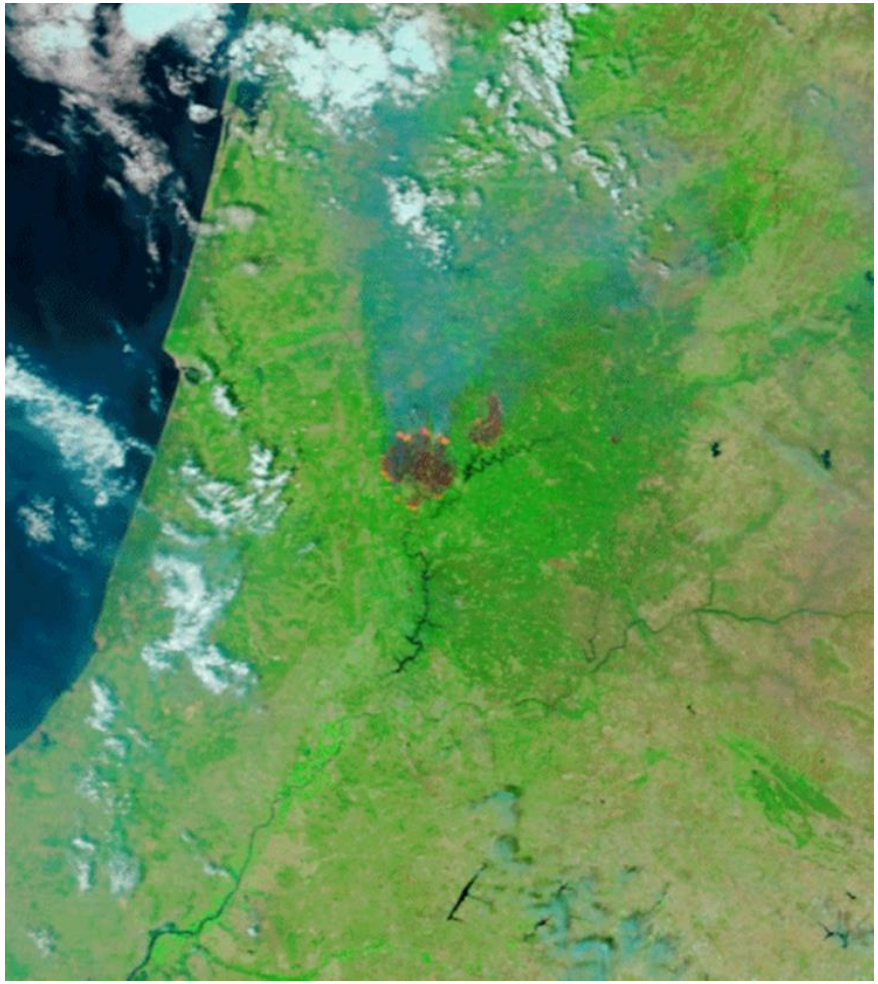
Iberia Fire Regimes for Future Climate Scenarios using a Climate Ensemble



MODIS image (2017)

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FIREXTR fire smart territory

