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Constructing Ergodic Families of Combinatorially Obtained Minimal Cantor Sets.

A Cantor set is a perfect, zero dimensional, compact metric space. Given a Cantor set X, a continuous map $f : X \to X$ is called a minimal Cantor set if every orbit of f is dense in X. In 2006, Gambaudo and Martens gave conditions under which it can be guaranteed that a minimal Cantor set can be obtained as the inverse limit of certain directed topological graphs by introducing specific nonnegative integer matrices, called winding matrices, to describe the projection between each graph. They went on to claim that non-uniquely ergodic minimal Cantor sets can be obtained from winding matrices whose unbounded entries grow "fast enough", but did not address the necessary growth rate. In this talk, a family of minimal Cantor sets that can be obtained using square winding matrices will be introduced and the growth rate needed to guarantee either unique or non-unique ergodicity within the family will be established. (Received September 21, 2015)