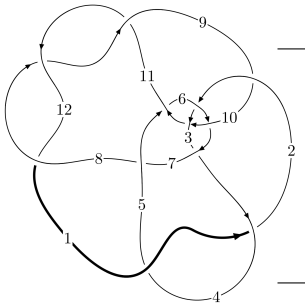
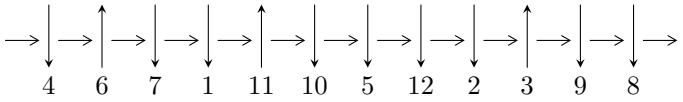
$12a_{0892}$ $(K12a_{0892})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -2.09914 \times 10^{1018} u^{144} - 2.88524 \times 10^{1018} u^{143} + \cdots + 3.72547 \times 10^{1017} b - 1.57837 \times 10^{1020},$$
$$- 5.40470 \times 10^{1019} u^{144} - 6.78220 \times 10^{1019} u^{143} + \cdots + 1.15490 \times 10^{1019} a - 6.04250 \times 10^{1021},$$
$$u^{145} + u^{144} + \cdots + 238u - 31 \rangle$$
$$I_2^u = \langle 3.61659 \times 10^{28} u^{31} + 7.73832 \times 10^{28} u^{30} + \cdots + 3.44067 \times 10^{28} b - 8.89248 \times 10^{28},$$
$$5.39323 \times 10^{28} u^{31} + 9.21403 \times 10^{28} u^{30} + \cdots + 3.44067 \times 10^{28} a + 1.58031 \times 10^{28},\ u^{32} + 2u^{31} + \cdots - u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 177 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. $\boldsymbol{I_1^u = \langle -2.10 \times 10^{1018} u^{144} - 2.89 \times 10^{1018} u^{143} + \cdots + 3.73 \times 10^{1017} b - 1.58 \times 10^{1020},\ -5.40 \times 10^{1019} u^{144} - 6.78 \times 10^{1019} u^{143} + \cdots + 1.15 \times 10^{1019} a - 6.04 \times 10^{1021},\ u^{145} + u^{144} + \cdots + 238u - 31 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 4.67981u^{144} + 5.87256u^{143} + \cdots - 2318.63u + 523.207 \\ 5.63455u^{144} + 7.74462u^{143} + \cdots - 2112.83u + 423.668 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.771919u^{144} - 1.57602u^{143} + \cdots - 344.597u + 136.514 \\ 4.76589u^{144} + 6.61597u^{143} + \cdots - 1806.59u + 361.766 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2.79017u^{144} + 2.81371u^{143} + \cdots - 749.380u + 174.315 \\ -4.73297u^{144} - 6.56048u^{143} + \cdots + 2011.61u - 424.449 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.954736u^{144} - 1.87207u^{143} + \cdots - 205.798u + 99.5386 \\ 5.63455u^{144} + 7.74462u^{143} + \cdots - 2112.83u + 423.668 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1.31802u^{144} - 2.68164u^{143} + \cdots + 272.155u - 87.1026 \\ 3.05808u^{144} + 3.78139u^{143} + \cdots - 1380.60u + 310.975 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 3.84388u^{144} + 6.25083u^{143} + \cdots - 1397.32u + 245.504 \\ 3.38549u^{144} + 4.43042u^{143} + \cdots - 1403.13u + 273.429 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 6.45647u^{144} + 8.13085u^{143} + \cdots - 2347.32u + 522.309 \\ 1.06667u^{144} + 1.24334u^{143} + \cdots - 411.667u + 76.4553 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 7.52566u^{144} + 9.42017u^{143} + \cdots - 3397.01u + 725.029 \\ -7.30654u^{144} - 9.43795u^{143} + \cdots + 3301.93u - 734.941 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.58406u^{144} + 3.01115u^{143} + \cdots + 35.0302u - 71.9586 \\ -2.19792u^{144} - 2.14369u^{143} + \cdots + 1374.66u - 309.390 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 5.57129u^{144} + 6.71330u^{143} + \cdots - 3177.35u + 441.593$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{145} + 6u^{144} + \cdots + 241016u + 53041$
c_2	$u^{145} - 8u^{144} + \cdots + 31u + 1$
c_3	$u^{145} - 25u^{143} + \cdots - 366697u + 53551$
c_5	$u^{145} - 2u^{144} + \cdots - 584109u + 262673$
c_6	$u^{145} - u^{144} + \cdots + 238u + 31$
c_7	$u^{145} + 4u^{144} + \cdots + 220494628u + 11977767$
c_8, c_{11}, c_{12}	$u^{145} + 6u^{144} + \cdots - 13u + 1$
c_9	$u^{145} - 10u^{143} + \cdots - 2690u + 1025$