COMPETE 2020

PORTUGAL 2020

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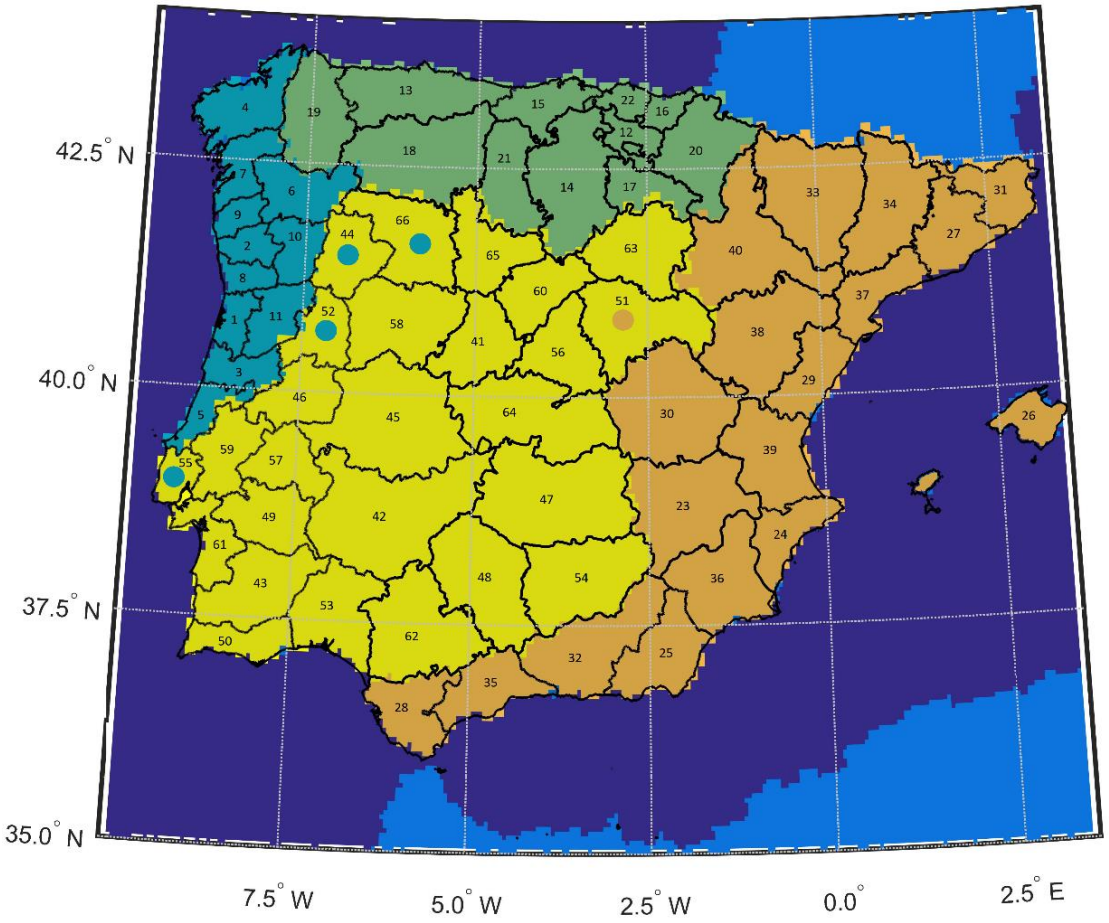
Fire Regime in the Present Climate

- Portugal and Spain fire data (1980-2015)
- Cluster analysis
- Intra annual differences in burnt area and number of fires



Recent evolution of spatial and temporal patterns of burnt areas and fire weather risk in the Iberian Peninsula

