



Summer fire predictability in a Mediterranean environment

Raül Marcos (1), Marco Turco (2), Joaquín Bedía (3), Maria Carmen Llasat (1), and Antonello Provenzale (2)

(1) Department of Astronomy and Meteorology, University of Barcelona, Av. Diagonal 647, 08028 Barcelona, Spain (rmarcos@am.ub.es), (2) Institute of Atmospheric Sciences and Climate (ISAC), National Research Council (CNR), Corso Fiume 4, 10133 Torino, Italy, (3) Meteorology Group, Institute of Physics of Cantabria, CSIC - Universidad de Cantabria, Avda. Los Castros s/n, 39005 Santander, Spain

Each year approximately 500000 hectares burn in Europe. Most of them are consequence of Mediterranean summer fires that lead to damages to the natural environment causing important economic and life losses. In order to allow the preparedness of adequate prevention measures in European Mediterranean regions, a better understanding of the summer fire predictability is crucial. Climate is a primary driver of the interannual variability of fires in Mediterranean-type ecosystems, controlling fuel flammability and fuel structure [1, 2]. That is, summer fires are linked to current-year climate values (proxies for the climatic factors that affect fuel flammability) and to antecedent climate variables (proxies for the climatic factors influencing fine fuel availability and connectivity). In our contribution we explore the long-term predictability of wildfires in a Mediterranean region (NE Spain), driving a multiple linear regression model with observed antecedent climate variables and with predicted variables from the ECMWF System-4 seasonal forecast. The approaches are evaluated through a leave-one-out cross-validation over the period 1983-2010. While the ECMWF System-4 proved of limited usefulness due to its limited skill, the model driven with antecedent climate variables alone allowed for satisfactory long-term prediction of above-normal fire activity, suggesting the feasibility of successful seasonal prediction of summer fires in Mediterranean-type regions.

*References

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