c_{10}	$u^{145} + 4u^{144} + \cdots - 193u + 27$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{145} + 114y^{144} + \cdots - 109382835062y - 2813347681$
c_2	$y^{145} + 8y^{144} + \cdots + 245y - 1$
c_3	$y^{145} - 50y^{144} + \cdots + 55811088111y - 2867709601$
c_5	$y^{145} + 48y^{144} + \cdots - 7065213404445y - 68997104929$
c_6	$y^{145} - 17y^{144} + \cdots + 83242y - 961$
c_7	$y^{145} + 38y^{144} + \cdots - 9969062284337030y - 143466902306289$
c_8, c_{11}, c_{12}	$y^{145} + 148y^{144} + \cdots - 23y - 1$
c_9	$y^{145} - 20y^{144} + \cdots - 85056950y - 1050625$
c_{10}	$y^{145} + 32y^{144} + \cdots - 44723y - 729$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.175233+0.993312I$ $a=-1.50509+0.99291I$ $b=\ \ 0.984730+0.148375I$	$9.85859+8.66525I$	0
$u=-0.175233-0.993312I$ $a=-1.50509-0.99291I$ $b=\ \ 0.984730-0.148375I$	$9.85859-8.66525I$	0
$u=-0.270642+0.973406I$ $a=\ \ 0.37280-1.37338I$ $b=-0.197005+0.309824I$	$8.44939+3.42419I$	0
$u=-0.270642-0.973406I$ $a=\ \ 0.37280+1.37338I$ $b=-0.197005-0.309824I$	$8.44939-3.42419I$	0
$u=-0.457505+0.873801I$ $a=\ \ 0.001931-1.056370I$ $b=-1.10167-1.39405I$	$10.5547+10.4208I$	0
$u=-0.457505-0.873801I$ $a=\ \ 0.001931+1.056370I$ $b=-1.10167+1.39405I$	$10.5547-10.4208I$	0
$u=\ \ 0.853690+0.554488I$ $a=\ \ 0.24679-1.57189I$ $b=\ \ 1.20444-1.27727I$	$6.99182-4.73153I$	0
$u=\ \ 0.853690-0.554488I$ $a=\ \ 0.24679+1.57189I$ $b=\ \ 1.20444+1.27727I$	$6.99182+4.73153I$	0
$u=-0.779856+0.578252I$ $a=\ \ 0.08031+1.59012I$ $b=\ \ 0.95266+1.16365I$	$1.26897+4.48898I$	0
$u=-0.779856-0.578252I$ $a=\ \ 0.08031-1.59012I$ $b=\ \ 0.95266-1.16365I$	$1.26897-4.48898I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.966669$ $a = 0.511382$ $b = -0.230935$	-1.29626	0
$u = -0.842836 + 0.473333I$ $a = 0.114165 + 0.731850I$ $b = 1.34113 + 1.21796I$	$3.56283 + 6.56801I$	0
$u = -0.842836 - 0.473333I$ $a = 0.114165 - 0.731850I$ $b = 1.34113 - 1.21796I$	$3.56283 - 6.56801I$	0
$u = 0.328978 + 0.898582I$ $a = 0.249788 + 1.287120I$ $b = -0.0809638 - 0.0060685I$	$2.99294 - 2.90031I$	0
$u = 0.328978 - 0.898582I$ $a = 0.249788 - 1.287120I$ $b = -0.0809638 + 0.0060685I$	$2.99294 + 2.90031I$	0
$u = 0.985932 + 0.403210I$ $a = 0.773146 - 0.957633I$ $b = 1.131940 - 0.532852I$	$7.33618 - 2.02582I$	0
$u = 0.985932 - 0.403210I$ $a = 0.773146 + 0.957633I$ $b = 1.131940 + 0.532852I$	$7.33618 + 2.02582I$	0
$u = -0.927787 + 0.062557I$ $a = 0.364733 + 0.697991I$ $b = 0.529992 + 1.300080I$	$0.88219 + 1.22730I$	0
$u = -0.927787 - 0.062557I$ $a = 0.364733 - 0.697991I$ $b = 0.529992 - 1.300080I$	$0.88219 - 1.22730I$	0
$u = 0.794588 + 0.464628I$ $a = 0.851818 + 0.312631I$ $b = -0.096564 + 0.431521I$	$-1.38971 - 0.42921I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.794588 - 0.464628I$ $a = 0.851818 - 0.312631I$ $b = -0.096564 - 0.431521I$	$-1.38971 + 0.42921I$	0
$u = 0.809274 + 0.438011I$ $a = -0.245927 - 0.502995I$ $b = -0.894106 - 0.707102I$	$-2.09607 - 0.26844I$	0
$u = 0.809274 - 0.438011I$ $a = -0.245927 + 0.502995I$ $b = -0.894106 + 0.707102I$	$-2.09607 + 0.26844I$	0
$u = 0.834733 + 0.378244I$ $a = 0.120339 - 0.828214I$ $b = 1.04293 - 1.22525I$	$-1.62770 - 3.91436I$	0
$u = 0.834733 - 0.378244I$ $a = 0.120339 + 0.828214I$ $b = 1.04293 + 1.22525I$	$-1.62770 + 3.91436I$	0
$u = 0.432543 + 0.996527I$ $a = 0.027076 + 1.027480I$ $b = -0.76676 + 1.24530I$	$4.17885 - 5.54834I$	0
$u = 0.432543 - 0.996527I$ $a = 0.027076 - 1.027480I$ $b = -0.76676 - 1.24530I$	$4.17885 + 5.54834I$	0