Author: T. Calheiros,J.P. Nunes,M.G. Pereira

Publication: Agricultural and Forest Meteorology

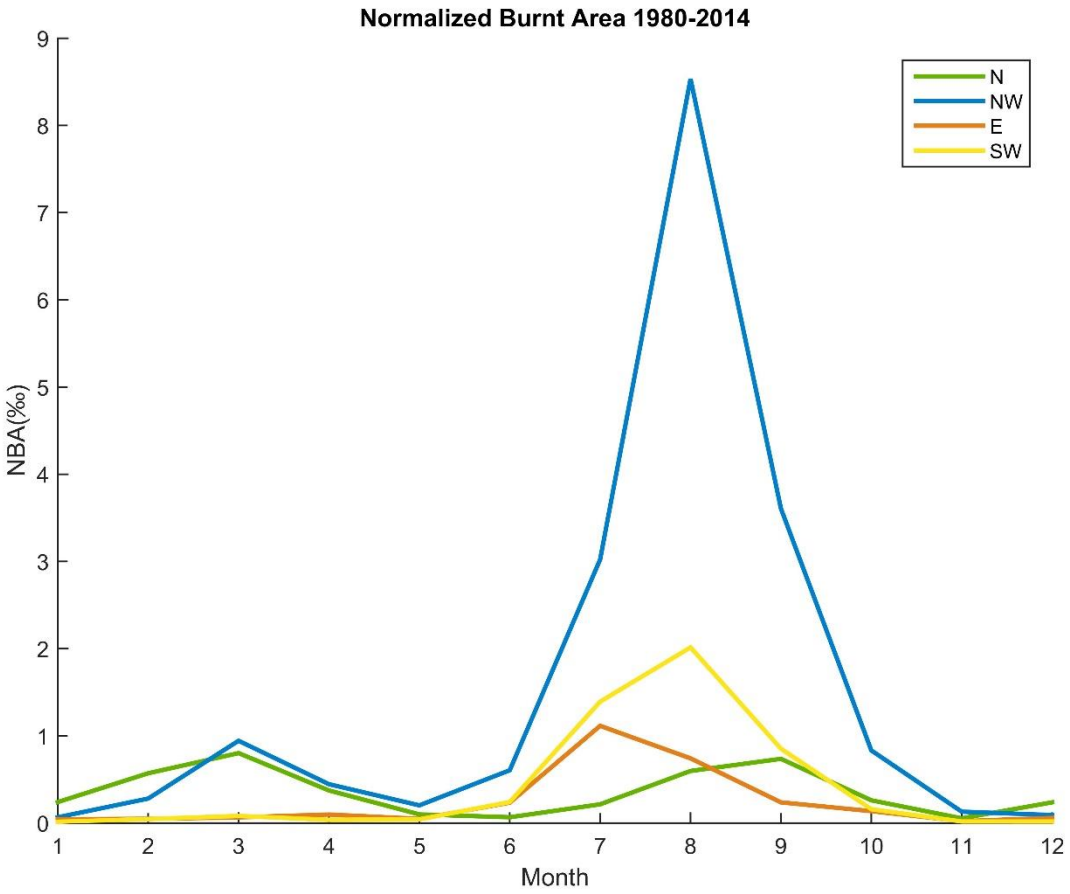
Publisher: Elsevier

Date: 15 June 2020

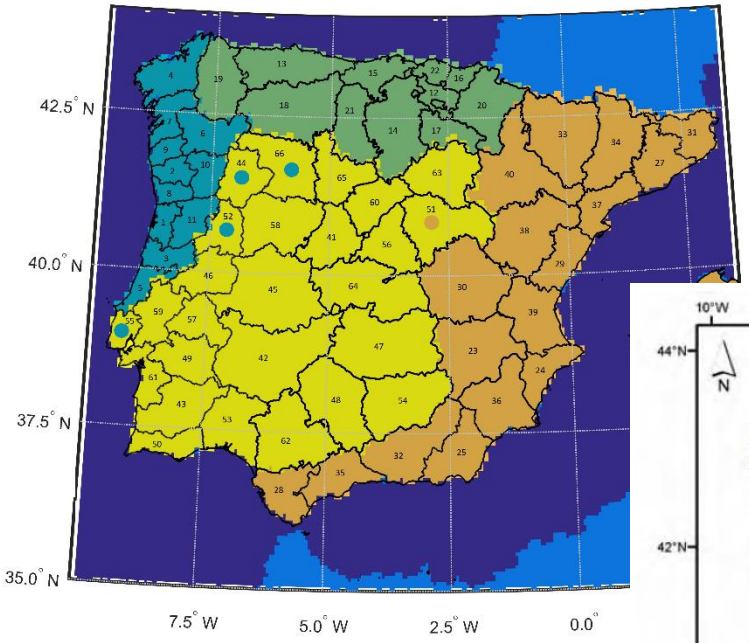
Fire Regime in the Present Climate

Fire clusters (1980-2015):

