AICLIMATE@EU DHEFEUS

2023
-
2026
IDL LIBRARY and ONLINE

1st WORKSHOP

Célia Gouveia

Concluding Remarks

13 Nov 2024

fct Fundação para a Ciência e a Tecnologia

Iceland Liechtenstein Norway grants

INSTITUTO DOM LUIZ · OSLOMET · Nord STAR · IPMA · Universidade de Vigo · EPhysLab

Other Results

Task 6

Atmospheric Research xxx (xxxx) 107766

Contents lists available at ScienceDirect

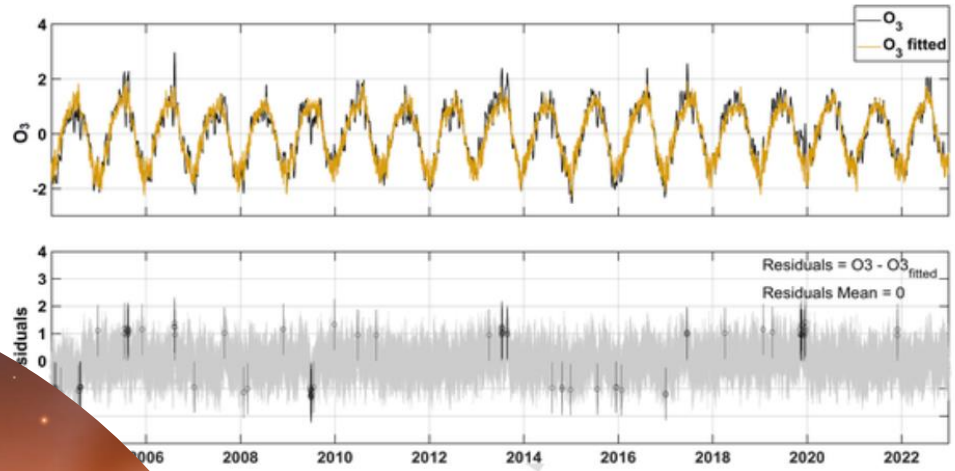
Atmospheric Research

journal homepage: www.elsevier.com/locate/atmosres

Analysis of tropospheric ozone concentration and their predictors in mainland Portugal

In press

Catarina Alonso [a, b, *], Célia Gouveia [b, c], João A. Santos [b]



lues (black line) and estimated values (yellow line) using the stepwise method (upper figure). Error bar plot of the confidence intervals el (bottom figure). The black lines indicates that the residuals are larger than expected in 99 % of new observations and suggests (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

