Title: Digital Calibration Techniques for Modulated Wideband Converters

Abstract: Modulated Wideband Converter (MWC) is a well-known compressed sensing–based approach for measuring sparse signals consisting of narrowband components distributed over a wide frequency band by combining low-rate analog-to-digital conversion with signal processing. In MWC systems, the input signal is multiplied by a random logic pattern called a Periodic Sign Function (PSF) prior to analog-to-digital conversion, and the signal is subsequently reconstructed using the PSF information. However, in practice, distortions in the implemented PSF waveform degrade the measurement and reconstruction accuracy. In this talk, I present digital signal processing–based methods for identifying and compensating for PSF waveform distortions.