

Radar 2013 Sub Themes

Radar systems and applications

- radars in the urban environment
 - vehicle radar
 - through-the-wall radar
 - body search radar
 - intruder detection radar
 - baggage inspection radar
- radars in the natural environment
 - FOPEN
 - anthropogenic change detection
 - crop monitoring, forestry and biomass estimation
 - soil moisture measurement
 - ground penetrating radar
 - radar entomology
 - meteorological radar
 - radar oceanography
- PCL and passive radar
 - terrestrial emitter exploitation
 - spaceborne emitter exploitation
 - PCL on mobile platforms
 - PCL augmentation of active radars
- HF radar
 - skywave OTH radar
 - HFSWR
 - SuperDARN
 - other configurations
- SAR/ISAR systems
- MIMO radar
- ATC radar

Radar system and subsystem technologies

- generation, radiation and capture of wide-band signals
- engineering for high-power signal generation and radiation
- developments in A/D converters, digital receivers and signal processing
- radar applications of metamaterials
- new designs and materials for antennas

Radar phenomenology

- multiscale phenomena
- multiple scattering
- nonlinear phenomena
- radars in plasma media
- radar polarimetry
- orbital angular momentum
- coherence and entanglement
- waves in random media

Radar signal design and processing

- waveform performance criteria
- domain extrapolation techniques
- adaptive processing
- MIMO and diversity modes
- channel sharing and co-existence
- EMC
- interference mitigation, especially wind farms
- compressive sensing

Target signatures and classification

- signature control and low observability
- NCTR and ATR in practice
- angle-constrained ISAR
- high range resolution and signature synthesis
- unsupervised learning
- sensor fusion for identification

Radar management techniques

- multifunction radar/waveform management
- artificial intelligence in radar
- sensor nets and data fusion
- dynamic control and resource allocation

Modelling and simulation

- computational electromagnetics
- system models
- environment modelling
- validation techniques
- performance evaluation and acceptance testing

Mathematical techniques for radar

- integration in high dimensional spaces
- nonlinear and multi-objective optimisation
- rays, caustics and catastrophes
- dynamical systems theory
- inverse problems

Cross-fertilisation with other disciplines

- learning from radio astronomy
- learning from optics
- learning from materials science
- fundamental physical limits to radar performance

The radar marketplace

- manufacturers' views
- acquisition and government agency views
- ITAR and IP issues