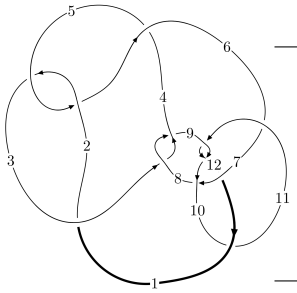
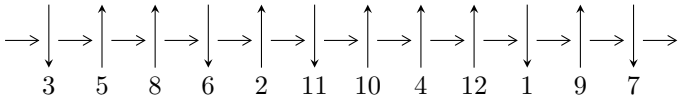
$12a_{0131}$ $(K12a_{0131})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 2.64768 \times 10^{518} u^{124} - 8.42800 \times 10^{518} u^{123} + \cdots + 4.89215 \times 10^{516} b + 1.49453 \times 10^{519}, \\ & 3.73739 \times 10^{519} u^{124} - 1.18654 \times 10^{520} u^{123} + \cdots + 9.78430 \times 10^{516} a + 2.09349 \times 10^{520}, \\ & u^{125} - 3u^{124} + \cdots + 17u + 1 \rangle \\ I_2^u = \langle & b,\ -u^5 a + 2u^4 a + u^5 - 3u^4 - 2u^2 a + 3u^3 + a^2 + au - 2u + 1,\ u^6 - u^5 - u^4 + 2u^3 - u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 137 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. $\boldsymbol{I_1^u = \langle 2.65 \times 10^{518} u^{124} - 8.43 \times 10^{518} u^{123} + \cdots + 4.89 \times 10^{516} b + 1.49 \times 10^{519},\ 3.74 \times 10^{519} u^{124} - 1.19 \times 10^{520} u^{123} + \cdots + 9.78 \times 10^{516} a + 2.09 \times 10^{520},\ u^{125} - 3u^{124} + \cdots + 17u + 1 \rangle}$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -381.979u^{124} + 1212.70u^{123} + \cdots - 24299.3u - 2139.65 \\ -54.1209u^{124} + 172.276u^{123} + \cdots - 3476.17u - 305.495 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 182.743u^{124} - 578.359u^{123} + \cdots + 11566.7u + 1015.20 \\ 12.4867u^{124} - 41.0452u^{123} + \cdots + 888.570u + 77.2473 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -525.800u^{124} + 1672.25u^{123} + \cdots - 33602.3u - 2955.69 \\ -87.0132u^{124} + 275.060u^{123} + \cdots - 5477.59u - 481.773 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 162.525u^{124} - 515.547u^{123} + \cdots + 10348.7u + 907.820 \\ 14.2770u^{124} - 45.0112u^{123} + \cdots + 905.020u + 79.4042 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -136.294u^{124} + 433.527u^{123} + \cdots - 8784.44u - 770.986 \\ -24.6461u^{124} + 77.8439u^{123} + \cdots - 1546.01u - 136.294 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 169.080u^{124} - 534.889u^{123} + \cdots + 10684.5u + 937.972 \\ 7.72249u^{124} - 25.6696u^{123} + \cdots + 569.242u + 49.2525 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -591.960u^{124} + 1881.43u^{123} + \cdots - 37752.9u - 3321.58 \\ -94.7243u^{124} + 300.362u^{123} + \cdots - 6018.61u - 528.924 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 99.7178u^{124} - 314.202u^{123} + \cdots + 6266.98u + 544.092 \\ -18.8512u^{124} + 58.0831u^{123} + \cdots - 1084.59u - 96.9655 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -323.549u^{124} + 1024.38u^{123} + \cdots - 20264.6u - 1780.82$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{125} + 41u^{124} + \cdots - 145u - 1$
