Spaces of smooth functions

Eleonor Harboure

Universidad Nacional del Litoral en Santa Fé.

We will pose several situations in analysis where some kind of smooth functions play a fundamental role. In connection with the study of Laplace equation, we shall analyze the behavior of the fractional integral operator on L^p-spaces, where BMO and Lipschitz spaces arise in a natural way. As a generalization, we will present and study a family of spaces introduced by Spanne. In particular we will be interested in identifying those members of the family containing only continuous functions. Finally we shall present a brief description of Besov spaces and their connection with a problem of non-linear approximation of a function by its wavelet expansion.