

Interactive comment on “A fast TDR-inversion technique for the reconstruction of spatial soil moisture content” by S. Schlaeger

Anonymous Referee #3

Received and published: 17 June 2005

This is an interesting article that tackles TDR from first principles. As a non-mathematician I find the development of the theory very useful. Some general first thoughts are that the work is not well grounded in the literature, reference to recent reviews would be helpful to many readers. The work must be placed in the context of what others are doing. This is a problem of interest and a number of publications have appeared on a similar theme. In the introduction the author should set this work in the context of these other publications, pointing out contrasts, improvements and differences in approach.

General reviews on TDR

Topp, G.C. and P.A. Ferre, 2002. Water content. In Methods of Soil Analysis pt 4 Physical methods, (Co-Editors, Dane J.H. and G.C. Topp), Soil Science Society of America Inc., Madison, Wisconsin, USA.

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Discussion Paper

Robinson, D.A., S.B. Jones, J.M. Wraith, D. Or, and S.P. Friedman, A review of advances in dielectric and electrical conductivity measurement in soils using time domain reflectometry. *Vadose Zone J.* 2:444-475, 2003.

Waveform modelling

Feng, W., C.P. Lin, R.J. Deschamps, and V.P. Drnevich. 1999. Theoretical model of a multisection time domain reflectometry measurement system. *Water Resources Research* 35:2321-2331.

Heimovaara, T.J., J.A. Huisman, J.A. Vrugt, and W. Bouten. 2004. Obtaining the spatial distribution of water content along a TDR probe using the SCEM-UA Bayesian inverse modeling scheme. *Vadose Zone Journal* 3:1128-1145.

Todoroff, P., and J. Luk. 2001. Calculation of in situ soil water content profiles from TDR signal traces. *Measurement Science & Technology* 12:27-36.

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