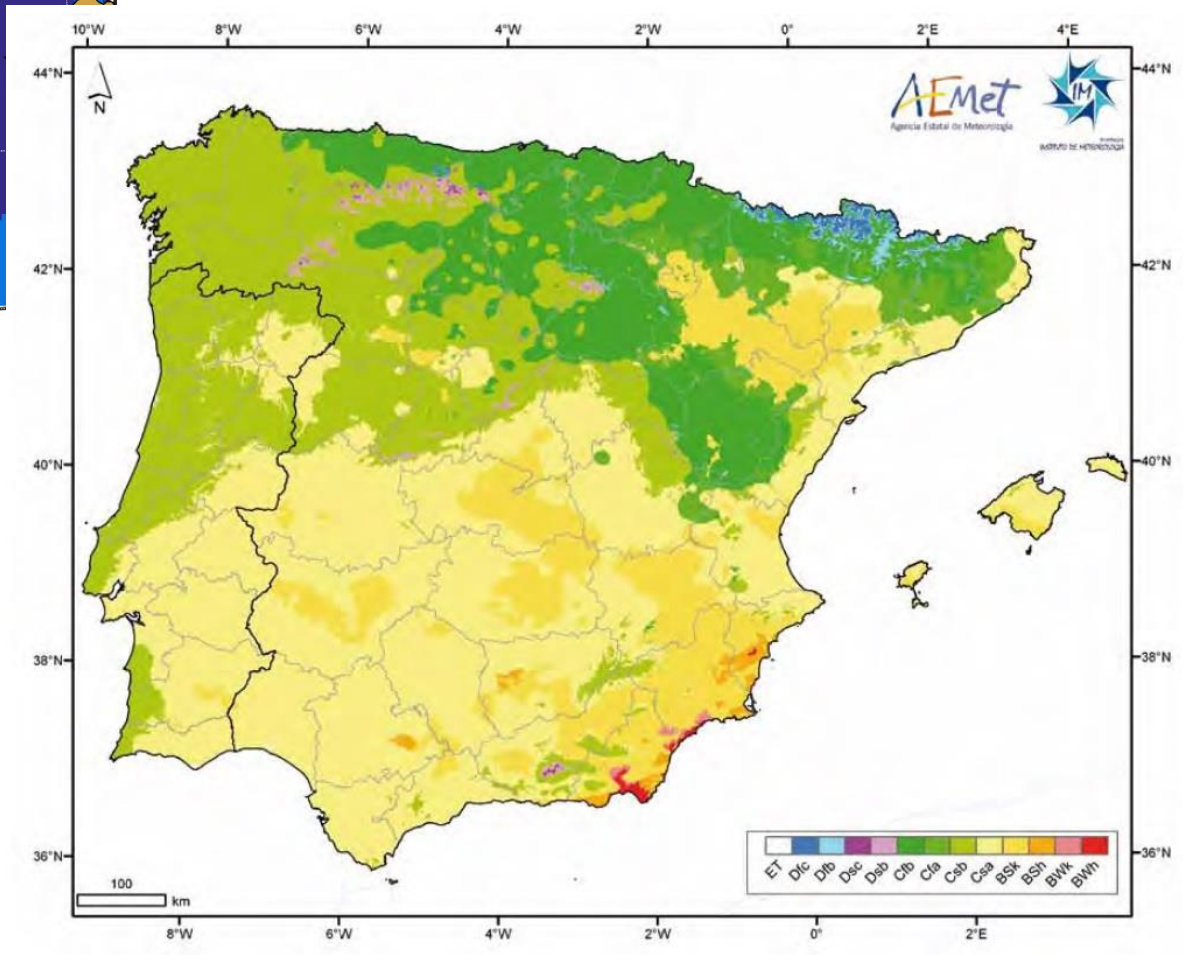
- NW (high NBA in August)
- N (high NBA in March and September)
- E (high NBA in July)
- SW (high NBA in August)
- Ratio A/M is higher in **SW** than in **NW**
- Fire regime is changing in some provinces



Fire Regime in the Present Climate

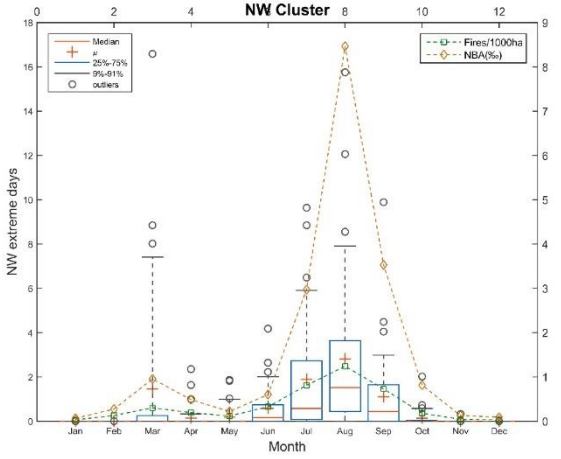


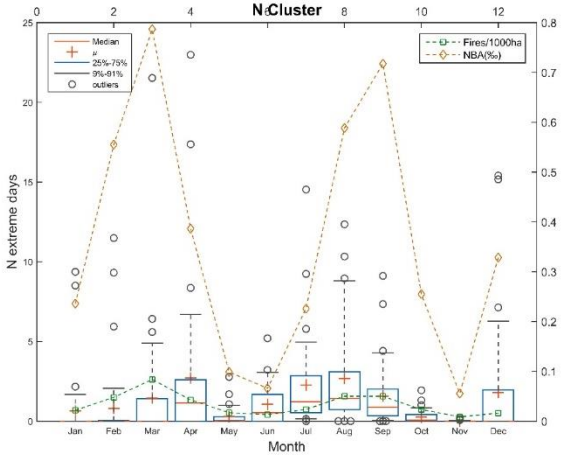
Fire clusters agrees well with Koppen climate classification

