



Applications of nonlinear signal processing in biomedicine

Sunday, 27 December, 2009

Of all the data encountered in scientific research, those from biomedical processes deserved special attention for their daunting nonlinearity, nonstationarity and complexity cumulated through continuously adaptation to the varying environment. These processes are highly nonlinear, for the components and sub-systems work together not just additively but interactively. Under such condition, the traditional method could not fully explore the underlying meaning of the data. Over the last few years, various new methods had been developed and tried with various degrees of success. The aim of this workshop is to discuss the recent progresses on different clinical topics by applying nonlinear and nonstationary signal processing tools. I hope this workshop can shed light on and bring better understanding to the latest information about the properties or physiological mechanisms beneath biomedical signals.

Norden E. Huang

Director, Research Center for Adaptive Data Analysis

Time	Topic	Speaker
09:00~09:10	Introduction and Welcome	Norden E Huang
09:10~10:10	What does hemispheric laterality stand for?	Pei-Feng Lin
10:10~11:10	Probe the nonlinear properties of cardiorespiratory coupling in aging process	Chen Lin
11:10~12:10	The application of 2D-EEMD in superacute stroke brain CT	Ping-Huang Tsai
Lunch time		
13:30~14:30	Explore the hidden information in seizure dynamics	Yi-Cheng Chang
14:30~15:30	T-wave morphology analysis-A promising risk stratification index in cardiovascular disease	Hui-Chun Huang
15:30~16:00	The analysis of pulse wave velocity	Hsien-Tsai Wu An-Bang Liu
16:00~16:10	Discussion	Men-Tzung Lo

Men-Tzung Lo : Research Center for Adaptive Data Analysis

Pei-Feng Lin : Geriatrics and Neurology, Tainan Hospital

Chen Lin : Institute of Systems Biology and Bioinformatics, National Central University

Ping-Huang Tsai : Neurology Department, National Yang-Ming University Hospital

Yi-Cheng Chang : Graduate Institute of Communication Engineering, National Taiwan University

Hui-Chun Huang : Division of Cardiology, Department of Internal Medicine, National Taiwan University Hospital

Hsien-Tsai Wu : Department of Electrical Engineering, National Dong Hua University

An-Bang Liu : Department of Neurology, Buddhist Tzu Chi General Hospital

(This seminar is by Invitation only)



National Central University
Research Center for Adaptive Data Analysis

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