

# Regional winds over the Iberian Peninsula (Cierzo, Levante and Poniente) from high resolution COSMO-REA6 reanalysis



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## 1. Introduction

REGIONAL WINDS (SMALL-SCALE): HIGH RESOLUTION NEEDS FOR ITS STUDY  
BY REANALYSIS AND MODELS

COSMO-REA6 HIGH RESOLUTION REANALYSIS

## 2. Objective

1) Characterize Cierzo, Levante and Poniente as seen from COSMO-REA6, 2000-2018 period; 2) Validate COSMO-REA6 reanalysis

## 3. Methods

1. Proposal of **objective regional wind definitions**

Cierzo:  $285^{\circ}$ - $315^{\circ}$  (west-northwest),  $> 5.6$  m/s

Levante:  $75^{\circ}$ - $105^{\circ}$  (east),  $> 5.0$  m/s

Poniente:  $255^{\circ}$ - $285^{\circ}$  (west),  $> 5.0$  m/s

2. **Regional wind days calculation** ( $> 6$  h wind under conditions / day)  
according to HadISD observations and COSMO-REA6

3. **Regional wind characterization** (main statistics, extension study, annual and interannual cycles, weather regimes)

## 4. Results

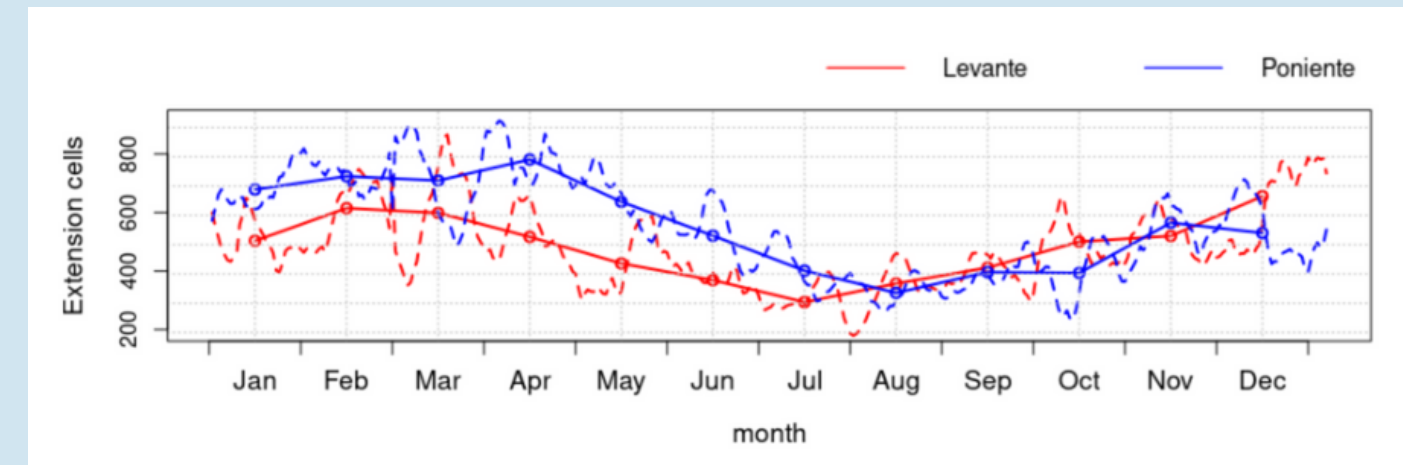


Figure 1. Annual cycle of Levante and Poniente reanalysis extension cells averaged according to COSMO-REA6, with daily (dashed line, smoothed by a moving average method with a 10-day window) and monthly (continuous line) data.

