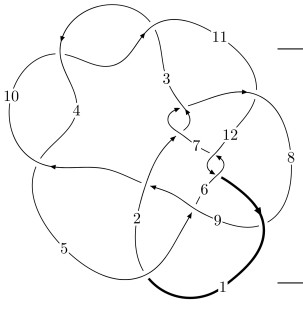
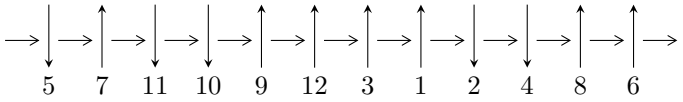
$12a_{1271}$ $(K12a_{1271})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 9.56602 \times 10^{402} u^{122} + 3.14586 \times 10^{402} u^{121} + \cdots + 4.38967 \times 10^{404} b + 9.87332 \times 10^{404}, \\ & 4.84508 \times 10^{405} u^{122} + 2.41874 \times 10^{405} u^{121} + \cdots + 1.62418 \times 10^{406} a - 8.32287 \times 10^{407}, \\ & 2u^{123} + u^{122} + \cdots - 528u - 37 \rangle \\ I_2^u = \langle & -26117698 u^{27} - 222490041 u^{26} + \cdots + 494125649 b - 12542647, \\ & - 124166822468 u^{27} + 228098314690 u^{26} + \cdots + 64730460019 a - 81382930510, \\ & 2u^{28} - 3u^{27} + \cdots - 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 151 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. $\boldsymbol{I_1^u = \langle 9.57 \times 10^{402} u^{122} + 3.15 \times 10^{402} u^{121} + \cdots + 4.39 \times 10^{404} b + 9.87 \times 10^{404},\ 4.85 \times 10^{405} u^{122} + 2.42 \times 10^{405} u^{121} + \cdots + 1.62 \times 10^{406} a - 8.32 \times 10^{407},\ 2u^{123} + u^{122} + \cdots - 528u - 37 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} -0.298310u^{122} - 0.148921u^{121} + \cdots + 283.554u + 51.2436 \\ -0.0217921u^{122} - 0.00716651u^{121} + \cdots - 14.3879u - 2.24922 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.526224u^{122} + 0.236644u^{121} + \cdots - 452.025u - 77.4936 \\ 0.0515116u^{122} + 0.0404131u^{121} + \cdots + 7.03362u - 0.786561 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.276518u^{122} - 0.141755u^{121} + \cdots + 297.942u + 53.4928 \\ -0.0217921u^{122} - 0.00716651u^{121} + \cdots - 14.3879u - 2.24922 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.124303u^{122} - 0.0535248u^{121} + \cdots + 52.5187u + 22.4128 \\ 0.0817857u^{122} + 0.0837779u^{121} + \cdots - 28.5938u - 4.15477 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.327328u^{122} - 0.118041u^{121} + \cdots + 326.769u + 48.8014 \\ -0.0453631u^{122} - 0.00808009u^{121} + \cdots + 38.2331u + 7.37988 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0591670u^{122} + 0.0181552u^{121} + \cdots + 17.5803u + 17.3490 \\ 0.0804370u^{122} + 0.0582818u^{121} + \cdots - 18.6939u - 3.62441 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.223915u^{122} + 0.0815103u^{121} + \cdots - 212.003u - 46.3108 \\ -0.0275443u^{122} + 0.00482334u^{121} + \cdots + 18.8238u + 3.83302 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.234910u^{122} + 0.266262u^{121} + \cdots + 98.5953u + 16.9348$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{123}+5u^{122}+\cdots+10661u-6658$
c_2, c_7	$u^{123}+3u^{122}+\cdots+33083u-2983$
c_3, c_4, c_{10}	$2(2u^{123}+u^{122}+\cdots-528u-37)$
c_5	$2(2u^{123}-7u^{122}+\cdots+8241u-1019)$
c_6, c_{12}	$2(2u^{123}+5u^{122}+\cdots+3232u-9296)$
c_8	$u^{123}+2u^{122}+\cdots+28u+1$
c_9	$u^{123}-3u^{122}+\cdots-26333u+17876$
c_{11}	$u^{123}-3u^{122}+\cdots-291760059u+81362762$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{123} + 29y^{122} + \cdots - 1515568995y - 44328964$