c_2, c_5	$u^{125} + 7u^{124} + \cdots - 9u - 1$
c_3, c_8	$u^{125} - u^{124} + \cdots + 20480u - 4096$
c_6	$u^{125} + 3u^{124} + \cdots - 6561489u + 604147$
c_7	$u^{125} + 9u^{124} + \cdots + 391375u + 25489$
c_9, c_{11}	$u^{125} + 3u^{124} + \cdots + 17u - 1$
c_{10}	$u^{125} - 21u^{124} + \cdots - 3u + 1$
c_{12}	$u^{125} - 9u^{124} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{125} + 93y^{124} + \cdots + 5099y - 1$
c_2, c_5	$y^{125} + 41y^{124} + \cdots - 145y - 1$
c_3, c_8	$y^{125} - 65y^{124} + \cdots + 301989888y - 16777216$
c_6	$y^{125} - 91y^{124} + \cdots - 24775319389441y - 364993597609$
c_7	$y^{125} - 127y^{124} + \cdots + 36942460527y - 649689121$
c_9, c_{11}	$y^{125} - 83y^{124} + \cdots - 17y - 1$
c_{10}	$y^{125} - 3y^{124} + \cdots - 17y - 1$
c_{12}	$y^{125} + 21y^{124} + \cdots - 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.003630+0.091762I$ $a=-3.97740-2.38530I$ $b=\ \ 0.818217-0.461607I$	$-0.01102-2.45400I$	0
$u=-1.003630-0.091762I$ $a=-3.97740+2.38530I$ $b=\ \ 0.818217+0.461607I$	$-0.01102+2.45400I$	0
$u=-0.982156+0.100911I$ $a=-2.15785+4.64167I$ $b=\ \ 0.310656+0.355934I$	$1.72895-2.62928I$	0
$u=-0.982156-0.100911I$ $a=-2.15785-4.64167I$ $b=\ \ 0.310656-0.355934I$	$1.72895+2.62928I$	0
$u=-0.112173+0.977335I$ $a=-0.393390+1.060410I$ $b=\ \ 0.267605+0.980914I$	$0.76237-1.42438I$	0
$u=-0.112173-0.977335I$ $a=-0.393390-1.060410I$ $b=\ \ 0.267605-0.980914I$	$0.76237+1.42438I$	0
$u=\ \ 0.239455+0.994751I$ $a=\ \ 0.314123-0.696394I$ $b=-0.594765-0.685477I$	$-4.30119-2.18209I$	0
$u=\ \ 0.239455-0.994751I$ $a=\ \ 0.314123+0.696394I$ $b=-0.594765+0.685477I$	$-4.30119+2.18209I$	0
$u=\ \ 1.013110+0.179661I$ $a=-2.25528+0.34509I$ $b=\ \ 1.304260+0.497331I$	$-0.34954+4.52947I$	0
$u=\ \ 1.013110-0.179661I$ $a=-2.25528-0.34509I$ $b=\ \ 1.304260-0.497331I$	$-0.34954-4.52947I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.039630+0.023694I$ $a=\ \ 0.67319-3.23584I$ $b=\ \ 0.130567+0.838675I$	$2.45673-2.54518I$	0
$u=-1.039630-0.023694I$ $a=\ \ 0.67319+3.23584I$ $b=\ \ 0.130567-0.838675I$	$2.45673+2.54518I$	0
$u=-0.109764+1.042850I$ $a=-0.728339-0.206603I$ $b=\ \ 1.040380-0.309779I$	$1.20280-4.30451I$	0
$u=-0.109764-1.042850I$ $a=-0.728339+0.206603I$ $b=\ \ 1.040380+0.309779I$	$1.20280+4.30451I$	0
$u=-1.05632$ $a=\ \ 5.26697$ $b=-0.911297$	3.09971	0
$u=\ \ 1.053350+0.126987I$ $a=-1.83858+0.07436I$ $b=\ \ 1.248250-0.599242I$	$1.78016+4.49817I$	0
