

UNDERGROUND LUNCH & LEARN

How to See Behind Concrete Tunnel Liners Non-Destructively

Verification of annulus backfill grout in TBM constructed tunnels is essential for the structural integrity and long-term performance of the tunnel lining. The current industry standard is to use destructive drilling methods through the pre-cast concrete liner to verify there are not voids present. Ground Penetrating Radar (GPR) and Impact-Echo techniques are being considered as potential non-destructive methods for ensuring complete annular-grout backfill behind pre-cast concrete tunnel liners. This presentation demonstrates the great success of GPR and Impact-Echo in detecting the air-filled and water-filled voids within the backfilled grout layer in tunnels.

September 19th 12-1PM
BROWN HALL W250

Lunch will be provided.



Dr. Reza Hedayat is an Assistant Professor in the Department of Civil and Environmental Engineering and the Center for Underground Construction and Tunneling at the Colorado School of Mines. He received his Ph.D. in Civil Engineering from Purdue University.

Dr. Hedayat's research interests focus on non-destructive evaluation of materials and structures, multi-scale studies of geomaterials, rock and fracture mechanics, applied geophysics and wave propagation. Dr. Hedayat is the recipient of the Early Career Award from the US Department of Energy, Cook Ph.D. Dissertation award from the American Rock Mechanics Association (ARMA), and the Manuel Rocha Medal Runner-Up Award from the International Society of Rock Mechanics (ISRM).

