



Estimating forest fire risk in North and South Europe: a comparative study using two different fire indices

P. Le Sager(1), C. Giannakopoulos(1), A. Vajda(2), A. Venalainen(2)

(1) Institute of Environmental Research and Sustainable Development, National Observatory of Athens, Greece (2) Finnish Meteorological Institute, Helsinki, Finland

Fire indices have been widely derived and used to estimate the risk of fire. However, their construction varies widely from one index to another, reflecting different approaches. It ensues that the reliability of an index may depend on the region where it is applied. In the present study, two indices are considered: the Canadian Fire Weather Index (FWI) and the Finish Forest Fire Index (FFI). The Canadian FWI depends on temperature, precipitation, relative humidity and wind measurements. On the other hand, the Finnish FFI relies on evaporation potential, precipitation and snow coverage. Since relative humidity, temperature and wind measurement can be combined to derive evaporation, both indices may be equivalent. FWI and FFI are computed from the ERA40 re-analyses meteorological data. We assess separately their differences for South and North Europe and discuss their performance through correlation with available fire observations (such as observations around Greece for the 1981-1990 period).