



TREASURE
TRAINING RESEARCH AND
APPLICATIONS NETWORK TO
SUPPORT THE ULTIMATE REAL-TIME
HIGH-ACCURACY GNSS SOLUTION



1st TREASURE WORKSHOP

17 - 18 April 2018

Istituto Nazionale di Geofisica e Vulcanologia-INGV
Via di Vigna Murata 605, Rome
Conference Room

PROGRAM 17 April

12:00 **REGISTRATION**

13:00 **LIGHT LUNCH**

14:30 Welcome-Prof. *Carlo Doglioni*, INGV President

14:35 Opening-*Marcio Aquino*, TREASURE Coordinator, UoN

SESSION 1.a: Error modelling to support GNSS high accuracy positioning

Chairs: *Lucilla Alfonsi* (INGV), *Sreeja V. Veetil* (UoN)

14.40-15.10 Invited: Some recent research on ionospheric sounding with GNSS and real-time applications, *M. Hernandez Pajares* (UPC)

15.10-15.40 TEC and scintillation forecasting model, *Juliana G. Damasceno* (ESR1, INGV/UNISALENTO)

15.40-16.10 A method to evaluate the accuracy of ionospheric tomographic reconstructions using incoherent scatter radar scans, *Jon Bruno* (ESR2, UoB)

16.10-16.30 **COFFEE BREAK**

16.30-17.00 Identification of travelling ionospheric disturbances in the ionosphere using GPS with independent verification
Karl H. Bolmgren (ESR3, UoB)

SESSION 1.b: Error modelling to support GNSS high accuracy positioning

Chairs: *Sandra Verhagen* (TUDELFT), *Pedro Tavares* (DEIMOS)

17.00-17.30 Troposphere Modelling and Correction During Extreme Weather Events, *Hongyang Ma* (ESR4, TUDELFT)

17.30-18.00 Assessment over Kalman filtering techniques for Orbit Determination and Time Synchronization in GNSS systems, *Lotfi Massarweh* (ESR13, DEIMOS)

18.00-18.30 Contribution: Integration of CIGALA/CALIBRA, ICEA and LISN Networks for Monitoring Ionospheric Scintillation, *J. F. Galera Monico* (UNESP)

18.45 **TRANSFER INGV-ARAN PARK HOTEL**

PROGRAM 18 April

8.30 **TRANSFER ARAN PARK HOTEL-INGV**

SESSION 2: Interference and scintillation mitigation

Chairs: *Fabio Dovis* (POLITO), *Marcio Aquino* (UoN)

9.00-9.30 Invited: The Ionosphere Prediction Service Project,
F. Rodriguez (TELESPAZIO)

9.30-10.00 Performance comparison of GPS L5 and L1 signal acquisition methods under phase scintillation, *Caner Savas* (ESR5, POLITO)

10.00-10.30 GNSS jammer signal mitigation by using adaptive notch filter,
Wenjian Qin (ESR6, POLITO)

10.30-11.00 Ionospheric scintillation sensitive tracking error models and their application to a generic GNSS receiver, *Kai Guo* (ESR7, UoN)

11.00-11.20 **COFFEE BREAK**

11.20-11.50 Contribution: Hong Kong Multiple-constellation and Multiple-frequency GNSS Network RTK, Experiments in urban area positioning, *Wu CHEN* (POLYU_HK)

Session 3: Expectations in PPP and RTK

Chairs: *Martin Schmitz* (GEO++), *J.F. Galera Monico* (UNESP)

11.50-12.20 Invited: High accuracy GNSS positioning, *Steffen Schön* (IFE Uni-Hannover)

12.20-12.50 New Algorithms for Real-time PPP and RTK GNSS positioning,
Brian Weaver (ESR8, UoN)

12.50-14.00 **LIGHT LUNCH**

12.50-14.00 Assessment of ionospheric corrections for PPP-RTK using regional ionosphere modelling, *Dimitrios Psychas* (ESR9, FUGRO/TUDELFT)

14.30-15.00 Case study of windstorm effects on zenith tropospheric delay for RTK networking in northern Germany and RTCM-SSR format Python demonstrator, *Francesco Darugna* (ESR10, GEO++/ IFE Uni-Hannover)

15.00-15.30 Contribution: Generation of Consistent GNSS SSR Corrections for distributed CORS Networks, *J. Wuebbena* (GEO++)

15.30-16.00 Contribution: Estimation and Analysis of Multi-GNSS Differential Code Biases Using a Hardware Signal Simulator, *M. Ammar* (UoN)

16.00-16.20 **COFFEE BREAK**

Session 4: Market opportunities for real time GNSS high accuracy positioning

Chair: *Hans Visser* (FUGRO), *Vincenzo Romano* (INGV)

16.20-16.50 Invited: Exploring the market for new services,
Monica Pesce (VVA)

16.50-17.20 Technical Feasibility of ICT Architecture for GNSS High Accuracy Positioning, *Hossein Ghobadi* (ESR11, INGV/UNISALENTO)

17.20-17.50 How a permanent link between industry and scientific community can enhance innovation: the case of GNSS downstream markets,
Paola Testa (ESR12, NOVELTIS/Toulouse Business School)

17.50-18.15 Workshop Wrap Up and Closure, *Marcio Aquino* (UoN)

18.30 **TRANSFER INGV-ARAN PARK HOTEL**

19.30-22.30 **TREASURE PARTY - RESTAURANT L'ARCHEOLOGIA**