$u = -1.066270 + 0.247929I$ $a = -0.206778 + 0.289540I$ $b = -1.200350 + 0.617183I$	$3.12685 - 0.12674I$	0
$u = -1.066270 - 0.247929I$ $a = -0.206778 - 0.289540I$ $b = -1.200350 - 0.617183I$	$3.12685 + 0.12674I$	0
$u = -0.162959 + 1.082590I$ $a = 0.198535 - 0.111941I$ $b = 0.648377 - 0.887697I$	$2.09440 - 1.76971I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.162959-1.082590I$ $a=\ \ 0.198535+0.111941I$ $b=\ \ 0.648377+0.887697I$	$2.09440+1.76971I$	0
$u=-0.967028+0.516281I$ $a=\ \ 1.004840+0.297297I$ $b=\ \ 0.219267-0.422014I$	$3.49440-1.89700I$	0
$u=-0.967028-0.516281I$ $a=\ \ 1.004840-0.297297I$ $b=\ \ 0.219267+0.422014I$	$3.49440+1.89700I$	0
$u=\ \ 1.101490+0.040866I$ $a=\ \ 0.48056-1.45999I$ $b=\ \ 0.024912-0.558133I$	$-0.861624+0.409948I$	0
$u=\ \ 1.101490-0.040866I$ $a=\ \ 0.48056+1.45999I$ $b=\ \ 0.024912+0.558133I$	$-0.861624-0.409948I$	0
$u=-0.722310+0.843040I$ $a=\ \ 0.34411-1.42106I$ $b=-0.763936-0.462647I$	$5.23556+5.23001I$	0
$u=-0.722310-0.843040I$ $a=\ \ 0.34411+1.42106I$ $b=-0.763936+0.462647I$	$5.23556-5.23001I$	0
$u=\ \ 0.355968+0.798221I$ $a=-1.17073-1.66706I$ $b=\ \ 0.807566-0.466961I$	$2.77202-6.23642I$	0
$u=\ \ 0.355968-0.798221I$ $a=-1.17073+1.66706I$ $b=\ \ 0.807566+0.466961I$	$2.77202+6.23642I$	0
$u=-0.711648+0.877783I$ $a=\ \ 0.045504-1.080010I$ $b=-0.077228-1.046060I$	$6.84476+0.58245I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.711648-0.877783I$ $a=\ 0.045504+1.080010I$ $b=-0.077228+1.046060I$	$6.84476-0.58245I$	0
$u=-0.509051+1.017630I$ $a=\ 0.064952-0.952618I$ $b=-0.772460-0.661107I$	$5.89302+0.19949I$	0
$u=-0.509051-1.017630I$ $a=\ 0.064952+0.952618I$ $b=-0.772460+0.661107I$	$5.89302-0.19949I$	0
$u=\ 0.750068+0.374115I$ $a=\ 0.27446-1.75411I$ $b=\ 0.48114-1.55804I$	$5.33434-5.39101I$	0
$u=\ 0.750068-0.374115I$ $a=\ 0.27446+1.75411I$ $b=\ 0.48114+1.55804I$	$5.33434+5.39101I$	0
$u=\ 0.559310+1.043510I$ $a=-0.022095+0.894625I$ $b=-1.110140+0.547552I$	$13.46280+2.57020I$	0
$u=\ 0.559310-1.043510I$ $a=-0.022095-0.894625I$ $b=-1.110140-0.547552I$	$13.46280-2.57020I$	0
$u=\ 0.677087+0.322793I$ $a=\ 0.092962+0.965597I$ $b=\ 1.28360+1.51766I$	$6.87184-10.70990I$	0
$u=\ 0.677087-0.322793I$ $a=\ 0.092962-0.965597I$ $b=\ 1.28360-1.51766I$	$6.87184+10.70990I$	0
$u=-0.568846+1.113300I$ $a=\ 0.162339+0.183610I$ $b=\ 1.100390+0.403905I$	$10.38580+4.15509I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.568846-1.113300I$ $a=\ \ 0.162339-0.183610I$ $b=\ \ 1.100390-0.403905I$	$10.38580-4.15509I$	0
$u=-0.659678+1.064510I$ $a=\ \ 0.590704-0.199088I$ $b=-0.466431-0.492976I$	$3.38993+3.85851I$	0
$u=-0.659678-1.064510I$ $a=\ \ 0.590704+0.199088I$ $b=-0.466431+0.492976I$	$3.38993-3.85851I$	0
$u=-0.856740+0.927176I$ $a=-0.831698+0.861803I$ $b=\ \ 0.289995+0.586627I$	$6.56094+5.30740I$	0
$u=-0.856740-0.927176I$ $a=-0.831698-0.861803I$ $b=\ \ 0.289995-0.586627I$	$6.56094-5.30740I$	0
$u=\ \ 0.637639+0.329081I$ $a=-0.47670+2.53347I$ $b=-0.312601+0.534758I$	$-2.41986-3.05864I$	0
$u=\ \ 0.637639-0.329081I$ $a=-0.47670-2.53347I$ $b=-0.312601-0.534758I$	$-2.41986+3.05864I$	0
$u=-1.136110+0.646165I$ $a=-0.294255+0.471721I$ $b=-0.702647+1.194120I$	$2.22638-0.12544I$	0
$u=-1.136110-0.646165I$ $a=-0.294255-0.471721I$ $b=-0.702647-1.194120I$	$2.22638+0.12544I$	0
$u=-1.170270+0.605888I$ $a=\ \ 0.285001+0.717823I$ $b=\ \ 0.774449+0.730807I$	$0.46547+2.09210I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.170270-0.605888I$ $a=\ \ 0.285001-0.717823I$ $b=\ \ 0.774449-0.730807I$	$0.46547-2.09210I$	0
