Abstracts

José Conde Alonso

BMO and commutators with nonhomogeneous martingales
The norm on L^p of the commutator of the Hilbert transform and a function b is known to be equivalent to the BMO norm of b. In this talk, we explain that the same result is no longer true in the dyadic setting if the underlying measure is not regular enough. Our result can be interpreted as an obstruction to construct dyadic representation theorems in non-doubling settings. Based on joint work with Tainara G. Borges, Jill Pipher, and Nathan Wagner.

Guillermo Rey

Cancellative sparse domination
In this talk we will give a sparse domination result that respects the cancellation present in the function. In particular, the $H^1 \to L^1$ boundedness of Calderón–Zygmund operators follows easily. Incidentally, the method of proof provides a path to proving sparse domination results in situations where the weak type (1,1) endpoint is lacking.

Francesco Di Plinio

Directional Carleson Measures
We state and prove an abstract Carleson embedding theorem for balayages, along N-directional collections of codimension 1 geometric objects, of sequences obeying a directional Carleson packing condition. This implies maximal and square function inequalities for geometric operators in weak L^2 and restricted L^4, respectively. If time permits, we will describe the extension to the conical setting. Joint works with I. Parissis and Accomazzo–Hagelstein–Parissis–Roncal.