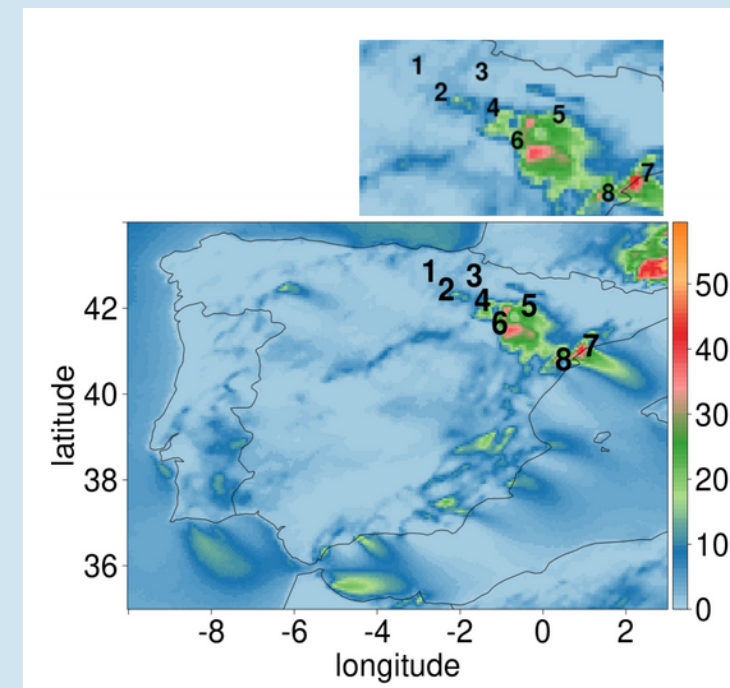


Figure 2. Percentage of Cierzo days per year in the Iberian Peninsula averaged in 2000-2018 according to COSMO-REA6 reanalysis. Zoom on the Ebro Valley is presented. Numbers mark HadISD weather stations: 1) Vitoria-Gasteiz, 2) Logroño, 3) Pamplona, 4) Bardenas Reales, 5) Huesca, 6) Zaragoza, 7) Reus and 8) Tortosa.

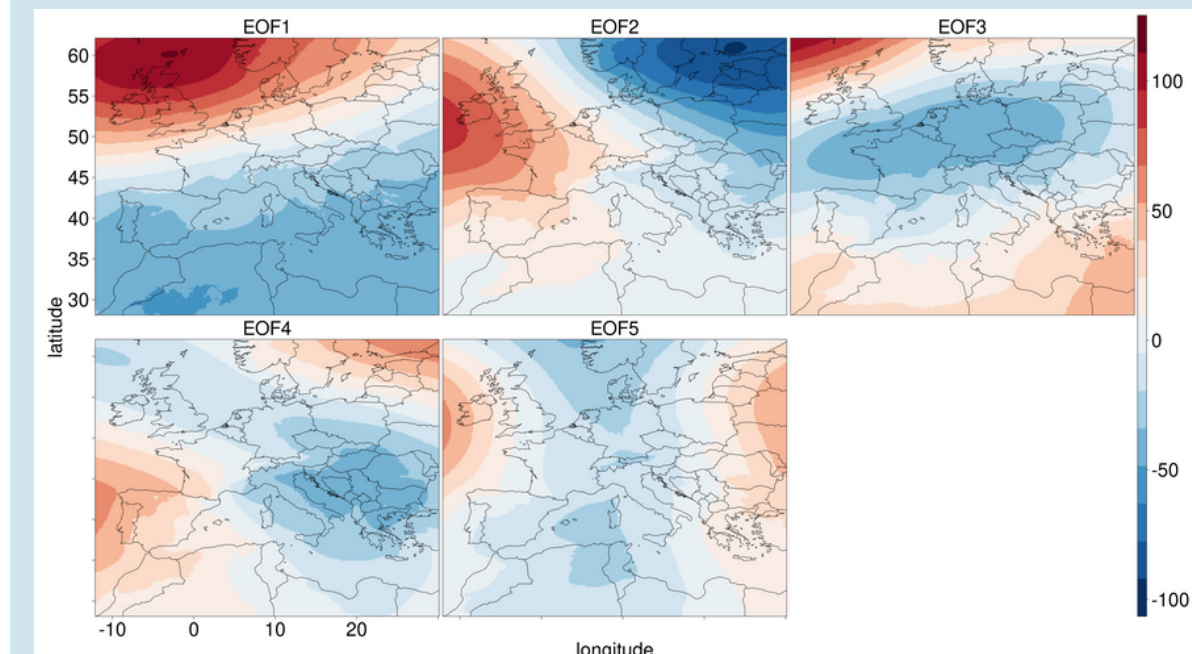


Figure 3. Annual mean sea level pressure anomalies according to COSMO-REA6 reanalysis (hPa) for the 2000-2018 period. Daily data was used for the calculation.