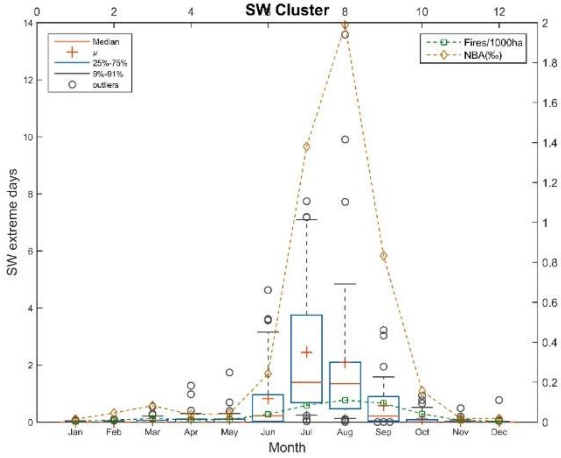


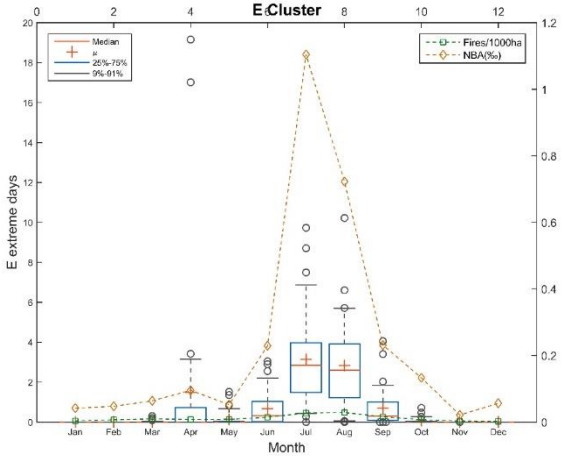
Source: Atlas Ibérico (IPMA & AEMET)

Fire Regime in the Present Climate







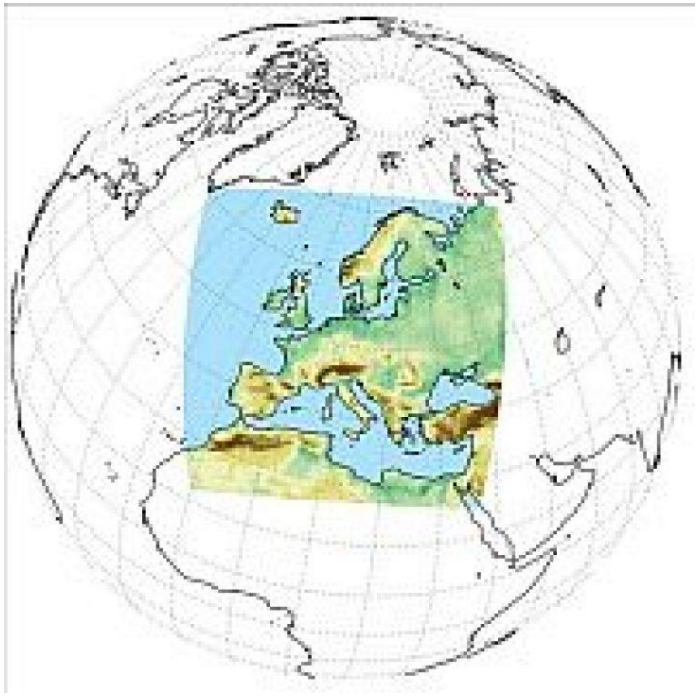


Extreme day definition:

- Only months with 90% NBA cumulated fraction
- P95 of DSR in mild months
- P95 of DC in cold months
- High correlation with NBA seasonal variability
- Explains the differences between seasonal wildfire characteristics

Fire Regime in the Future Climate

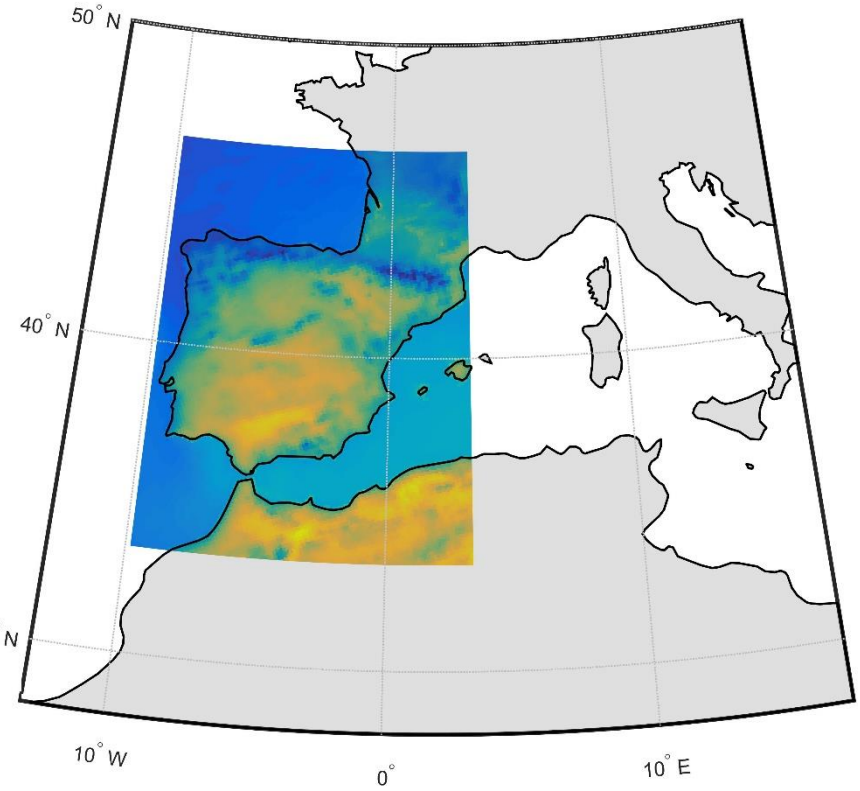
- 11 Euro-Cordex models ensemble (12 km resolution)
- Current (historical) and two future (RCP4.5 and RCP8.5) climate scenarios
- One historical (1976-2005) and three (2011-2040, 2041-2070, 2071-2100) climatic periods