c_2, c_7	$y^{123} - 77y^{122} + \cdots - 21246601y - 8898289$
c_3, c_4, c_{10}	$4(4y^{123} + 535y^{122} + \cdots + 153132y - 1369)$
c_5	$4(4y^{123} + 103y^{122} + \cdots - 1.12194 \times 10^7 y - 1038361)$
c_6, c_{12}	$4(4y^{123} + 335y^{122} + \cdots - 9.10350 \times 10^9 y - 8.64156 \times 10^7)$
c_8	$y^{123} + 22y^{122} + \cdots - 540y - 1$
c_9	$y^{123} + 33y^{122} + \cdots - 10689902655y - 319551376$
c_{11}	$y^{123} - 41y^{122} + \cdots + 204460804952227665y - 6619899040268644$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.821306 + 0.575750I$ $a = 0.37620 - 1.48100I$ $b = 1.177380 - 0.400585I$	$2.48098 - 5.83170I$	0
$u = 0.821306 - 0.575750I$ $a = 0.37620 + 1.48100I$ $b = 1.177380 + 0.400585I$	$2.48098 + 5.83170I$	0
$u = 0.888462 + 0.485693I$ $a = -0.484306 + 0.160361I$ $b = -1.083620 - 0.079516I$	$2.23175 + 0.42092I$	0
$u = 0.888462 - 0.485693I$ $a = -0.484306 - 0.160361I$ $b = -1.083620 + 0.079516I$	$2.23175 - 0.42092I$	0
$u = -0.065715 + 0.965127I$ $a = 0.154437 - 0.645271I$ $b = -0.497884 - 0.266752I$	$0.95176 + 1.31743I$	0
$u = -0.065715 - 0.965127I$ $a = 0.154437 + 0.645271I$ $b = -0.497884 + 0.266752I$	$0.95176 - 1.31743I$	0
$u = -0.661126 + 0.696040I$ $a = -0.718141 - 0.654042I$ $b = -1.071970 + 0.299629I$	$-1.04868 - 2.47387I$	0
$u = -0.661126 - 0.696040I$ $a = -0.718141 + 0.654042I$ $b = -1.071970 - 0.299629I$	$-1.04868 + 2.47387I$	0
$u = 0.187523 + 0.922512I$ $a = 1.071230 - 0.186073I$ $b = -0.626268 + 0.492556I$	$-2.61548 - 0.66055I$	0
$u = 0.187523 - 0.922512I$ $a = 1.071230 + 0.186073I$ $b = -0.626268 - 0.492556I$	$-2.61548 + 0.66055I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.483898 + 0.954010I$ $a = 0.38199 - 1.61047I$ $b = 0.993902 - 0.524937I$	$0.66587 - 1.68115I$	0
$u = 0.483898 - 0.954010I$ $a = 0.38199 + 1.61047I$ $b = 0.993902 + 0.524937I$	$0.66587 + 1.68115I$	0
$u = -0.271344 + 1.055970I$ $a = 0.53356 - 1.52032I$ $b = 0.752925 - 0.603989I$	$-0.08615 - 2.91185I$	0
$u = -0.271344 - 1.055970I$ $a = 0.53356 + 1.52032I$ $b = 0.752925 + 0.603989I$	$-0.08615 + 2.91185I$	0
$u = 1.073470 + 0.314108I$ $a = 0.816886 + 0.293214I$ $b = 1.096480 + 0.357431I$	$-1.68259 + 8.21035I$	0
$u = 1.073470 - 0.314108I$ $a = 0.816886 - 0.293214I$ $b = 1.096480 - 0.357431I$	$-1.68259 - 8.21035I$	0
$u = 0.824395 + 0.760029I$ $a = -0.300542 + 1.344200I$ $b = -1.244460 + 0.537834I$	$-0.3270 - 14.2808I$	0
$u = 0.824395 - 0.760029I$ $a = -0.300542 - 1.344200I$ $b = -1.244460 - 0.537834I$	$-0.3270 + 14.2808I$	0
$u = -0.267435 + 1.099870I$ $a = -0.305011 - 0.925898I$ $b = -0.876337 - 0.028125I$	$0.956139 + 1.037070I$	0
$u = -0.267435 - 1.099870I$ $a = -0.305011 + 0.925898I$ $b = -0.876337 + 0.028125I$	$0.956139 - 1.037070I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.593481+0.583322I$ $a=-0.191608+1.328490I$ $b=-0.226497+0.989907I$	$-3.55874+8.80614I$	0
$u=-0.593481-0.583322I$ $a=-0.191608-1.328490I$ $b=-0.226497-0.989907I$	$-3.55874-8.80614I$	0
$u=-0.474528+0.683487I$ $a=-0.00586-1.45576I$ $b=-1.264680-0.616575I$	$-1.08067+5.68283I$	0