$u=\ \ 1.053350-0.126987I$ $a=-1.83858-0.07436I$ $b=\ \ 1.248250+0.599242I$	$1.78016-4.49817I$	0
$u=-1.038390+0.225291I$ $a=-0.352291+0.467094I$ $b=-0.188310+0.258966I$	$1.92047-0.80353I$	0
$u=-1.038390-0.225291I$ $a=-0.352291-0.467094I$ $b=-0.188310-0.258966I$	$1.92047+0.80353I$	0
$u=-0.046115+1.076500I$ $a=\ \ 0.299835-0.965828I$ $b=-0.395582-1.031400I$	$0.16327-6.85626I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.046115-1.076500I$ $a=\ \ 0.299835+0.965828I$ $b=-0.395582+1.031400I$	$0.16327+6.85626I$	0
$u=\ \ 0.625338+0.884155I$ $a=-0.088385+0.576244I$ $b=\ \ 0.879634+0.009949I$	$-0.67458-2.99174I$	0
$u=\ \ 0.625338-0.884155I$ $a=-0.088385-0.576244I$ $b=\ \ 0.879634-0.009949I$	$-0.67458+2.99174I$	0
$u=\ \ 1.080410+0.075085I$ $a=-0.351541+0.913041I$ $b=\ \ 0.52839-1.46115I$	$3.28804+3.77271I$	0
$u=\ \ 1.080410-0.075085I$ $a=-0.351541-0.913041I$ $b=\ \ 0.52839+1.46115I$	$3.28804-3.77271I$	0
$u=\ \ 0.850915+0.292810I$ $a=-0.792606-0.010998I$ $b=\ \ 0.682547+0.867427I$	$-2.63980+3.08960I$	0
$u=\ \ 0.850915-0.292810I$ $a=-0.792606+0.010998I$ $b=\ \ 0.682547-0.867427I$	$-2.63980-3.08960I$	0
$u=\ \ 1.106890+0.037877I$ $a=\ \ 0.553072+0.744699I$ $b=-0.56971-1.42281I$	$4.17272+2.48498I$	0
$u=\ \ 1.106890-0.037877I$ $a=\ \ 0.553072-0.744699I$ $b=-0.56971+1.42281I$	$4.17272-2.48498I$	0
$u=\ \ 1.113830+0.017169I$ $a=\ \ 2.01483+0.00282I$ $b=-1.46526-0.55623I$	$4.64685+0.82915I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.113830 - 0.017169I$ $a = 2.01483 - 0.00282I$ $b = -1.46526 + 0.55623I$	$4.64685 - 0.82915I$	0
$u = 0.551143 + 0.972708I$ $a = 0.136281 - 0.596937I$ $b = -0.911041 - 0.235645I$	$-0.90323 + 2.21060I$	0
$u = 0.551143 - 0.972708I$ $a = 0.136281 + 0.596937I$ $b = -0.911041 + 0.235645I$	$-0.90323 - 2.21060I$	0
$u = -1.114330 + 0.144086I$ $a = -3.26348 - 1.21677I$ $b = 1.224000 - 0.514814I$	$5.73499 - 7.52961I$	0
$u = -1.114330 - 0.144086I$ $a = -3.26348 + 1.21677I$ $b = 1.224000 + 0.514814I$	$5.73499 + 7.52961I$	0
$u = -1.122540 + 0.112281I$ $a = 3.44318 + 1.02925I$ $b = -1.232750 + 0.406885I$	$6.52143 - 1.68218I$	0
$u = -1.122540 - 0.112281I$ $a = 3.44318 - 1.02925I$ $b = -1.232750 - 0.406885I$	$6.52143 + 1.68218I$	0
$u = 0.056373 + 1.126940I$ $a = 0.668400 + 0.571949I$ $b = -1.003520 + 0.542763I$	$-3.00982 - 6.94600I$	0
$u = 0.056373 - 1.126940I$ $a = 0.668400 - 0.571949I$ $b = -1.003520 - 0.542763I$	$-3.00982 + 6.94600I$	0
$u = -0.864045 + 0.092430I$ $a = 1.48819 - 1.26345I$ $b = 0.687136 + 0.522380I$	$-0.39162 + 1.59192I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.864045-0.092430I$ $a=\ 1.48819+1.26345I$ $b=\ 0.687136-0.522380I$	$-0.39162-1.59192I$	0
