



Ingegneria Geotecnica: COME E PERCHÉ

2° Ciclo di Seminari di Ingegneria Geotecnica 2023-2024

Things can get messy when we miss the big picture: the real case of a road on the move



Georgios Belokas

5 Marzo | 12:00-13:30

Politecnico di Bari
Sala Consiliare
Dicotech 1° piano



Dr. Georgios Belokas is Assistant Professor in Geotechnical Engineering at the University of West Attica, the Head of the “Hydraulic and Geotechnical Engineering Division” at UNIWA and the General Secretary of the Hellenic department of ISSMGE. He holds a Diploma in Civil Engineering from the National Technical University of Athens (1997), an MSc in Soil Mechanics from Imperial College (1998) and a PhD from NTU Athens (2008). He currently teaches Soil Mechanics, Geotechnical Works, Slope Stability – Embankments - and Retaining Walls & Deep Excavations. His research interests include constitutive modelling of anisotropic structured clays and unsaturated soils, field measurements and laboratory testing on unsaturated soils, numerical and probabilistic analyses of geotechnical works, soil – atmosphere effect on soil slope stability and foundation problems and resilience quantification methods for infrastructures. He has 26 years of professional experience in the geotechnical engineering analysis and design of geotechnical major infrastructure works, with emphasis on the investigation and remediation of landslides, and in laboratory testing, focusing on the implementation and application of laboratory ISO 17025. He is a member of TG A2 “NSB contact group” and TG B2 “Design Examples” for the ongoing development of the 2nd generation of CEN/TC 250/SC 7 “Eurocode 7 - Geotechnical design”. He has been a member of the ERTC10 “Evaluation of Eurocode 7” and the TC202 “Field Monitoring in Geomechanics.”

ABOUT THE LECTURE

In February 2003 one of the largest highway landslides in Greece occurred, in which about 6,000,000m³ of soil material moved downslope disrupting the road. The failure included a complex combined movement of a deep translational slide and a surficial earthflow-mudflow. The deep movements developed mainly around the interface of the colluvium with the flysch bedrock at depths varying from about 20m to 35m, whilst the surficial flow was assisted by a prolonged very wet season from November to February. After the catastrophic event, a new geotechnical investigation in 2003 allowed to recognise that various lithological, hydrogeological, geotechnical, and morphological factors have interacted in a geological time scale to create an unstable area at a plan dimension considerably larger than that of the highway. This lecture presents the evolution of the landslide and the conditions that led to its activation and discusses road resilience and remedial measures. If the engineer fails to understand and appropriately account for the adversity of the broader geological—geotechnical and the extreme hydrological environment, this can lead to severe situations, even catastrophic ones.

