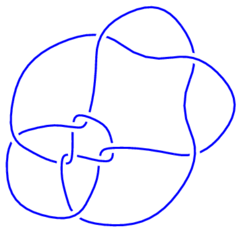
$11a_{321}$ ($K11a_{321}$)



[1]

Arc Sequences

$$\rightarrow \underset{7}{\uparrow} \rightarrow \underset{9}{\uparrow} \rightarrow \underset{1}{\downarrow} \rightarrow \underset{8}{\uparrow} \rightarrow \underset{10}{\uparrow} \rightarrow \underset{2}{\uparrow} \rightarrow \underset{11}{\uparrow} \rightarrow \underset{3}{\uparrow} \rightarrow \underset{5}{\uparrow} \rightarrow \underset{6}{\uparrow} \rightarrow \underset{4}{\downarrow} \rightarrow$$

Solving Sequence

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

Representation Ideals

$$I = \bigcap_{i=1}^{4} I_i^u$$

$$\begin{aligned}
I_1^u = \langle & u^{10} - 6u^9 + 3u^8 + 46u^7 - 90u^6 - 40u^5 + 257u^4 - 258u^3 + 99u^2 - 48u + 103, \\
& -452508u^9 + 929512u^8 + \cdots + 230425945b - 9058360, \\
& 9001411u^9 - 2897188u^8 + \cdots + 2373387182a - 1144596905 \rangle \\
I_2^u = \langle & u^{16} - 9u^{14} + \cdots - 6u + 1,\ b + u, \\
& -6.55185 \times 10^{17}u^{15} - 1.63660 \times 10^{16}u^{14} + \cdots + 3.64314 \times 10^{17}a + 3.53085 \times 10^{18} \rangle \\
I_3^u = \langle & u^{26} + 2u^{25} + \cdots + 2u + 1,\ b - u, \\
& 2.56013 \times 10^{37}u^{25} + 4.67380 \times 10^{37}u^{24} + \cdots + 4.14202 \times 10^{37}a + 1.40875 \times 10^{37} \rangle \\
I_4^u = \langle & u^{40} + 11u^{39} + \cdots + 46816u + 24224, \\
& -2.69869 \times 10^{131}u^{39} - 2.92130 \times 10^{132}u^{38} + \cdots + 1.02927 \times 10^{136}a - 1.62421 \times 10^{135}, \\
& 1.64842 \times 10^{140}u^{39} + 1.60701 \times 10^{141}u^{38} + \cdots + 6.02807 \times 10^{145}b + 3.42015 \times 10^{145} \rangle
\end{aligned}$$

There are 4 irreducible components with 92 representations.

[1]The knot diagram image is adapter from "C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, http://www.indiana.edu/ knotinfo"

I.