$u=-0.104328+0.661044I$ $a=-0.03414-1.78053I$ $b=\ \ 0.620897+0.232105I$	$8.37051+1.60856I$	0
$u=-0.104328-0.661044I$ $a=-0.03414+1.78053I$ $b=\ \ 0.620897-0.232105I$	$8.37051-1.60856I$	0
$u=\ \ 0.661436+0.014358I$ $a=\ \ 0.173534-1.294400I$ $b=-0.95347-1.62284I$	$1.32185-4.06716I$	0
$u=\ \ 0.661436-0.014358I$ $a=\ \ 0.173534+1.294400I$ $b=-0.95347+1.62284I$	$1.32185+4.06716I$	0
$u=-0.578994+0.298296I$ $a=-0.71154+1.53149I$ $b=\ \ 0.929249+0.898528I$	$0.07179+3.70060I$	0
$u=-0.578994-0.298296I$ $a=-0.71154-1.53149I$ $b=\ \ 0.929249-0.898528I$	$0.07179-3.70060I$	0
$u=-0.550613+0.347580I$ $a=\ \ 0.038949-0.919566I$ $b=\ \ 1.45706-1.12848I$	$0.68944+6.98932I$	0
$u=-0.550613-0.347580I$ $a=\ \ 0.038949+0.919566I$ $b=\ \ 1.45706+1.12848I$	$0.68944-6.98932I$	0
$u=-0.613680+0.203109I$ $a=\ \ 2.84986-1.48270I$ $b=-0.155422-0.487057I$	$0.30339+6.35289I$	$0.-25.1026I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.613680-0.203109I$ $a=2.84986+1.48270I$ $b=-0.155422+0.487057I$	$0.30339-6.35289I$	$0.+25.1026I$
$u=0.591375+0.256999I$ $a=-0.55267-2.24509I$ $b=0.980139-1.004110I$	$5.89423-4.66757I$	0
$u=0.591375-0.256999I$ $a=-0.55267+2.24509I$ $b=0.980139+1.004110I$	$5.89423+4.66757I$	0
$u=1.072280+0.838787I$ $a=-0.073824-0.857507I$ $b=0.98899-1.14772I$	$-1.91092-4.53651I$	0
$u=1.072280-0.838787I$ $a=-0.073824+0.857507I$ $b=0.98899+1.14772I$	$-1.91092+4.53651I$	0
$u=-0.625242+0.104972I$ $a=0.810423+0.997280I$ $b=0.556069+0.687308I$	$0.68161+1.58841I$	0
$u=-0.625242-0.104972I$ $a=0.810423-0.997280I$ $b=0.556069-0.687308I$	$0.68161-1.58841I$	0
$u=0.562625+0.271590I$ $a=0.98707-1.67557I$ $b=0.995209-0.465961I$	$7.40415-1.90436I$	0
$u=0.562625-0.271590I$ $a=0.98707+1.67557I$ $b=0.995209+0.465961I$	$7.40415+1.90436I$	0
$u=0.369904+0.468983I$ $a=-0.603481+0.212699I$ $b=1.183390-0.469764I$	$1.58948-2.62456I$	$0.+3.62743I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.369904 - 0.468983I$ $a = -0.603481 - 0.212699I$ $b = 1.183390 + 0.469764I$	$1.58948 + 2.62456I$	$0. - 3.62743I$
$u = 0.371064 + 0.461167I$ $a = -0.268667 + 0.858423I$ $b = 1.251690 + 0.170593I$	$1.70497 - 2.66262I$	$0. + 6.62401I$
$u = 0.371064 - 0.461167I$ $a = -0.268667 - 0.858423I$ $b = 1.251690 - 0.170593I$	$1.70497 + 2.66262I$	$0. - 6.62401I$
$u = 1.083310 + 0.908174I$ $a = 0.016723 + 1.094320I$ $b = -0.831442 + 1.025920I$	$-3.19557 - 5.94519I$	0
$u = 1.083310 - 0.908174I$ $a = 0.016723 - 1.094320I$ $b = -0.831442 - 1.025920I$	$-3.19557 + 5.94519I$	0
$u = 0.497529 + 0.282324I$ $a = 3.82000 + 0.64029I$ $b = -0.313502 + 0.520244I$	$7.70025 - 10.38410I$	$-6.0000 + 16.0066I$
$u = 0.497529 - 0.282324I$ $a = 3.82000 - 0.64029I$ $b = -0.313502 - 0.520244I$	$7.70025 + 10.38410I$	$-6.0000 - 16.0066I$
$u = -0.486754 + 0.297305I$ $a = 0.88123 + 2.29211I$ $b = 0.006286 + 0.981261I$	$0.46950 + 3.52931I$	$-11.59746 - 5.64649I$
$u = -0.486754 - 0.297305I$ $a = 0.88123 - 2.29211I$ $b = 0.006286 - 0.981261I$	$0.46950 - 3.52931I$	$-11.59746 + 5.64649I$
$u = -1.00830 + 1.01817I$ $a = -0.266712 + 0.840438I$ $b = 1.23990 + 1.10914I$	$2.55761 + 7.40596I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00830-1.01817I$ $a=-0.266712-0.840438I$ $b=\ \ 1.23990-1.10914I$	$2.55761-7.40596I$	0
$u=-1.18863+0.80119I$ $a=-0.047559+0.688065I$ $b=\ \ 0.486127+1.210110I$	$1.08652+2.07918I$	0
$u=-1.18863-0.80119I$ $a=-0.047559-0.688065I$ $b=\ \ 0.486127-1.210110I$	$1.08652-2.07918I$	0
$u=-0.556768+0.038672I$ $a=\ \ 0.031722+1.231130I$ $b=-1.22823+1.28194I$	$-3.65244+1.72670I$	$-21.4514-5.0713I$
