Geophysical Research Abstracts
Vol. 19, EGU2017-17926, 2017
EGU General Assembly 2017

Role of land-atmosphere feedback in the 2015 Indian Heat Wave

Debjani Ghatak and Benjamin Zaitchik
Johns Hopkins University, Baltimore, USA

Two consecutive heat waves during 2015-16 in India have drawn the attention of international news in recent times. These hydro-climatic extremes have enormous impact on underlying water and land resource issues that are having severe societal consequences, as seen in sharpened class conflicts and, in extreme cases, farmer suicides. Temperature anomalies during the heat wave in 2015 peaked in the dry period before the onset of the summer monsoon. This suggests that the local land-atmosphere feedbacks involving desiccated soil may have played a role in driving the heat wave. The South Asia Land Data Assimilation System (South Asia LDAS) has been developed to achieve better estimates of land-surface state and flux variables for the South Asian countries. We employ South Asia LDAS to examine the land-atmosphere feedback during the heat extreme of 2015 in addition to the application of in situ data, reanalysis, satellite observations.