$\boldsymbol{I_1^u = \langle u^{10} - 6u^9 + \cdots - 48u + 103,\ -4.53 \times 10^5 u^9 + 9.30 \times 10^5 u^8 + \cdots + 2.30 \times 10^7 b - 9.06 \times 10^6,\ 9.00 \times 10^6 u^9 - 2.90 \times 10^6 u^8 + \cdots + 2.37 \times 10^9 a - 1.14 \times 10^9 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} -0.00379264u^9 + 0.00122070u^8 + \cdots - 0.415649u + 0.482263 \\ 0.0196379u^9 - 0.0403389u^8 + \cdots - 0.931235u + 0.393114 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.00331450u^9 + 0.0108277u^8 + \cdots + 0.641168u - 0.0794843 \\ 0.0277397u^9 - 0.124887u^8 + \cdots + 1.48316u - 1.52354 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0244252u^9 - 0.114059u^8 + \cdots + 2.12433u - 1.60302 \\ 0.0277397u^9 - 0.124887u^8 + \cdots + 1.48316u - 1.52354 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.00541396u^9 - 0.0253217u^8 + \cdots - 0.0686849u + 0.347691 \\ 0.0477221u^9 - 0.175865u^8 + \cdots - 0.819388u - 1.06877 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.00338163u^9 - 0.0152191u^8 + \cdots - 0.144840u - 1.30194 \\ -0.00324738u^9 + 0.00643630u^8 + \cdots + 0.137497u - 1.46091 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.00379264u^9 + 0.00122070u^8 + \cdots - 0.415649u + 0.482263 \\ -0.0440246u^9 + 0.175686u^8 + \cdots - 1.57428u + 2.61124 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.00573234u^9 + 0.0244921u^8 + \cdots + 1.24276u + 0.885447 \\ 0.0167831u^9 - 0.0631593u^8 + \cdots + 1.61356u + 0.601610 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0138198u^9 - 0.0586435u^8 + \cdots + 0.202743u - 1.18142 \\ -0.0605905u^9 + 0.234152u^8 + \cdots - 0.0491119u + 1.44861 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.00102186u^9 + 0.00493095u^8 + \cdots + 0.357808u + 0.935689 \\ 0.0393729u^9 - 0.130918u^8 + \cdots + 0.793237u - 0.323751 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.00102186u^9 + 0.00493095u^8 + \cdots + 0.357808u + 0.935689 \\ 0.0393729u^9 - 0.130918u^8 + \cdots + 0.793237u - 0.323751 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -2.20487 - 0.28512I$ $a = -0.645537 - 0.015924I$ $b = 2.51829 - 0.40596I$	$6.81032 + 8.80167I$	$11.48863 - 6.99717I$
$u = -2.20487 + 0.28512I$ $a = -0.645537 + 0.015924I$ $b = 2.51829 + 0.40596I$	$6.81032 - 8.80167I$	$11.48863 + 6.99717I$
$u = -0.302373 - 0.583240I$ $a = 0.960244 - 0.033543I$ $b = 0.844629 + 0.916251I$	$-4.27660 + 3.06116I$	$3.03023 - 8.86130I$
$u = -0.302373 + 0.583240I$ $a = 0.960244 + 0.033543I$ $b = 0.844629 - 0.916251I$	$-4.27660 - 3.06116I$	$3.03023 + 8.86130I$
$u = 0.844629 - 0.916251I$ $a = -0.493021 + 0.116240I$ $b = -0.302373 + 0.583240I$	$-4.27660 - 3.06116I$	$3.03023 + 8.86130I$
$u = 0.844629 + 0.916251I$ $a = -0.493021 - 0.116240I$ $b = -0.302373 - 0.583240I$	$-4.27660 + 3.06116I$	$3.03023 - 8.86130I$
$u = 2.14432 - 0.42471I$ $a = -0.546453 - 0.108231I$ $b = 2.14432 + 0.42471I$	-0.132640	4.96229
$u = 2.14432 + 0.42471I$ $a = -0.546453 + 0.108231I$ $b = 2.14432 - 0.42471I$	-0.132640	4.96229
$u = 2.51829 - 0.40596I$ $a = 0.535447 + 0.173346I$ $b = -2.20487 - 0.28512I$	$6.81032 + 8.80167I$	$11.48863 - 6.99717I$
$u = 2.51829 + 0.40596I$ $a = 0.535447 - 0.173346I$ $b = -2.20487 + 0.28512I$	$6.81032 - 8.80167I$	$11.48863 + 6.99717I$

