Cite this article
Mondelli G (2023)
Editorial: Classical always fits well.
Environmental Geotechnics **10(4)**: 227–228,
https://doi.org/10.1680/jenge.2023.10.4.227

Editorial

Environmental Geotechnics

ice Publishing

Editorial: Classical always fits well

Giulliana Mondelli
Professor, São Paulo State University, Bauru, Brazil

June 2023 is a special June. For the first time since the original event in 1994, the International Conference on Environmental Geotechnics (ICEG) in Edmonton, Canada, the event was postponed and will be held five years after the previous event, and not four years, as per usual. The reason for this is one everyone in the whole world is familiar with: the Covid-19 pandemic. During this time, many researchers tried to adapt their personal lives to continue their work while others were unfortunately paralyzed by the fear or mourned the deaths occurring around them and worldwide. Yet, some managed to adapt and discovered different avenues of research, some even including the Sars-CoV-2 virus in theories and/or in laboratory research. This June issue of *Environmental Geotechnics* doesn't address these topics because these papers present research developed before 2020, but readers can look forward to the research emerging from the 9th edition of ICEG that will be held in Chania, Greece.

This issue includes two papers about erosion controlling, two about consolidation improvement and one about landfill gas monitoring. Except for the final one, these papers were developed in a laboratory, using a diverse range of equipment and theories. The coupled phenomena is presented in all five papers, confirming that deep understanding of soil-water-microorganisms-gas-temperature demands basics interdisciplinary theory and equipped institutions.

Haouzi *et al*. (2023) developed an experimental column for microbially induced calcite precipitation (MICP) treatment. First, a bacterial solution composed of calcifying bacteria (lyophilisate of *Sporosarcina pasteurii*) was percolated, followed by a fixation solution made up of 0.35 M equimolar concentrations of urea and calcium chloride dihydrate. Finally, cementation solutions consisting of equimolar concentrations of urea and calcium chloride were prepared using distilled water (0.35 or 0.75 M, depending on the treatment strategy) and then percolated. The authors concluded that the reduction of erosional behaviour is enhanced when the uniformity of treatment is controlled and the outlet water flow showed an 'elastic' response during charging and discharging—that is, before and after erosion occurs.

Wang *et al*. (2023) monitored the methane emissions from the Jiangcungou municipal solid waste landfill in China using a static chamber. The results were compared with those obtained from the California Landfill Methane Inventory Model (Calmim) and showed that average methane emission flux from the temporary cover is one to two orders of magnitude greater than those from the final cover and the working face. The observed results are lower than those predicted by Calmim, which were 74.98 and 98.64 (g/m^2)/day, respectively. The model results indicated that there is a strong seasonal variability due to the variation in rainfall amount across different months, and that the methane emission amount was greatly reduced with the increase in vegetation coverage.

Fattahi *et al*. (2023) examined the effects of the physico-chemical and strength properties of 19 soil samples, mostly silty soils taken from some dust sources in China, on their erosion rate induced by the impacts of windborne abrader particles by employing a wind tunnel. The results showed that higher strength parameters resulted in lower erosion rates. Moreover, the fine content and mean weight diameter of the soils were the other parameters that significantly affected erosion rate.

Martin and Meegoda (2023) presented a review about electro-osmotic tests. The authors developed a testing cell and loading frame using ion-exchange membrane (IEM) for measuring settlements according to different voltages with and without a membrane. The results showed that the membrane was always more effective in removing water, particularly at voltages below the limiting current. This occurs because the anion-exchange membrane blocks the migration of hydrogen ions formed near the anode into the soil, which would in turn increase soil electrical resistance.

Siddiqua *et al*. (2023) conducted a series of standard oedometer tests to evaluate the impact of acidic and alkaline pore fluid pH on the collapse behaviour of loess. The microstructural characterization of soil exposed to different values of pore fluid pH was determined by performing microscopic analysis of specimens before and after oedometer tests. The results indicated that pore fluid pH has significant effect on the structural stability of loess and on the evolution of pore-size distribution during consolidation and, consequently, on its wetting-induced collapse behaviour.

It is a pleasure to see and publish so much contemporary development in *Environmental Geotechnics*. We are finally ready to answer so many questions that appeared 30 years ago in the best

of ways: applying classical knowledge to chaos so as to understand all the interactions between soil particles and fluids, microbiology, air and gases. The mature science of *Environment Geotechnics* has become more relevant, after having branched out as an arm of basic geotechnics.

REFERENCES

Fattahi SM, Soroush A, Huang N *et al.* (2023) Soil properties affecting erosion induced by saltating particles. *Environmental Geotechnics* **10(4)**: 252–265, https://doi.org/10.1680/jenge.19.00230.

Haouzi FZ, Esnault-Filet A and Courcelles B (2023) Optimisation of microbially induced calcite precipitation protocol against erosion. *Environmental Geotechnics* **10(4)**: 229–240, https://doi.org/10.1680/jenge.19.00083.

Martin L and Meegoda JN (2023) Introduction to anion-exchange membranes and their use in electro-osmotic consolidation. *Environmental Geotechnics* **10(4)**: 266–277, https://doi.org/10.1680/jenge.20.00006.

Siddiqua S, Bigdeli A and Cherian C (2023) Effect of pore fluid pH on the collapse behaviour and microstructural evolution of a loess. *Environmental Geotechnics* **10(4)**: 278–288, https://doi.org/10.1680/jenge.20.00011

Wang Q, Fei S, Wang L *et al.* (2023) Investigation of methane fluxes from temporary cover of Xi'an Jiangcungou landfill, China. *Environmental Geotechnics* **10(4)**: 241–251, https://doi.org/10.1680/jenge.19.00224.