ABSTRACT BOOK

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Innovations for sustainability and food security in arid and semiarid lands

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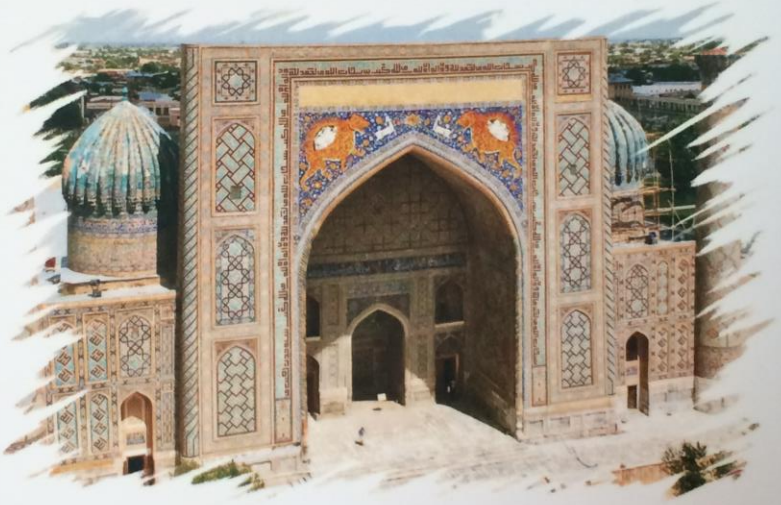

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Satellite-based observation and modeling of grasslands and croplands in dry areas

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Abstract

Grasslands and croplands in dry areas (semi-arid and arid regions) are sensitive to changes in climate and land use. Accurate and updated information of grasslands and croplands are important for the studies of food security and sustainability of socio-ecological systems as well as water resources and climate. In this presentation, we provide an overview on satellite-based observation and modeling of grasslands and croplands in the dry areas. First, we will highlight the recent progress in satellite-based mapping of croplands (cropping intensity, cropping calendar, crop type). Second, we will present satellite-based modeling of gross and net primary production of croplands and grasslands from the Vegetation Photosynthesis Model. Third, we will introduce the new methods in satellite-based mapping of grassland degradation and desertification. Finally we will discuss the role of community remote sensing and citizen science in monitoring grasslands and croplands in the dry areas. We will showcase the data products at the Earth Observation and Modeling Facility, University of Oklahoma (http://www.eomf.ou.edu), and ICARDA Geoinformatics (http://geoagro.icarda.org/) including smartphone app "Field Photo", Global Geo-Referenced Field Photo Library, MODIS data visualization, and ODK based electronic field data collection kit

Keywords: MODIS, Landsat, grasslands, croplands, soil moisture, crop types

Preferred presentation format: Oral presentation.