$u=\ 0.944897+0.622415I$ $a=-0.279539+0.291335I$ $b=\ 0.766133+0.309948I$	$0.35042+8.49800I$	0
$u=\ 0.944897-0.622415I$ $a=-0.279539-0.291335I$ $b=\ 0.766133-0.309948I$	$0.35042-8.49800I$	0
$u=\ 0.012357+0.858107I$ $a=\ 1.322470+0.205051I$ $b=-0.804293+0.281983I$	$-1.140860-0.185574I$	0
$u=\ 0.012357-0.858107I$ $a=\ 1.322470-0.205051I$ $b=-0.804293-0.281983I$	$-1.140860+0.185574I$	0
$u=\ 0.668706+0.474679I$ $a=\ 0.167838+0.706366I$ $b=\ 0.450382-0.628106I$	$-3.11701+0.35524I$	0
$u=\ 0.668706-0.474679I$ $a=\ 0.167838-0.706366I$ $b=\ 0.450382+0.628106I$	$-3.11701-0.35524I$	0
$u=-0.998504+0.639377I$ $a=-0.153096-0.381054I$ $b=-0.576307-0.526668I$	$0.652314-1.029720I$	0
$u=-0.998504-0.639377I$ $a=-0.153096+0.381054I$ $b=-0.576307+0.526668I$	$0.652314+1.029720I$	0
$u=\ 1.125470+0.392351I$ $a=\ 0.359799+0.247253I$ $b=-0.160029-0.909740I$	$1.30610+5.13081I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.125470 - 0.392351I$ $a = 0.359799 - 0.247253I$ $b = -0.160029 + 0.909740I$	$1.30610 - 5.13081I$	0
$u = -1.194780 + 0.075780I$ $a = 1.42591 - 1.82909I$ $b = -0.440536 - 0.347780I$	$2.22327 + 1.42836I$	0
$u = -1.194780 - 0.075780I$ $a = 1.42591 + 1.82909I$ $b = -0.440536 + 0.347780I$	$2.22327 - 1.42836I$	0
$u = 1.183740 + 0.261203I$ $a = 1.89132 - 0.39755I$ $b = -1.39565 - 0.72651I$	$7.45341 + 5.28303I$	0
$u = 1.183740 - 0.261203I$ $a = 1.89132 + 0.39755I$ $b = -1.39565 + 0.72651I$	$7.45341 - 5.28303I$	0
$u = 1.172770 + 0.313622I$ $a = -1.87155 + 0.48256I$ $b = 1.34558 + 0.77808I$	$6.22986 + 11.45440I$	0
$u = 1.172770 - 0.313622I$ $a = -1.87155 - 0.48256I$ $b = 1.34558 - 0.77808I$	$6.22986 - 11.45440I$	0
$u = -0.704619 + 0.330068I$ $a = 1.12653 - 1.06495I$ $b = 1.179890 + 0.411487I$	$4.79797 + 5.99082I$	0
$u = -0.704619 - 0.330068I$ $a = 1.12653 + 1.06495I$ $b = 1.179890 - 0.411487I$	$4.79797 - 5.99082I$	0
$u = 1.036090 + 0.650073I$ $a = 0.130173 - 0.283963I$ $b = -0.718749 - 0.004737I$	$0.64386 + 3.59414I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.036090 - 0.650073I$ $a = 0.130173 + 0.283963I$ $b = -0.718749 + 0.004737I$	$0.64386 - 3.59414I$	0
$u = -0.584340 + 1.104670I$ $a = -0.201920 + 0.122143I$ $b = 1.261580 + 0.192500I$	$6.19530 - 3.43221I$	0
$u = -0.584340 - 1.104670I$ $a = -0.201920 - 0.122143I$ $b = 1.261580 - 0.192500I$	$6.19530 + 3.43221I$	0
$u = -0.021698 + 1.281390I$ $a = -0.408314 - 0.458618I$ $b = 1.248900 - 0.574848I$	$3.88678 - 7.08241I$	0
$u = -0.021698 - 1.281390I$ $a = -0.408314 + 0.458618I$ $b = 1.248900 + 0.574848I$	$3.88678 + 7.08241I$	0
