

Fulvio Ricci | Scuola Normale Superiore

Title: Multi-parameter Littlewood-Paley decompositions in \mathbb{R}^n generated by families of dilations.

Abstract: The topic of this talk is joint work with A. Hejna and A. Nagel. Its origin is in work from 1982 by D. Phong and E.M. Stein, where they discuss properties of compositions of two Calderón-Zygmund operators on \mathbb{R}^n adapted to different types of dilations, one isotropic, the other parabolic.

A systematic treatment of the resulting class of operators, with extensions to any number of dilations, is contained in the AMS Memoirs paper by A. Nagel, E.M. Stein, S. Wainger and myself of 2018.

I will present the different kinds of Littlewood-Paley square functions that arise in this context and discuss their equivalence in defining an adapted H^1 Hardy space.