

Metrology for long distance surveying

IPQ, Caparica | 9:00 | 21st November 2014

PROGRAMME

- 9:00 Reception
- 9:30 **OPENING SESSION**
Jorge Marques dos Santos, President of IPQ
- 9:40 Introduction to EMRP JRP SIB60 “Metrology for long distance surveying”
Florian Pollinger, PTB, Coordinator of JRP SIB60
- 9:55 **SESSION I: Challenges of distance metrology in surveying**
Chairman: *Wolfgang Niemeier, Technical University of Braunschweig*
- 10:00 Geodetic and Alignment activities at CERN
Dominique Missiaen, CERN
- 10:30 Measuring the earth surface deformation using SAR interferometry and GPS
João Catalão Fernandes, FCUL
- 10:50 Short GNSS baseline with short-length session, what precision level can we expect?
Nuno Lima, LNEC
- 11:10 **BREAK AND POSTER SESSION**
- 11:40 **SESSION IIa: GNSS-based distance metrology – understanding uncertainty contributions**
Chairman: *Sten Bergstrand, SP*
- 11:45 Submillimetric GNSS distance determination: an account of the research at the Universitat Politècnica de València (UPV)
Sergio Baselga, Luis García-Asenjo and Pascual Garrigues, Universitat Politècnica de València
- 12:05 Investigations on the influence of near-field effects and obstruction on the uncertainty of GNSS-based distance measurements
Florian Zimmermann, University of Bonn
- 12:25 On the influence of the troposphere on GNSS-based distance metrology: modeling and experiments
Steffen Schön, T. Krawinkel, T. Kersten, University of Hanover
- 12:45 **LUNCH**
- 13:45 **SESSION IIb: GNSS-based distance metrology – towards standardized field characterisation**
Chairman: Florian Pollinger, PTB
- 13:50 **Metrological Control of Global Navigation Satellite System (GNSS) Equipment**
Teresa F. Pareja, Miguel C. Cortés Calvo, Universidad Politécnica de Madrid

PROGRAMME



- 14:10 **A field test procedure to check GNSS antenna calibration parameters**
Markku Poutanen, **FGI**
- 14:35 **SESSION III: Traceable electronic distance meters in air – towards novel standards for baseline calibration**
Chairman: Jean-Pierre Wallerand, LNE-CNAM
- 14:55 **Electronic Distance Meter Technology inside Trimble's Geospatial Instruments**
Christian Grässer, Trimble
- 15:15 **Spectroscopic inline thermometry**
Tuomas Hieta, MIKES
- 15:35 **A 1550 nm telemeter for outdoor application based on off-the-shelf components**
Joffray Guillory et al., LNE-CNAM
- 15:55 **A refractivity-compensated absolute distance interferometer as prospective novel primary standard for baseline calibrations**
Karl-Meiners-Hagen, PTB
- 16:15 **BREAK AND POSTER SESSION**
- 16:45 **SESSION IV: Frequency-comb based distance metrology – fundamental technology for future application**
Chairman: Florian Pollinger, PTB
- 16:50 **Heterodyne many-wavelength interferometry**
Jutta Mildner, PTB
- 17:10 **Spectrally resolved frequency comb interferometry for long distance measurement**
Steven van den Berg, VSL
- 17:30 **CLOSING SESSION**

POSTER SESSION

Common-clock experiments with GNSS-based distance meters

Julia Leute, Thomas Krawinkel, Andreas Bauchand Steffen Schön, PTB, University of Hanover

Uncertainties of GNSS baselines related to ITRF

D. Tengen, C. Homann, W. Niemeier, Technical University of Braunschweig

The INRIM experimental set-up to characterize the effect of the turbulence

M. Zucco, M. Astrua, INRIM

A GPS-based local tie vector at the Onsala Space Observatory

Tong Ning, Rüdiger Haas, Gunnar Elgered, Chalmers University of Technology

Elevation dependent deformation of the Onsala 20 m telescope

S. Bergstrand, SP

High accuracy laser ranging and amplitude-to-phase coupling

Michel Lintz, Observatoire de la Cote d'Azur

Design of the external optical cavity for multiplication of repetition rate of Er:doped fs comb

Radek Smid, Adam Lesundak, Lenka Pravdova, and Ondrej Cip; Institute of Scientific Instruments of AS CR; CZ

Femtosecond frequency comb mode selection by external optical cavity

Adam Lesundak, Steven van den Berg; Institute of Scientific Instruments of AS CR; CZ

