



REMOTE SENSING BASED WATER AND ENERGY FLUXES ESTIMATION IN A CHANGING ENVIRONMENT

Córdoba, Thursday 18th September, 2014

IFAPA, Alameda del Obispo, Av. Menéndez Pidal s/n, 14004

Understanding, characterizing and closing both the water and energy budgets have been a major focus for research in the last years. Water and energy fluxes regimes condition the availability of water at different scales throughout the world, and have an important feedback role in the climate system.

Quantifying them requires an efficient and sound monitoring of the state variables driving their evolution, the external conditions influencing them, and even measuring the fluxes themselves.

Remote sensing provides a unique perspective to approach these exchanges, with sensors, analytical tools and models continuously evolving and providing new possibilities to address a more complete space-time description of these land-atmosphere processes.

This workshop aims to present the current state of art and discuss the perspectives for the use of earth observation technology on the estimation of water and energy fluxes, with a special focus on the modelling of crops and natural systems evapotranspiration. This action is part of the CERESS Project activities (AGL2011-30498) and is also developed within the framework of the Panta Rhei Research Initiative of the International Association of Hydrological Sciences (IAHS), in the Working Group Water and Energy Fluxes in a Changing Environment (<http://distart119.ing.unibo.it/pantarhei/>).



Program

- 8:30 Reception of participants
- 9:00 M. Pat González Dugo (IFAPA)
Welcome and introduction. Scope and goals of the workshop. The CERESS project.
- 9:15 Bill Kustas (HRSL-ARS-USDA)
A thermal-based Two-Source Energy Balance (TSEB) model for estimating surface fluxes.
- 10:00 Martha C. Anderson (HRSL-ARS-USDA)
Regional TSEB applications for monitoring water use and drought.
- 10:45 Tea and coffee.
- 11:15 María José Polo (IISTA-UCO)
Hydrological modeling over Mediterranean environments.
- 12:00 Alfonso Calera/ José González (UCLM)
Spatially distributed soil water balance remote sensing-assisted by multispectral time series imagery. Assets and shortcomings.
- 12:45 Christopher Neale (Univ. of Nebraska)
Evapotranspiration rate change of vegetation as indicator of soil water holding capacity. Towards a coupling between SWB and SEB remote sensing assisted.
- 13:30 Lunch
- 15:00 Short presentations of on-going research. (10' presentation-5' discussion)

Ana Andreu (IFAPA)
Estimation of evapotranspiration over Mediterranean woody crop and natural vegetation using TSEB.
- 15:15 Jose González Piqueras/Julio Villodre (UCLM)
Comparing satellite assisted SWB vs. SEB in complex landscape.
- 15:30 Elisabet Carpintero (IFAPA)
Use of remote sensing data fusion for continuous evapotranspiration monitoring at watershed scale.
- 15:45 Jose González Piqueras/ Juan José Gómez (UCLM)
Comparing SWB vs. SEB. Scale issue.
- 16:00 Rafael Pimentel (IISTA-UCO)
Remote sensing and terrestrial photography data to monitor, model and calibrate snow dynamics in semiarid conditions.
- 16:30 Small Groups Discussion Session
- Group 2. Possibilities for integration of water and energy balance models.
- Group 1. Spatial and Temporal scale requirements for vegetation energy and water exchanges monitoring using RS.
- 18:00 Exchange of group finding. Closure of workshop

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Organizes:



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CONSEJERÍA DE AGRICULTURA, PESCA Y DESARROLLO RURAL

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