

1133-42-42

Cheng Cheng* (cheng.cheng@knights.ucf.edu), **Junzheng Jiang** and **Qiyu Sun**. *Phaseless sampling and reconstruction in a shift-invariant space.*

Phase retrieval arises in various fields of science and engineering. In this talk, we consider an infinite-dimensional phase retrieval problem to reconstruct real-valued signals living in a shift-invariant space from their phaseless samples taken either on the whole line or on a discrete set with finite sampling rate. We find an equivalence between nonseparability of signals in a shift-invariant space and their phase retrievability with phaseless samples taken on the whole line. For spline signals of order N , we show that they can be well approximated, up to a sign, from their noisy phaseless samples taken on a set with sampling rate $2N - 1$. We also propose a robust algorithm to reconstruct nonseparable signals in a shift-invariant space from their phaseless samples corrupted by bounded noises. (Received June 28, 2017)