



**ASA-CSSA-SSSA**  
November 1-5, 2009 | Pittsburgh, PA

## 2009 International Annual Meetings

**Footprints in the Landscape: Sustainability through Plant and Soil Sciences**

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**A Dual-Temperature-Difference Approach to Estimate Daytime Sensible and Latent Heat Fluxes Under Advection Conditions During BEAREX08.**

*Monday, November 2, 2009: 2:00 PM*  
*Convention Center, Room 326, Third Floor*

**Paul Colaizzi<sup>1</sup>, W.P. Kustas<sup>2</sup>, Steven R. Evett<sup>1</sup>, Terry Howell<sup>1</sup> and Prasanna Gowda<sup>1</sup>, (1)USDA-ARS, Bushland, TX (2)USDA-ARS Hydrology & Remote Sens. Lab, USDA-ARS, Beltsville, MD**

The Dual-Temperature-Difference (DTD) approach uses continuous radiometric surface temperature measurements in a two-source (soil + vegetation) energy balance model to solve for the daytime evolution of the sensible and latent heat fluxes. By using the surface-air temperature difference at two times during the day, the errors associated with accurate absolute surface-air temperature differences when the two-source model is applied for a single time-of-day are reduced. The DTD approach is useful in areas with significant local variations in air temperatures such as in advective environments with irrigated and non-irrigated fields. The DTD approach is evaluated at several sites ranging from irrigated and dryland cotton crops to a grassland/rangeland site.

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[See more of: Modeling Evapo-Transpiration and Energy Balances in Crops and Soils](#)

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