

RECENT PROGRESS ON THE DYNAMICS OF RANDOM SUBSTITUTIONS

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There has been recent interest in understanding a class of tilings associated to random substitution systems - substitutions where a given letter is independently replaced by one possible word out of a set of words according to some probability distribution. In particular, such tilings appear to be good models for quasicrystals with defects. These systems retain the property of having long range order from the deterministic setting but also exhibit positive entropy and so occupy a position intermediate between low complexity long range order and entirely random. We'll discuss some of the basic dynamical properties of such systems in dimension one as well as new results concerning their diffraction spectra, topological entropy and periodic point structure.