



## **Assessment of fire weather index forecasts in Continental Portugal**

**R. Libonati** (1), I. F. Trigo (2,3), J. Silva (2) and C.C. DaCamara (1,3)

(1) Faculty of Sciences, University of Lisbon, Lisbon, Portugal, (2) Instituto de Meteorologia, Lisbon, Portugal, (3) Centro de Geofísica da Universidade de Lisboa, Lisbon, Portugal.

Mediterranean countries have experienced in the last years a large number of wildfires that has caused enormous losses in terms of human life and environmental damage. In Portugal, for instance, from 1980 to 1998 the total burned area has reached  $1.686 \times 10^6$  ha, which is equivalent to 19% of the surface of the country. Therefore accurate forecasts of fire risk constitute an important concern in these regions. The Fire Weather Index (FWI) is a numerical rating used to estimate risk of fire. It takes into account the effects of fuel moisture and surface weather parameters on fire behavior. In the present work, we compare values of the FWI computed from observed meteorological data with forecasts of the index based on fields obtained from a limited area numerical weather prediction (NWP) model -ALADIN - for continental Portugal. The study is performed using observation and forecast data from the Instituto de Meteorologia (IM) - the Portuguese National Meteorological Center - during the peak of the fire season of 2004, i.e. from May to October. IM is responsible for giving alert of fire risk in Portugal, and currently uses the Canadian System to calculate daily values of FWI. Results show that false alarms, as well as undetected high risk of fires are quite frequent in certain regions, and that there are systematic errors in the forecasts, which vary accordingly to the location. Thus, the objective of this work is to understand the main characteristics of FWI forecasts errors, and test a statistical correction scheme for the FWI forecasts, based on a Kalman Filter technique.