1067-60-1620   **Gustavo Didier*** (`gdidier@tulane.edu`), 6823 St Charles Avenue, New Orleans, LA 70118, and **Vladas Pipiras**. *Self-similarity and long range dependence: some recent developments for the multivariate setting.*

A stochastic process is said to be self-similar (s.s.) when its law scales according to a power $0 < H < 1$, the so-called the Hurst parameter. An example of a self-similar process is the classical Brownian Motion. Long range dependence (LRD) has been gaining great popularity in Time Series Analysis. It is presently used to model Internet data traffic, water levels of rivers, and many other phenomena of interest.

There are many connections between s.s. processes and LRD. This talk is about the multivariate setting, for which there are still many open research questions. We focus on a class of self-similar processes, called Operator Fractional Brownian Motions (OFBMs). We establish integral representations of OFBMs and study issues such as spectral properties and time reversibility. We also look into the identifiability of the parametrization by studying the symmetry groups of OFBMs. In low dimension, we provide a full description of the latter, but we also show that, in any dimension, the parametrization of OFBM is identifiable in general, in the topological sense. (Received September 21, 2010)