

Auburn Montgomery
Department of Mathematics
Colloquium/*MAMS*

Time: Monday, November 16, 2009, 4:00-5:00pm

Place: Auburn Montgomery, Goodwyn Hall, Room 202

Speaker: Professor Tao Qian, Department of Mathematics, University of Macau

Title: Adaptive Decomposition of Signals Into Mono-components

Abstract: By mono-components we mean the signals that possess non-negative analytic phase derivatives (analytic instantaneous frequency). An algorithm is proposed to decompose a general signal into a series of mono-components with fast convergence in energy. The formulation is related to the so called Takenaka-Malmquist or rational function system. Due to the adaptivity our study, however, does not fall into the scope of the long term and traditional studies.

Keywords: Hilbert transform, Hardy spaces, Analytic phase derivative, instantaneous frequency, time frequency analysis, Fourier series, conformal mapping, Moebius transform, Bkashke product, Bedrosian identity, Greedy algorithm, Takenaka-Malmquist system, rational function system.

Refreshments will be served at 3:30pm