http://www.euro-cordex.net/index.php.en

Fire Regime in the Future Climate

Maximum Temperature



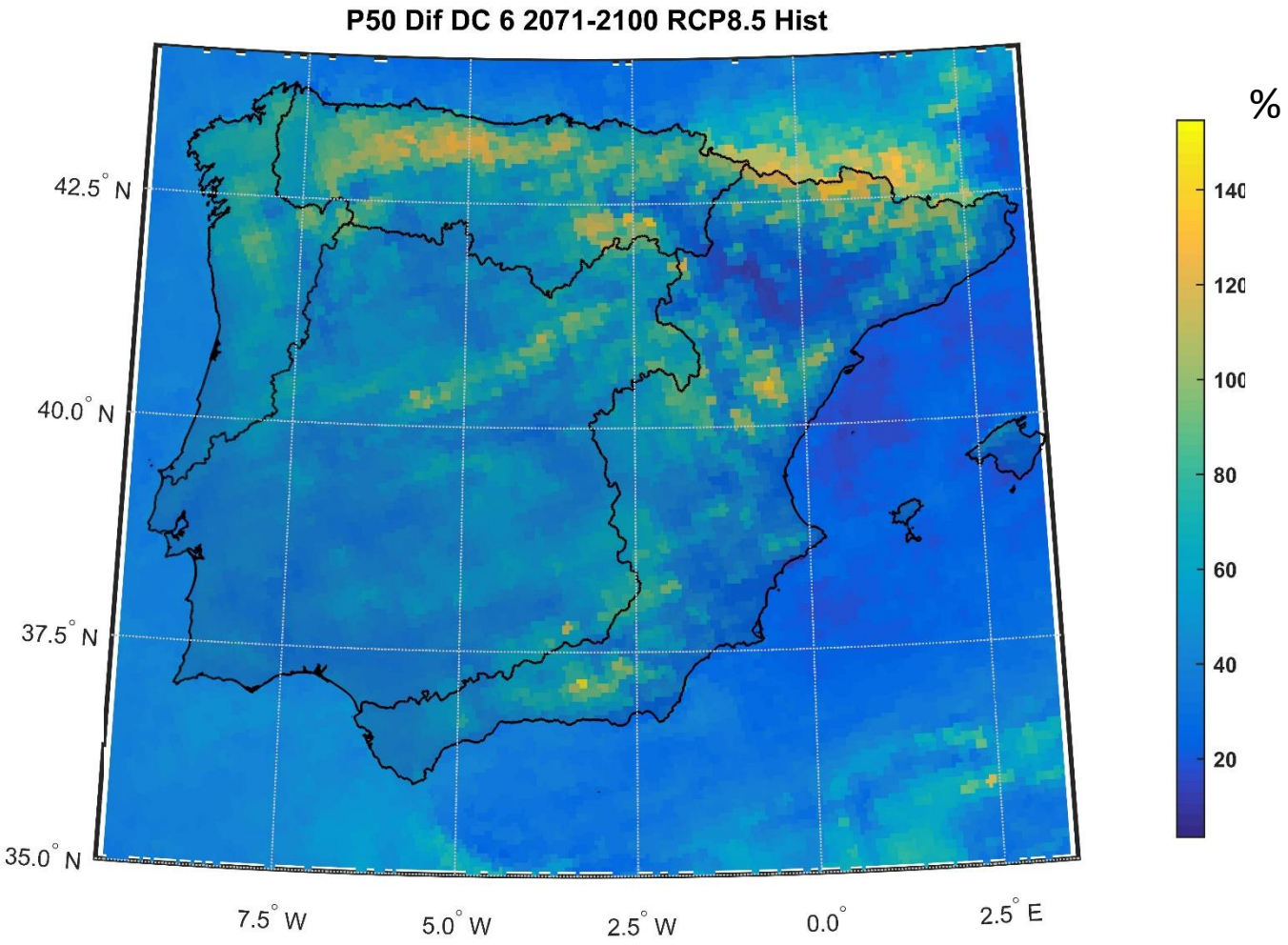
Precipitation

