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SPEAKER TITLES/ABSTRACTS

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Bio:

Cheng Cheng got her Ph.D. in Mathematics in 2017 at University of Central Florida. She is a second-year postdoc at SAMSI affiliated with Duke University. Her research interests are applied and computational harmonic analysis such as phase retrieval, distributed sampling theory in signal processing.

Abstract:

“Non-subsampled Graph Filter Banks and Distributed Implementation”

Graph signal processing provides an innovative framework to process data on graphs. A proper definition of the down-sampling and up-sampling procedures is not obvious especially when the residing graph is of large order and complicated topological structure. In this talk, I consider nonsubsampled graph filter banks (NSGFBs) which does not include down-sampling and up-sampling procedures, to process data on a graph in a distributed manner. For an NSGFB on a graph of large order, a distributed implementation has significant advantages, since data processing and communication demands for the agent at each vertex depend mainly on the topological structure of its small neighborhood. In this talk, I will introduce an iterative distributed algorithm to implement the proposed NSGFBs. Based on NSGFBs, we also develop a distributed denoising technique which is demonstrated to have satisfactory performance on noise suppression.