$u=-0.474528-0.683487I$ $a=-0.00586+1.45576I$ $b=-1.264680+0.616575I$	$-1.08067-5.68283I$	0
$u=-0.670345+0.454387I$ $a=0.75109+1.35319I$ $b=1.237040+0.531743I$	$-1.67033+7.04459I$	0
$u=-0.670345-0.454387I$ $a=0.75109-1.35319I$ $b=1.237040-0.531743I$	$-1.67033-7.04459I$	0
$u=-0.889063+0.824559I$ $a=0.339799+0.832689I$ $b=1.198440+0.293277I$	$4.42995+7.73324I$	0
$u=-0.889063-0.824559I$ $a=0.339799-0.832689I$ $b=1.198440-0.293277I$	$4.42995-7.73324I$	0
$u=0.762334+0.145940I$ $a=-1.76251-0.77310I$ $b=-0.959387-0.322392I$	$-1.82052-2.70790I$	0
$u=0.762334-0.145940I$ $a=-1.76251+0.77310I$ $b=-0.959387+0.322392I$	$-1.82052+2.70790I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.771558$ $a = -1.05154$ $b = -1.28315$	2.74555	0
$u = \ 0.343892 + 0.684932I$ $a = -0.133429 - 0.606375I$ $b = -0.996989 - 0.434157I$	$2.03687 + 1.43581I$	0
$u = \ 0.343892 - 0.684932I$ $a = -0.133429 + 0.606375I$ $b = -0.996989 + 0.434157I$	$2.03687 - 1.43581I$	0
$u = -0.613227 + 0.433414I$ $a = -1.28627 + 1.14789I$ $b = \ 0.312298 + 0.492561I$	$-4.04362 - 4.68912I$	0
$u = -0.613227 - 0.433414I$ $a = -1.28627 - 1.14789I$ $b = \ 0.312298 - 0.492561I$	$-4.04362 + 4.68912I$	0
$u = -0.566231 + 0.467381I$ $a = \ 0.429439 - 1.303690I$ $b = \ 0.070394 - 0.640386I$	$-0.74627 + 1.87969I$	0
$u = -0.566231 - 0.467381I$ $a = \ 0.429439 + 1.303690I$ $b = \ 0.070394 + 0.640386I$	$-0.74627 - 1.87969I$	0
$u = \ 0.373666 + 0.569590I$ $a = \ 0.675317 - 0.628063I$ $b = -0.151756 - 0.121172I$	$1.19060 + 0.97150I$	0
$u = \ 0.373666 - 0.569590I$ $a = \ 0.675317 + 0.628063I$ $b = -0.151756 + 0.121172I$	$1.19060 - 0.97150I$	0
$u = \ 0.508121 + 0.438554I$ $a = -0.549978 + 1.064350I$ $b = -0.075671 + 0.706568I$	$0.64905 - 4.26495I$	$0. + 7.73497I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.508121 - 0.438554I$ $a = -0.549978 - 1.064350I$ $b = -0.075671 - 0.706568I$	$0.64905 + 4.26495I$	$0. - 7.73497I$
$u = 0.234565 + 1.308270I$ $a = 1.021150 - 0.224599I$ $b = 0.910078 + 0.078208I$	$2.65265 - 6.28084I$	0
$u = 0.234565 - 1.308270I$ $a = 1.021150 + 0.224599I$ $b = 0.910078 - 0.078208I$	$2.65265 + 6.28084I$	0
$u = 0.399348 + 0.538165I$ $a = -0.757600 - 1.096510I$ $b = 1.108070 - 0.326234I$	$1.73412 - 4.24811I$	$0. + 6.74904I$
$u = 0.399348 - 0.538165I$ $a = -0.757600 + 1.096510I$ $b = 1.108070 + 0.326234I$	$1.73412 + 4.24811I$	$0. - 6.74904I$
$u = 0.022247 + 0.645132I$ $a = 0.243797 + 0.889141I$ $b = 1.355980 + 0.006009I$	$2.52785 - 5.12439I$	$7.37684 + 6.09074I$
$u = 0.022247 - 0.645132I$ $a = 0.243797 - 0.889141I$ $b = 1.355980 - 0.006009I$	$2.52785 + 5.12439I$	$7.37684 - 6.09074I$
$u = 0.300977 + 0.554618I$ $a = 0.24267 - 2.19815I$ $b = 1.170580 - 0.089071I$	$4.86680 - 1.87555I$	$12.89229 + 3.77881I$
$u = 0.300977 - 0.554618I$ $a = 0.24267 + 2.19815I$ $b = 1.170580 + 0.089071I$	$4.86680 + 1.87555I$	$12.89229 - 3.77881I$
$u = -0.233026 + 1.373320I$ $a = -0.478285 - 0.027672I$ $b = -0.076126 + 0.216418I$	$4.01446 + 4.15866I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.233026-1.373320I$ $a=-0.478285+0.027672I$ $b=-0.076126-0.216418I$	$4.01446-4.15866I$	0