Relative Humidity

Wind Speed

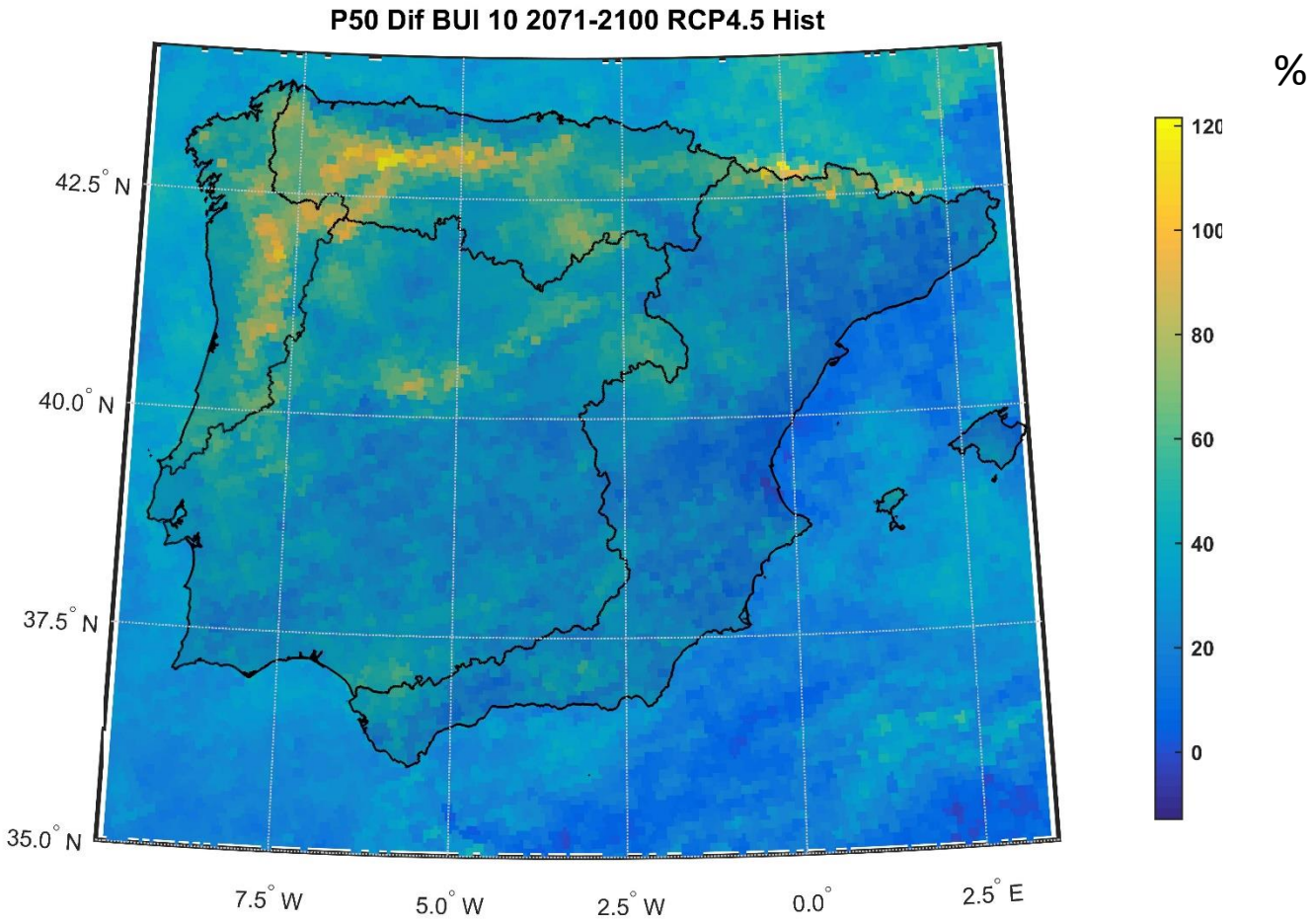
Fire Regime in the Future Climate

P50 (median) of the 11 anomalies: Drought Code (DC)