$u=-0.556768-0.038672I$ $a=\ \ 0.031722-1.231130I$ $b=-1.22823-1.28194I$	$-3.65244-1.72670I$	$-21.4514+5.0713I$
$u=\ \ 1.08513+0.95150I$ $a=-0.170686-0.386102I$ $b=-0.233957-0.718289I$	$-2.26919-0.66351I$	0
$u=\ \ 1.08513-0.95150I$ $a=-0.170686+0.386102I$ $b=-0.233957+0.718289I$	$-2.26919+0.66351I$	0
$u=\ \ 0.529427+0.121719I$ $a=-2.50547-2.05101I$ $b=\ \ 0.294527-0.823997I$	$1.89483-4.47916I$	$-13.3702+6.6534I$
$u=\ \ 0.529427-0.121719I$ $a=-2.50547+2.05101I$ $b=\ \ 0.294527+0.823997I$	$1.89483+4.47916I$	$-13.3702-6.6534I$
$u=-1.13569+0.91956I$ $a=-0.041880-1.052690I$ $b=-1.00525-1.11497I$	$-4.11430+10.02680I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.13569-0.91956I$ $a=-0.041880+1.052690I$ $b=-1.00525+1.11497I$	$-4.11430-10.02680I$	0
$u=-0.514987+0.053999I$ $a=-2.24549-2.98451I$ $b=\ \ 0.017963-0.599980I$	$-3.51088-1.35231I$	$-23.2910+3.3744I$
$u=-0.514987-0.053999I$ $a=-2.24549+2.98451I$ $b=\ \ 0.017963+0.599980I$	$-3.51088+1.35231I$	$-23.2910-3.3744I$
$u=-1.46228+0.26379I$ $a=-0.482951-0.780205I$ $b=-0.420296-0.640012I$	$6.42247+5.98655I$	0
$u=-1.46228-0.26379I$ $a=-0.482951+0.780205I$ $b=-0.420296+0.640012I$	$6.42247-5.98655I$	0
$u=\ \ 1.17057+0.91668I$ $a=-0.101247+1.044950I$ $b=-1.14666+1.12493I$	$1.95287-13.11790I$	0
$u=\ \ 1.17057-0.91668I$ $a=-0.101247-1.044950I$ $b=-1.14666-1.12493I$	$1.95287+13.11790I$	0
$u=\ \ 1.06134+1.15983I$ $a=\ \ 0.290866+0.840933I$ $b=-1.08775+1.01185I$	$-1.48980-7.19259I$	0
$u=\ \ 1.06134-1.15983I$ $a=\ \ 0.290866-0.840933I$ $b=-1.08775-1.01185I$	$-1.48980+7.19259I$	0
$u=-1.00710+1.21075I$ $a=\ \ 0.396548-0.871295I$ $b=-1.23418-1.02046I$	$3.78215+7.83286I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00710-1.21075I$ $a=\ \ 0.396548+0.871295I$ $b=-1.23418+1.02046I$	$3.78215-7.83286I$	0
$u=-1.14288+1.10201I$ $a=-0.025648+0.997008I$ $b=\ \ 1.00226+1.13946I$	$-0.1104+15.3505I$	0
$u=-1.14288-1.10201I$ $a=-0.025648-0.997008I$ $b=\ \ 1.00226-1.13946I$	$-0.1104-15.3505I$	0
$u=\ \ 1.15081+1.09791I$ $a=-0.030003-1.020660I$ $b=\ \ 1.12279-1.13424I$	$6.9949-19.7067I$	0
$u=\ \ 1.15081-1.09791I$ $a=-0.030003+1.020660I$ $b=\ \ 1.12279+1.13424I$	$6.9949+19.7067I$	0
$u=\ \ 1.14125+1.12989I$ $a=-0.011180-0.972430I$ $b=\ \ 0.827355-1.078260I$	$-0.20472-9.22747I$	0
$u=\ \ 1.14125-1.12989I$ $a=-0.011180+0.972430I$ $b=\ \ 0.827355+1.078260I$	$-0.20472+9.22747I$	0
$u=-1.22379+1.09810I$ $a=\ \ 0.017653+0.917259I$ $b=\ \ 0.673357+0.716516I$	$8.13394+4.05463I$	0
$u=-1.22379-1.09810I$ $a=\ \ 0.017653-0.917259I$ $b=\ \ 0.673357-0.716516I$	$8.13394-4.05463I$	0
$u=\ \ 0.307554+0.154586I$ $a=\ \ 3.39026-1.13438I$ $b=-0.720259-0.623857I$	$1.56557+0.67995I$	$-2.42170-4.86730I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.307554 - 0.154586I$ $a = 3.39026 + 1.13438I$ $b = -0.720259 + 0.623857I$	$1.56557 - 0.67995I$	$-2.42170 + 4.86730I$
$u = 0.329955 + 0.025626I$ $a = -0.06445 - 1.65101I$ $b = -1.90495 - 0.84217I$	$-1.047060 + 0.869818I$	$-20.8494 + 1.2292I$
$u = 0.329955 - 0.025626I$ $a = -0.06445 + 1.65101I$ $b = -1.90495 + 0.84217I$	$-1.047060 - 0.869818I$	$-20.8494 - 1.2292I$
$u = -1.17816 + 1.18635I$ $a = 0.217123 - 0.632934I$ $b = -0.851518 - 1.095940I$	$2.26413 + 6.60189I$	0
$u = -1.17816 - 1.18635I$ $a = 0.217123 + 0.632934I$ $b = -0.851518 + 1.095940I$	$2.26413 - 6.60189I$	0
$u = 0.99162 + 1.34973I$ $a = 0.127144 + 0.282380I$ $b = -0.090432 + 0.845531I$	$-0.51554 - 3.03375I$	0
$u = 0.99162 - 1.34973I$ $a = 0.127144 - 0.282380I$ $b = -0.090432 - 0.845531I$	$-0.51554 + 3.03375I$	0
