Publicacions més rellevants de la línia de recerca:

Integrals singulars

Referència: Mateu, J., Prat, L. and Verdera, J. The capacity associated to signed Riesz kernels, and Wolff potentials. *J. Reine Angew. Math.* , **578** (2005), pp. 201–223.

Abstract: We show that, for $0 < \alpha < 1$, the capacity associated to the signed vector valued Riesz kernel $\frac{x}{|x|^{1+\alpha}}$ in $\mathbb{R}^n$ is comparable to the Riesz capacity $C_{\frac{2}{3}(n-\alpha),\frac{2}{3}}$ of non-linear potential theory.

Referència: Mateu, J. and Verdera, J. L^p and weak L^1 estimates for the maximal Riesz transform and the maximal Beurling transform. *Math. Res. Lett.*, **13(5-6)** (2006), pp. 957–966.

Abstract: We prove L^p estimates for the maximal Riesz transform in terms of the Riesz transform itself, for $1 < p \leq \infty$. We show that the corresponding weak L^1 estimate fails for the maximal Riesz transform, but surprisingly does hold for the maximal Beurling transform.

Referència: Mattila, P. and Verdera, J. Convergence of singular integrals with general measures. *J. Eur. Math. Soc. (JEMS)*, **11(2)** (2009), pp. 257–271.

Abstract: We show that L^2-bounded singular integrals in metric spaces with respect to general measures and kernels converge weakly. This implies a kind of average convergence almost everywhere. For measures with zero density we prove the almost everywhere existence of principal values.