

## Preface

The 3<sup>rd</sup> Pan-American Conference on Unsaturated Soils is part of a series of Pan-American events, supported by the technical committee on unsaturated soils (TC106) of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE). This third edition of the conference follows the steps of the highly successful Pan-American Conferences on Unsaturated Soils held in Cartagena de Indias, Colombia (2013), and in Dallas, Texas, USA (2017).

This edition of the conference took place between July 26 and 28, 2021, at a time of social distancing and travel restrictions, due to the outbreak of COVID-19. The conference was organized by the Pontifical Catholic University of Rio de Janeiro, in association with the Federal University of Goiás and the University of São Paulo. The conference, originally planned to happen in the beautiful city of Rio de Janeiro, Brazil, went on fully online as required under these challenging conditions.

Despite the unusual remote delivery of all presentation, this format did not prevent the active participation of researchers, scholars, and experts interested in the behavior of soils and waste materials under unsaturated condition. The success of the conference is primarily due to the engagement of the entire unsaturated soils community. We believe that the knowledge contained in the conference proceedings should be a relevant contribution for applications and future research aimed towards improving infrastructure and engineering projects with a strong benefit for society and the environment.

The conference topics dealt with advances in unsaturated soil mechanics and offered to its delegates an opportunity to discuss current and future trends in practical applications. The conference hosted 14 plenary lectures (9 keynotes and 5 state-of-the-art). The set of invited keynote and state-of-the-art speakers was designed to cover various specific topics. An effort was made to disseminate what has been done in the practice of engineering while still offering an opportunity for delegates to discuss the latest developments regarding the fundamentals of behavior of materials under unsaturated condition. The papers associated with the invited lectures were published in a special issue of the *Soils and Rocks Journal*.

A total of 68 papers are published in these proceedings. Although being a Pan-American event, the proceedings of the 3<sup>rd</sup> Pan-American Conference on Unsaturated Soils have also a large participation of authors from other continents. The first-rate papers published in the proceedings were subdivided into four themes that made up the sections

of the event, as follows: fundamentals and experimental investigations (23 papers); constitutive and numerical modeling (12 papers); slopes, embankments, roads, and foundations (21 papers); tailings and waste disposal (12 papers). Aiming at expanding the access to the knowledge contained in the published articles (expanding the capillarity) all articles are open access.

Special thanks are due to all reviewers of papers submitted to the conference and to João Guilherme R. Almeida, Mariane B de Lemos, Nicolas R. Moura, and Roberto D. Alves, who assisted us with the various tasks pertaining to the preparation of the proceedings. Carlos Besso, Dr. Thiago Carnavale, Prof. André L. B. Cavalcante and Prof. Orêncio M. Vilar helped organizing the conference during its many preparation stages and the two later provided special assistance with all financial matters. We would also like to thank all authors, lecturers, reviewers, session chairs, session secretaries and students, who contributed to the success of the event. We also acknowledge PUC-Rio for in kind assistance to the conference, and CNPq (Brazilian Research Council) and FAPERJ (Research Council of the State of Rio de Janeiro) for the financial support. We are also grateful to ISSMGE, the Technical Committee on Unsaturated Soils (TC106), and the Brazilian Association for Soil Mechanics and Geotechnical Engineering (ABMS), for trusting the mission of hosting the conference to us.

Tácio M.P. de Campos

Fernando A.M. Marinho

Gilson de F. N. Gitirana Jr.

Márcia M.A. Mascarenha