$u = -0.687479 + 1.083920I$ $a = 0.125109 - 0.159026I$ $b = -1.235130 - 0.322869I$	$5.75964 + 2.41343I$	0
$u = -0.687479 - 1.083920I$ $a = 0.125109 + 0.159026I$ $b = -1.235130 + 0.322869I$	$5.75964 - 2.41343I$	0
$u = -0.623835 + 0.327479I$ $a = -1.18028 + 0.99719I$ $b = -1.186940 - 0.283113I$	$5.39776 + 0.24395I$	0
$u = -0.623835 - 0.327479I$ $a = -1.18028 - 0.99719I$ $b = -1.186940 + 0.283113I$	$5.39776 - 0.24395I$	0
$u = 0.028319 + 1.301680I$ $a = 0.381596 + 0.524313I$ $b = -1.235670 + 0.655146I$	$2.84254 - 12.99610I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.028319 - 1.301680I$ $a = 0.381596 - 0.524313I$ $b = -1.235670 - 0.655146I$	$2.84254 + 12.99610I$	0
$u = 1.206280 + 0.562767I$ $a = -0.134327 - 0.307209I$ $b = -0.435625 + 0.751365I$	$-1.27865 + 7.70761I$	0
$u = 1.206280 - 0.562767I$ $a = -0.134327 + 0.307209I$ $b = -0.435625 - 0.751365I$	$-1.27865 - 7.70761I$	0
$u = 0.210808 + 0.613821I$ $a = -0.833651 + 0.257889I$ $b = 0.118571 + 0.552585I$	$-1.40641 - 1.21884I$	0
$u = 0.210808 - 0.613821I$ $a = -0.833651 - 0.257889I$ $b = 0.118571 - 0.552585I$	$-1.40641 + 1.21884I$	0
$u = 1.296410 + 0.456800I$ $a = 2.01682 - 0.61181I$ $b = -1.157670 - 0.272520I$	$2.84396 + 4.99238I$	0
$u = 1.296410 - 0.456800I$ $a = 2.01682 + 0.61181I$ $b = -1.157670 + 0.272520I$	$2.84396 - 4.99238I$	0
$u = -1.358600 + 0.282911I$ $a = 1.89560 - 0.24501I$ $b = -0.751539 - 0.210200I$	$2.34856 + 1.43127I$	0
$u = -1.358600 - 0.282911I$ $a = 1.89560 + 0.24501I$ $b = -0.751539 + 0.210200I$	$2.34856 - 1.43127I$	0
$u = 1.394310 + 0.224132I$ $a = 1.75711 - 0.20635I$ $b = -1.59703 + 0.10582I$	$12.64840 + 1.23482I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.394310 - 0.224132I$ $a = 1.75711 + 0.20635I$ $b = -1.59703 - 0.10582I$	$12.64840 - 1.23482I$	0
$u = 1.34392 + 0.46774I$ $a = 0.212460 + 0.407369I$ $b = 0.356486 - 1.260450I$	$5.23935 + 6.54595I$	0
$u = 1.34392 - 0.46774I$ $a = 0.212460 - 0.407369I$ $b = 0.356486 + 1.260450I$	$5.23935 - 6.54595I$	0
$u = 1.41177 + 0.27659I$ $a = -1.74801 + 0.27510I$ $b = 1.59117 + 0.00580I$	$12.7252 + 7.6247I$	0
$u = 1.41177 - 0.27659I$ $a = -1.74801 - 0.27510I$ $b = 1.59117 - 0.00580I$	$12.7252 - 7.6247I$	0
$u = -1.28033 + 0.66068I$ $a = 1.50434 + 1.03430I$ $b = -0.931017 + 0.395630I$	$1.67799 - 4.80704I$	0
$u = -1.28033 - 0.66068I$ $a = 1.50434 - 1.03430I$ $b = -0.931017 - 0.395630I$	$1.67799 + 4.80704I$	0
$u = 1.35929 + 0.48402I$ $a = -1.82786 + 0.65853I$ $b = 1.280880 + 0.413506I$	$5.74950 + 9.66103I$	0
$u = 1.35929 - 0.48402I$ $a = -1.82786 - 0.65853I$ $b = 1.280880 - 0.413506I$	$5.74950 - 9.66103I$	0
