

Overview

On behalf of the Scientific Committee, we are pleased to announce the International Symposium on **Micro to macro mathematical modelling in soil mechanics** that will be held in Reggio Calabria (Italy) on May 29 - June 01, 2018, at the Department of Civil, Energy, Environmental and Materials Engineering (*DICEAM*) at the University *Mediterranea* of Reggio Calabria.

Conference theme

Three Symposia on granular or porous issues have already been held in [Reggio Calabria](#) with the participation of many outstanding scholars in the field. The new proposed Symposium will be an occasion to enhance the scientific debate about the construction of mathematical models for the description of the physical behaviour of soils, as well as about the suggestions obtained from the micro-mechanical observation of the matter.

The attention will be focused on the comparison between the appropriateness of models and the needs of mathematics to get rigorous results. Skills from applied mathematical physics, geotechnical engineering and mechanics are then involved. It is well known that granular matter displays, in fact, subtle complexity. Phenomena like strain localization, liquefaction of solids, cyclic mobility, effects of diagenesis, weathering, compaction and segregation may imply sophisticated models and sometime render questionable traditional approaches. Moreover, these models suggest non-trivial mathematical problems that are interesting per se. Engineering requests of applicability need also to be satisfied for civil and geotechnical purposes. All these issues may be open to discussion during the Symposium, though the emphasis will be on modelling: higher order continua, incrementally non-linear laws and micro-mechanical considerations must be taken into account.

Guest speakers will present complementary issues from the fields of geotechnical engineering, statistical physics and applied mathematics that can be considered together as a short advanced course on the topic. Regular presentations are also intended to cover fields from mathematical physics to civil and geotechnical engineering, with the discussion of theoretical, numerical and experimental results.

SCIENTIFIC COMMITTEE

Chairmen

Pasquale Giovine
Giuseppe Mortara
University of Reggio Calabria

Members

Gianfranco Capriz, *Accad. Naz. dei Lincei*
Claudio di Prisco, *Politecnico di Milano*
Wolfgang Ehlers, *University of Stuttgart*
James Thomas Jenkins, *Cornell University*
Stefan Luding, *University of Twente*
Paolo Maria Mariano, *University of Florence*
David Muir Wood, *University of Dundee*
Kenichi Soga, *University of Berkeley*

ORGANIZING COMMITTEE

Chairman

Giuseppe Mortara, *Reggio Calabria*

Members

Antonino Amoddeo, *Reggio Calabria*
Maurizio Brocato, *Paris-Malaquais*
Michele Buonsanti, *Reggio Calabria*
Pasquale Giovine, *Reggio Calabria*
Francesco Oliveri, *Messina*

Conference Chairman

Nicola Moraci, *Reggio Calabria*

UNDER THE AUSPICES OF



micro^{to}MACRO

micro to MACRO mathematical modelling in soil mechanics

May 29 – June 1, 2018

University *Mediterranea*
of Reggio Calabria
DICEAM



Main topics

- continuum modelling
- mechanics of porous materials
- multiphase flows
- discrete element modelling
- micro-macro in soil-mechanics
- granular flows
- transport phenomena in particulate materials
- hydro-thermo-chemo mechanical coupling
- mechanics of saturated and unsaturated soils
- laboratory testing and modelling

Contributions

Those interested in submitting technical contributions related to the proposed topics are invited to send an abstract prior to the deadline of November 26, 2017. Abstracts, in English and in pdf format, should be submitted to Prof. Giuseppe Mortara, email giuseppe.mortara@unirc.it, typed on a single sheet of A4 paper; they must include (i) title, (ii) name of the Author(s), (iii) full address of the corresponding Author including email address. The decision of the Scientific Committee will be communicated to Authors before the end of 2017.

Complete papers should not exceed 8 pages including figures and references. All papers will be peer-reviewed before final approval for publication in a **Springer series** indexed by Scopus.

Moreover, the **International Journal of Solids and Structures** (IJSS) and **Meccanica** will publish special issues containing full-length papers selected by the Scientific Committee from all the manuscripts accepted for presentation to the Symposium. The invited extended papers will undergo the standard peer review process after regular submission on the journal website.

All the papers will be published with the assumption that at least one of the authors will register to the conference. English will be the official Symposium language.

Symposium Programme

The programme is based on eight general lectures based on the main topics. The lectures will be given by

Edward Andò, *Laboratoire 3SR*
Diego Berzi, *Politecnico di Milano*
Itai Einav, *University of Sidney*
Guy Houlsby, *University of Oxford*
Vanessa Magnanimo, *University of Twente*
Farhang Radjai, *University of Montpellier*
Tim Ricken, *University of Stuttgart*
Jean-Noël Roux, *Université Paris-Est*

A special lecture will be given by Professor **Tommaso Ruggeri** (*University of Bologna*).

There will be four round-table discussions about mathematical models, physical behaviour, computational methods and experimental validations. Submitted papers will be presented there: Authors and Participants are invited to join in the subsequent discussion.

Information and correspondence

Further detailed information about the Symposium will appear on the web page microtomacro2018.unirc.it/. A mailing list of the Symposium is active. For any other information please contact Prof. Giuseppe Mortara, email giuseppe.mortara@unirc.it.

Secretariat

DICEAM, Via Graziella, Feo di Vito, I-89122 Reggio Calabria, Italy; email giuseppe.mortara@unirc.it; phone: +39 0965 1692 271.

Cancellation policy

Cancellation of registration must be communicated to the Secretariat. 50% of the fee is refundable before April 30, 2018.

Conference fees (EUR)

Type	Early	Regular	Late
Full	400	500	600
Reduced	200	250	300
Accompanying	150	150	150

- **Early** before March 1, 2018
- **Regular** from March 1, 2018 to April 30, 2018
- **Late** after April 30, 2018

The **full** registration fees include: welcome cocktail, conference banquet, lunches and coffee breaks. The **reduced** registration fees apply to PhD students and Post-Doc scholars and do not include the conference banquet. The participation fee for the conference banquet can be paid separately. The **accompanying** persons' registration fees include the welcome cocktail, the conference banquet and a guided tour of the Museum of Reggio Calabria that hosts the world famous Bronzes of Riace. **A maximum of one paper can be presented on payment of a single registration fee.**

Bank transfer information

Bank name: **UNICREDIT SPA**

Bank address:

Corso Garibaldi 331, 89125, Reggio Calabria, Italy

Account name

DICEAM, Università Mediterranea, Reggio Calabria

IBAN: **IT 41 R 02008 16303 000102452580**

BIC/SWIFT CODE: **UNCRITM1585**

payment description: **microtomacro2018 SURNAME**

Participants must fill the registration form on the symposium web page microtomacro2018.unirc.it/.

Hotel room rates for B&B per day (EUR) (MAPS)

Name	category	S	DSU	D
Hotel Excelsior	4S	—	100	125
Hotel Medinblu	4	—	80	110
è Hotel	4	—	70	90
Hotel Lido	4	55	60	85
Regent Hotel	4	—	50	70
Hotel Continental	3	—	54	59
Hotel Lungomare	3	35	45	60

Room types: single (**S**), double single use (**DSU**), double (**D**). Rates apply from May 27 to June 3, 2018. Hotel promotional code: **microtomacro2018**.