1163-37-433 **Nandor J Simanyi*** (simanyi@uab.edu), University Hall, Room 4005, 1402 10th Avenue South, Birmingham, AL 35294-1241, and **Michael Hofbauer** (hofbauer@uab.edu), University Hall, Room 4005, 1402 10th Avenue South, Birmingham, AL 35294-1241. *Asymptotic Homotopical Complexity of a Sequence of 2D Dispersing Billiards.* Preliminary report.

We are studying the asymptotic homotopical complexity of a sequence of billiard flows on the 2D unit torus T^2 with n circular obstacles. We get asymptotic lower and upper bounds for the radial sizes of the homotopical rotation sets and, accordingly, asymptotic lower and upper bounds for the sequence of topological entropies. The obtained bounds are rather close to each other, so this way we are pretty well capturing the asymptotic homotopical complexity of such systems. Note that the sequence of topological entropies grows at the order of log(n), whereas, in sharp contrast, the order of magnitude of the sequence of metric entropies is only log(n)/n.

Also, we prove the convexity of the admissible rotation set AR, and the fact that the rotation vectors obtained from periodic admissible trajectories form a dense subset in AR. (Received September 06, 2020)