Topic:

Signal Reflection from the Wind Turbines and the Analysis of Influence of Doppler Shift in Radar

Karel Juryca, M.Sc
University of Pardubice

Abstract:

This presentation deals with analysis of undesirable Doppler shift in the Primary Radar System from wind turbines and a target. Wind turbines and target have several parameters which have influence Doppler shift in the Primary Radar System. These parameters are the frequency of rotation of the Primary Radar System, the frequency of rotation of wind turbines blades, length of blades, the angle of rotation of wind turbine blades, azimuth od the Primary Radar System etc. The analyses of Doppler shift are focused on scenarios and every scenario is focused on changing some parameters of wind turbines, a target or the Primary Radar System. The first part of presentation deals with the designed generator of reflected signals from wind turbines and a target. The second part of presentation deals with analysis progression of Doppler shift of reflected signals for several rotations of the Primary Radar System. The designed generator is essential for the development of new filtering method for the suppression of influence of wind turbines.

Topic:

Adaptive Electronically Controlled Antenna Systems for 3D Radars

Thomas Hnilička, M.Sc.
University of Pardubice

Abstract:

Today, the adaptive electronically controlled antenna systems are increasingly used. The advantage of these radar systems is electronically steering antenna beam and accuracy of target position measurement. The big price for these systems is disadvantage, because each antenna element usually consists of transmitting and receiving unit. The angular resolution is one of the important parameters for radars system development. In the presentation I will introduce the project deals with radar system design for detecting very small flying objects. I will speak about receive antenna unit design where the results of the simulations and measurement will be presented. In the end of presentation, the angular resolution analysis of the proposal receive antenna unit will be described.