II. $\boldsymbol{I_2^u = \langle u^{16} - 9u^{14} + \cdots - 6u + 1,\ b + u,\ -6.55 \times 10^{17}u^{15} - 1.64 \times 10^{16}u^{14} + \cdots + 3.64 \times 10^{17}a + 3.53 \times 10^{18}\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1.79841u^{15} + 0.0449229u^{14} + \cdots + 61.7322u - 9.69179 \\ -u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -3.12103u^{15} - 0.0821901u^{14} + \cdots - 103.198u + 15.7438 \\ 0.0420366u^{15} + 0.0356823u^{14} + \cdots + 2.52887u + 0.0449229 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -3.07899u^{15} - 0.0465078u^{14} + \cdots - 100.669u + 15.7887 \\ 0.0420366u^{15} + 0.0356823u^{14} + \cdots + 2.52887u + 0.0449229 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -3.45931u^{15} - 0.0490423u^{14} + \cdots - 110.112u + 15.8261 \\ 0.153489u^{15} + 0.0989509u^{14} + \cdots + 3.15676u + 0.127113 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.0415220u^{15} + 0.370953u^{14} + \cdots - 7.66568u + 9.18323 \\ 0.134633u^{15} + 0.0269801u^{14} + \cdots + 1.34519u - 0.195525 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.79841u^{15} + 0.0449229u^{14} + \cdots + 61.7322u - 9.69179 \\ -0.0420366u^{15} - 0.0356823u^{14} + \cdots - 2.52887u - 0.0449229 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.127113u^{15} - 0.153489u^{14} + \cdots + 4.08105u - 3.91944 \\ -0.134633u^{15} - 0.0269801u^{14} + \cdots - 1.34519u + 0.195525 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.34298u^{15} - 0.184776u^{14} + \cdots + 52.7825u - 9.95014 \\ -0.0723240u^{15} + 0.0363070u^{14} + \cdots - 4.23597u + 0.355091 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.92964u^{15} - 0.257013u^{14} + \cdots + 69.6444u - 15.2721 \\ -0.364212u^{15} - 0.0571476u^{14} + \cdots - 3.89397u + 0.319966 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.92964u^{15} - 0.257013u^{14} + \cdots + 69.6444u - 15.2721 \\ -0.364212u^{15} - 0.0571476u^{14} + \cdots - 3.89397u + 0.319966 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -2.82522 - 0.81767I$ $a = -0.439581 + 0.070982I$ $b = \ \ 2.82522 + 0.81767I$	$4.26074 + 5.75964I$	$11.30648 - 7.65537I$
$u = -2.82522 + 0.81767I$ $a = -0.439581 - 0.070982I$ $b = \ \ 2.82522 - 0.81767I$	$4.26074 - 5.75964I$	$11.30648 + 7.65537I$
$u = -0.984076 - 0.459298I$ $a = -0.192230 + 0.416160I$ $b = \ \ 0.984076 + 0.459298I$	$1.00222 + 3.96560I$	$4.29089 - 5.86867I$
$u = -0.984076 + 0.459298I$ $a = -0.192230 - 0.416160I$ $b = \ \ 0.984076 - 0.459298I$	$1.00222 - 3.96560I$	$4.29089 + 5.86867I$
$u = -0.044811 - 0.753154I$ $a = \ \ 0.04429 - 1.68384I$ $b = \ \ 0.044811 + 0.753154I$	$-1.36561 + 1.03179I$	$13.09233 + 0.83056I$
$u = -0.044811 + 0.753154I$ $a = \ \ 0.04429 + 1.68384I$ $b = \ \ 0.044811 - 0.753154I$	$-1.36561 - 1.03179I$	$13.09233 - 0.83056I$
$u = \ \ 0.086778 - 0.170995I$ $a = -3.65312 - 7.71756I$ $b = -0.086778 + 0.170995I$	$8.58175 - 2.59504I$	$15.8180 - 1.0523I$
$u = \ \ 0.086778 + 0.170995I$ $a = -3.65312 + 7.71756I$ $b = -0.086778 - 0.170995I$	$8.58175 + 2.59504I$	$15.8180 + 1.0523I$
$u = \ \ 0.189963 - 0.682181I$ $a = -0.885850 - 0.865396I$ $b = -0.189963 + 0.682181I$	$-4.35479 - 2.08547I$	$2.28739 + 3.71145I$
$u = \ \ 0.189963 + 0.682181I$ $a = -0.885850 + 0.865396I$ $b = -0.189963 - 0.682181I$	$-4.35479 + 2.08547I$	$2.28739 - 3.71145I$

Solution to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.370196 - 0.872686I$ $a = -0.511485 - 0.229657I$ $b = -0.370196 + 0.872686I$	$-4.35506 - 1.95343I$	$2.10403 + 1.81382I$
$u = 0.370196 + 0.872686I$ $a = -0.511485 + 0.229657I$ $b = -0.370196 - 0.872686I$	$-4.35506 + 1.95343I$	$2.10403 - 1.81382I$
$u = 1.223194 - 0.204593I$ $a = 0.667356 + 0.568299I$ $b = -1.223194 + 0.204593I$	$-2.00312 + 2.11071I$	$-0.36261 + 5.84578I$
$u = 1.223194 + 0.204593I$ $a = 0.667356 - 0.568299I$ $b = -1.223194 - 0.204593I$	$-2.00312 - 2.11071I$	$-0.36261 - 5.84578I$
$u = 1.98398 - 1.67944I$ $a = 0.470621 + 0.302904I$ $b = -1.98398 + 1.67944I$	$1.52375 - 4.32708I$	$9.46348 + 3.89019I$
$u = 1.98398 + 1.67944I$ $a = 0.470621 - 0.302904I$ $b = -1.98398 - 1.67944I$	$1.52375 + 4.32708I$	$9.46348 - 3.89019I$

