



**HAL**  
open science

## The mediterranean ecosystem L-band experiment over vine yards (MELBEX-II)

Aurelio Cano, Cristina Millan-Scheiding, Jean-Pierre Wigneron, Carmen Antolin, Jan E. Balling, Jennifer Grant, Alain Kruszewski, Kauzar Saleh Contell, Sten Schmidl Søbjaerg, Niels Skou, et al.

### ► To cite this version:

Aurelio Cano, Cristina Millan-Scheiding, Jean-Pierre Wigneron, Carmen Antolin, Jan E. Balling, et al.. The mediterranean ecosystem L-band experiment over vine yards (MELBEX-II). 10. Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment, Mar 2008, Florence, Italy. 1 p. hal-02819285

**HAL Id: hal-02819285**

**<https://hal.inrae.fr/hal-02819285v1>**

Submitted on 6 Jun 2020

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## **The Mediterranean Ecosystem L-Band EXperiment over vineyards (MELBEX-II)**

A.Cano (1), Cristina Millán-Scheiding (2), Jean-Pierre Wigneron (3), Carmen Antolín (2), Jan E. Balling (4), Jennifer P. Grant (5), Alain Kruszewski (3), Kauzar Saleh (6), Sten Schmidl Søbjaerg (4), Niels Skou (4) and Ernesto López-Baeza (1)

(1) Department of Physics of the Earth and Thermodynamics, Universitat de Valencia, Spain, (2) Research Centre on Desertification (CIDE), Albal, Spain, (3) INRA, EPHYSE, Villenave d'Ornon, France, (4) DTU, Copenhagen, Denmark (5) Vrije Universiteit Amsterdam, Netherlands, (6) Geography Department, University of Cambridge, UK

In the framework of the ESA's SMOS mission (Soil Moisture and Ocean Salinity), several studies are being carried out over different types of land surfaces to study their microwave L-Band emission (1.4 GHz). These studies are being integrated in the SMOS emission model (L-MEB, L-band emission model of the Biosphere, (Wigneron et al. 2006), which is the core of the SMOS algorithm for the retrieval of land surface parameters from SMOS data.

The Mediterranean Ecosystem L-Band characterisation EXperiment over vineyards (MELBEX-II) is being deployed at the 'Valencia Anchor Station' area (Caudete de las Fuentes, Valencia, Spain), at about 80km west of the city of Valencia since March of 2007 until present day. This area has been proposed as one of the SMOS primary validation areas (ESA SMOS Cal/Val AO, Project ID 3252, López-Baeza et al., 2005), mainly due to its reasonably homogeneous characteristics and before attempting other more complex sites. In this area, several 'environmental homogeneous units' have been defined according to the type and use of the soil (mainly composed of shrubs, vineyards and fruit trees) on a 40 km x 40 km. With the study of each of these covers we are trying to establish a validation area comparable to a SMOS's pixel in order to validate its land products ('SMOS reference pixel'). The described experiment will complement previous studies over the different vegetation covers present in the area, such as Mediterranean shrubs (Cano et al., submitted)

Nowadays there is a lack of knowledge regarding the L-Band response of vineyards during its phenological period. For this reason, it is necessary concentrate on sort of vegetation studies allowing establishing the proper parameters to characterize and assimilate them into the SMOS's emission model (L-MEB)

The experiment consists of the acquisition of L-Band polarimetric and multiangular measurements (from 20 to 60 degrees of elevation) over a vineyard field. The L-Band radiometer, EMIRAD from the Electromagnetic System Group (EMI) of the Technical University of Denmark has been placed at the top of an 8 meter height platform over a vineyard field. In addition to the radiometric measurements, infrared temperatures, gravimetric soil moisture, soil temperatures at different depths, soil roughness and Leaf Area Index (LAI) measurements are also being collected.

This work aims to deriving the significant parameters that characterize these types of Mediterranean ecosystem species to be included in the core L-MEB emission model to retrieve SMOS land products.