



## Heat waves and extreme fires in Portugal

Joana Parente (1), Mário Pereira (1,2), Malik Amraoui (1), and Erich Fischer (3)

(1) CITAB, UTAD, Vila Real, Portugal (joanaparente@utad.pt, gpereira@utad.pt, malik@utad.pt), (2) IDL, Faculdade de Ciências da Universidade de Lisboa, Portugal (gpereira@utad.pt), (3) Institute for Atmospheric and Climate Science, ETH Zurich, Switzerland (erich.fischer@env.ethz.ch)

Heat waves (HW) combined with long periods of dry weather may have a significant impact on the occurrence of extreme wildfires which, in turn, can have devastating social, economic and environmental consequences. The main focus of this study is to assess HW's influence on the occurrence of extreme wildfires (EW) in Portugal. HW's occurrence in the period 1981 – 2010 were compared with precise and detailed information of Portuguese EW events. Results disclose high spatial, intra and inter-annual variability in the HW's characteristics are clearly associated to the spatial-temporal distribution of the EW. In fact, most of: (i) total number of EW were active during an HW; (iii) total EW days were also HW days; (iv) EW had duration completely contained in the duration of an HW; and, (v) EW occurred during and in the area affected by HW. Findings of this study can be used to support fire danger and risk management.

### Acknowledgements

This work is funded by INTERACT project -“Integrative Research in Environment, Agro-Chains and Technology”, no. NORTE-01-0145-FEDER-000017, in its line of research entitled BEST, co-financed by the European Regional Development Fund (ERDF) through NORTE 2020 (North Regional Operational Program 2014/2020) and supported by: (i) project FIREXTR- Prevent and prepare society for extreme fire events: the challenge of seeing the “forest” and not just the “trees”, co-financed by the European Regional Development Fund (ERDF) through the COMPETE 2020 - Operational Program Competitiveness and Internationalization (POCI Ref: 16702) and national funds by FCT-Portuguese Foundation for Science and Technology (FCT Ref: PTDC/ATPGEO/0462/2014; and, (ii) European Investment Funds by FEDER/COMPETE/POCI- Operational Competitiveness and Internationalization Programme, under Project POCI-01-0145-FEDER-006958 and National Funds by FCT - Portuguese Foundation for Science and Technology, under the project UID/AGR/04033/2013.