III. $\boldsymbol{I_3^u = \langle u^{26} + 2u^{25} + \cdots + 2u + 1,\ b - u,\ 2.56 \times 10^{37}u^{25} + 4.67 \times 10^{37}u^{24} + \cdots + 4.14 \times 10^{37}a + 1.41 \times 10^{37}\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} -0.618088u^{25} - 1.12839u^{24} + \cdots + 1.49746u - 0.340113 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.295502u^{25} - 0.306325u^{24} + \cdots + 2.23977u + 0.648738 \\ 0.0139482u^{25} - 0.0161305u^{24} + \cdots + 1.40251u - 0.107789 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.281553u^{25} - 0.322456u^{24} + \cdots + 3.64228u + 0.540948 \\ 0.0139482u^{25} - 0.0161305u^{24} + \cdots + 1.40251u - 0.107789 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.795978u^{25} - 1.88030u^{24} + \cdots - 2.71520u - 1.40671 \\ -0.0423004u^{25} + 0.0335809u^{24} + \cdots + 0.871345u + 0.392467 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.518600u^{25} + 1.00386u^{24} + \cdots + 1.33781u + 1.06136 \\ -0.162209u^{25} - 0.392981u^{24} + \cdots - 0.612754u - 0.0562486 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.618088u^{25} - 1.12839u^{24} + \cdots + 1.49746u - 0.340113 \\ 0.0139482u^{25} - 0.0161305u^{24} + \cdots + 1.40251u - 0.107789 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.392467u^{25} - 0.827235u^{24} + \cdots - 2.13580u + 0.0864105 \\ 0.162209u^{25} + 0.392981u^{24} + \cdots + 0.612754u + 0.0562486 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.554513u^{25} - 1.24310u^{24} + \cdots - 1.02040u - 1.30560 \\ -0.140203u^{25} - 0.191429u^{24} + \cdots + 2.16494u + 0.340313 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.101462u^{25} + 0.449531u^{24} + \cdots + 3.57448u + 1.45412 \\ 0.216602u^{25} + 0.387973u^{24} + \cdots - 0.578335u - 0.489456 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.101462u^{25} + 0.449531u^{24} + \cdots + 3.57448u + 1.45412 \\ 0.216602u^{25} + 0.387973u^{24} + \cdots - 0.578335u - 0.489456 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -2.33173 - 1.12420I$ $a = 0.576312 - 0.126131I$ $b = -2.33173 - 1.12420I$	$3.3294 + 16.2583I$	$9.07179 - 8.72442I$
$u = -2.33173 + 1.12420I$ $a = 0.576312 + 0.126131I$ $b = -2.33173 + 1.12420I$	$3.3294 - 16.2583I$	$9.07179 + 8.72442I$
$u = -2.20434 - 0.27840I$ $a = 0.633125 + 0.078905I$ $b = -2.20434 - 0.27840I$	$6.54594 + 5.84781I$	$12.9077 - 6.2870I$
$u = -2.20434 + 0.27840I$ $a = 0.633125 - 0.078905I$ $b = -2.20434 + 0.27840I$	$6.54594 - 5.84781I$	$12.9077 + 6.2870I$
$u = -1.70374$ $a = 0.867007$ $b = -1.70374$	7.01191	13.0995
$u = -0.715120 - 0.471181I$ $a = -0.960547 - 0.644305I$ $b = -0.715120 - 0.471181I$	$-2.65503 + 11.68359I$	$5.29865 - 8.17521I$
$u = -0.715120 + 0.471181I$ $a = -0.960547 + 0.644305I$ $b = -0.715120 + 0.471181I$	$-2.65503 - 11.68359I$	$5.29865 + 8.17521I$
$u = -0.631429 - 0.196744I$ $a = -0.531370 - 0.915879I$ $b = -0.631429 - 0.196744I$	$1.79534 + 1.92657I$	$9.32234 - 4.27733I$
$u = -0.631429 + 0.196744I$ $a = -0.531370 + 0.915879I$ $b = -0.631429 + 0.196744I$	$1.79534 - 1.92657I$	$9.32234 + 4.27733I$
$u = -0.232752$ $a = -1.81788$ $b = -0.232752$	0.617191	16.1816

