

CGD SEMINAR



DATE: Tuesday, 4 September 2018

TIME: 11 a.m.

LOCATION: NCAR, 1850 Table Mesa Drive
Mesa Lab, Main Seminar Room

TITLE: The role of the land surface in weather
and climate

SPEAKER: Paul Dirmeyer, George Mason Univ.

ABSTRACT:

Similar to the ocean, the land surface is a slow manifold relative to the atmosphere that provides predictability and prediction skill across a range of time scales. Land-atmosphere feedbacks occur when and where three ingredients are in place: sensitivity (a.k.a. coupling), variability and memory (persistence of land anomalies). Although the peak influence of land surface states like soil moisture is in the “sub-seasonal” time range between 1-3 weeks, significant impact of land and errors in its representation begin the first day of simulation, and manifest at all time scales. The process chains that link soil moisture, vegetation, snow, and other land states through the energy and water cycles manifest through their effects on the growing daytime boundary layer, cloud formation and convection. Thus, the diurnal cycle is key to assessing and improving model performance related to land-atmosphere interactions. We show evidence of land surface impacts from a variety of global weather and climate models and highlight some current shortcomings that may inform model development.

Live webcast: <http://ucarconnect.ucar.edu/live>

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