Topp's Dowsing Rods (TDR) - Clarke Topp's Lifetime of Contributions to Soil Science. (S01-ferre115639-Oral)

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Abstract:

For over thirty-five years, Dr. Clarke Topp has made fundamental contributions to our understanding of soil physics and agriculture through careful measurement, keen insight, and the development and testing of new measurement methods. His work has covered subjects as diverse as the examination of equilibrium vs. steady-state soil characteristic relationships, explaining relationships among yield, management and soil properties, and monitoring freeze/thaw processes. However, Dr. Topp has made his greatest impact in the field of subsurface measurement. While he has been integral to the design, analysis, and application of gamma attenuation probes, air permeameters, and infiltrometers, it is his development and promotion of the time domain reflectometry (TDR) method that has led to the most profound changes in the practice of soil physics and vadose zone hydrology. Through his patience and exuberance, Dr. Topp convinced an often-unwelcoming audience that TDR showed promise for nondestructive measurement of volumetric water content in soils. His seminal 1980 publication, now cited over 650 times, laid the foundation of what has become a standard soil physical measurement method. Dr. Topp continued to extend the TDR method to measure soil electrical conductivity and to improve the interpretation of cone penetrometer measurements. A special session has been convened at the 2002 annual meeting to present advances in subsurface measurement methods in his honor.

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Presentation Information:

Presentation Date: Monday, November 11, 2002 Presentation Time: 1:15 pm

Keywords: TDR, water content, surface tension, constitutive relationships