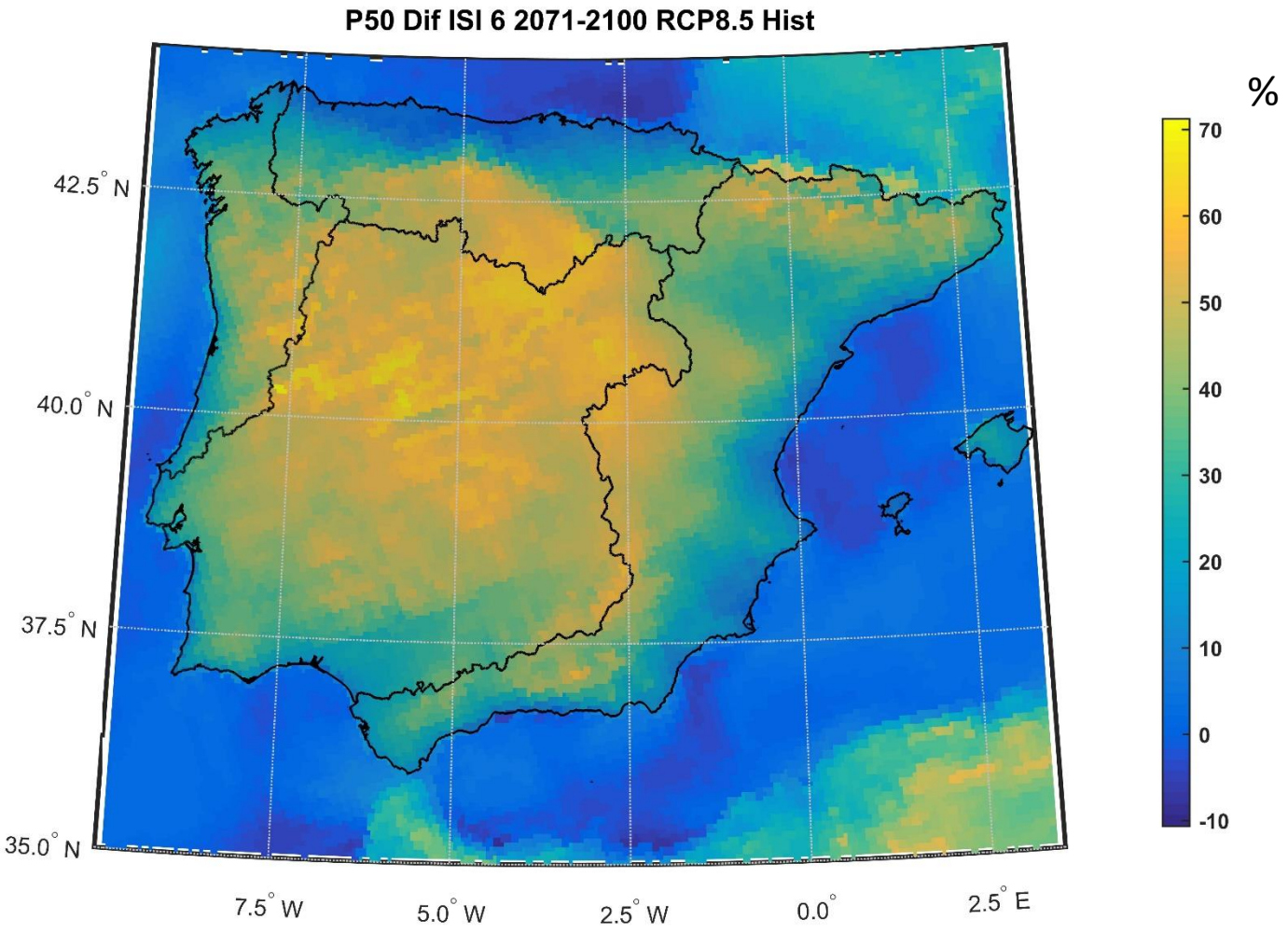
Fire Regime in the Future Climate

P50 (median) of the 11 anomalies: Build-Up Index (BUI)



Fire Regime in the Future Climate

Initial Spread Index



Fire Regime in the Future Climate

- High differences in June and July (DSR)
- E and SW clusters has the highest increases