Local entropy averages in geometric measure theory

PABLO SHMERKIN

University of Surrey (Guildford, England)

ABSTRACT:

Local entropy averages, introduced in different contexts by Llorente and Nicolau, and by Hochman and myself, provide a convenient, dynamically-inspired way to estimate various notions of dimension of a measure. In this talk I will explain how they can be used to unify, extend and generalize a large number of recent results in geometric measure theory. More precisely, I will describe sharp dimension bounds for measures (and sets) in terms of their local distribution, described by geometric concepts such as porosity or conical densities. All the relevant notions will be explained.

This is joint work with T. Sahlsten (Helsinki) and V. Suomala (Oulu).