

**Tolsa, Xavier** (ICREA and Universitat Autònoma de Barcelona)

*Rectifiability, the Jones'  $\beta$  coefficients, and densities*

**Abstract:** In this talk I will review some recent results regarding the characterization of  $n$ -rectifiable sets in  $\mathbb{R}^d$  in terms of different square functions involving the so called  $\beta$  coefficients of Jones, David and Semmes and other coefficients which involve differences of densities. These results are valid for sets  $E \subset \mathbb{R}^d$  with finite Hausdorff measure  $\mathcal{H}^n$  without any doubling assumption.

The arguments are based on a corona type decomposition which can be applied to study the  $L^2$  boundedness of Calderón-Zygmund operators such as Riesz transforms.