



Soil, Water and Environmental Science

Arthur Warrick

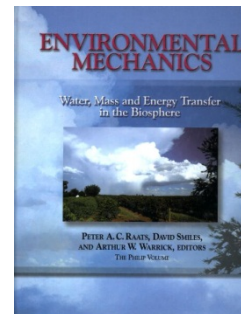
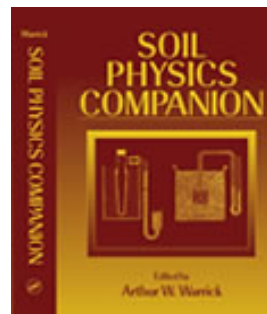
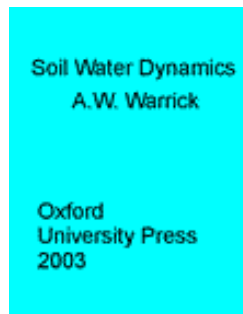
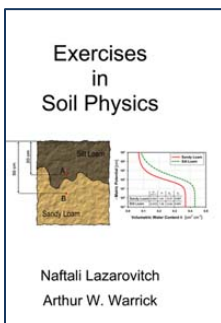


Professor Emeritus

(Joint appointment with Hydrology and Water Resources; Associate Member of Applied Math Program)

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Links



[Soil Water Dynamics](#)

[Soil Physics Companion](#)

[Environmental Mechanics](#)

EDUCATION

Iowa State University Mathematics B.S., 1962

Iowa State University Soil Physics M.S., 1964

Iowa State University Soil Physics Ph.D., 1967

RESEARCH AND TOPICAL INTERESTS

Movement and interaction of water and soil as well as describing how materials move in the soils; unsaturated flow including point and line sources into the vadose zone; movement of potential pollutants in the vadose zone; application of geostatistics in the management of soil and water. Teach classes in soil physics and soil water dynamics. Current Research

APPOINTMENTS

1988 Acting Head, Department of Soil and Water Science, University of Arizona

1975 - Present Professor of Soil Physics, University of Arizona

1975 - 1976 Visiting Professor, Dept. of Land, Air and Water Resources, University of California, Davis

1967 - 1975 Assistant and Associate Professor of Soil Physics, University of Arizona

1966 - 1967 Research Associate and Administrative Assistant, Iowa State Water Resources Research Institute, Iowa State University, Ames, Iowa.

HONORS AND AWARDS

Fellow, Soil Science Society of America

Fellow, American Society of Agronomy

Fellow, American Geophysical Union

Outstanding Research Award for 1984, College of Agriculture

PUBLICATIONS

Recent Books

2003 Warrick, A.W. Soil Water Dynamics. Oxford Univ. Press, New York. 416 p.

2002 Warrick, A.W. (Ed.). Soil Physics Companion. CRC Press, Boca Raton. 389 p.

2002 Smiles, D.E., P. A.C. Raats and A.W. Warrick, (Ed.). Environmental mechanics: Water, mass and energy transfer in the biosphere. The Philip Volume. American Geophysical Union, Washington, D.C. 345

Selected journal articles during past five years

2002 Furman, A., A.W. Warrick, and T.P.A. Ferré. Electrical potential distributions in a heterogeneous subsurface in response to applied current: Solution for circular inclusions. *Vadose Zone J.* 1:273-280.

2002 Henry, E.J., J.E. Smith and A.W. Warrick. Two-dimensional modeling of flow and transport in the vadose zone with surfactant induced-flow. *Water Resour. Res.* 10.1029/2001WRR000674.

2002 Vargas-Guzman, J.A., A.W. Warrick and D.E. Myers. Coregionalization by linear combination of nonorthogonal components. *Math. Geology* 34:401-415.

2002 Warrick, A.W. and J.H. Knight. Two-dimensional unsaturated flow through a circular inclusion. *Water Resources Res.* 38(7), 10.1029/2001WR001041, 2002.

2001 Henry, E.J., J.E. Smith and A.W. Warrick. Surfactant effects on unsaturated flow in porous media with hysteresis: Horizontal column experiments and numerical modeling. *J. Hydrology* 245:73-88.

- 2001 Kluitenberg, G.J. and A.W. Warrick. Improved evaluation procedure for heat-pulse soil water flux density method. *Soil Sci. Soc. Am. J.* 65:320-323.
- 2000 Fennemore, G.G., A. Davis, L. Goss and A.W. Warrick. A rapid screening- level method to optimize location of infiltration ponds. *Ground Water* 39:230- 238.
- 2000 Holland, D.F., M. Yitayew and A.W. Warrick. Measurement of subsurface unsaturated hydraulic conductivity. *J. Irrig. Dr. Engr.* 126:21-27.
- 2000 Or, D., U. Shani and A.W. Warrick. Subsurface tension permeametry. *Water Resour. Res.* 36:2043-2053.
- 2000 Scott, R.L., W.J. Shuttleworth, T.O. Keefer and A.W. Warrick. Modeling multiyear observations of soil moisture recharge in the semiarid American Southwest. *Water Resour. Res.* 36:2233-2247.
- 2000 Vargas-Guzman, J.A., D.E. Myers and A.W. Warrick. Derivatives of spatial variances of growing windows and the variogram. *Math. Geol.* 32:851-871.
- 1999 Henry, E., J.E. Smith and A.W. Warrick. Solubility effects on surfactant-induced unsaturated flow through porous media. *J. Hydrology* 223:164-174.
- 1999 Vargas-Guzman, J.A., A.W. Warrick and D.E. Myers. Multivariate correlation in the framework of support and spatial scales of variability. *Math. Geol.* 31:85-103.
- 1999 Vargas-Guzman, J.A., A.W. Warrick and D.E. Myers. Scale effect on principal component analysis for vector random functions. *Math. Geol.* 31:701-722.
- 1999 Warrick, A.W. and A. Rojano. Effects of source cavity shape on steady, three-dimensional flow of soil gases. *Water Resour. Res.* 35:1425-1433.
- 1999 Young, M.H., P.J. Wierenga, A.W. Warrick, L.L. Hofmann, S.A. Musil. Variability of water front velocities during a field-scale infiltration experiment. *Water Resour. Res.* 35:3079-3087.
- 1999 Yu, C., A.W. Warrick and M.H. Conklin. A moment method for analyzing breakthrough curves of step inputs. *Water Resour. Res.* 35:3567-3572.
- 1999 Yu, C., A.W. Warrick and M.H. Conklin. Derived functions of time domain reflectometry for soil moisture measurement. *Water Resour. Res.* 35:1789-1796.
- 1998 Assadian, N.W., L.C. Esparza, L.B. Fenn, A.S. Ali, S. Miyamoto, U.V. Figueroa and A.W. Warrick. Spatial variability of heavy metals in irrigated alfalfa fields in the upper Rio Grande River basin. *Agr. Water Management* 36:141-156.
- 1998 Warrick, A.W., P.J. Wierenga, M.H. Young and S.A. Musil. Diurnal fluctuations of tensiometric readings due to surface temperature changes. *Water Resour. Res.* 34:2863-2869.
- 1998 Warrick, A.W., M.H. Young and P.J. Wierenga. Probabilistic analysis of monitoring systems for detecting subsurface contaminant plumes. *Ground Water* 36:894-900.
- 1998 Yitayew, M., A.A. Khan and A.W. Warrick. In-situ measurements of soil hydraulic conductivity using point application of water. *ASAE J. Applied Engr. Agr.* 14:115-120.