Solution to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.040108-0.597183I$ $a=-1.36958+1.36049I$ $b=-0.040108-0.597183I$	$-1.25182-6.02050I$	$5.93358+4.78066I$
$u=-0.040108+0.597183I$ $a=-1.36958-1.36049I$ $b=-0.040108+0.597183I$	$-1.25182+6.02050I$	$5.93358-4.78066I$
$u=\ 0.056739-0.471199I$ $a=\ 1.84738+2.07193I$ $b=\ 0.056739-0.471199I$	$-3.21650-0.73193I$	$6.23274-2.78423I$
$u=\ 0.056739+0.471199I$ $a=\ 1.84738-2.07193I$ $b=\ 0.056739+0.471199I$	$-3.21650+0.73193I$	$6.23274+2.78423I$
$u=\ 0.161826-1.083035I$ $a=-0.16716-1.55526I$ $b=\ 0.161826-1.083035I$	$8.12481-2.87714I$	$2.87010+6.16700I$
$u=\ 0.161826+1.083035I$ $a=-0.16716+1.55526I$ $b=\ 0.161826+1.083035I$	$8.12481+2.87714I$	$2.87010-6.16700I$
$u=\ 0.343903-0.337951I$ $a=\ 0.27825+1.50646I$ $b=\ 0.343903-0.337951I$	$3.26437+1.57845I$	$12.40306-2.05363I$
$u=\ 0.343903+0.337951I$ $a=\ 0.27825-1.50646I$ $b=\ 0.343903+0.337951I$	$3.26437-1.57845I$	$12.40306+2.05363I$
$u=\ 0.629910-0.409660I$ $a=\ 1.072796-0.873955I$ $b=\ 0.629910-0.409660I$	$-5.41034-5.29072I$	$3.13484+6.09748I$
$u=\ 0.629910+0.409660I$ $a=\ 1.072796+0.873955I$ $b=\ 0.629910+0.409660I$	$-5.41034+5.29072I$	$3.13484-6.09748I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.968868 - 0.402755I$ $a = -0.503524 - 0.845164I$ $b = 0.968868 - 0.402755I$	$-1.85940 + 2.41843I$	$9.7124 - 14.3057I$
$u = 0.968868 + 0.402755I$ $a = -0.503524 + 0.845164I$ $b = 0.968868 + 0.402755I$	$-1.85940 - 2.41843I$	$9.7124 + 14.3057I$
$u = 1.65992 - 0.73751I$ $a = -0.738889 - 0.386347I$ $b = 1.65992 - 0.73751I$	$10.23745 + 3.38664I$	$16.0962 - 1.6906I$
$u = 1.65992 + 0.73751I$ $a = -0.738889 + 0.386347I$ $b = 1.65992 + 0.73751I$	$10.23745 - 3.38664I$	$16.0962 + 1.6906I$
$u = 2.06981 - 0.93114I$ $a = -0.661363 - 0.111038I$ $b = 2.06981 - 0.93114I$	$0.31031 - 10.20527I$	$6.37611 + 6.34949I$
$u = 2.06981 + 0.93114I$ $a = -0.661363 + 0.111038I$ $b = 2.06981 + 0.93114I$	$0.31031 + 10.20527I$	$6.37611 - 6.34949I$

