

Characterization and Measurement of the Hydraulic Properties of Unsaturated Porous Media

Part 1

Proceedings of the International Workshop on
**Characterization and Measurement of the Hydraulic
Properties of Unsaturated Porous Media**

Riverside, California
October 22-24, 1997

Edited by

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Preface

These Proceedings document presentations given at the International Workshop "Characterization and Measurement of the Hydraulic Properties of Unsaturated Porous Media," held in Riverside, California, October 22-24, 1997. The workshop was organized to review various aspects of water flow and solute transport in unsaturated porous media, particularly with respect to the characterization and measurement of the unsaturated hydraulic properties (water retention, hydraulic conductivity). Knowledge of the hydraulic properties is indispensable for addressing many soil, hydrological, environmental, ecological and agricultural problems. They are needed in nearly all basic and applied aspects of soil, water, nutrient, and salinity management research (including precision agriculture), and serve as integrated indices for soil quality. They are also needed in models for heat and mass transport near the soil surface to simulate the extent and effects of regional and global climate change, and to interpret or improve the utility of remotely sensed soil moisture data at a variety of spatial scales.

About 220 scientists and engineers from some 20 countries participated in the Workshop; they included soil physicists, hydrologists, chemical and petroleum engineers, geologists, and agricultural engineers. Topics presented at the Workshop ranged from theoretical to application-oriented research, and from modeling to laboratory and field experimentation. The multidisciplinary nature of the Workshop provided unique opportunities for the participants to interact with each other, to appreciate issues and opportunities in porous media modeling and characterization, and to discover commonalities and differences between the various disciplines.

It is a pleasure and honor to acknowledge all those who contributed to the Workshop and these Proceedings. First and foremost, the Workshop had the fortune of being sponsored by a large number of governmental, professional and private organizations (see next page); their support directly reflects the importance of the Workshop. Success of the Workshop would have been impossible without the input from a large number of colleagues and friends, both here in Riverside and elsewhere. I thank all those who served on the Workshop Advisory Committee (see next page). In Riverside, the help by Donna Cooney, Debbie Noordman and Carol Hansen of the Department of Environmental Sciences of the University of California, Riverside, proved to be indispensable. Donna Cooney's insight and resourcefulness was especially critical. Roberta Cook provided similar support from the U.S. Salinity Laboratory. Special thanks are due to all those involved in the typing, editing and processing of the Workshop Abstracts and these Proceedings. They include Walter Russell, Janice Neal, Louise DeHayes and, especially, Sharon Conditt, whose expertise, commitment and enthusiasm up until her untimely passing in October 1998 inspired us all. Dallas Johnson and Kathy Chapman of Printing and Reprographics at UC-Riverside deserve much credit for their superb job of printing these Proceedings.

I also must thank the many people of the U.S. Salinity Laboratory for their tireless help before, during and after the workshop. These individuals include Bill Alves, Richard Austin, Fred Ernst, Joan Fargerlund, Jack Jobes, Sondra Luther, Binayak Mohanty, Walter Russell, Marcel Schaap, Pete Shouse, Jirka Simunek, Todd Skaggs, and Dong Wang, and of course co-editors Feike Leij and Laosheng Wu. Finally, many thanks to the participants who found it worthwhile to travel to Riverside from around the world, and who prepared first-rate contributions to these Proceedings; it was their input and dedication that made the Workshop such a successful event.

Martinus Th. van Genuchten
Workshop Coordinator

Riverside, California
July, 1999

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