$u=-0.566398+0.215733I$ $a=0.641030-0.721225I$ $b=0.122104-0.449288I$	$-0.99237+1.19266I$	$-2.78479-1.90364I$
$u=-0.566398-0.215733I$ $a=0.641030+0.721225I$ $b=0.122104+0.449288I$	$-0.99237-1.19266I$	$-2.78479+1.90364I$
$u=-0.587969+0.117877I$ $a=1.66498+0.00661I$ $b=0.949537-0.431732I$	$-2.67680-2.15681I$	$-2.19591+3.12767I$
$u=-0.587969-0.117877I$ $a=1.66498-0.00661I$ $b=0.949537+0.431732I$	$-2.67680+2.15681I$	$-2.19591-3.12767I$
$u=-0.09306+1.41750I$ $a=1.202790-0.574115I$ $b=-1.026960+0.044437I$	$1.54486-1.39803I$	0
$u=-0.09306-1.41750I$ $a=1.202790+0.574115I$ $b=-1.026960-0.044437I$	$1.54486+1.39803I$	0
$u=-0.06443+1.43813I$ $a=-0.277602-1.195840I$ $b=-0.807021-0.789461I$	$1.81995+2.92375I$	0
$u=-0.06443-1.43813I$ $a=-0.277602+1.195840I$ $b=-0.807021+0.789461I$	$1.81995-2.92375I$	0
$u=0.168847+0.525271I$ $a=-1.38296-0.41894I$ $b=0.477482-0.817206I$	$-3.94878-2.48873I$	$-2.37089+7.95153I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.168847 - 0.525271I$ $a = -1.38296 + 0.41894I$ $b = 0.477482 + 0.817206I$	$-3.94878 + 2.48873I$	$-2.37089 - 7.95153I$
$u = 0.05698 + 1.46259I$ $a = -0.108076 - 0.667046I$ $b = -0.35426 - 1.46772I$	$0.89120 - 2.50465I$	0
$u = 0.05698 - 1.46259I$ $a = -0.108076 + 0.667046I$ $b = -0.35426 + 1.46772I$	$0.89120 + 2.50465I$	0
$u = -0.09232 + 1.48608I$ $a = -1.95091 - 0.06714I$ $b = 1.027050 + 0.044735I$	$3.02811 + 6.76823I$	0
$u = -0.09232 - 1.48608I$ $a = -1.95091 + 0.06714I$ $b = 1.027050 - 0.044735I$	$3.02811 - 6.76823I$	0
$u = 0.17406 + 1.47983I$ $a = -0.448160 - 0.740634I$ $b = 1.51152 - 0.26912I$	$8.14515 - 3.17570I$	0
$u = 0.17406 - 1.47983I$ $a = -0.448160 + 0.740634I$ $b = 1.51152 + 0.26912I$	$8.14515 + 3.17570I$	0
$u = -0.19565 + 1.51130I$ $a = 0.402349 - 1.020670I$ $b = -1.45443 - 0.68152I$	$4.78994 + 10.10650I$	0
$u = -0.19565 - 1.51130I$ $a = 0.402349 + 1.020670I$ $b = -1.45443 + 0.68152I$	$4.78994 - 10.10650I$	0
$u = -0.08241 + 1.52199I$ $a = -0.80125 + 1.27457I$ $b = 1.37281 + 0.47552I$	$8.14920 + 7.12933I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.08241-1.52199I$ $a=-0.80125-1.27457I$ $b=\ \ 1.37281-0.47552I$	$8.14920-7.12933I$	0
$u=-0.17770+1.51407I$ $a=-0.320304+0.682712I$ $b=-0.060148+0.961871I$	$5.79302+4.58086I$	0
$u=-0.17770-1.51407I$ $a=-0.320304-0.682712I$ $b=-0.060148-0.961871I$	$5.79302-4.58086I$	0
$u=\ \ 0.03560+1.52587I$ $a=\ \ 0.152006+0.493142I$ $b=\ \ 0.20270+1.59077I$	$2.01880-0.12358I$	0
$u=\ \ 0.03560-1.52587I$ $a=\ \ 0.152006-0.493142I$ $b=\ \ 0.20270-1.59077I$	$2.01880+0.12358I$	0
$u=\ \ 0.14189+1.52038I$ $a=-0.016213-0.755114I$ $b=\ \ 0.232193-1.171810I$	$7.20225-6.53938I$	0
$u=\ \ 0.14189-1.52038I$ $a=-0.016213+0.755114I$ $b=\ \ 0.232193+1.171810I$	$7.20225+6.53938I$	0
$u=\ \ 0.02531+1.52740I$ $a=-0.316151-0.836586I$ $b=\ \ 1.47650-0.67300I$	$10.97280-0.40185I$	0
$u=\ \ 0.02531-1.52740I$ $a=-0.316151+0.836586I$ $b=\ \ 1.47650+0.67300I$	$10.97280+0.40185I$	0
