



Project Proposal

Compressed DOA Estimation for Millimeter Wave MIMO system

Supervisor: Shahar Stein (shahar-stein@campus.technion.ac.il)

In the race toward increasing data rates at cellular networks, mmWave MIMO (Multiple Input Multiple Output) systems are considered a leading candidate for 5G standard, the next generation of cellular technology.

Using mmWave offers multiple advantages, such as channel bandwidths far greater than previously available and larger antenna arrays, but also arouse new difficulties such as expensive RF chains, and massive amount of data need to be processed digitally.

This difficulties raise the need to come up with a new solution that will consider both the analog and digital domains.

To reduce the necessary amount of expensive RF chains we aim to exploit the sparse mmWave channel model.

The goal of the project is to develop a new sensing scheme for the mmWave model along with an algorithm for the DOA estimation.

The project will include research next to matlab implementation

Required background: Introduction to Digital Signal Processing (044198)

