Feature Extraction and target classification by micro-Doppler signatures with the empirical mode decomposition

Empirical mode decomposition is a new method to decompose non-stationary signals that can be used to study micro-Doppler signatures. This can potentially result in improved classification performance as it does not suffer from time-frequency resolution limitations. The objectives of this project are to run a set of various targets at a range of operating frequencies spanning from S-band to X-band, to decompose the micro –Doppler signatures using the EMD and to investigate whether classification performance of typical classifiers improves when EMD is used with respect to existing methods using STFT.

Tools: MATLAB, ADS