IV. $\boldsymbol{I^u_4 = \langle u^{40} + 11u^{39} + \cdots + 46816u + 24224,\ -2.70 \times 10^{131}u^{39} - 2.92 \times 10^{132}u^{38} + \cdots + 1.03 \times 10^{136}a - 1.62 \times 10^{135},\ 1.65 \times 10^{140}u^{39} + 1.61 \times 10^{141}u^{38} + \cdots + 6.03 \times 10^{145}b + 3.42 \times 10^{145}\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0.0000262194u^{39} + 0.000283822u^{38} + \cdots + 0.422367u + 0.157801 \\ -2.73458 \times 10^{-6}u^{39} - 0.0000266587u^{38} + \cdots + 0.934425u - 0.567371 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -5.77264 \times 10^{-6}u^{39} - 0.0000633409u^{38} + \cdots + 0.750512u + 0.844989 \\ 3.85751 \times 10^{-6}u^{39} + 0.0000496276u^{38} + \cdots + 0.796726u + 0.445256 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1.91513 \times 10^{-6}u^{39} - 0.0000137133u^{38} + \cdots + 1.54724u + 1.29024 \\ 3.85751 \times 10^{-6}u^{39} + 0.0000496276u^{38} + \cdots + 0.796726u + 0.445256 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0000303273u^{39} + 0.000320770u^{38} + \cdots + 1.92786u + 1.07705 \\ 7.91071 \times 10^{-6}u^{39} + 0.0000795386u^{38} + \cdots + 1.30668u - 0.536961 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0000317515u^{39} + 0.000349256u^{38} + \cdots - 1.43422u + 0.441951 \\ 0.0000141833u^{39} + 0.000163090u^{38} + \cdots - 0.599967u - 0.637265 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0000262194u^{39} + 0.000283822u^{38} + \cdots + 0.422367u + 0.157801 \\ 3.32833 \times 10^{-7}u^{39} + 5.93383 \times 10^{-6}u^{38} + \cdots + 0.514219u - 0.456159 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0000182226u^{39} + 0.000198499u^{38} + \cdots + 0.644173u + 1.92395 \\ 4.66941 \times 10^{-6}u^{39} + 0.0000444597u^{38} + \cdots + 0.775911u + 0.444879 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0000186467u^{39} + 0.000197292u^{38} + \cdots + 0.642440u + 1.34477 \\ 8.99944 \times 10^{-6}u^{39} + 0.0000964385u^{38} + \cdots - 0.719854u - 0.102893 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0000124112u^{39} + 0.000144819u^{38} + \cdots - 3.03453u - 0.328829 \\ 1.13511 \times 10^{-6}u^{39} + 5.59848 \times 10^{-6}u^{38} + \cdots - 1.01267u + 0.180497 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0000124112u^{39} + 0.000144819u^{38} + \cdots - 3.03453u - 0.328829 \\ 1.13511 \times 10^{-6}u^{39} + 5.59848 \times 10^{-6}u^{38} + \cdots - 1.01267u + 0.180497 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -2.71306 - 0.72366I$ $a = 0.419030 - 0.111769I$ $b = -2.28363 - 0.04820I$	$3.33884 + 4.40083I$	$8.22546 - 3.49859I$
$u = -2.71306 + 0.72366I$ $a = 0.419030 + 0.111769I$ $b = -2.28363 + 0.04820I$	$3.33884 - 4.40083I$	$8.22546 + 3.49859I$
$u = -2.42195 - 1.40727I$ $a = -0.477253 + 0.186816I$ $b = 2.09791 + 1.48680I$	$1.26686 + 5.93141I$	$7.25943 - 7.92923I$
$u = -2.42195 + 1.40727I$ $a = -0.477253 - 0.186816I$ $b = 2.09791 - 1.48680I$	$1.26686 - 5.93141I$	$7.25943 + 7.92923I$
$u = -2.28363 - 0.04820I$ $a = 0.533008 - 0.011249I$ $b = -2.71306 - 0.72366I$	$3.33884 + 4.40083I$	$8.22546 - 3.49859I$
$u = -2.28363 + 0.04820I$ $a = 0.533008 + 0.011249I$ $b = -2.71306 + 0.72366I$	$3.33884 - 4.40083I$	$8.22546 + 3.49859I$
$u = -1.88695 - 0.08636I$ $a = -0.745017 + 0.150246I$ $b = 1.71370 - 0.53355I$	$3.33884 - 4.40083I$	$8.22546 + 3.49859I$
$u = -1.88695 + 0.08636I$ $a = -0.745017 - 0.150246I$ $b = 1.71370 + 0.53355I$	$3.33884 + 4.40083I$	$8.22546 - 3.49859I$
$u = -1.73671 - 1.50568I$ $a = -0.528843 + 0.332298I$ $b = 1.97256 + 1.74169I$	$1.26686 + 2.87025I$	$7.25943 + 0.93206I$
$u = -1.73671 + 1.50568I$ $a = -0.528843 - 0.332298I$ $b = 1.97256 - 1.74169I$	$1.26686 - 2.87025I$	$7.25943 - 0.93206I$

