

TDR 2006

Purdue University

Plenary Lecture: TDR Probe Design and Selection

P. A. “Ty” Ferre

Ref.: Ferre, P. A. “Ty”, “Plenary Lecture: TDR Probe Design and Selection”, Proc. TDR 2006, Purdue University, West Lafayette, USA, Sept. 2006, Paper ID A4, 1 p.,
<https://engineering.purdue.edu/TDR/Papers>

TDR Probe Selection and Design

Ty P.A. Ferré

Associate Professor
Dept. of Hydrology and Water Resources
1133 E. North Campus Drive
University of Arizona,
Tucson, Arizona 85721-0011
(520) 621-2952
ty@hwr.arizona.edu

Abstract

TDR has become the standard method for volumetric water content measurement in porous materials. The success of the method stems from its robust calibration and its ease of use. In particular, the ability of users to design probes for specific applications makes the method highly adaptable for well-controlled measurements over a range of spatial scales. The improvements made over the last quarter century in using and understanding TDR have advanced soil science and other related disciplines. Now it is time to take the lessons that we have learned and to apply them to other indirect measurement methods. The purpose of this talk is to review our progress with TDR and to attempt to describe how our work could benefit a wider community.

Key Words: measurement sensitivity, sample area, indirect measurement, modeling, probe design

Biographical Information

Dr. Ferré completed a bachelor's in geophysical engineering at the Colorado School of Mines in 1988. After working as a hydrologic consultant, he began a Ph.D. program in Earth Sciences at the University of Waterloo, Canada. He finished that degree in 1997, taught hydrology, geology, and geophysics courses at the University of Waterloo, and then completed a short post doctoral fellowship at the University of Victoria, Canada. Dr. Ferré became an Assistant Professor in the Department of Hydrology and Water Resources at the University of Arizona in 1999 and became an Associate Professor there in 2004. He has been awarded the S1 Early Career Award by the Soil Science Society of America and the John Wesley Powell Award by the United States Geological Survey. He has also been selected for multiple teaching awards by students in his department. With his graduate students, Dr. Ferré is currently researching methods to improve the use of indirect measurement methods in hydrology. Ty and his wife, Leslie, have two sons: Ben (3) and Luke (1).