$u=-0.221269+0.402394I$ $a=\ \ 0.54033-3.57089I$ $b=-1.298420-0.315444I$	$1.56498+5.97171I$	$11.86443-6.77214I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.221269-0.402394I$ $a=\ \ 0.54033+3.57089I$ $b=-1.298420+0.315444I$	$1.56498-5.97171I$	$11.86443+6.77214I$
$u=\ \ 0.11128+1.53725I$ $a=-0.097438+0.746880I$ $b=-0.014743+0.796330I$	$8.12667-0.76838I$	0
$u=\ \ 0.11128-1.53725I$ $a=-0.097438-0.746880I$ $b=-0.014743-0.796330I$	$8.12667+0.76838I$	0
$u=-0.05951+1.55007I$ $a=\ \ 0.504350+0.433865I$ $b=-0.266714+0.792997I$	$3.26304-2.31319I$	0
$u=-0.05951-1.55007I$ $a=\ \ 0.504350-0.433865I$ $b=-0.266714-0.792997I$	$3.26304+2.31319I$	0
$u=\ \ 0.238605+0.370889I$ $a=-0.712947-1.130240I$ $b=-0.227745-1.243130I$	$-4.49862+0.65916I$	$-3.09576+6.41157I$
$u=\ \ 0.238605-0.370889I$ $a=-0.712947+1.130240I$ $b=-0.227745+1.243130I$	$-4.49862-0.65916I$	$-3.09576-6.41157I$
$u=\ \ 0.08576+1.55702I$ $a=\ \ 0.523575+1.103580I$ $b=-1.275700+0.344537I$	$12.03740-3.28062I$	0
$u=\ \ 0.08576-1.55702I$ $a=\ \ 0.523575-1.103580I$ $b=-1.275700-0.344537I$	$12.03740+3.28062I$	0
$u=\ \ 0.156686+0.411401I$ $a=-0.90478+2.30137I$ $b=-1.279530+0.343200I$	$4.30555+0.12568I$	$11.56781-3.17091I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.156686 - 0.411401I$ $a = -0.90478 - 2.30137I$ $b = -1.279530 - 0.343200I$	$4.30555 - 0.12568I$	$11.56781 + 3.17091I$
$u = 0.02703 + 1.56361I$ $a = 0.482876 - 0.394798I$ $b = -1.57890 - 0.26314I$	$10.00810 - 5.45882I$	0
$u = 0.02703 - 1.56361I$ $a = 0.482876 + 0.394798I$ $b = -1.57890 + 0.26314I$	$10.00810 + 5.45882I$	0
$u = -0.18290 + 1.55908I$ $a = 0.241042 - 0.677384I$ $b = 0.163547 - 1.308400I$	$3.58353 + 11.64840I$	0
$u = -0.18290 - 1.55908I$ $a = 0.241042 + 0.677384I$ $b = 0.163547 + 1.308400I$	$3.58353 - 11.64840I$	0
$u = 0.11834 + 1.57169I$ $a = 0.775920 + 0.486481I$ $b = -1.43829 + 0.30576I$	$8.97050 - 6.12397I$	0
$u = 0.11834 - 1.57169I$ $a = 0.775920 - 0.486481I$ $b = -1.43829 - 0.30576I$	$8.97050 + 6.12397I$	0
$u = 0.01624 + 1.59222I$ $a = -0.383853 + 0.507771I$ $b = 1.35022 + 0.48512I$	$10.03810 + 0.59329I$	0
$u = 0.01624 - 1.59222I$ $a = -0.383853 - 0.507771I$ $b = 1.35022 - 0.48512I$	$10.03810 - 0.59329I$	0
$u = -0.13667 + 1.59487I$ $a = -0.595570 + 0.848522I$ $b = 1.51331 + 0.66571I$	$6.62792 + 7.94764I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.13667-1.59487I$ $a=-0.595570-0.848522I$ $b=1.51331-0.66571I$	$6.62792-7.94764I$	0
$u=0.28986+1.57463I$ $a=0.436738+1.283910I$ $b=-1.292140+0.537051I$	$9.53392-9.97126I$	0
$u=0.28986-1.57463I$ $a=0.436738-1.283910I$ $b=-1.292140-0.537051I$	$9.53392+9.97126I$	0
$u=-0.332578+0.210309I$ $a=3.99857-3.82161I$ $b=-0.740612-0.225976I$	$-2.84248+5.34682I$	$3.0402-14.1291I$
$u=-0.332578-0.210309I$ $a=3.99857+3.82161I$ $b=-0.740612+0.225976I$	$-2.84248-5.34682I$	$3.0402+14.1291I$
$u=0.319557+0.205174I$ $a=-0.17587+2.00836I$ $b=0.339040+1.087230I$	$-4.73999-1.38888I$	$-8.18552+9.20306I$
$u=0.319557-0.205174I$ $a=-0.17587-2.00836I$ $b=0.339040-1.087230I$	$-4.73999+1.38888I$	$-8.18552-9.20306I$
$u=-0.11614+1.63623I$ $a=-0.395934+0.811509I$ $b=1.029910+0.053937I$	$7.22204+0.26579I$	0
