

PIPGES · WEBINARS

JUN · 24
2022

02:00 PM

(GMT-03:00) Brasilia Standard Time - Sao Paulo

The video call link will be available at:

<https://tiny.one/fonseca-r>

Interinstitutional Graduate Program in Statistics (PIPGES) of Federal University of São Carlos with University of São Paulo promotes seminars groups (temporarily webinars, due to pandemic issues) of researches involving Probability, Statistics, Machine Learning etc. Our interest, among other things, is to stimulate the sharing of knowledge, as well as the connection between members of the program and researchers in other institutions.

Organizer

Michel H. Montoril, Department of Statistics,
Federal University of São Carlos.

UFSCar

GRAPH WAVELET VARIANCE AND ITS PROPERTIES

Many data sets have observations of signals measured on networks, and such a graph structure must be considered when performing statistical analyses. This is a frequent task in fields related to graphical models and graph signal processing. We introduce graph wavelet variance to analyze random variables observed on nodes of a graph. This new measure uses the definition of graph wavelet transform, a well-known concept in signal processing literature. Graph wavelet variance allows one to evaluate the signal's variability corresponding to different scales of the graph spectrum, which provides valuable insights into how the observations vary across neighboring nodes. We propose an estimator for the graph wavelet variance, discuss some of its large sample properties, and suggest two ways of computing approximate confidence intervals. We use the proposed methods to evaluate the dynamics of Sars-Cov-2 infection rates in Brazilian cities. Joint work with Debashis Mondal and Aluisio Pinheiro.

SPEAKER

Rodney Fonseca · Weizmann Institute of Science

BIO

Since 2021 Rodney Fonseca is a postdoctoral fellow at the Weizmann Institute of Science, in Israel. He got his Ph.D. in Statistics at the University of Campinas (Unicamp) in 2021, under the supervision of Aluísio Pinheiro. His earlier work was focused on nonparametric models, time series, and regression analysis. More recently, he has also been working on graph signal processing, high-dimensional statistics, and communication-efficient inference.

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