# SEMINÁRIOS

## SÉRIES TEMPORAIS, ONDALETAS E DADOS FUNCIONAIS

Local: **IMECC, Unicamp, Sala 221**

Data: **23 de março de 2017**

Horário: **14h30**

### Deformation Based on B-splines
**Ronaldo Dias (Unicamp)**

We are proposing a new approach to the estimation of the spatial deformation model for nonstationary spatial covariance structure introduced by Sampson and Guttorp in the 1990s. This subject is of fundamental importance in the modeling and analysis of spatial and spatio-temporal monitoring data common in the environmental sciences. It allows more accurate spatial prediction, and can be used in the design of monitoring networks for environmental pollution, a critical issue in assessing the impacts of industrial sources of air pollution.

This approach, based on B-splines, addresses a two important weaknesses in current computational approaches. First, it allows one to constrain estimated 2D deformations to be non-folding (bijective) in 2D. This requirement of the model has, up to now, been addressed only by arbitrary levels of spatial smoothing. Second, it uses a dimension reduction strategy than enables application to larger datasets of spatial monitoring sites of environmental data.