

UNIVERSITY OF MACAU
FACULTY OF SCIENCE AND TECHNOLOGY
DEPARTMENT of MATHEMATICS

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**“The Structures of Some Typical Intrinsic
Mode Functions”**

by

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Venue : J320

Abstract

The empirical mode decomposition (EMD) is a powerful tool for analyzing nonlinear and non-stationary data. In this method, one of the main conceptual innovations is the introduction of intrinsic mode functions (IMFs), which arise as basic modes from the application of the empirical mode decomposition to signals. Extracting physically meaningful instantaneous frequency (IF) from IMFs is very important to form the final time-frequency distribution. It is well known that the IFs of some IMFs computed by the Analytic Signal (AS) method contain negative values somewhere. In view of this, by characterizing the structures of some typical IMFs, this paper presents a new method to define the instantaneous frequency of IMFs. With this method, we can provide positive and meaningful instantaneous frequency estimation for any IMF.

Biography

Prof. Li-hua Yang is currently an Associate Professor in the School of Mathematics and Computing Science, Zhongshan (Sun Yatsen) University. His

research interests include Wavelet Analysis; Image Processing and Pattern Recognition

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