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.328866-0.123862I$ $a=0.192970-0.431806I$ $b=-0.028853-0.377276I$	$1.26686-5.93141I$	$7.25943+7.92923I$
$u=-1.328866+0.123862I$ $a=0.192970+0.431806I$ $b=-0.028853+0.377276I$	$1.26686+5.93141I$	$7.25943-7.92923I$
$u=-1.280140-0.087303I$ $a=-1.091551+0.245646I$ $b=1.37042+0.84075I$	6.81032	11.4886
$u=-1.280140+0.087303I$ $a=-1.091551-0.245646I$ $b=1.37042-0.84075I$	6.81032	11.4886
$u=-0.813003-0.744009I$ $a=-0.129414-0.557963I$ $b=-0.330212-0.143459I$	$1.26686+2.87025I$	$7.25943+0.93206I$
$u=-0.813003+0.744009I$ $a=-0.129414+0.557963I$ $b=-0.330212+0.143459I$	$1.26686-2.87025I$	$7.25943-0.93206I$
$u=-0.424323-1.127633I$ $a=0.517772-0.080002I$ $b=0.428365+0.491299I$	-4.27660	3.03023
$u=-0.424323+1.127633I$ $a=0.517772+0.080002I$ $b=0.428365-0.491299I$	-4.27660	3.03023
$u=-0.330212-0.143459I$ $a=0.18090-1.74392I$ $b=-0.813003-0.744009I$	$1.26686+2.87025I$	$7.25943+0.93206I$
$u=-0.330212+0.143459I$ $a=0.18090+1.74392I$ $b=-0.813003+0.744009I$	$1.26686-2.87025I$	$7.25943-0.93206I$

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.028853 - 0.377276I$ $a = -1.38665 - 0.92750I$ $b = -1.328866 - 0.123862I$	$1.26686 - 5.93141I$	$7.25943 + 7.92923I$
$u = -0.028853 + 0.377276I$ $a = -1.38665 + 0.92750I$ $b = -1.328866 + 0.123862I$	$1.26686 + 5.93141I$	$7.25943 - 7.92923I$
$u = 0.176644 - 0.547627I$ $a = 0.744194 - 0.805974I$ $b = 0.896627 - 0.048290I$	$-2.20462 + 1.53058I$	$3.99626 - 4.43065I$
$u = 0.176644 + 0.547627I$ $a = 0.744194 + 0.805974I$ $b = 0.896627 + 0.048290I$	$-2.20462 - 1.53058I$	$3.99626 + 4.43065I$
$u = 0.428365 - 0.491299I$ $a = -0.948351 + 0.196062I$ $b = -0.424323 + 1.127633I$	-4.27660	3.03023
$u = 0.428365 + 0.491299I$ $a = -0.948351 - 0.196062I$ $b = -0.424323 - 1.127633I$	-4.27660	3.03023
$u = 0.493412 - 0.208698I$ $a = -2.09346 - 0.88547I$ $b = 0.59805 - 1.72798I$	$-2.20462 - 1.53058I$	$3.99626 + 4.43065I$
$u = 0.493412 + 0.208698I$ $a = -2.09346 + 0.88547I$ $b = 0.59805 + 1.72798I$	$-2.20462 + 1.53058I$	$3.99626 - 4.43065I$
$u = 0.59805 - 1.72798I$ $a = -0.217810 - 0.629331I$ $b = 0.493412 - 0.208698I$	$-2.20462 - 1.53058I$	$3.99626 + 4.43065I$
$u = 0.59805 + 1.72798I$ $a = -0.217810 + 0.629331I$ $b = 0.493412 + 0.208698I$	$-2.20462 + 1.53058I$	$3.99626 - 4.43065I$

