SEMINÁRIOS

SÉRIES TEMPORAIS, ONDALETAS E DADOS FUNCIONAIS

LOCAL: **IME, USP, Sala 132 Bloco A**

DATA: **31 de março de 2016**

HORÁRIO: **15h30**

WAVELET ANALYSIS IN MULTITEMPORAL SAR / SATELLITE IMAGES

Aluísio Pinheiro (Unicamp)

We discuss two different problems in satellite and SAR multi temporal images.

The first work addresses measuring cyclonic field intensity by the fractal parameter of an isotropic fractional statistical model via ARFIMA wavelet modeling. We derive a method for the detection of cyclone eye in outflow cloud environment by identifying areas associated with lowest fractal intensity (the eye) among surrounding areas having very high fractal intensities (eyewall). We illustrate the proposed method on a image series of Isaac hurricane.

The second work addresses multi temporal SAR image analysis. This multitemporal sequence may be used for: sea glaciers movement assessment; deforestation; changes in urban areas; among other applications. In general the detection methods in SAR images follow a three-step procedure: (1) pre-processing; (2) pixel-by-pixel comparisons; and (3) image thresholding. We propose wavelet statistical tools which can substitute in one step the three aforementioned steps. We show the advantages in a simulation study as well as in a Pol-SAR Alpine glacier example (TERRA-SAR).

These are joint works with Abou Atto, Emmanuel Trouvé, Guillaume Ginolhac (LISTIC-USMB) and Pedro A. Morettin (USP).