



Surface energy balance in a not irrigated wheat and its impact on actual ET in the south east of Spain

E. A. Torres, J. Gonzalez, E. Rubio and A. Calera

Universidad de Castilla La Mancha, IDR, Teledetección y SIG, Spain.

(enrique.torres@uclm.es Phone:+34-967599200 (2640)/Fax: +34-967599233)

Non irrigated crops represent approximately 75% of the cultivated area in the semiarid region of “Castilla La Mancha”. Therefore the study of actual evapotranspiration (ET) and the hydrological balance in these crops becomes an important issue. The aim of this study is to analyse how the components of the energy balance influence the ET under wet and water stress conditions in non irrigated crops. To investigate the ET of this land use, a non irrigated wheat crop was monitored during March to June 2006 in the Albacete region, Spain. To this end a Bowen station was set up to measure ET and an EnviroScan equipment was used to monitor the water humidity in the soil at 10, 20, 30 and 50 cm depth. These equipments worked during the whole experiment at 20 min time resolution. In the studied period five rain events were registered, nevertheless the crop was under stress conditions several times, especially at the end of the crop period.

Here the data for a rain-evaporation period in two specific days: wet conditions and stress conditions will be showed. Under these conditions real evaporation and the atmospheric demand are calculated every 20 min. Preliminary results show that the incoming energy increase evaporative demand at the point that phase I of ET occurs during a couple of hours after the precipitation. This short duration in phase I (less than one day) should produce overestimation of the ET in daily models like FAO 56.