

Wintersemester 2011/12

Gebäude NW I
Hörsaal H12

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung**Donnerstag 01.12.2011, 17:00 Uhr, H12****Anschließend Postkolloquium mit Bier und Brezeln im H12**

Prof. Dr. Massimo Menenti

Institute of Earth Observation and Space systems (DEOS), Faculty
of AeroSpace Engineering, Delft University of Technology

Observation and modeling of land surface state and convective activity over the Qinghai - Tibet Plateau

The Qinghai – Tibet Plateau is characterized by a significant intra-annual variability and spatial heterogeneity of surface conditions. Snow and vegetation cover, albedo, surface temperature and wetness change very significantly during the year and from place to place. This is well documented by ground based measurements of land – atmosphere exchanges of heat and water.

But to determine the state of the land surface over the entire Plateau can be done only by space observation of these surface conditions. This remote sensing method provides spatial patterns in the land surface drivers of atmospheric instability: radiative forcing, land surface temperature and soil moisture contribute to trigger convective events. Different satellite platforms were used and improved to map at high spatial resolution and over periods of time representative of seasonal variability like MODIS and AATSR multispectral radiometric data, or 25 years of AVHRR observations or 28 years of SMMR and SSM/I 18 and 37 GHz data. The linkages between land surface conditions or the onset of the Asian Monsoon was additionally investigated using two Numerical Weather Prediction Models: GRAPES in China and WRF in Japan. Combined use of satellite sensors with models has provided turbulent flux maps at a kilometric resolution on the entire Tibetan Plateau. Both meso and local scale approaches are compared and discussed to analyse the effect of sub-grid heterogeneity on land surface and turbulent flux parameterisation.

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