$u = 1.35560 + 0.50945I$ $a = -0.188960 - 0.410287I$ $b = -0.474298 + 1.244750I$	$4.53531 + 12.42450I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.35560 - 0.50945I$ $a = -0.188960 + 0.410287I$ $b = -0.474298 - 1.244750I$	$4.53531 - 12.42450I$	0
$u = 1.34176 + 0.55145I$ $a = 1.78812 - 0.84581I$ $b = -1.164220 - 0.571326I$	$1.03911 + 12.82610I$	0
$u = 1.34176 - 0.55145I$ $a = 1.78812 + 0.84581I$ $b = -1.164220 + 0.571326I$	$1.03911 - 12.82610I$	0
$u = -1.38517 + 0.57374I$ $a = -0.333577 - 0.332157I$ $b = -0.185085 - 1.020160I$	$4.41420 - 4.52899I$	0
$u = -1.38517 - 0.57374I$ $a = -0.333577 + 0.332157I$ $b = -0.185085 + 1.020160I$	$4.41420 + 4.52899I$	0
$u = 0.057985 + 0.496616I$ $a = 0.625520 + 0.187481I$ $b = 1.165890 - 0.616248I$	$3.00041 - 8.24027I$	$2.00000 + 4.16679I$
$u = 0.057985 - 0.496616I$ $a = 0.625520 - 0.187481I$ $b = 1.165890 + 0.616248I$	$3.00041 + 8.24027I$	$2.00000 - 4.16679I$
$u = -1.42505 + 0.47694I$ $a = 0.390319 + 0.371697I$ $b = 0.009283 + 1.000550I$	$4.58964 + 0.88814I$	0
$u = -1.42505 - 0.47694I$ $a = 0.390319 - 0.371697I$ $b = 0.009283 - 1.000550I$	$4.58964 - 0.88814I$	0
$u = 1.41127 + 0.57553I$ $a = -1.61400 + 0.78068I$ $b = 1.32951 + 0.70113I$	$8.4195 + 13.4799I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41127 - 0.57553I$ $a = -1.61400 - 0.78068I$ $b = 1.32951 - 0.70113I$	$8.4195 - 13.4799I$	0
$u = 1.40529 + 0.59972I$ $a = 1.58505 - 0.82652I$ $b = -1.29307 - 0.76159I$	$7.2064 + 19.5482I$	0
$u = 1.40529 - 0.59972I$ $a = 1.58505 + 0.82652I$ $b = -1.29307 + 0.76159I$	$7.2064 - 19.5482I$	0
$u = -1.43282 + 0.53553I$ $a = -1.53681 - 0.52917I$ $b = 1.060380 - 0.089433I$	$5.22915 - 1.86813I$	0
$u = -1.43282 - 0.53553I$ $a = -1.53681 + 0.52917I$ $b = 1.060380 + 0.089433I$	$5.22915 + 1.86813I$	0
$u = -0.014121 + 0.456602I$ $a = -0.877616 - 0.209246I$ $b = -1.165790 + 0.522208I$	$3.99062 - 2.47202I$	$4.97922 - 0.67353I$
$u = -0.014121 - 0.456602I$ $a = -0.877616 + 0.209246I$ $b = -1.165790 - 0.522208I$	$3.99062 + 2.47202I$	$4.97922 + 0.67353I$
$u = -1.42562 + 0.83441I$ $a = 1.102050 + 0.853846I$ $b = -1.280800 + 0.557576I$	$7.89271 - 10.20530I$	0
$u = -1.42562 - 0.83441I$ $a = 1.102050 - 0.853846I$ $b = -1.280800 - 0.557576I$	$7.89271 + 10.20530I$	0
$u = -1.45842 + 0.78770I$ $a = -1.148630 - 0.788635I$ $b = 1.299280 - 0.458696I$	$8.74385 - 4.24214I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.45842-0.78770I$ $a=-1.148630+0.788635I$ $b=1.299280+0.458696I$	$8.74385+4.24214I$	0
$u=0.028788+0.275966I$ $a=-2.84672+3.05328I$ $b=0.683163+0.017853I$	$-0.66370-2.83474I$	$3.37234+5.05490I$
