

FOREWORD

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This Special Issue of the Italian Journal of Engineering Geology and Environment includes twenty-two papers selected among the 108 contributions submitted to the 13th National Conference of Young Researchers in Engineering Geology (XIII Convegno Nazionale dei Giovani Ricercatori di Geologia Applicata). The event is organized by the Italian Association of Engineering and Environmental Geology (AIGA - Associazione Italiana di Geologia Applicata e Ambientale) together with the University of Catania.

For the first time ever, an AIGA national conference is hosted in Sicily (Italy), at the Benedictine Monastery of “San Nicolò”, a UNESCO World Heritage Site. Besides housing a section of the University of Catania, this 16th- century monastery represents an iconic “geological” location, having withstood both the 1669 eruption of Mount Etna and the catastrophic 1693 “Val di Noto” earthquake.

The AIGA Young Researchers Conference represents a venue for scientific exchange and discussion on major topics in Engineering and Environmental Geology, considered within a broad scientific perspective. The contributions address a variety of engineering geological topics, spanning from ground instability to hydrogeology, with attention also paid to geothermal systems and technical characterization of geo-materials. A substantial number of contributions focus on innovative technologies, numerical modelling and machine learning, applied both to landslide studies and to groundwater-related issues. This highlights how Engineering Geology is constantly aligned with scientific progress and technological innovation, while maintaining tangible links with the territory, affected by evolving dynamics that interact with the social fabric.

This connection is particularly evident in the region hosting the conference. Sicily, in fact, has recently been affected by high-magnitude natural events, with significant impacts on its territory, economy and society. Among these, the Niscemi landslide stands out as one of the largest mass movements in Europe in terms of extent and volume, representing an emblematic case of the susceptibility of the Sicilian territory to ground instability phenomena. At the same time, the effects of Cyclone Harry have clearly highlighted the increasingly significant role of climate change on the island’s coasts, particularly along the Ionian side, where the most severe damage was recorded. In this context, the conference also aims to emphasize how Engineering Geology represents a fundamental discipline, capable of providing analytical tools and potential solutions to these complex issues.

On behalf of the Organizing Committee, we gratefully acknowledge all researchers attending the conference, from early-career to senior, whose activity contributes to advancing the state of the art in Engineering Geology in response to increasingly complex scientific and societal challenges. We would like to express our heartfelt thanks to the colleagues who carefully reviewed abstracts and papers, and to Dr Tania Ruspandini of the IJEGE editorial board, who managed and supported the preparation of this Special Issue.