

TDR 2006

Purdue University

Plenary Lecture: Geotechnical Applications of TDR

Craig H. Benson

Ref.: Benson, Craig H., "Plenary Lecture: Geotechnical Applications of TDR", Proc. TDR 2006, Purdue University, West Lafayette, USA, Sept. 2006, Paper ID A3, 1 p.,
<https://engineering.purdue.edu/TDR/Papers>

Geotechnical Applications of Time-Domain Reflectometry

By Craig H. Benson¹

¹Professor and Kellet Fellow, Dept. of Civil and Environmental Engineering, University of Wisconsin-Madison, 1415 Engineering Drive, Madison, WI 53706, USA, P: +1 (608) 262-7242, benson@engr.wisc.edu

Time-domain reflectometry (TDR) has evolved from a research technique primarily used by scientists to measure soil water content to a broad-based geophysical technique used in a variety of civil engineering applications. Although the majority of the applications still are hydrological, other engineering applications have evolved including evaluation of the field performance of landfill covers, monitoring water level, detecting petroleum hydrocarbons, monitoring frost depth, determining soil density, monitoring curing of cement-stabilized materials, and measuring displacement and/or deformation. This presentation reviews the various applications of TDR in civil engineering applications, using examples from papers in the proceedings. Field applications are also described using examples from case histories.

Biographical Information

Craig H. Benson received his BS in Civil Engineering from Lehigh University (Bethlehem, PA, USA) and MSE and PhD in Civil Engineering (geotechnical/geoenvironmental engineering) from the University of Texas at Austin (Austin, TX, USA). Currently he is Professor of Civil and Environmental Engineering, Professor of Geological Engineering, and the Kellet Fellow at the University of Wisconsin-Madison (Madison, WI, USA). Benson also is a professional engineer and currently serves as Editor-in-Chief of the *J. of Geotechnical and Geoenvironmental Engineering*.