CAMS data

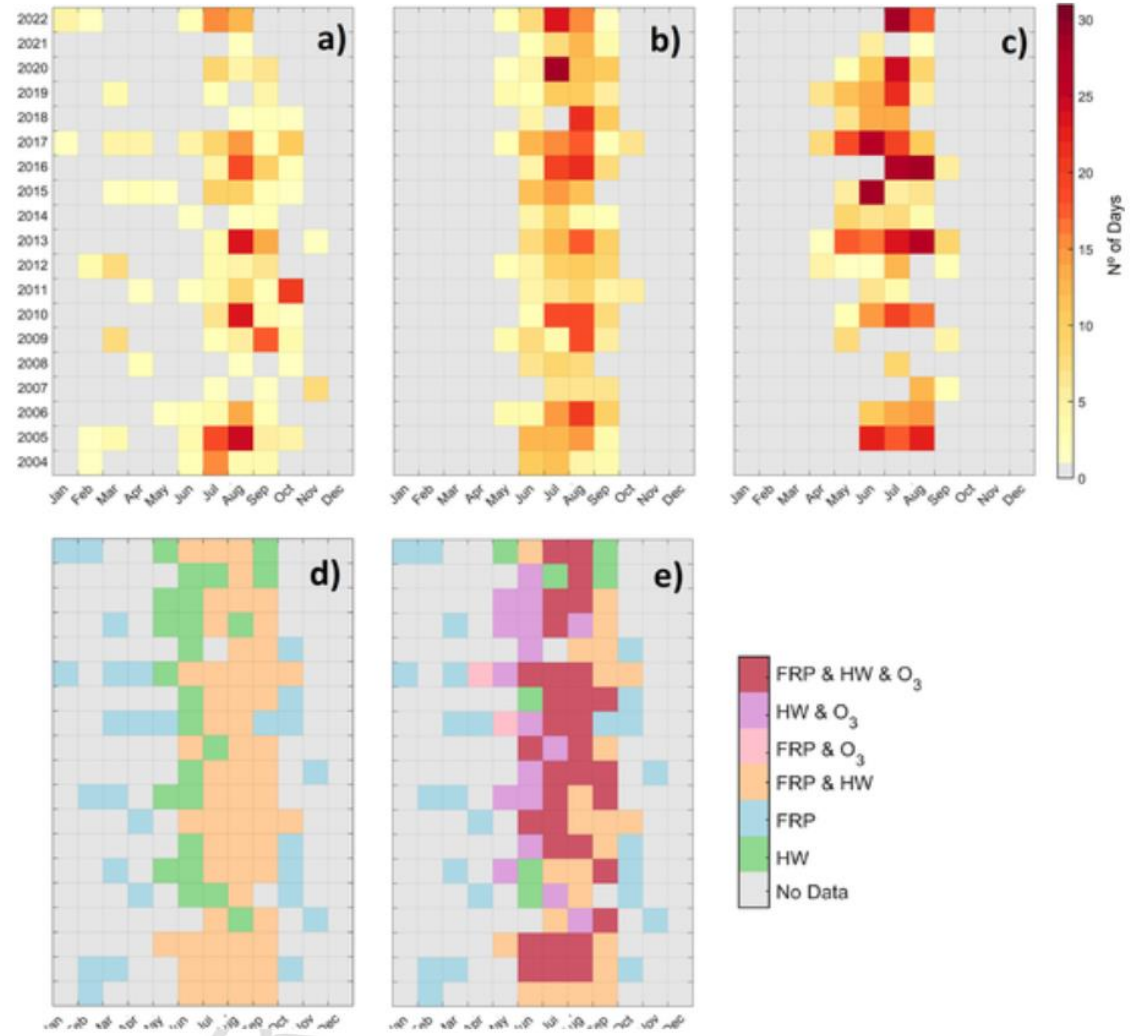


Fig. 7. Number of days with daily FRP (a), maximum temperature (HW, b), and O_3 concentration (c) above the percentile 90th by month. Monthly occurrences of a) and b) (a, b, and c) single and simultaneous events (d) and (e) from 2004 to 2022.

Task 5

Other Results

IOP Publishing Environ. Res. Commun. 6 (2024) 031002 https://doi.org/10.1088/2515-7620/ad2bb8

Environmental Research Communications

LETTER

OPEN ACCESS

RECEIVED
7 June 2023

Compound drought and hot events assessment in Australia using copula functions

Patrícia Páscoa[1,2,3], Célia M Gouveia[1,3], Andreia F S Ribeiro[4,5] and Ana Russo[3]

