Time-Frequency Analysis for Frequency Modulated Signals

IEEE SPS Lecture Series

Prof. Yimin Zhang
Associate Professor at Temple University

Abstract. This talk will discuss time-frequency analysis methods and applications for FM signals using both single-sensor and multi-sensor systems. We first review the interplayed role of the spatial dimension and time-frequency representation for improved time-frequency signature characterization, source discrimination, and signal enhancement. We then introduce recent advances of nonstationary signal analysis and array processing in the following two areas: (a) Nonparametric instantaneous frequency estimation of multi-component signals with closely separated time-varying frequency signatures, and (b) Sparse reconstruction of time-frequency signatures and instantaneous frequency estimation for FM signals with random missing time entries. These methods are supported by application examples including DOA estimation, target localization, and interference mitigation.

Biography. Dr. Zhang graduated from Xidian University, China, and received his Ph.D. degree from the University of Tsukuba, Japan. He is currently an Associate Professor at the Department of Electrical and Computer Engineering, Temple University. He is an Associate Professor for IEEE Transactions on Signal Processing, an Associate Editor for the Signal Processing journal, and is a member of the Sensor Array and Multichannel (SAM) Technical Committee and the Signal Processing Theory and Methods (SPTM) Technical Committee of the IEEE Signal Processing Society. His general research interests lie in the areas of statistical signal and array processing, time-frequency analysis, compressive sensing, and convex optimization.

Date:

Wednesday, March 13, 2019

Time:

12:30 PM to 1:30 PM

Location:

Room 423, Clough Undergraduate Learning Commons, GT Campus 266 4th St NW, Atlanta, GA 30313

Space is limited, RSVP to https://events.vtools.ieee.org/m/188696

For details, please contact:

Alessio Medda
alessio.medda@gtri.gatech.edu
404.407.8217