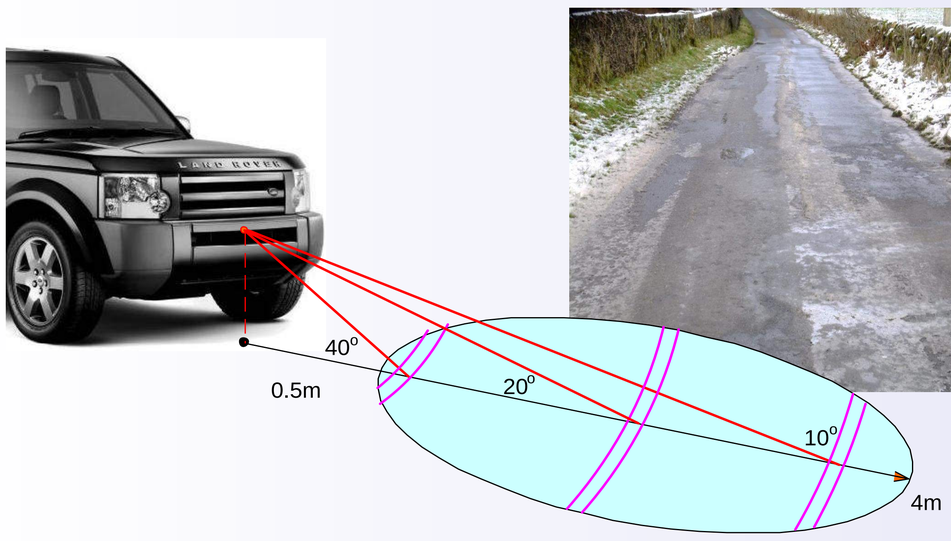
UNIVERSITY OF BIRMINGHAM

School of Electronic, Electrical and Computer Engineering

MICROWAVE INTEGRATED SYSTEMS LABORATORY

Surface Identification

What is in front? Gravel? Snow? Sand? Mud?.....?



24/7, all weather, compact methods of remote surface identification in front of a vehicle

Applications

Automotive Drivers Assistance

Mobile Robots

Aircraft Automatic Landing

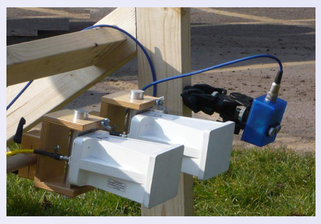
Space Exploration

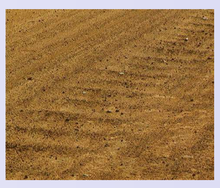
Defence Unmanned Vehicles

Statistical Based Identification

Surface identification using radars:
The most universal technique for automotive applications

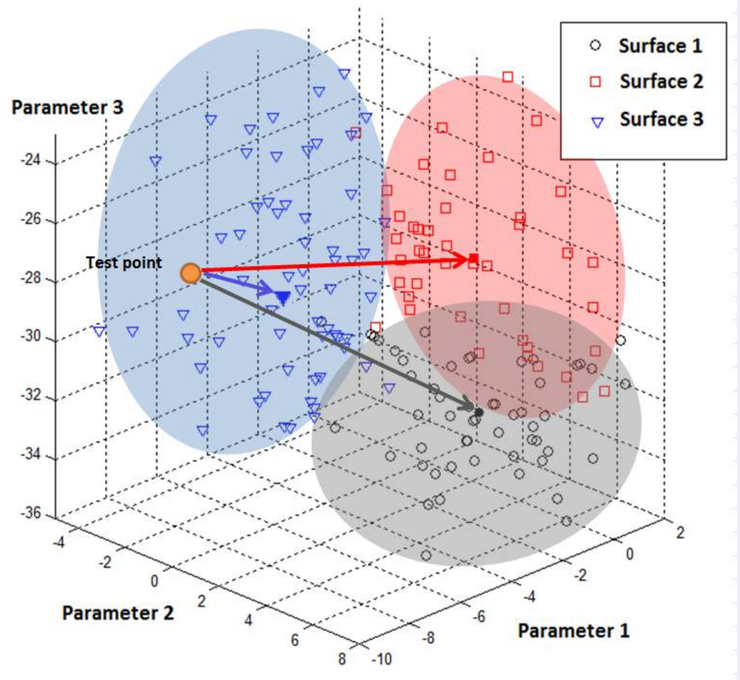
- Analysis of polarization properties of backscattered signal: Recognition between different surfaces
- Time-domain or frequency-domain analysis of reflected signal: Getting information about surface roughness and dielectric constant





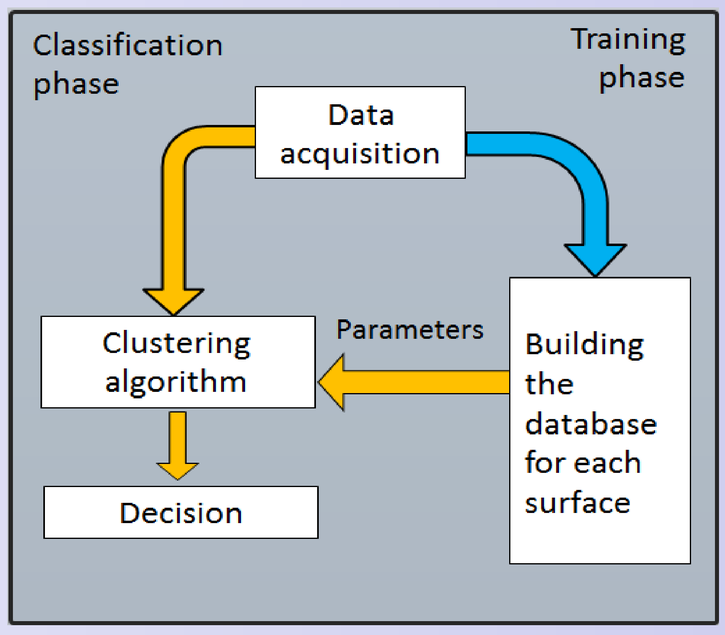
Surface identification using ultrasonic sensors

- Energy, duration and range of echo signal analysis
- Time-domain or frequency-domain analysis of echo signal



Sponsored by
Jaguar
Land Rover LTD

Surface Identification Procedure



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