

## **Micro-doppler detection in forward scattering radar: theoretical analysis and experiment**

### **ABSTRACT**

Forward scatter radar (FSR) is actively studied in the field of radars, as it has many advantages such as robust to radar absorbing material and possibility in target recognition. In many radar systems, micro-Doppler signature is one of the most distinguished information used for target recognition. Yet, there is lacking in established work on investigating the feasibility of using FSR to detect and analyse micro-Doppler signature generated from micro-motions of moving targets. Hence, a theoretical and experimental investigation of using the FSR to detect micro-Doppler signatures is presented. The preliminary results for both theoretical and experiment investigations verified that the FSR system is capable to detect the micro-Doppler signature for a swinging pendulum attached to the moving trolley.

**Keyword:** Doppler radar; Radar absorbing materials; Radar detection; Radar target recognition