NEWS & ANNOUNCEMENTS

Special Issue – Call for papers

**2019 EGU GA Session GI4.1 "Ground Penetrating Radar:
Technology, Methodology, Applications and Case Studies"**

This *Ground Penetrating Radar* Special Issue will be a collection of extended papers resuming contributions presented during the scientific session GI4.1 "Ground Penetrating Radar: Technology, Methodology, Applications and Case Studies" successfully organized in the framework of the 2019 European Geosciences Union General Assembly (EGU GA), held in Vienna, Austria, on 7-12 April 2019 (https://meetingorganizer.copernicus.org/EGU2019/session/30181).

As is known, Ground Penetrating Radar (GPR) is a safe, advanced, non-destructive and non-invasive imaging technique that can be effectively used for inspecting the subsurface as well as natural and man-made structures. During GPR surveys, a source is used to send high-frequency electromagnetic waves into the ground or structure under test. At the boundaries where the electromagnetic properties of media change, the electromagnetic waves may undergo transmission, reflection, refraction and diffraction; the radar sensors measure the amplitudes and travel times of signals returning to the surface. Session GI4.1 aimed at bringing together scientists, engineers, industrial delegates and end-users working in all GPR areas, ranging from fundamental electromagnetics to the numerous fields of applications. The session provided a supportive framework for (1) the delivery of critical updates on the ongoing research activities, (2) fruitful discussions and development of new ideas, (3) community-building through the identification of skill sets and collaboration opportunities, (4) vital exposure of early-career scientists to the GPR research community.

The topics of interest for Session GI4.1, as well as for this Special Issue, are:

1. Ground Penetrating Radar instrumentation
- Innovative GPR equipment and antennas
- Equipment testing and calibration procedures

2. Ground Penetrating Radar methodology
- Survey planning and data acquisition strategies

- Methods and tools for data analysis and interpretation
- Data processing algorithms
- Electromagnetic modelling, imaging and inversion techniques
- Studying the relationship between GPR sensed quantities and physical properties of inspected subsurface/structures useful for application needs
- Advanced data visualization methods to clearly and efficiently communicate the significance of GPR data

3. Ground Penetrating Radar applications and case studies
- Earth sciences
- Civil engineering
- Environmental engineering
- Archaeology and cultural heritage
- Management of water resources
- Humanitarian mine clearance
- Vital signs detection of trapped people in natural and man-made disasters
- Planetary exploration

4. Contributions on the combined use of Ground Penetrating Radar and other geoscience instrumentation, in all applications fields