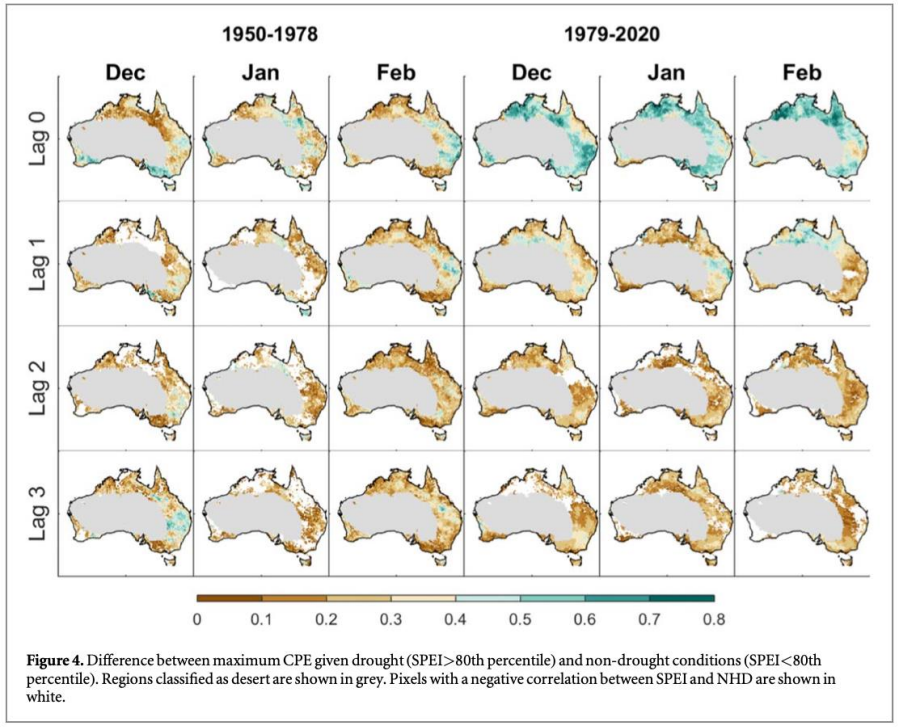


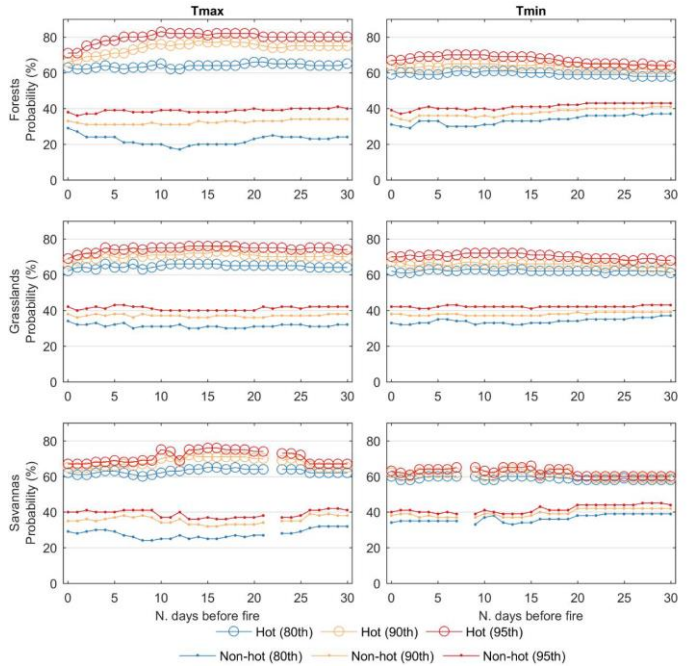
Figure 4. Difference between maximum CPE given drought (SPEI>80th percentile) and non-drought conditions (SPEI<80th percentile). Regions classified as desert are shown in grey. Pixels with a negative correlation between SPEI and NHD are shown in white.

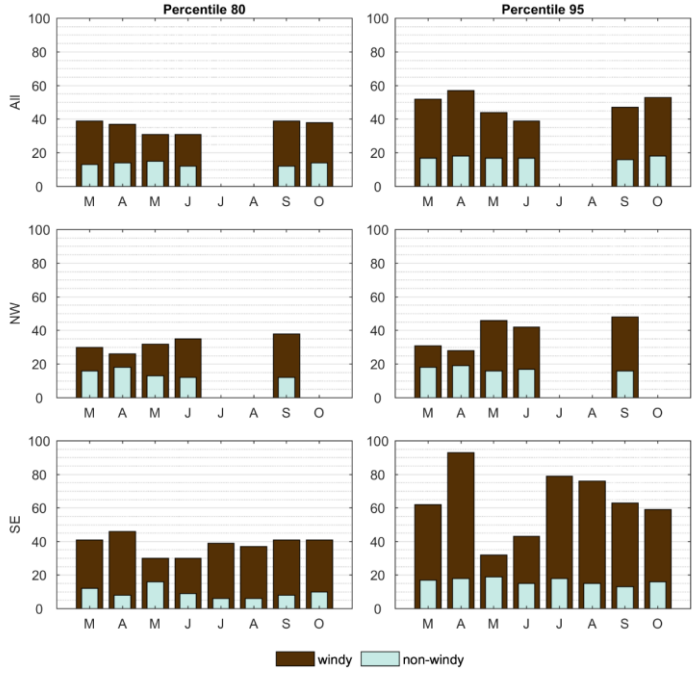
Compound drought and hot events assessment in Australia using copula functions