$u=-0.11614-1.63623I$ $a=-0.395934-0.811509I$ $b=1.029910-0.053937I$	$7.22204-0.26579I$	0
$u=0.05770+1.64687I$ $a=0.142205+0.940817I$ $b=-1.112710+0.827183I$	$9.79001-3.28548I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.05770 - 1.64687I$ $a = 0.142205 - 0.940817I$ $b = -1.112710 - 0.827183I$	$9.79001 + 3.28548I$	0
$u = 0.33263 + 1.61856I$ $a = -0.267522 - 0.549377I$ $b = 1.357130 - 0.112709I$	$9.09350 - 4.31625I$	0
$u = 0.33263 - 1.61856I$ $a = -0.267522 + 0.549377I$ $b = 1.357130 + 0.112709I$	$9.09350 + 4.31625I$	0
$u = 0.27065 + 1.63011I$ $a = -0.424432 - 1.115910I$ $b = 1.39250 - 0.63595I$	$7.5621 - 18.4218I$	0
$u = 0.27065 - 1.63011I$ $a = -0.424432 + 1.115910I$ $b = 1.39250 + 0.63595I$	$7.5621 + 18.4218I$	0
$u = -0.27178 + 1.64321I$ $a = 0.334443 - 0.876866I$ $b = -1.42910 - 0.44346I$	$12.5393 + 12.0640I$	0
$u = -0.27178 - 1.64321I$ $a = 0.334443 + 0.876866I$ $b = -1.42910 + 0.44346I$	$12.5393 - 12.0640I$	0
$u = -0.27220 + 1.68723I$ $a = -0.307776 + 0.853779I$ $b = 1.272740 + 0.391980I$	$12.12140 + 5.05912I$	0
$u = -0.27220 - 1.68723I$ $a = -0.307776 - 0.853779I$ $b = 1.272740 - 0.391980I$	$12.12140 - 5.05912I$	0
$u = -0.1150270 + 0.0115063I$ $a = 7.93172 + 7.13213I$ $b = 0.798573 - 0.513973I$	$-3.22439 - 2.14554I$	$-4.98018 + 3.72211I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.1150270-0.0115063I$ $a=\ \ 7.93172-7.13213I$ $b=\ \ 0.798573+0.513973I$	$-3.22439+2.14554I$	$-4.98018-3.72211I$
$u=-1.61350+1.21787I$ $a=-0.111943-0.304491I$ $b=-1.021780-0.049257I$	$3.15370-0.16077I$	0
$u=-1.61350-1.21787I$ $a=-0.111943+0.304491I$ $b=-1.021780+0.049257I$	$3.15370+0.16077I$	0

II. $I_2^u =$
$\langle -2.61\times10^{7}u^{27}-2.22\times10^{8}u^{26}+\cdots+4.94\times10^{8}b-1.25\times10^{7},\ -1.24\times10^{11}u^{27}+2.28\times10^{11}u^{26}+\cdots+6.47\times10^{10}a-8.14\times10^{10},\ 2u^{28}-3u^{27}+\cdots-2u+1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1.91821u^{27}-3.52382u^{26}+\cdots+4.63300u+1.25726\\0.0528564u^{27}+0.450270u^{26}+\cdots+4.66394u+0.0253835\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.0263085u^{27}-0.711609u^{26}+\cdots+3.99013u-3.32024\\-0.253249u^{27}+0.321752u^{26}+\cdots-0.453641u-0.176542\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1.86536u^{27}-3.97409u^{26}+\cdots-0.0309420u+1.23188\\0.0528564u^{27}+0.450270u^{26}+\cdots+4.66394u+0.0253835\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.204718u^{27}-0.577219u^{26}+\cdots+8.42236u+0.546407\\0.148365u^{27}-0.205654u^{26}+\cdots+1.64754u-1.35313\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-1.15147u^{27}+3.49656u^{26}+\cdots-7.12765u+1.76057\\-0.621442u^{27}+2.21400u^{26}+\cdots+1.10324u+0.528788\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u^2+1\\u^4+2u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.0325227u^{27}-0.311472u^{26}+\cdots+10.5638u-0.866160\\0.414757u^{27}-0.204393u^{26}+\cdots+1.53617u-1.16284\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1.04252u^{27}-2.42103u^{26}+\cdots+2.58820u-2.44844\\-0.309396u^{27}+0.991119u^{26}+\cdots-4.52599u+1.31563\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{180472544174}{64730460019}u^{27}-\frac{129321336473}{64730460019}u^{26}+\cdots+\frac{1092503506402}{64730460019}u+\frac{291508413369}{64730460019}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28}+2u^{27}+\cdots+7u+2$