5. Communication and education initiatives and methods

Special Issue Editors:
– Dr Alessandro Fedeli (University of Genoa, Italy) – alessandro.fedeli@unige.it
– Prof Lara Pajewski (Sapienza University of Rome, Italy) – lara.pajewski@uniroma1.it
– Prof Aleksandar Ristic (University of Novi Sad, Serbia) – aristic@uns.ac.rs
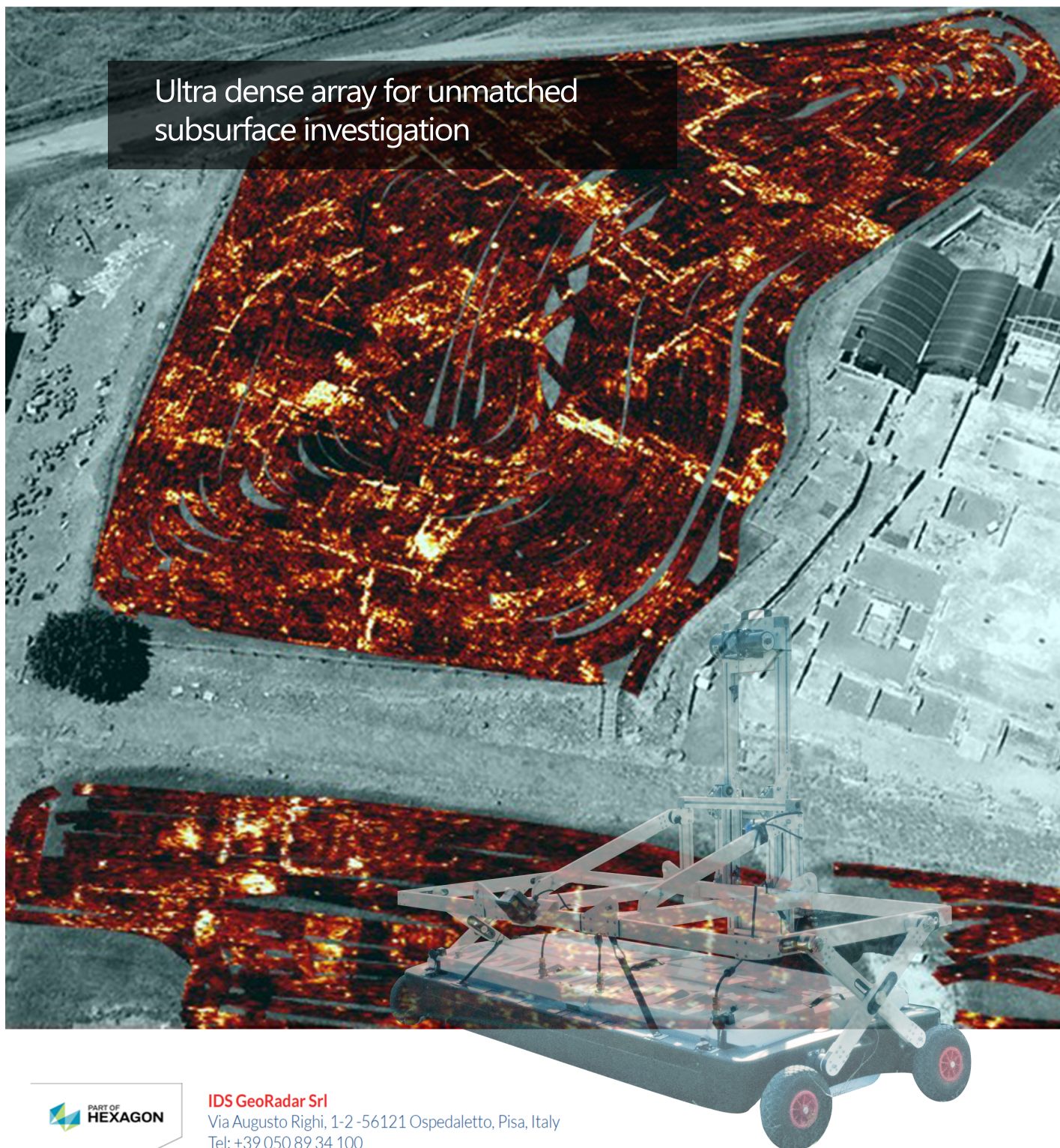– Dr Milan Vrtunski (University of Novi Sad, Serbia) – milanv@uns.ac.rs

Deadlines and Milestones:
– Submission deadline: 15 September 2019;
– Publication of accepted papers: 31 December 2019.

Notes:
Submissions are open to scientists and experts who participated in the session (Authors of Abstracts and Attendees). When you submit your paper, please specify in your 'Letter to the Editor' that you wish to have the paper included in this Special Issue.

First Class GPR Solutions

Ultra dense array for unmatched subsurface investigation

IDS GeoRadar Srl
Via Augusto Righi, 1-2 -56121 Ospedaletto, Pisa, Italy
Tel: +39 050 89 34 100
www.idsgeoradar.com | info@idsgeoradar.com

Special Issue – Call for papers

**New perspectives for the study and preservation of cultural heritage
with the aid of noninvasive prospecting**

Cultural heritage is a resource of maximum importance. Beyond its short- and medium-term economical value, it is the material testimony of our memory and roots. Preserving and valorizing it is a must for our future, in all the countries of the world. Ground Penetrating Radar (GPR) and other noninvasive diagnostic techniques can play a role for this, and the achievable results have been made progressively more refined over the years. Nowadays, it is possible to investigate floors and walls, but also columns, pillars, vaulted ceilings, arched historical bridges and even statues in order to acquire precious information regarding the monuments and works of art, related to their history, change of use and status of conservation. New techniques of visualization and enjoyment of the cultural heritage, both for specialists and for tourists, are nowadays possible, thanks to virtual reality and augmented reality, and the results of a GPR (and more in general geophysical) prospecting can be inserted and locally referenced to provide clear and suggestive (and at the same time scientifically rigorous) imaging results.

This Special Issue is mainly dedicated to publishing a selection of papers that provide a comprehensive and up-to-date overview of the state-of the art of research activities dealing with the combined used of GPR and complementary geophysical and/or remote sensing techniques, newest hardware devices devoted to this kind of applications, advanced data processing methods and skilled analyses for a correct interpretation of the data.

We invite you to submit a paper by November 30th, 2019. The publication of the Special Issue is scheduled as the first issue of the 2020 volume of the journal. Manuscripts can be submitted via the online submission form: www.gpradar.eu/journal/submission.html. Accepted papers are published in open access free of charge.

Sincerely,

The Editors
Raffaele Persico, Mercedes Solla, Xavier Dérobert