

SEMINÁRIOS
SÉRIES TEMPORAIS, ONDALETAS E DADOS
FUNCIONAIS

LOCAL: IMECC, Unicamp, Sala 221

DATA: 30 de outubro de 2014

HORÁRIO: 15h00

RECENT RESULTS ON THE USE OF INFORMATION THEORY IN IMAGE
UNDERSTANDING

Leonardo Torres, INPE

Polarimetric synthetic aperture radar (PolSAR) imagery is an important information source in remote sensing applications. However, images from such systems are contaminated by an interference pattern called “speckle noise”. This phenomenon precludes both the visual and automatic analysis of PolSAR images and, therefore, tailored probabilistic models and inferential method are required as pre-processing steps. The baseline distribution associated with the physical processing of multilook PolSAR image formation is the scaled complex Wishart law. Such model is defined by two parameters: the covariance matrix of polarization channels, and the number of looks. The first parameter contains all the information necessary for characterizing PolSAR data; the second one describes the signal-to-noise ratio. This paper is a survey about the use of information theory (IT) measures as features in PolSAR images. In particular, several statistical methods and image processing techniques involving (h-phi)-entropies and distances as PolSAR features are discussed an applied to PolSAR synthetic and actual data.