$u = -0.242721 + 0.189733I$ $a = 4.85248 + 0.35743I$ $b = -0.957873 + 0.192495I$	$8.92002 - 4.00313I$	$2.19779 + 2.09749I$
$u = -0.242721 - 0.189733I$ $a = 4.85248 - 0.35743I$ $b = -0.957873 - 0.192495I$	$8.92002 + 4.00313I$	$2.19779 - 2.09749I$
$u = 1.43136 + 0.97804I$ $a = -0.327669 + 0.522569I$ $b = -0.923323 + 0.372366I$	$10.6141 - 9.7736I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.43136 - 0.97804I$ $a = -0.327669 - 0.522569I$ $b = -0.923323 - 0.372366I$	$10.6141 + 9.7736I$	0
$u = 1.61882 + 0.64012I$ $a = 0.182021 + 0.559726I$ $b = -0.103544 + 0.592485I$	$-1.035610 + 0.080466I$	0
$u = 1.61882 - 0.64012I$ $a = 0.182021 - 0.559726I$ $b = -0.103544 - 0.592485I$	$-1.035610 - 0.080466I$	0
$u = 0.69404 + 1.61334I$ $a = -0.258376 + 0.114266I$ $b = -0.422112 - 0.451167I$	$3.67587 + 5.14877I$	0
$u = 0.69404 - 1.61334I$ $a = -0.258376 - 0.114266I$ $b = -0.422112 + 0.451167I$	$3.67587 - 5.14877I$	0
$u = -1.35889 + 1.18561I$ $a = -0.075214 - 0.465586I$ $b = -0.654863 - 0.638412I$	$2.49668 + 7.42652I$	0
$u = -1.35889 - 1.18561I$ $a = -0.075214 + 0.465586I$ $b = -0.654863 + 0.638412I$	$2.49668 - 7.42652I$	0
$u = 1.22410 + 1.34142I$ $a = -0.220476 - 0.354537I$ $b = 0.122506 - 0.422165I$	$-1.94572 - 1.90721I$	0
$u = 1.22410 - 1.34142I$ $a = -0.220476 + 0.354537I$ $b = 0.122506 + 0.422165I$	$-1.94572 + 1.90721I$	0
$u = -0.92489 + 1.69832I$ $a = -0.243371 + 0.050641I$ $b = -0.188996 + 0.408334I$	$-2.61907 - 2.06320I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.92489-1.69832I$ $a=-0.243371-0.050641I$ $b=-0.188996-0.408334I$	$-2.61907+2.06320I$	0
$u=1.42436+1.38893I$ $a=0.312943+0.128735I$ $b=0.371339+0.634069I$	$7.17709+10.75390I$	0
$u=1.42436-1.38893I$ $a=0.312943-0.128735I$ $b=0.371339-0.634069I$	$7.17709-10.75390I$	0
$u=-1.58503+1.22762I$ $a=0.265276-0.229194I$ $b=0.141739-0.592882I$	$-0.16117-6.34878I$	0
$u=-1.58503-1.22762I$ $a=0.265276+0.229194I$ $b=0.141739+0.592882I$	$-0.16117+6.34878I$	0

II.

$\boldsymbol{I_2^u = \langle 3.62\times 10^{28}u^{31}+7.74\times 10^{28}u^{30}+\cdots+3.44\times 10^{28}b-8.89\times 10^{28},\ 5.39\times 10^{28}u^{31}+9.21\times 10^{28}u^{30}+\cdots+3.44\times 10^{28}a+1.58\times 10^{28},\ u^{32}+2u^{31}+\cdots-u+1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}-1.56749u^{31}-2.67798u^{30}+\cdots+0.447580u-0.459304\\-1.05113u^{31}-2.24907u^{30}+\cdots-0.696011u+2.58452\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}-1.35112u^{31}-1.73786u^{30}+\cdots+3.16810u-3.50084\\-1.25788u^{31}-2.75976u^{30}+\cdots-0.405026u+2.07716\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.483239u^{31}-0.524494u^{30}+\cdots+1.98152u-2.12181\\-0.133827u^{31}-1.23298u^{30}+\cdots-0.184214u-0.00969783\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.516364u^{31}-0.428901u^{30}+\cdots+1.14359u-3.04382\\-1.05113u^{31}-2.24907u^{30}+\cdots-0.696011u+2.58452\end{pmatrix}$$

$$a_1 = \begin{pmatrix}2.03773u^{31}+4.53441u^{30}+\cdots+1.01245u-1.50697\\-0.385017u^{31}-1.14000u^{30}+\cdots-5.07614u+1.05225\end{pmatrix}$$

$$a_5 = \begin{pmatrix}2.35656u^{31}+2.86776u^{30}+\cdots+0.424283u+1.40474\\0.525047u^{31}+0.282613u^{30}+\cdots-1.74040u+0.495953\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-0.776499u^{31}+0.270111u^{30}+\cdots+6.08595u-0.702777\\0.427087u^{31}+0.438374u^{30}+\cdots-1.92022u-1.40934\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0.405957u^{31}+1.84513u^{30}+\cdots+3.17463u-5.72185\\-1.01188u^{31}-3.80125u^{30}+\cdots-0.818655u+0.867011\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-0.205937u^{31}-2.29513u^{30}+\cdots+1.79936u+0.753290\\1.71145u^{31}+3.03215u^{30}+\cdots-0.877205u+1.65118\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 9.04209u^{31}+16.4503u^{30}+\cdots-6.34383u-16.7797$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 7u^{31} + \cdots - 11u + 1$
