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Aalto University School of Science and Technology, Department of Surveying, has the pleasure of inviting you to attend a four day graduate school course in October 2010 in Espoo, Finland. The main themes of the course are GPS carrier phase interferometry and new SAR (synthetic aperture radar) techniques and applications. The course is aimed at graduate students in the field of Geomatics, but we welcome students and all interested parties of other fields as well. Lectures are given in English.

#### The lecturers

[Prof. Dr.-Ing. Jan Johansson](#), Chalmers university of technology, Department of Radio and Space Science  
[Dr.-Ing. Kostas Papathanassiou](#), DLR German Aerospace Center

[Prof. Dr.-Ing. Uwe Sörgel](#), Leibniz Universität Hannover, Institute of Photogrammetry and GeoInformation

#### Credits

Students are given 1 credit of attending three of the four days of lectures. There is also a possibility to get extra credits by giving a seminar presentation and writing a publication.

#### Costs

The course is free of charge, but the attendants must pay for their meals, travel and accommodation expenses.

#### Registration

Please email your name and student number to Katri Koistinen (firstname.lastname@tkk.fi) and write "Graduate School Course in Geomatics 2010" to the subject line. The registration is open until Oct 24, 2010.

#### Contact

Questions concerning the course can be sent to Juho Lumme (firstname.lastname@tkk.f

## Program

### Monday Oct 25. GPS carrier phase interferometry in Earth studies

#### Day 1: Prof. Dr.-Ing. Jan Johansson

9:00 - 10:45 Fundamentals of GPS carrier phase interferometry

10:45 - 11:00 Break

11:00 - 12:30 GPS measurement and processing strategies

12:30 - 13:30 Lunch break

13:30 - 15:00 Use of GPS in monitoring the environment and in geodynamics

15:00 - 15:15 Break

15:15 - 17:00 Exotic uses of GPS

### Wednesday Oct 27. SAR theory and polarimetry

#### Day 2: Dr.-Ing. Kostas Papathanassiou

9:00 - 10:45 Fundamentals of microwave remote sensing and radars

10:45 - 11:00 Break

11:00 - 12:30 Theory of SAR (Synthetic Aperture Radar)

12:30 - 13:30 Lunch break

13:30 - 15:00 SAR polarimetry

15:00 - 15:15 Break

15:15 - 17:00 Applications of SAR polarimetry

### Thursday Oct 28. SAR interferometry

#### Day 3: Prof. Dr.-Ing. Uwe Sörgel

9:00 - 10:45 Fundamentals of SAR interferometry

10:45 - 11:00 Break

11:00 - 12:30 SAR interferometry for DEM (digital elevation model) Generation

12:30 - 13:30 Lunch break

13:30 - 15:00 PSI (Persistent Scatterer Interferometry) and advanced techniques

15:00 - 15:15 Break

15:15 - 17:00 Mapping of urban areas using SAR techniques

### Friday Oct 29. Finnish SAR scene

#### Day 4: Jaan Praks, Jarkko Koskinen, Mika Karjalainen, Kirsi Karila, Yrjö Rauste

9:00 - 10:45 Aalto University School of Science and Technology

10:45 - 11:00 Break

11:00 - 12:30 Finnish Meteorological Institute

12:30 - 13:30 Lunch break

13:30 - 15:00 Finnish Geodetic Institute

15:00 - 15:15 Break

15:15 - 17:00 VTT Technical Research Centre

## How to get here?

Helsinki University of Technology is situated in Otaniemi, Espoo, 10 km from the centre of Helsinki. The street address is Otakaari 1 TKK main building. Lectures take place in lecture hall M1 (Department of Surveying).

You can travel to Otaniemi from Helsinki city center by bus no. 102 or 103 from Kamppi, or bus no. 194 or 195 from Elielinaukio. Timetables can be search from the web page <http://aikataulut.ytv.fi/reittiopas/en/>.