

## SPCOMIT Poster Presentation

Title: Carrier frequency offset Estimation for linear channels with periodic characteristics

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### Abstract

Periodic characteristics arise in many communications scenarios. Two major examples are interference-limited communications and power line communications. The most general point-to-point periodic channel model includes periodic variations of the channel transfer function and of the noise statistics. In this work we study carrier frequency offset estimation for linear channels with periodic characteristics. We design a maximum likelihood estimator (MLE), analytically characterize its asymptotic performance, and provide guidelines for its low-complexity implementation. We compare the strengths and weaknesses of the new estimator to those of an ad-hoc extended estimator obtained by adapting an MLE, originally designed for time-invariant channels, to periodically time-varying channels via a time partitioning approach. We numerically evaluate the performance of the new estimator and of the ad-hoc estimator, and illustrate the gain of rigorously accounting for the periodic characteristics of the channel, as opposed to the currently prevailing ad-hoc approach.

Roe Shaked is an M.Sc. student of Dr. Ron Dabora.

The seminar will take place on **Thursday, 23-6-2016, 14:10, in room 102 building 33.**