Patrícia Páscoa, Célia M. Gouveia,

Andreia Ribeiro, Ana Russo

In revision



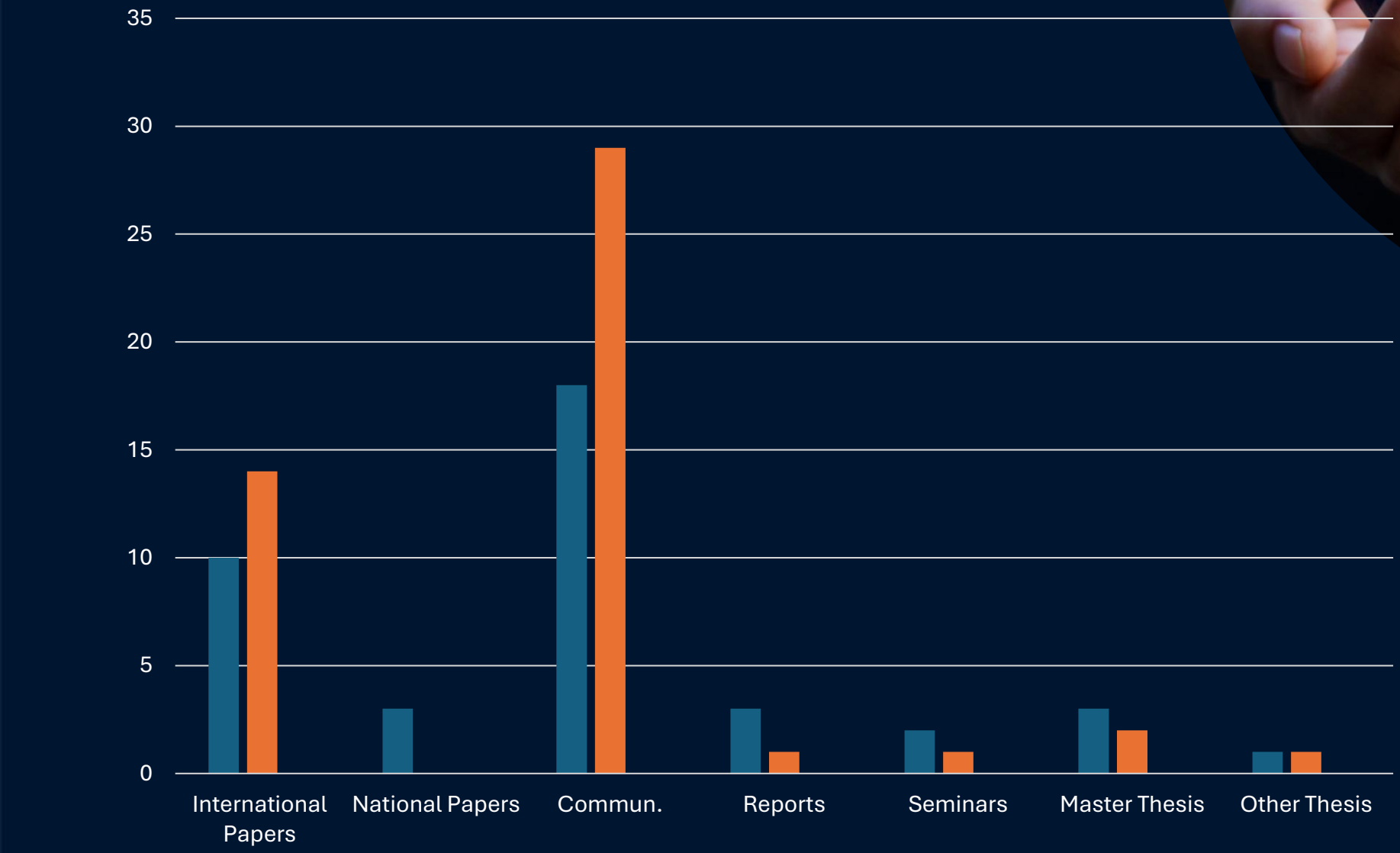


Synergies between Individual Weather Conditions and Fire Radiative Power (FRP) in Portugal

Patrícia Páscoa, Patrícia de Zea Bermudez, Soraia Pereira, Ana Russo, Célia M. Gouveia

In progress….

DELIVERABLES



Proposed

Delivered

4 Submitted Papers

18 Conference Presentations

Next...

Master Thesis (ongoing...)