c_2	$u^{28}-2u^{27}+\cdots-u+1$
c_3, c_4	$2(2u^{28}-3u^{27}+\cdots-2u+1)$
c_5	$2(2u^{28}-7u^{27}+\cdots-5u+1)$
c_6	$2(2u^{28}-3u^{27}+\cdots+16u+4)$
c_7	$u^{28}+2u^{27}+\cdots+u+1$
c_8	$u^{28}-u^{27}+\cdots+2u+1$
c_9	$u^{28}+9u^{26}+\cdots-35u+4$
c_{10}	$2(2u^{28}+3u^{27}+\cdots+2u+1)$
c_{11}	$u^{28}+2u^{26}+\cdots-61u+14$
c_{12}	$2(2u^{28}+3u^{27}+\cdots-16u+4)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 2y^{27} + \cdots + 19y + 4$
c_2, c_7	$y^{28} - 12y^{27} + \cdots - 19y + 1$
c_3, c_4, c_{10}	$4(4y^{28} + 123y^{27} + \cdots + 32y + 1)$
c_5	$4(4y^{28} + 27y^{27} + \cdots + 9y + 1)$
c_6, c_{12}	$4(4y^{28} + 83y^{27} + \cdots + 96y + 16)$
c_8	$y^{28} + 23y^{27} + \cdots - 12y + 1$
c_9	$y^{28} + 18y^{27} + \cdots - 785y + 16$
c_{11}	$y^{28} + 4y^{27} + \cdots + 647y + 196$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.008025+1.095820I$ $a=\ 0.64035+1.63660I$ $b=\ 0.812859+0.564856I$	$-0.98996+2.29936I$	$-1.47584-2.11904I$
$u=-0.008025-1.095820I$ $a=\ 0.64035-1.63660I$ $b=\ 0.812859-0.564856I$	$-0.98996-2.29936I$	$-1.47584+2.11904I$
$u=\ 1.171530+0.135101I$ $a=-0.661586+0.104382I$ $b=-1.130320+0.029289I$	$3.04675+0.00214I$	$16.8127+1.5074I$
$u=\ 1.171530-0.135101I$ $a=-0.661586-0.104382I$ $b=-1.130320-0.029289I$	$3.04675-0.00214I$	$16.8127-1.5074I$
$u=-0.307913+0.753218I$ $a=\ 0.285067+0.817010I$ $b=-0.888623+0.368385I$	$2.17371-2.01469I$	$9.57123+7.54695I$
$u=-0.307913-0.753218I$ $a=\ 0.285067-0.817010I$ $b=-0.888623-0.368385I$	$2.17371+2.01469I$	$9.57123-7.54695I$
$u=-0.132754+0.736721I$ $a=\ 0.790140-1.075570I$ $b=-0.873273+0.438007I$	$-2.29537-1.87184I$	$2.98347+3.16131I$
$u=-0.132754-0.736721I$ $a=\ 0.790140+1.075570I$ $b=-0.873273-0.438007I$	$-2.29537+1.87184I$	$2.98347-3.16131I$
$u=\ 0.003285+1.273060I$ $a=\ 0.539557+0.331923I$ $b=-0.055302+0.758594I$	$-0.87252+1.15187I$	$-1.27136-1.43599I$
$u=\ 0.003285-1.273060I$ $a=\ 0.539557-0.331923I$ $b=-0.055302-0.758594I$	$-0.87252-1.15187I$	$-1.27136+1.43599I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.215698+1.297370I$ $a=\ 0.388654-0.001676I$ $b=\ 0.606066+0.226952I$	$4.47887+4.56895I$	$10.77443-6.54974I$
$u=-0.215698-1.297370I$ $a=\ 0.388654+0.001676I$ $b=\ 0.606066-0.226952I$	$4.47887-4.56895I$	$10.77443+6.54974I$
$u=\ 0.137397+1.370990I$ $a=-1.59911+0.16102I$ $b=-0.440357+0.139322I$	$1.45021-6.68619I$	$-0.19760+6.34878I$
$u=\ 0.137397-1.370990I$ $a=-1.59911-0.16102I$ $b=-0.440357-0.139322I$	$1.45021+6.68619I$	$-0.19760-6.34878I$
$u=-0.488137+0.345385I$ $a=\ 0.38002+2.26602I$ $b=\ 1.283430+0.347849I$	$0.83358+6.07227I$	$0.02294-8.71575I$
$u=-0.488137-0.345385I$ $a=\ 0.38002-2.26602I$ $b=\ 1.283430-0.347849I$	$0.83358-6.07227I$	$0.02294+8.71575I$
$u=-0.00156+1.51798I$ $a=-0.214119-0.525739I$ $b=-0.06460-1.49850I$	$1.98118-1.14085I$	$1.67149+4.55352I$
