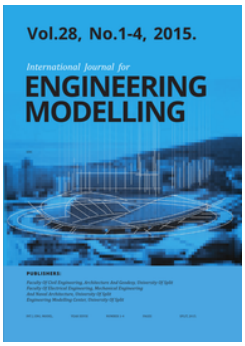
International Journal for Engineering Modelling



Special Issue on:
Civil Engineering Applications of Ground Penetrating Radar

Objective of the journal:
The journal is dedicated to the dissemination of the latest developments of new engineering analysis techniques using numerical methods.

Call for Papers:

In the last few decades, there have been significant advances in Ground Penetrating Radar (GPR) technology and methodology. Of particular interest is the application of GPR in civil engineering, which is also the subject of the ongoing interdisciplinary COST Action TU1208. The Action's research activities are being developed within the frame of a unique approach based on the integrated contribution of University researchers, software developers, geophysics experts, non-destructive testing equipment designers and producers, and several end-users coming from both the private and public sectors.

Some of the valuable contributions of this COST Action are the development of protocols and guidelines, the promotion of a wider and more effective use of GPR in civil engineering, the design of novel GPR equipment and the development of advanced electromagnetic modelling and data-processing techniques. Furthermore, the Action is investigating the integration of GPR with other complementary non-destructive testing techniques.

Studies based on enhanced engineering models and numerical simulation, exploiting the finite-difference time-domain technique, integral-equation methods or other approaches, are crucial in providing the growth of scientific knowledge in the area of civil engineering applications of GPR and beyond. Electromagnetic modelling can be very beneficial in situations where a deeper understanding of the operation and detection mechanisms of GPR is required. A full-wave simulator can also be used to produce synthetic datasets and assess the effectiveness of data-processing/imaging algorithms, or else be embedded in inverse electromagnetic solvers. Further modelling activities in the GPR field include the construction of three-dimensional models of investigated areas/structures, based on data measured with GPR and other techniques. Moreover, GPR data can be used to build empirical models to support the monitoring over time of the condition of structures and plan their maintenance, or to extrapolate physical properties of different kind from electromagnetic data.

The *International Journal for Engineering Modelling* has the long tradition of being at the forefront of developing innovative numerical methods for engineering analysis. The guest editors of the journal have recognized that it is the right time for this special issue of the journal to be assembled, thus addressing relevant innovations developed in GPR and numerical modelling community. Hence this call for papers is issued.

Full-length journal papers are invited, concerning the development and application of electromagnetic modelling approaches, innovative numerical methods, computational models and simulation for the analysis of all aspects of GPR use in civil engineering.

All submitted manuscripts will be subjected to the peer review process practiced by this journal.

Abstract Submission: Abstracts should be submitted as soon as possible. Abstracts will only be used for scheduling purpose and will not be reviewed.

Paper Submission Deadline: June 15th, 2017. *The publication of the Special Issue is foreseen for September 2017, therefore this submission deadline cannot be postponed.*

Guest Editors: Lara Pajewski, Antonios Giannopoulos, Dragan Poljak

Abstracts and manuscripts should be submitted to the Guest Editors:

Lara Pajewski, *Chair of COST Action TU1208 "Civil engineering applications of Ground Penetrating Radar"* (www.GPRadar.eu)

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