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**Jimmy Tseng\*** ([tseng@math.ohio-state.edu](mailto:tseng@math.ohio-state.edu)), Department of Mathematics, Ohio State University, 231 West 18th Avenue, Columbus, OH 43210. *Markov partitions, nondense orbits, games, and number theory.*

Winning a certain game, played on a subset of some Euclidean space, allows us to determine the Hausdorff dimension of the subset.

Consider the orbit of a point under an expanding circle map. Using the game and (finite element) Markov partitions, I show that points whose orbits are nondense form a full Hausdorff dimension set. When the map is linear, this set has number-theoretical meaning.

Very recently, together with W. Mance, I have extended my result above to Lüroth expansions, which are analogous to continued fraction expansions. For this result, we deal with an infinite element Markov partition. (Received February 16, 2011)