20} + \cdots + u + 1$
c_3	$u^{21} - 2u^{19} + \cdots + 3u^2 + 1$
c_4, c_5	$u^{21} - 10u^{19} + \cdots - 18u^3 - 1$
c_6	$u^{21} + 6u^{19} + \cdots + 3u^2 - 1$
c_7	$u^{21} - u^{20} + \cdots + u - 1$
c_8	$u^{21} - u^{20} + \cdots + u - 1$
c_9	$u^{21} + 3u^{19} + \cdots - 2u^2 + 1$
c_{10}	$u^{21} + 6u^{19} + \cdots - 3u^2 + 1$
c_{11}	$u^{21} - 10u^{19} + \cdots - 18u^3 + 1$
c_{12}	$u^{21} + u^{20} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} - 4y^{20} + \cdots + 10y - 1$
c_2, c_7	$y^{21} - 21y^{20} + \cdots + 15y - 1$
c_3	$y^{21} - 4y^{20} + \cdots - 6y - 1$
c_4, c_5, c_{11}	$y^{21} - 20y^{20} + \cdots + 12y^2 - 1$
c_6, c_{10}	$y^{21} + 12y^{20} + \cdots + 6y - 1$
c_8, c_{12}	$y^{21} - 15y^{20} + \cdots + 21y - 1$
c_9	$y^{21} + 6y^{20} + \cdots + 4y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.062614+0.857160I$ $a=\ \ 0.275352+0.744219I$ $b=\ \ 0.991659+0.241341I$	$7.09483+2.69700I$	$0.204052-0.960418I$
$u=-0.062614-0.857160I$ $a=\ \ 0.275352-0.744219I$ $b=\ \ 0.991659-0.241341I$	$7.09483-2.69700I$	$0.204052+0.960418I$
$u=-1.18462$ $a=\ \ 0.514078$ $b=-3.17275$	-0.0653881	2.89470
$u=\ \ 1.235030+0.104057I$ $a=-0.770955-0.434248I$ $b=-1.68506-0.31727I$	$-4.45553-3.99750I$	$-8.33700+7.35069I$
$u=\ \ 1.235030-0.104057I$ $a=-0.770955+0.434248I$ $b=-1.68506+0.31727I$	$-4.45553+3.99750I$	$-8.33700-7.35069I$
$u=\ \ 1.234780+0.272929I$ $a=\ \ 0.736844-0.846584I$ $b=\ \ 0.398323-0.870978I$	$-2.77607+0.23467I$	$-9.48318-3.28637I$
$u=\ \ 1.234780-0.272929I$ $a=\ \ 0.736844+0.846584I$ $b=\ \ 0.398323+0.870978I$	$-2.77607-0.23467I$	$-9.48318+3.28637I$
$u=-1.212920+0.392860I$ $a=-0.439696-0.262167I$ $b=\ \ 0.203010+0.888489I$	$3.55654+1.79152I$	$-2.35096-2.63279I$
$u=-1.212920-0.392860I$ $a=-0.439696+0.262167I$ $b=\ \ 0.203010-0.888489I$	$3.55654-1.79152I$	$-2.35096+2.63279I$
$u=\ \ 0.072517+0.710236I$ $a=-1.26753+1.64767I$ $b=-1.045360+0.236003I$	$0.77767-3.77401I$	$-4.35410+8.39040I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.072517 - 0.710236I$ $a = -1.26753 - 1.64767I$ $b = -1.045360 - 0.236003I$	$0.77767 + 3.77401I$	$-4.35410 - 8.39040I$
$u = -1.323560 + 0.298366I$ $a = -1.111640 + 0.313500I$ $b = -3.17414 - 0.98120I$	$-3.62134 + 7.43161I$	$-8.6486 - 11.9040I$
$u = -1.323560 - 0.298366I$ $a = -1.111640 - 0.313500I$ $b = -3.17414 + 0.98120I$	$-3.62134 - 7.43161I$	$-8.6486 + 11.9040I$
$u = 1.316400 + 0.393822I$ $a = 0.515998 + 0.022497I$ $b = 1.35440 - 1.33801I$	$2.78443 - 7.19164I$	$-4.22867 + 4.01785I$
$u = 1.316400 - 0.393822I$ $a = 0.515998 - 0.022497I$ $b = 1.35440 + 1.33801I$	$2.78443 + 7.19164I$	$-4.22867 - 4.01785I$
$u = -1.391350 + 0.102602I$ $a = 0.845334 + 0.317790I$ $b = 3.00093 + 0.78369I$	$-6.34020 - 0.86818I$	$-9.18780 - 0.27914I$
$u = -1.391350 - 0.102602I$ $a = 0.845334 - 0.317790I$ $b = 3.00093 - 0.78369I$	$-6.34020 + 0.86818I$	$-9.18780 + 0.27914I$
$u = 1.47523$ $a = -0.549398$ $b = -3.38448$	-3.89149	-19.3050
$u = -0.385686$ $a = -1.78797$ $b = -2.12563$	2.41587	-14.8360
$u = 0.179252 + 0.337282I$ $a = 0.12794 - 3.11208I$ $b = 0.297662 - 0.095157I$	$-1.18464 + 2.46905I$	$-1.99075 + 0.76816I$