$u=0.028788-0.275966I$ $a=-2.84672-3.05328I$ $b=0.683163-0.017853I$	$-0.66370+2.83474I$	$3.37234-5.05490I$
$u=-1.68644+0.39726I$ $a=-1.168950-0.169636I$ $b=1.311260+0.345336I$	$9.42374-0.00303I$	0
$u=-1.68644-0.39726I$ $a=-1.168950+0.169636I$ $b=1.311260-0.345336I$	$9.42374+0.00303I$	0
$u=0.159611+0.211315I$ $a=-0.12907+1.61974I$ $b=0.867715-0.605551I$	$-2.31917-2.48205I$	$-2.69773+2.44933I$
$u=0.159611-0.211315I$ $a=-0.12907-1.61974I$ $b=0.867715+0.605551I$	$-2.31917+2.48205I$	$-2.69773-2.44933I$
$u=-1.71298+0.33924I$ $a=1.125470+0.100393I$ $b=-1.290840-0.457455I$	$8.75351+5.95447I$	0
$u=-1.71298-0.33924I$ $a=1.125470-0.100393I$ $b=-1.290840+0.457455I$	$8.75351-5.95447I$	0
$u=-0.164114+0.107295I$ $a=-3.33164+0.86262I$ $b=-0.863198+0.199616I$	$1.45688-0.48467I$	$7.00982+0.32488I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.164114-0.107295I$ $a=-3.33164-0.86262I$ $b=-0.863198-0.199616I$	$1.45688+0.48467I$	$7.00982-0.32488I$
$u=-0.177721+0.000193I$ $a=-2.45913-5.53903I$ $b=-0.125986-0.790649I$	$1.04154+2.17510I$	$2.60677-4.61609I$
$u=-0.177721-0.000193I$ $a=-2.45913+5.53903I$ $b=-0.125986+0.790649I$	$1.04154-2.17510I$	$2.60677+4.61609I$
$u=-0.0486880+0.1279180I$ $a=-2.68538+5.94050I$ $b=\ \ 0.338372+0.815233I$	$0.62427-2.85549I$	$1.37496+1.53556I$
$u=-0.0486880-0.1279180I$ $a=-2.68538-5.94050I$ $b=\ \ 0.338372-0.815233I$	$0.62427+2.85549I$	$1.37496-1.53556I$

II. $I_2^u = \langle b,\ -u^5a + u^5 + \cdots + a^2 + 1,\ u^6 - u^5 - u^4 + 2u^3 - u + 1\rangle$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} a \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^5 - u^4 - 2u^3 + u^2 + u - 1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u^5 - 2u^3 + u \\ -u^5 + u^4 + 2u^3 - u^2 - u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -2u^5a + 2u^3a - 2u^2a - 2au + 2a \\ 2u^5a - 2u^3a + 2u^2a + au - 2a \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2u^5 + 2u^4 + 2u^3 - 2u^2 + a \\ u^5 - u^4 - 2u^3 + u^2 + u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= -u^5a + 5u^4a + u^5 + u^3a - 7u^4 - 5u^2a + 3u^3 - au + 4u^2 + a - 6u - 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$(u^2-u+1)^6$
c_2	$(u^2+u+1)^6$
c_3, c_8	u^{12}
c_6, c_{10}, c_{11}	$(u^6+u^5-u^4-2u^3+u+1)^2$
c_7, c_{12}	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^2$
c_9	$(u^6-u^5-u^4+2u^3-u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2+y+1)^6$
c_3, c_8	y^{12}
c_6, c_9, c_{10} c_{11}	$(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$
