

Speaker: Carlos Pérez, Universidad de Sevilla

Title: Weighted estimates Singular Integral Operators and Sobolev inequalities.

Abstract:

In this talk we will present recent results about a sharp weighted weak type $(1, 1)$ estimate for any Calderón-Zygmund singular integral operator assuming that the weight satisfy the A_1 condition. This result is related to a problem of Muckenhoupt-Wheeden that we will discuss. We will show that the endpoint result follows by proving first a corresponding sharp weighted L^p estimate both sharp on p and the A_1 constant of the weight. The connection of this result with the A_2 conjecture for Singular Integrals Operators will be discussed as well. Finally we will show some sharp string type weighted estimates for Sobolev type inequalities. They will be derived from corresponding weak type results for fractional integrals.

The first part of the lecture will be based on a joint work with A. Lerner and S. Ombrosi and the second on joint work with K. Moen and R. Torres.