$u=-0.00156-1.51798I$ $a=-0.214119+0.525739I$ $b=-0.06460+1.49850I$	$1.98118+1.14085I$	$1.67149-4.55352I$
$u=-0.13204+1.55089I$ $a=\ 0.784150-0.957831I$ $b=-1.49170-0.50620I$	$7.46841+8.20050I$	$7.14741-8.88305I$
$u=-0.13204-1.55089I$ $a=\ 0.784150+0.957831I$ $b=-1.49170+0.50620I$	$7.46841-8.20050I$	$7.14741+8.88305I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.409316 + 0.122472I$ $a = -0.44720 - 4.23815I$ $b = 0.599807 + 0.096913I$	$-2.88784 + 4.85383I$	$2.58432 + 0.86409I$
$u = 0.409316 - 0.122472I$ $a = -0.44720 + 4.23815I$ $b = 0.599807 - 0.096913I$	$-2.88784 - 4.85383I$	$2.58432 - 0.86409I$
$u = 0.23735 + 1.56199I$ $a = -0.426922 - 0.578032I$ $b = 1.41544 - 0.16291I$	$8.54980 - 4.07721I$	$2.00000 + 3.73465I$
$u = 0.23735 - 1.56199I$ $a = -0.426922 + 0.578032I$ $b = 1.41544 + 0.16291I$	$8.54980 + 4.07721I$	$2.00000 - 3.73465I$
$u = 0.07930 + 1.59683I$ $a = -0.273069 - 0.923398I$ $b = 1.171420 - 0.582185I$	$10.95870 - 2.55041I$	$9.71429 + 0.I$
$u = 0.07930 - 1.59683I$ $a = -0.273069 + 0.923398I$ $b = 1.171420 + 0.582185I$	$10.95870 + 2.55041I$	$9.71429 + 0.I$
$u = -0.002061 + 0.255353I$ $a = 1.81406 + 0.98908I$ $b = 0.055155 + 1.174080I$	$-4.28671 - 1.15758I$	$5.54668 + 4.43189I$
$u = -0.002061 - 0.255353I$ $a = 1.81406 - 0.98908I$ $b = 0.055155 - 1.174080I$	$-4.28671 + 1.15758I$	$5.54668 - 4.43189I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{28}+2u^{27}+\cdots+7u+2)(u^{123}+5u^{122}+\cdots+10661u-6658)$
c_2	$(u^{28}-2u^{27}+\cdots-u+1)(u^{123}+3u^{122}+\cdots+33083u-2983)$
c_3, c_4	$4(2u^{28}-3u^{27}+\cdots-2u+1)(2u^{123}+u^{122}+\cdots-528u-37)$
c_5	$4(2u^{28}-7u^{27}+\cdots-5u+1)(2u^{123}-7u^{122}+\cdots+8241u-1019)$
c_6	$4(2u^{28}-3u^{27}+\cdots+16u+4)(2u^{123}+5u^{122}+\cdots+3232u-9296)$
c_7	$(u^{28}+2u^{27}+\cdots+u+1)(u^{123}+3u^{122}+\cdots+33083u-2983)$
c_8	$(u^{28}-u^{27}+\cdots+2u+1)(u^{123}+2u^{122}+\cdots+28u+1)$
c_9	$(u^{28}+9u^{26}+\cdots-35u+4)(u^{123}-3u^{122}+\cdots-26333u+17876)$
c_{10}	$4(2u^{28}+3u^{27}+\cdots+2u+1)(2u^{123}+u^{122}+\cdots-528u-37)$
c_{11}	$(u^{28}+2u^{26}+\cdots-61u+14)$ $\cdot(u^{123}-3u^{122}+\cdots-291760059u+81362762)$
c_{12}	$4(2u^{28}+3u^{27}+\cdots-16u+4)(2u^{123}+5u^{122}+\cdots+3232u-9296)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{28}+2y^{27}+\cdots+19y+4)$ $\cdot(y^{123}+29y^{122}+\cdots-1515568995y-44328964)$
c_2, c_7	$(y^{28}-12y^{27}+\cdots-19y+1)$ $\cdot(y^{123}-77y^{122}+\cdots-21246601y-8898289)$
c_3, c_4, c_{10}	$16(4y^{28}+123y^{27}+\cdots+32y+1)$ $\cdot(4y^{123}+535y^{122}+\cdots+153132y-1369)$
c_5	$16(4y^{28}+27y^{27}+\cdots+9y+1)$ $\cdot(4y^{123}+103y^{122}+\cdots-11219421y-1038361)$
c_6, c_{12}	$16(4y^{28}+83y^{27}+\cdots+96y+16)$ $\cdot(4y^{123}+335y^{122}+\cdots-9103501312y-86415616)$
c_8	$(y^{28}+23y^{27}+\cdots-12y+1)(y^{123}+22y^{122}+\cdots-540y-1)$
c_9	$(y^{28}+18y^{27}+\cdots-785y+16)$ $\cdot(y^{123}+33y^{122}+\cdots-10689902655y-319551376)$
c_{11}	$(y^{28}+4y^{27}+\cdots+647y+196)$ $\cdot(y^{123}-41y^{122}+\cdots+204460804952227665y-6619899040268644)$