c_2	$u^{32} + u^{31} + \cdots + 2u + 1$
c_3	$u^{32} + u^{31} + \cdots - 8u + 1$
c_4	$u^{32} + 7u^{31} + \cdots + 11u + 1$
c_5	$u^{32} - u^{31} + \cdots - 8u + 1$
c_6	$u^{32} + 2u^{31} + \cdots - u + 1$
c_7	$u^{32} + 5u^{31} + \cdots + 111u + 17$
c_8	$u^{32} - 7u^{31} + \cdots + 2u + 1$
c_9	$u^{32} - u^{31} + \cdots - 7u + 1$
c_{10}	$u^{32} - u^{31} + \cdots + 2u + 1$
c_{11}, c_{12}	$u^{32} + 7u^{31} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{32} + 31y^{31} + \cdots + 15y + 1$
c_2	$y^{32} + y^{31} + \cdots + 20y + 1$
c_3	$y^{32} - 17y^{31} + \cdots + 14y + 1$
c_5	$y^{32} + 21y^{31} + \cdots - 10y + 1$
c_6	$y^{32} - 8y^{31} + \cdots - 9y + 1$
c_7	$y^{32} - 13y^{31} + \cdots - 13y + 289$
c_8, c_{11}, c_{12}	$y^{32} + 33y^{31} + \cdots - 24y + 1$
c_9	$y^{32} + y^{31} + \cdots - 13y + 1$
c_{10}	$y^{32} + 21y^{31} + \cdots + 36y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.022426 + 0.961456I$ $a = -0.645889 + 0.132990I$ $b = -0.241809 - 0.427079I$	$-2.48524 - 1.51052I$	$-12.43093 + 2.19531I$
$u = 0.022426 - 0.961456I$ $a = -0.645889 - 0.132990I$ $b = -0.241809 + 0.427079I$	$-2.48524 + 1.51052I$	$-12.43093 - 2.19531I$
$u = -0.736928 + 0.592892I$ $a = -0.707619 + 0.840043I$ $b = 0.520185 + 1.022860I$	$3.07571 + 4.72411I$	$-4.27650 - 6.25172I$
$u = -0.736928 - 0.592892I$ $a = -0.707619 - 0.840043I$ $b = 0.520185 - 1.022860I$	$3.07571 - 4.72411I$	$-4.27650 + 6.25172I$
$u = 0.716295 + 0.581208I$ $a = -0.04103 - 1.62674I$ $b = 0.84715 - 1.16868I$	$1.06653 - 4.54772I$	$-17.0622 + 16.0080I$
$u = 0.716295 - 0.581208I$ $a = -0.04103 + 1.62674I$ $b = 0.84715 + 1.16868I$	$1.06653 + 4.54772I$	$-17.0622 - 16.0080I$
$u = -0.318229 + 1.088270I$ $a = -0.688768 + 0.080851I$ $b = 0.258467 + 0.629324I$	$3.13261 + 4.42693I$	$-7.57575 - 6.49141I$
$u = -0.318229 - 1.088270I$ $a = -0.688768 - 0.080851I$ $b = 0.258467 - 0.629324I$	$3.13261 - 4.42693I$	$-7.57575 + 6.49141I$
$u = -1.005940 + 0.563864I$ $a = 0.489242 + 1.237170I$ $b = 0.758960 + 0.827442I$	$6.47740 + 3.02424I$	$-2.60662 - 4.16406I$
$u = -1.005940 - 0.563864I$ $a = 0.489242 - 1.237170I$ $b = 0.758960 - 0.827442I$	$6.47740 - 3.02424I$	$-2.60662 + 4.16406I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.685996+0.496224I$ $a=-0.20418+2.01980I$ $b=\ \ 0.94573+1.24163I$	$6.41698+5.33981I$	$0.48064-11.37051I$
$u=-0.685996-0.496224I$ $a=-0.20418-2.01980I$ $b=\ \ 0.94573-1.24163I$	$6.41698-5.33981I$	$0.48064+11.37051I$
$u=-1.123360+0.371214I$ $a=-0.240380+0.510345I$ $b=-0.60112+1.32586I$	$0.333435-0.316469I$	$-11.06515-1.48103I$
$u=-1.123360-0.371214I$ $a=-0.240380-0.510345I$ $b=-0.60112-1.32586I$	$0.333435+0.316469I$	$-11.06515+1.48103I$
$u=-0.659831+0.130237I$ $a=-0.436980-1.235320I$ $b=\ \ 0.556162+0.248693I$	$0.93477-5.87209I$	$-4.32645+5.96982I$
$u=-0.659831-0.130237I$ $a=-0.436980+1.235320I$ $b=\ \ 0.556162-0.248693I$	$0.93477+5.87209I$	$-4.32645-5.96982I$
$u=\ \ 0.598600+0.305377I$ $a=-0.50271+1.42441I$ $b=\ \ 0.164249-0.615739I$	$7.94608+9.61613I$	$-1.35542-4.59648I$
$u=\ \ 0.598600-0.305377I$ $a=-0.50271-1.42441I$ $b=\ \ 0.164249+0.615739I$	$7.94608-9.61613I$	$-1.35542+4.59648I$
