Geophysical Research Abstracts, Vol. 8, 03561, 2006
SRef-ID: 1607-7962/gra/EGU06-A-03561

Atmospheric instability analysis and its relationship with precipitation patterns over the western Iberian Peninsula.

S. Queralt (1), D. Gallego (2), E. Hernández (1), I. Iturrioz (1)

1. Dept. Física de la Tierra II, Facultad de Ciencias Físicas, Universidad Complutense de Madrid, Ciudad Universitaria s/n, 28040 Madrid, Spain (queralt@fis.ucm.es)
2. Dept. Física de la Tierra, Facultad de Ciencias Ambientales, Universidad Pablo de Olavide, Ctra. de Utrera, km. 1, 41013 Sevilla, Spain

Thermodynamic and dynamic atmospheric instability indexes allow to classify the the rainfall type´s and provide information about the associated meteorological phenomena and regional instability sources. In this work, we characterize the instability sources over the Iberian Peninsula by means of radiosounding station data and reanalysis data sets from the ECMWF, for the period 1963-2002. Dynamic instability indices such us the Q vector divergence (dQ) or the potential vorticity anomaly (PV) in the 330K isentropic surface have been calculated. Thermodynamic instability indexes including CAPE, NCAPE, LI, TT, KI, SI have been also evaluated. In addition, the leading Principal Components (PCs) in an EOF analysis of specific humidity are computed in order to assess the dominant moisture sources over de Iberian Peninsula. The first results allow to evaluate the combined dynamic and thermodynamic preferred conditions leading to rainfall events over the western Iberian Peninsula.