

Presented by the Department of Crop & Soil Sciences

# 2013 Campbell Lecture

How Do Porous Terrestrial Surfaces Control  
Evaporation Into the Atmosphere?

Thursday, October 31st

11:00 am in VBR 305

Reception to follow



**Dr. Dani Or**

*Professor, Soil & Terrestrial Environmental  
Physics*

*Director, Institute of Terrestrial Ecosystems*

**Swiss Federal Institute of Technology**

Globally, evaporation consumes about 25% of solar energy input, and it drives the hydrological cycle by sending about 60% of terrestrial precipitation back to the atmosphere. Quantifying evaporation is important for assessing changes in hydrologic reservoirs, surface energy balance, and many industrial and engineering applications.

Evaporation dynamics from porous media is significantly different than from free water surfaces due to liquid withdrawal from internal pore spaces, and nonlinearities arising from gradual drying of evaporating surfaces.

Potential implications for formulation of boundary conditions and constraining estimates of evaporative losses by hydrological and climate models will be discussed.

Dr. Dani Or's research focuses on mass and energy transport in porous media, on mechanics of abrupt landslides and avalanches, and on linking physical processes and biological activity in porous media. Dr. Or has authored over 180 refereed publications, co-authored a book, and over 270 proceeding papers and abstracts. Dr. Or is the outgoing Editor in Chief of the *Vadose Zone Journal*, recipient of the Kirkham Soil Physics Award (2001), 2004 Fellow of the Soil Science Society of America, chair of the 2008 Gordon Research Conference on Flow and Transport (Oxford, UK), and 2010 Fellow of the American Geophysical Union. He is the 2013 Birdsall-Dreiss distinguished lecturer, and the recipient of the 2013 Helmholtz International Fellow Award.



*World Class. Face to Face.*

The Campbell Lecture was created to help further understanding of environmental soil science. It is named for Gaylon Campbell, who spent nearly 30 years as a professor of environmental biophysics and soil physics in the WSU's Crop & Soil Sciences department. He retired from WSU in 1998 to become vice president of engineering at Decagon Devices, a local manufacturer of biophysical research instrumentation. The lecture was created through gifts from Campbell Scientific, Inc., and Decagon Devices, Inc.