PhD Research Assistantship – Soil & Environmental Physics

A Novel Approach to Quantifying Soil Evaporation Rates With High Resolution Thermal Imaging and Heat Flux Measurements

We invite applications for a Graduate Research Assistantship (GRA; PhD level; 3 years funding) from students interested in application of novel, high-resolution thermal imaging (HRTI) and subsurface heat-pulse techniques for quantification of soil evaporation rates. The goals of the project are to apply the abovementioned techniques in conjunction with large weighing lysimeters to investigate correlations between thermal surface footprints, physical and hydraulic soil properties, atmospheric conditions, and transient evaporative fluxes from soils and to expand and scale recently developed physical pore and sample-scale evaporation models. Evaporation is a key process for water exchange between soil and the atmosphere and an extremely important component of the water balance. Better predictive capabilities for evaporation rates and development of advanced management strategies aimed at reducing evaporative water loss from urban and agricultural areas are crucial for conservation of scarce water resources in arid environments.

Preferred starting date is **fall 2009 or spring 2010**. The assistantship includes an annual salary of $19,000; waiver of out-of-state tuition; full remission of in-state tuition; and health insurance (total value of assistantship plus benefits ~ $35,000 per year).

Students may enroll in the Soil, Water and Environmental Science or Hydrology PhD programs [here](http://grad.arizona.edu/live/programs/description/157#PhD) [here](http://grad.arizona.edu/live/programs/description/79#PhD).

Applications will be accepted until **November 8, 2009**. Applications should include: (1) a statement of interests and goals, (2) a CV with copies of transcripts and GRE scores, and (3) names and contact information for 3-5 references.

Willingness to work in the field (CAC Lysimeter Station), good mathematics or physics background, and excellent computational skills are required. Some knowledge with environmental sensors and data acquisition systems is advantageous. The GRA will have the opportunity to work with collaborators at ETH Zürich (Dani Or) and Utah State University (Scott Jones) and to participate in the international STAiR PhD program [here](http://www.stair.agrproject.dk/).

Applications and information requests should be directed (preferably via email) to **Markus Tuller** (mtuller@cals.arizona.edu), Room 526, Shantz 38, Department of Soil, Water and Environmental Science, University of Arizona, Tucson, AZ 85721-0038; Phone: 520 621-7225.

For additional information about the SWES Department and the Tuller Research Group please visit: [here](http://ag.arizona.edu/swes/) and [here](http://ag.arizona.edu/swes/soilphysics/).