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Nandor J Simanyi* (simanyi@uab.edu) and **Caleb C Moxley**. *Asymptotic Homotopical Complexity of a Sequence of 2D Billiards*. Preliminary report.

We are studying the asymptotic behavior of the homotopical rotation sets and the topological entropy for a sequence of billiard flows on the 2D flat torus \mathbb{T}^2 with n disjoint, circular scatterers, as n tends to infinity. Constant upper and lower bounds have been found for the internal and external radial sizes of the homotopical rotation sets, whereas for the topological entropy, logarithmic lower and upper bounds are presented, so that they differ only by a constant factor. Furthermore, computer simulation has been done for the computation of $\lim_{n \rightarrow \infty} \frac{h_{top}}{\ln n}$, as n tends to infinity, if we rely upon the so called admissible billiard trajectories. (Received February 08, 2018)