c_7, c_{12}	$(y^6+y^5+5y^4+6y^2+3y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.002190+0.295542I$ $a=-0.82520+2.42341I$ $b=0$	$1.89061-2.95419I$	$11.02954+8.16480I$
$u=-1.002190+0.295542I$ $a=2.51133-0.49706I$ $b=0$	$1.89061+1.10558I$	$-0.484082-0.231437I$
$u=-1.002190-0.295542I$ $a=-0.82520-2.42341I$ $b=0$	$1.89061+2.95419I$	$11.02954-8.16480I$
$u=-1.002190-0.295542I$ $a=2.51133+0.49706I$ $b=0$	$1.89061-1.10558I$	$-0.484082+0.231437I$
$u=0.428243+0.664531I$ $a=0.489858+0.681154I$ $b=0$	$-1.89061+1.10558I$	$-1.04064-1.99047I$
$u=0.428243+0.664531I$ $a=-0.834826+0.083652I$ $b=0$	$-1.89061-2.95419I$	$-3.79900+4.11613I$
$u=0.428243-0.664531I$ $a=0.489858-0.681154I$ $b=0$	$-1.89061-1.10558I$	$-1.04064+1.99047I$
$u=0.428243-0.664531I$ $a=-0.834826-0.083652I$ $b=0$	$-1.89061+2.95419I$	$-3.79900-4.11613I$
$u=1.073950+0.558752I$ $a=0.458424-0.081263I$ $b=0$	$7.72290I$	$2.83009-4.64337I$
$u=1.073950+0.558752I$ $a=-0.299588-0.356375I$ $b=0$	$3.66314I$	$-2.53591-3.55776I$

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.073950-0.558752I$		
$a=$	$0.458424+0.081263I$	$-7.72290I$	$2.83009+4.64337I$
$b=$	0		
$u=$	$1.073950-0.558752I$		
$a=$	$-0.299588+0.356375I$	$-3.66314I$	$-2.53591+3.55776I$
$b=$	0		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$((u^2-u+1)^6)(u^{125}+41u^{124}+\cdots-145u-1)$
c_2	$((u^2+u+1)^6)(u^{125}+7u^{124}+\cdots-9u-1)$
c_3, c_8	$u^{12}(u^{125}-u^{124}+\cdots+20480u-4096)$
c_5	$((u^2-u+1)^6)(u^{125}+7u^{124}+\cdots-9u-1)$
c_6	$(u^6+u^5-u^4-2u^3+u+1)^2$ $\cdot(u^{125}+3u^{124}+\cdots-6561489u+604147)$
c_7	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^2$ $\cdot(u^{125}+9u^{124}+\cdots+391375u+25489)$
c_9	$((u^6-u^5-u^4+2u^3-u+1)^2)(u^{125}+3u^{124}+\cdots+17u-1)$
c_{10}	$((u^6+u^5-u^4-2u^3+u+1)^2)(u^{125}-21u^{124}+\cdots-3u+1)$
c_{11}	$((u^6+u^5-u^4-2u^3+u+1)^2)(u^{125}+3u^{124}+\cdots+17u-1)$
c_{12}	$((u^6+3u^5+5u^4+4u^3+2u^2+u+1)^2)(u^{125}-9u^{124}+\cdots-3u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^6)(y^{125}+93y^{124}+\cdots+5099y-1)$
c_2, c_5	$((y^2+y+1)^6)(y^{125}+41y^{124}+\cdots-145y-1)$
c_3, c_8	$y^{12}(y^{125}-65y^{124}+\cdots+3.01990\times10^8 y-1.67772\times10^7)$
c_6	$(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot(y^{125}-91y^{124}+\cdots-24775319389441y-364993597609)$
c_7	$(y^6+y^5+5y^4+6y^2+3y+1)^2$ $\cdot(y^{125}-127y^{124}+\cdots+36942460527y-649689121)$
c_9, c_{11}	$((y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2)(y^{125}-83y^{124}+\cdots-17y-1)$
c_{10}	$((y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2)(y^{125}-3y^{124}+\cdots-17y-1)$
c_{12}	$((y^6+y^5+5y^4+6y^2+3y+1)^2)(y^{125}+21y^{124}+\cdots-9y-1)$