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.179252-0.337282I$		
$a=$	$0.12794+3.11208I$	$-1.18464-2.46905I$	$-1.99075-0.76816I$
$b=$	$0.297662+0.095157I$		

III. $I_3^u = \langle b,\ a+1,\ u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$		
$a = -1.00000$	-1.64493	-6.00000
$b = 0$		

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)(u^{21}-2u^{19}+\cdots-6u+1)(u^{111}-16u^{110}+\cdots+15u+1)$
c_2	$(u+1)(u^{21}+u^{20}+\cdots+u+1)(u^{111}-u^{110}+\cdots+2080u-1879)$
c_3	$u(u^{21}-2u^{19}+\cdots+3u^2+1)(u^{111}-u^{110}+\cdots-49u-5)$
c_4, c_5	$(u+1)(u^{21}-10u^{19}+\cdots-18u^3-1)(u^{111}-2u^{110}+\cdots-17u+1)$
c_6	$u(u^{21}+6u^{19}+\cdots+3u^2-1)(u^{111}+3u^{110}+\cdots-42277u+3245)$
c_7	$(u+1)(u^{21}-u^{20}+\cdots+u-1)(u^{111}-u^{110}+\cdots+2080u-1879)$
c_8	$(u+1)(u^{21}-u^{20}+\cdots+u-1)(u^{111}-u^{110}+\cdots-882u+271)$
c_9	$(u+1)(u^{21}+3u^{19}+\cdots-2u^2+1)$ $\cdot(u^{111}+2u^{110}+\cdots-123711u+123383)$
c_{10}	$u(u^{21}+6u^{19}+\cdots-3u^2+1)(u^{111}+3u^{110}+\cdots-42277u+3245)$
c_{11}	$(u+1)(u^{21}-10u^{19}+\cdots-18u^3+1)(u^{111}-2u^{110}+\cdots-17u+1)$
c_{12}	$(u+1)(u^{21}+u^{20}+\cdots+u+1)(u^{111}-u^{110}+\cdots-882u+271)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)(y^{21}-4y^{20}+\cdots+10y-1)(y^{111}-4y^{110}+\cdots+567y-1)$
c_2, c_7	$(y-1)(y^{21}-21y^{20}+\cdots+15y-1)$ $\cdot(y^{111}-85y^{110}+\cdots+140050328y-3530641)$
c_3	$y(y^{21}-4y^{20}+\cdots-6y-1)(y^{111}-y^{110}+\cdots+881y-25)$
c_4, c_5, c_{11}	$(y-1)(y^{21}-20y^{20}+\cdots+12y^2-1)(y^{111}-92y^{110}+\cdots+81y-1)$
c_6, c_{10}	$y(y^{21}+12y^{20}+\cdots+6y-1)$ $\cdot(y^{111}+87y^{110}+\cdots+1070147809y-10530025)$
c_8, c_{12}	$(y-1)(y^{21}-15y^{20}+\cdots+21y-1)$ $\cdot(y^{111}-63y^{110}+\cdots+624538y-73441)$
c_9	$(y-1)(y^{21}+6y^{20}+\cdots+4y-1)$ $\cdot(y^{111}-34y^{110}+\cdots+1350344005825y-15223364689)$