Geophysical Research Abstracts
Vol. 18, EGU2016-16027, 2016
EGU General Assembly 2016

A framework for developing an impact-oriented agricultural drought monitoring system from remote sensing

Jie Zhang
University of Maryland, College Park, United States (jiezhang@umd.edu)

With a changing climate, drought has become more intensified, of which agriculture is the major affected sector. Satellite observations have proven great utilities for real-time drought monitoring as well as crop yield estimation, and many remotely sensed indicators have been developed for drought monitoring based on vegetation growth conditions, surface temperature and evapotranspiration information. However, those current drought indicators typically don't take into account the different responses of various input information and the drought impacts during the growing season, revealing some limitations for effective agricultural drought monitoring and impact analysis. Therefore, the goal of this research is to build a framework for the development of an impact-oriented and remote sensing based agricultural drought indicator. Firstly, the global agricultural drought risk was characterized to provide an overview of the agricultural drought prone areas in the world. Then, the responses of different remotely sensed indicators to drought and the impacts of drought on crop yield from the remote sensing perspective during the growing season were explored. Based on previous works on drought risk, drought indicator response and drought impact analysis, an impact-oriented drought indicator will be prototyped from the integration of the drought responses of different indicators and the drought impacts during the growing season. This research can inform an impact-oriented agricultural drought indicator, help prototype an impact-oriented agricultural drought monitoring system, and thus provide valuable inputs for effective agricultural management.