## Organizers

Eniuce Menezes de Souza, UEM (Coordinator).

Margarete O. Domingues, LabAC/CTE/INPE.

Thelma Safadi, UFLA.

Aline Medeiros, UEM.

Multiscale and Wavelets SBMAC Group:

*Coordinator:* Eniuce Menezes de Souza, UEM

*Vice-Coordinator:* Maria Teodora Ferreira, BILAC e Cetec SA, UNIVAP

*Secretary:* Gilcelia Regiane Souza, UFSJ

*Vice-Secretary:* Luciano A Magrini, IFSP

### About the SBMAC Committee: "Análise Multiescala e Wavelets - Teoria, Desenvolvimento e Aplicações"

The specific interests of the Sociedade Brasileira de Matemática Aplicada e Computacional (SBMAC) are represented by thematic committees. The IX WWlet is an initiative of the committee "Análise Multiescala e Wavelets - Teoria, Desenvolvimento e Aplicações". The committee emerged from the growing interest of several scientific communities in wavelet techniques applied in signal/image processing and in adaptive methods in partial differential equations. Our aim is to explore the concepts of these analyzes and their theoretical, numerical and computational aspects, expanding them broadly for the different purposes of the work segments of the Brazilian community. The wavelet area received in 1990 the prominence of research topic recommended for the next decades by the American Mathematical Society (37) (8): 984-1004, 1990). Especially in recent decades, wavelet techniques have become an important research area in numerical analysis and an important tool for advanced one-dimensional, two-dimensional (image), three-dimensional (point cloud and surface) signal processing. In addition, wavelets applied to partial differential equation solutions provide an alternative tool for adaptive method development, which enables an adaptive refinement of the solution according to local regularities.

Information of SBMAC Committee can be found at **sbmac.org.br/comites/comite-analise/**.

### Contact Information

We also have regular meetings during the year at some institutions (e.g. INPE, UEM) and undergraduate, master, doctorate, post-doctorate and research positions on wavelet topics and applications. If you have any further questions, please don't hesitate to contact us using the email address: **wwlet@inpe.br**.

# IX WWLET

# Wavelets & Applications

### in Time-Series, Signal and Image Processing

**http://redeabe.org.br/este2019/paginas/wwlet**

**www.inpe.br/wwlet**

**September** 03rd, 2019

**Time Series and Econometrics Meeting, Gramado, RS, Brazil**

## About this event

The Organizing Committee of IX WWlet in 2019 is pleased to invite you to participate in the event Wavelet Applications in Time-Series, Signal and Image Processing to be held during the XVIII Time Series and Econometrics Meeting, Gramado, RS, Brazil on September 03-06th, 2019. Since its first edition in 2007, WWlet has been regularly organized and sponsored by CNPq, CAPES, FAPESP and SBMAC. One of the main goals of this event is to explore concepts of wavelet analysis and its theoretical, numerical and computational aspects applied to time-series, signal and image processing.

The vast amount of time series, signal and imaging data being generated today, such as satellite imagery and health imaging diagnostics, has opened a growing perspective for innovation. The development of methodologies and analysis capable of detecting patterns, obtaining information to feed mathematical and statistical models is part of a unique scenario that can not be ignored.

Considering multiscale analyses and, in particular, wavelet analyses have become widely used tools and continue to expand in use in the aforementioned and many other areas, WWlet is a place to strengthen further collaboration!

## Program

**Registration/Material:** 13:30h-14:00h

**Opening Remarks:** 14:00h-14:15h
  Eniuce Menezes
  Thelma Safadi
  Margarete Domingues

**Lectures I:** 14:15h-16:30h

► *(Opening Conference) Wavelet-based clustering and classification*,
  **Pedro A. Morettin** (IME/USP, Brazil).
► *Wavelet Statistical Analysis of Multitemporal SAR and Satellite Images*,
  **Aluísio Pinheiro** (UNICAMP, Brazil).
► *Partial Directed Wavelet Covariance*,
  **Kim Samejima** (UFBA, Brazil).
► *Multi-scale Identification of Dynamics in Chaotic Electrochemical oscillators*,
  **Luciano A. Magrini** (IFSP, Brazil), Margarete Oliveira Domingues (LabAC/CTE/INPE, Brazil), Elbert E. N.Macau (Unifesp, Brazil).

**Coffee Break** 16:30h-17:00h

**Lectures II:** 17:00h-18:30h

► *Geomagnetic disturbances in a local regularity point of view*,
  **Odim Mendes** (Space Geophysics Division - DIDGE/INPE, Brazil) Margarete Oliveira Domingues (Associate Laboratory for Computation and Applied Mathematics - LabAC/INPE, Brazil)
► *Evaluation of Genome Similarities: a Wavelet-Domain Approach*,
  **Telma Safadi** (UFLA, Brazil).
► *Wavelet Neural Networks for Prediction and Classification*,
  **Eniuce Menezes de Souza**, Marcia Lorena Alves, Aline Medeiros (UEM, Brazil), Ademir Marques Jr., Maurício Veronez e Luiz Gonzaga Jr. (VIZlab/Unisinos, Brazil).

## Venue

The event will happen at the Serra Azul Hotel localized in 152, Garibald, St. in Gramado - RS.

## Associe-se ABE e SBMAC: pague meia!

Acordo de Reciprocidade ABE/SBMAC: **50% de desconto** em cada uma das associações e dobro de vantagens! https://associacoes.galoa.com.br/sbmac/associe-se