

Geophysical Imaging of Rock Failure and Fracture Growth

Dr. Reza Hedayat

Assistant professor, UC&T faculty, Colorado School of Mines

WEDNESDAY, October 21st at NOON in BB W210

Lunch Provided –

The study of geomaterials is essential in evaluating the stability of underground structures, understanding earthquakes, and assessing storage and transport of oil and gas in rock formations. Geophysical imaging techniques can be used to probe the internal structure of the soil and rock remotely and non-destructively with the aim of understanding multi-scale physical processes happening inside the material. The research described in this talk utilizes active geophysical imaging to investigate the behavior of rock joints approaching shear failure. In addition, the applications of geophysical imaging techniques for detecting fractures and understanding the hydraulic fracture growth will be discussed. This talk also provides an introduction to Dr. Hedayat's research interests and research projects.



Dr. Reza Hedayat is an Assistant Professor in the Department of Civil and Environmental Engineering and the center for Underground Construction and Tunneling at Colorado School of Mines. Dr. Hedayat received his B.S. degree in Civil Engineering from Shiraz University, M.S. degree in Geotechnical Engineering from Tehran Polytechnic, and Ph.D. in Civil Engineering from Purdue University. Dr. Hedayat's research interests focus on the ground-support interaction in tunnels, microtunneling, multiscale experimental studies of geomaterials, rock and fracture mechanics, applied geophysics and wave propagation, and fluid flow in porous and fractured media. Dr. Hedayat is the recipient of the Cook Ph.D. Dissertation award from the American Rock Mechanics Association (ARMA) in 2014 and the Manuel Rocha Medal Runner-Up Award from the International Society of Rock Mechanics (ISRM) in 2015. Dr. Hedayat is a member of the ARMA Future Leaders Program.

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