

EGU22-12077

<https://doi.org/10.5194/egusphere-egu22-12077>

EGU General Assembly 2022

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## Weather Extremes in the Euro Atlantic Region: Assessment and Impacts

**Margarida L. R. Liberato**<sup>1,2</sup> and Alexandre M. Ramos<sup>1</sup>

<sup>1</sup>Instituto Dom Luiz (IDL), Faculdade de Ciências, Universidade de Lisboa, 1749-016 Lisboa, Portugal (mlr@utad.pt)

<sup>2</sup>Universidade de Trás-os-Montes e Alto Douro (UTAD), 5001-801 Vila Real, Portugal

Despite being major sources of hazards and having impacts on local and national populations, environment and economies, processes involved in extremes' intensification and generation of disastrous impacts, such as extreme and widespread dry and wet events or flash flooding, are not fully understood yet. Therefore, the goal of WEx-Atlantic project is to perform research, to improve knowledge on weather extremes in the North Atlantic European sector and to communicate it to society. Considered extremes are strong winds and heavy hydrometeorological (HM – dry and wet) events associated with extratropical cyclones (EC), frontal systems and atmospheric rivers (AR).

WEx-Atlantic contributes to improve our understanding on the assessment of weather systems and the underlying physical mechanisms, variability and expected changes under global warming, as well as meteorological, environmental (e.g. forest) and socioeconomic (e.g. renewable wind energy and power grid) impacts on Portugal including the Macaronesia Islands.

WEx-Atlantic applies state-of-the-art techniques to detect and track weather systems, including AR, mid-latitude systems and weather types to reanalysis datasets as well as to GCMs. Here a review of WEx-Atlantic research and new contribution is presented.

This work was supported by project “Weather Extremes in the Euro Atlantic Region: Assessment and Impacts—WEx-Atlantic” (PTDC/CTA-MET/29233/2017; LISBOA-01-0145-FEDER-029233, NORTE-01-0145-FEDER-029233) funded by Fundação para a Ciência e a Tecnologia, Portugal (FCT). Alexandre. M. Ramos was supported by the FCT Scientific Employment Stimulus 2017 (CEECIND/00027/2017).

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