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.896627 - 0.048290I$ $a = -0.311710 - 0.630098I$ $b = 0.176644 - 0.547627I$	$-2.20462 + 1.53058I$	$3.99626 - 4.43065I$
$u = 0.896627 + 0.048290I$ $a = -0.311710 + 0.630098I$ $b = 0.176644 + 0.547627I$	$-2.20462 - 1.53058I$	$3.99626 + 4.43065I$
$u = 1.37042 - 0.84075I$ $a = 0.680901 + 0.577654I$ $b = -1.280140 + 0.087303I$	6.81032	11.4886
$u = 1.37042 + 0.84075I$ $a = 0.680901 - 0.577654I$ $b = -1.280140 - 0.087303I$	6.81032	11.4886
$u = 1.71370 - 0.53355I$ $a = 0.791045 + 0.118398I$ $b = -1.88695 - 0.08636I$	$3.33884 - 4.40083I$	$8.22546 + 3.49859I$
$u = 1.71370 + 0.53355I$ $a = 0.791045 - 0.118398I$ $b = -1.88695 + 0.08636I$	$3.33884 + 4.40083I$	$8.22546 - 3.49859I$
$u = 1.97256 - 1.74169I$ $a = 0.459291 + 0.294428I$ $b = -1.73671 + 1.50568I$	$1.26686 - 2.87025I$	$7.25943 - 0.93206I$
$u = 1.97256 + 1.74169I$ $a = 0.459291 - 0.294428I$ $b = -1.73671 - 1.50568I$	$1.26686 + 2.87025I$	$7.25943 + 0.93206I$
$u = 2.09791 - 1.48680I$ $a = 0.499460 + 0.249501I$ $b = -2.42195 + 1.40727I$	$1.26686 - 5.93141I$	$7.25943 + 7.92923I$
$u = 2.09791 + 1.48680I$ $a = 0.499460 - 0.249501I$ $b = -2.42195 - 1.40727I$	$1.26686 + 5.93141I$	$7.25943 - 7.92923I$

V. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_8	$(u^{10}+2u^9+\cdots+8u+17)(u^{16}+8u^{14}+\cdots-u+1)$ $(u^{26}+7u^{24}+\cdots+3u-1)(u^{40}-u^{39}+\cdots+112u+32)$
c_2, c_6	$(u^{10}+2u^9+\cdots+8u+17)(u^{16}+8u^{14}+\cdots+u+1)$ $(u^{26}+7u^{24}+\cdots+3u-1)(u^{40}-u^{39}+\cdots+112u+32)$
c_3	$(-1+u-u^2+2u^3-u^4+u^5)^{10}(u^{16}+3u^{15}+\cdots+5u^2+1)$ $(u^{26}+12u^{25}+\cdots+448u+32)$
c_4, c_7	$(u^{10}-2u^9+3u^8+4u^6+15u^4+16u^3+33u^2+20u+7)$ $(u^{16}-3u^{13}-u^{12}-u^{11}+8u^8+2u^7+6u^6+3u^5+10u^4+3u^2+1)$ $(u^{26}-9u^{24}+\cdots-16u^2-1)(u^{40}+7u^{39}+\cdots-80u+32)$
c_5	$(1+u+u^2-2u^3-u^4+u^5)^{10}(u^{16}-9u^{14}+\cdots-4u^2+1)$ $(u^{26}+11u^{25}+\cdots+16u-32)$
c_9, c_{10}	$(1+u+u^2-2u^3-u^4+u^5)^{10}(u^{16}-9u^{14}+\cdots-4u^2+1)$ $(u^{26}+11u^{25}+\cdots+16u-32)$
c_{11}	$(-1+u-u^2+2u^3-u^4+u^5)^{10}(u^{16}-3u^{15}+\cdots+5u^2+1)$ $(u^{26}+12u^{25}+\cdots+448u+32)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_2, c_6	$(y^{10}+6y^9+\cdots+786y+289)(y^{16}+16y^{15}+\cdots+13y+1)$
c_8	$(y^{26}+14y^{25}+\cdots-y+1)(y^{40}+29y^{39}+\cdots+8960y+1024)$
c_3, c_{11}	$(-1-y+y^2+4y^3+3y^4+y^5)^{10}(y^{16}+7y^{15}+\cdots+10y+1)$ $(y^{26}+10y^{25}+\cdots-27136y+1024)$
c_4, c_7	$(y^{10}+2y^9+\cdots+62y+49)(y^{16}-2y^{14}+\cdots+6y+1)$ $(y^{26}-18y^{25}+\cdots+32y+1)(y^{40}+5y^{39}+\cdots+9984y+1024)$
c_5, c_9, c_{10}	$(-1-y-3y^2+8y^3-5y^4+y^5)^{10}(y^{16}-18y^{15}+\cdots-8y+1)$ $(y^{26}-23y^{25}+\cdots-5888y+1024)$