

# SEMINARI IN GEO

UNIVERSITÀ DEGLI STUDI "G. D'ANNUNZIO" – CHIETI PESCARA

# Rock Mechanics-Basic Concepts of Rock Slope Stability

INGEO



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Aula 18, Dipartimento IN GEO (Piano terra, Pescara)



## Short CV



Prof. Dr. Mutluhan Akin completed his BSc at Ankara University (Turkey), Faculty of Science, Department of Geological Engineering in 1997. Dr. Akin continued his master's and doctoral studies at the same university and received his PhD in 2008. Between 2002 and 2003, he completed his master's program on engineering geology and soil/rock slope stability at the International Institute For Geoinformation Science and Earth Observation (ITC) in the Netherlands. Between 1998 and 2010, he worked as a geological engineer in the engineering projects of infrastructure facilities at a governmental organization in Ankara.

Dr. Akin worked as an Assistant Professor at Yüzüncü Yıl University, Faculty of Engineering, Department of Mining Engineering between 2010 and 2016. After receiving the title of Associate Professor in 2015, Dr. Akin started working at Nevşehir Hacı Bektaş Veli University, Faculty of Engineering and Architecture, Geological Engineering in 2016 as an Associate Professor. Dr. Akin was awarded by the title of professor in 2022 and is currently conducting his scientific research at the same university. He also serves as Vice Rector at this institution. Dr. Akin's main research topics include weathering at rock mass and rock material scale and rock slope stability with a special emphasis on rockfalls. Dr. Akin is currently conducting research on the stability problems of rock slopes and underground rock hewn structures in the Cappadocia region of Central Anatolia.

## Abstract

Rock slope stability is of great concern in hilly terrain. Contrary to soil slopes, stability is dominantly controlled by discontinuities in rock masses unless rock slopes are highly fractured and/or highly weathered. Therefore, it is quite crucial to evaluate the rock material as well as discontinuity characteristics to accurately assess rock slope stability in an engineering project. Despite technological and theoretical improvements in characterization methodologies and remedial measures, slope instabilities may still threaten residential areas and transportation routes in mountainous regions. Detailed rock slope stability analyses should be carried out to prevent failure of rock masses and to ensure a safe excavated slope design. For this purpose, potential failure mechanisms of the rock slopes should be initially determined, and rock slope stability conditions should be revealed.



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