$u=-1.101510+0.819862I$ $a=\ \ 0.138085-1.156940I$ $b=-0.564029-0.500089I$	$7.53790+5.62370I$	$2.35992-7.85868I$
$u=-1.101510-0.819862I$ $a=\ \ 0.138085+1.156940I$ $b=-0.564029+0.500089I$	$7.53790-5.62370I$	$2.35992+7.85868I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.370800 + 0.128159I$ $a = -0.115526 + 1.063450I$ $b = 0.052016 + 0.540405I$	$-0.598809 + 0.612645I$	$3.65302 - 13.18789I$
$u = 1.370800 - 0.128159I$ $a = -0.115526 - 1.063450I$ $b = 0.052016 - 0.540405I$	$-0.598809 - 0.612645I$	$3.65302 + 13.18789I$
$u = 0.313801 + 0.476983I$ $a = -0.510320 - 0.524271I$ $b = -1.54381 + 0.10949I$	$-0.712793 - 1.100790I$	$-2.86026 + 9.24500I$
$u = 0.313801 - 0.476983I$ $a = -0.510320 + 0.524271I$ $b = -1.54381 - 0.10949I$	$-0.712793 + 1.100790I$	$-2.86026 - 9.24500I$
$u = 1.23232 + 0.78418I$ $a = -0.116491 - 0.506159I$ $b = -0.008606 - 0.651179I$	$-1.99902 - 1.33246I$	$-11.56431 + 2.50661I$
$u = 1.23232 - 0.78418I$ $a = -0.116491 + 0.506159I$ $b = -0.008606 + 0.651179I$	$-1.99902 + 1.33246I$	$-11.56431 - 2.50661I$
$u = 0.412137 + 0.285133I$ $a = -0.439508 - 1.085520I$ $b = 1.59813 - 0.97300I$	$1.04794 - 2.73578I$	$-11.9118 + 8.0050I$
$u = 0.412137 - 0.285133I$ $a = -0.439508 + 1.085520I$ $b = 1.59813 + 0.97300I$	$1.04794 + 2.73578I$	$-11.9118 - 8.0050I$
$u = 1.07246 + 1.12234I$ $a = 0.229962 + 0.874367I$ $b = -0.978345 + 1.011560I$	$-1.39853 - 6.77157I$	$-6.00000 + 0.I$
$u = 1.07246 - 1.12234I$ $a = 0.229962 - 0.874367I$ $b = -0.978345 - 1.011560I$	$-1.39853 + 6.77157I$	$-6.00000 + 0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.10705+1.21197I$ $a=\quad 0.292118-0.754427I$ $b=-1.26333-1.10870I$	$2.12371+8.22607I$	$0.-11.82419I$
$u=-1.10705-1.21197I$ $a=\quad 0.292118+0.754427I$ $b=-1.26333+1.10870I$	$2.12371-8.22607I$	$0.+11.82419I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{32}-7u^{31}+\cdots-11u+1)(u^{145}+6u^{144}+\cdots+241016u+53041)$
c_2	$(u^{32}+u^{31}+\cdots+2u+1)(u^{145}-8u^{144}+\cdots+31u+1)$
c_3	$(u^{32}+u^{31}+\cdots-8u+1)(u^{145}-25u^{143}+\cdots-366697u+53551)$
c_4	$(u^{32}+7u^{31}+\cdots+11u+1)(u^{145}+6u^{144}+\cdots+241016u+53041)$
c_5	$(u^{32}-u^{31}+\cdots-8u+1)(u^{145}-2u^{144}+\cdots-584109u+262673)$
c_6	$(u^{32}+2u^{31}+\cdots-u+1)(u^{145}-u^{144}+\cdots+238u+31)$
c_7	$(u^{32}+5u^{31}+\cdots+111u+17)$ $\cdot(u^{145}+4u^{144}+\cdots+220494628u+11977767)$
c_8	$(u^{32}-7u^{31}+\cdots+2u+1)(u^{145}+6u^{144}+\cdots-13u+1)$
c_9	$(u^{32}-u^{31}+\cdots-7u+1)(u^{145}-10u^{143}+\cdots-2690u+1025)$
c_{10}	$(u^{32}-u^{31}+\cdots+2u+1)(u^{145}+4u^{144}+\cdots-193u+27)$
c_{11}, c_{12}	$(u^{32}+7u^{31}+\cdots-2u+1)(u^{145}+6u^{144}+\cdots-13u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{32}+31y^{31}+\cdots+15y+1)$ $\cdot(y^{145}+114y^{144}+\cdots-109382835062y-2813347681)$
c_2	$(y^{32}+y^{31}+\cdots+20y+1)(y^{145}+8y^{144}+\cdots+245y-1)$
c_3	$(y^{32}-17y^{31}+\cdots+14y+1)$ $\cdot(y^{145}-50y^{144}+\cdots+55811088111y-2867709601)$
c_5	$(y^{32}+21y^{31}+\cdots-10y+1)$ $\cdot(y^{145}+48y^{144}+\cdots-7065213404445y-68997104929)$
c_6	$(y^{32}-8y^{31}+\cdots-9y+1)(y^{145}-17y^{144}+\cdots+83242y-961)$
c_7	$(y^{32}-13y^{31}+\cdots-13y+289)$ $\cdot(y^{145}+38y^{144}+\cdots-9969062284337030y-143466902306289)$
c_8, c_{11}, c_{12}	$(y^{32}+33y^{31}+\cdots-24y+1)(y^{145}+148y^{144}+\cdots-23y-1)$
c_9	$(y^{32}+y^{31}+\cdots-13y+1)$ $\cdot(y^{145}-20y^{144}+\cdots-85056950y-1050625)$
c_{10}	$(y^{32}+21y^{31}+\cdots+36y+1)(y^{145}+32y^{144}+\cdots-44723y-729)$