



Automotive Radar Systems

Prof. Dr Hermann Rohling
Hamburg University of Technology, Germany

Conference Centre
Technology Park Adelaide
Mawson Lakes SA

How to register

Please fill out the registration form overleaf if you wish to register for 1 or 2 courses and/or a field trip on Kangaroo Island to explore HFSW Radar.

Presenter:

Professor Dr Hermann Rohling

*Hamburg University of Technology
Germany*



Prof. Dr Hermann Rohling received the Diploma in Maths from the Technical University of Stuttgart, Germany, in 1977, and the Ph.D. degree from the Faculty of Electrical Engineering at RWTH Aachen, Germany, in 1983. He was with the AEG Research Institute, Ulm, as a researcher working in the area of digital signal processing for radar and communications applications.

Currently Prof. Rohling is with the Hamburg University of Technology, Germany, where he has developed an international reputation for radar signal processing, CFAR detection theory and FMCW waveform design especially in the application field of automotive radars. His research interests have included digital radar signal processing, detection, estimation, signal theory, wideband mobile communications especially based on multicarrier transmission techniques (OFDM) for future broadband systems (4G), and differential GPS for high precision navigation. Prof. Rohling is a member of Informationstechnische Gesellschaft (ITG), German Institute of Navigation (DGON) and a Fellow of IEEE. He is a chairman of the International Radar Symposium (IRS 20xx) and the International OFDM Workshop (InOWo) in Germany. Prof. Rohling is the Vice President of the Hamburg University of Technology.

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Course Fees

- AU\$ 1122 (register by 1 May 2008)
- AU\$ 1320 (register by 25 Aug 2008)

20% discount will be given if registered for 2 courses during Radar Week

Student scholarships available, please enquire.

About

Automotive Radar Systems

Powerful radar systems for the automotive sector are currently under development or in a research stage for various applications, amongst them Adaptive Cruise Control (ACC) which has already been introduced to the market (e.g. Mercedes S class, Volkswagen Phaeton or Audi A8), stop-and-go (City ACC), lane change assistance, turn assistant and even pre-crash systems. But there are many additional applications for such smart radar sensors for example environmental control and surveillance of industrial facilities.

One important step in the design and development phase of a radar system is the waveform design procedure. Frequency coded and linear frequency modulated continuous wave (LFMCW) radar sensors have the advantage of high resolution performance in target range and radial velocity but they require a long measurement time. Therefore, new intertwined waveforms, like FSK or combinations between FSK and FMCW will be discussed in detail to demonstrate the technical differences and advantages.

All other radar signal processing topics, such as CFAR detection, parameter estimation, azimuth angle measurement, target tracking, and even target recognition will be covered by this two-day course. Some experimental systems and measurement results from real urban scenarios are used to explain and demonstrate the technical challenges of automotive radar sensor development.

Target Audience

The course is suitable for engineers and researchers working in the fields of radar system design in general. The course will be of particular interest to all engineers who design and develop high performance and smart radar systems in the radar and automotive industry.

Course topics will include

- Introduction to Automotive Radar Systems
- System requirements and technical challenges
- Simultaneous range and Doppler frequency measurement
- Waveform designs, technical differences and advantages
- Azimuth angle estimation based on monopulse technique
- Monopulse patch antennas
- Multi-target detection
- CFAR detection
- Parameter estimation
- Joint range, Doppler frequency and azimuth angle measurement
- Target tracking
- Target recognition
- Different applications (automotive and surveillance)
- Real urban environment applications

Further information is available from
www.nicta.com.au/radar_week

Registration Form and Tax Invoice* ABN 62 102 206 173

*Upon completion of this form, including the relevant payment, this form will become a Tax Invoice.

Please register me for Automotive Radar Systems on 8-9 September 2008.

PLEASE PRINT

Date: _____

Title: _____ First Name: _____ Surname: _____

Position: _____ Organisation/Division: _____

Postal Address: _____

Telephone No: _____ Facsimile No: _____ Email: _____

Dietary preference: _____

Course Fees: Early bird fee: AU\$1122 (incl. GST) (Register before **May 1st, 2008.**) Full fee: AU\$1320 (incl. GST) (Register before **Aug 25th, 2008.**)

Please also register me for:

One of the following Radar Week courses on 10-11 September 2008:

- Tracking and Data Fusion
- Breakthroughs and New Concepts in Radar: from Bistatic to MIMO Configurations
- Fundamentals of RF Systems Design and Simulation

Total fees for 2 courses: AU\$1795 (incl. GST) (Before **May 1st, 2008.**) AU\$2112 (incl. GST) (Before **Aug 25th, 2008.**)
(with 20% discount)

- Radar Week Dinner (7:30pm, 9 September 2008). Cost: AU\$ 120 (incl. GST)
- Field trip on Kangaroo Island (12 September 2008). Cost AU\$ 220 (incl. GST)

Total Amount: AU\$ _____

Method of Payment (please tick below):

- Cheque (payable to National ICT Australia Ltd)
Forward the cheque and a copy of THIS registration form to:
Anne-Marie Eliseo, Industry Education Manager, NICTA, SPRI Bld, Mawson Lakes Boulevard, Mawson Lakes SA 5095, Australia.

Credit Card: Credit Card No.: _____ Expiry Date: _____
 Visa Master Card Name on card: _____
Amount: AU\$ _____ Signature: _____ Tick if receipt required
Email address of card holder: _____

Electronic Funds Transfer
Please advise by email to Annette Van Bramer
annette.vanbramer@nicta.com.au
when payment is made

BANK	Commonwealth Bank of Australia
ACCOUNT NAME	National ICT Australia Limited
BSB	062 900
ACCOUNT NUMBER	1032 4576
REFERENCE NUMBER	RW0908

FAX the form to +61 – 8 – 8302 3115 or EMAIL it to industryeducation@nicta.com.au

Enquiries: Anne-Marie Eliseo, Industry Education Manager, ph: +61 8 8302 3928, email: industryeducation@nicta.com.au.

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