- **André Lourenço (2024)**

"Compound dry and hot extreme events in the Mediterranean region"

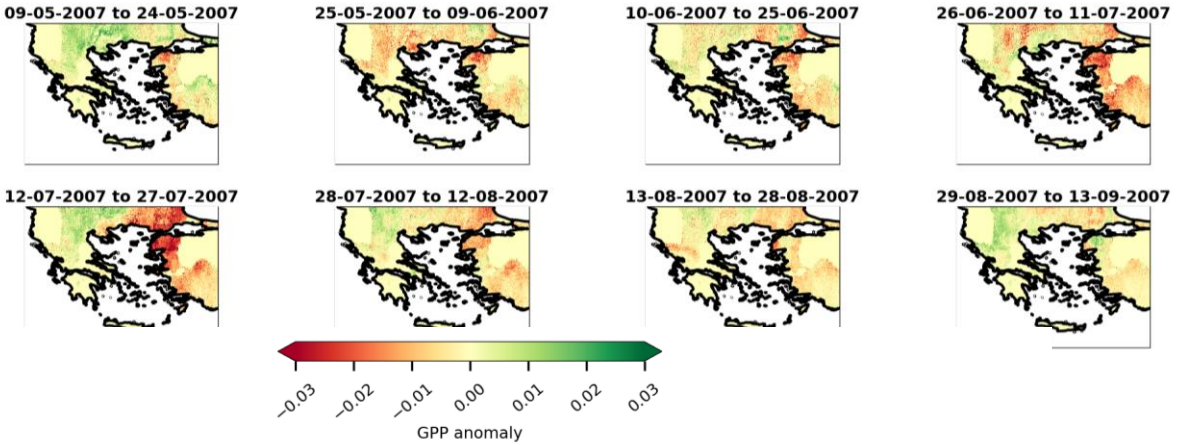
- **Mariana Finuras** *(2025)*

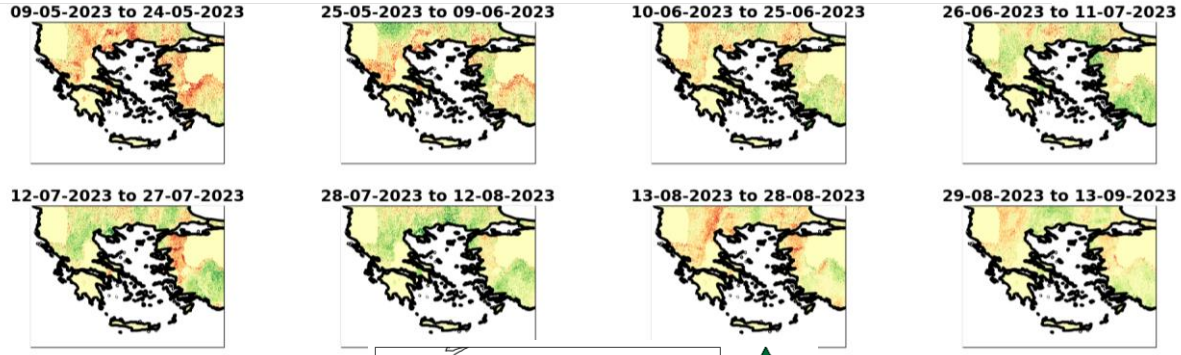
"Wildfire impacts on vegetation dynamics and carbon cycle over the Mediterranean region"

- **Marte Brekke** *(2025)*

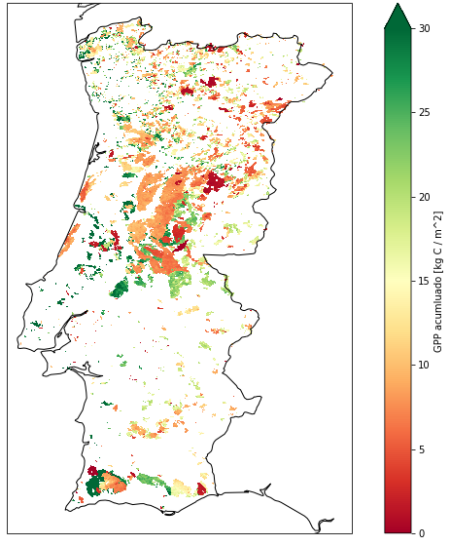
"Compound heat and drought events analised under AI perspective"

Next...

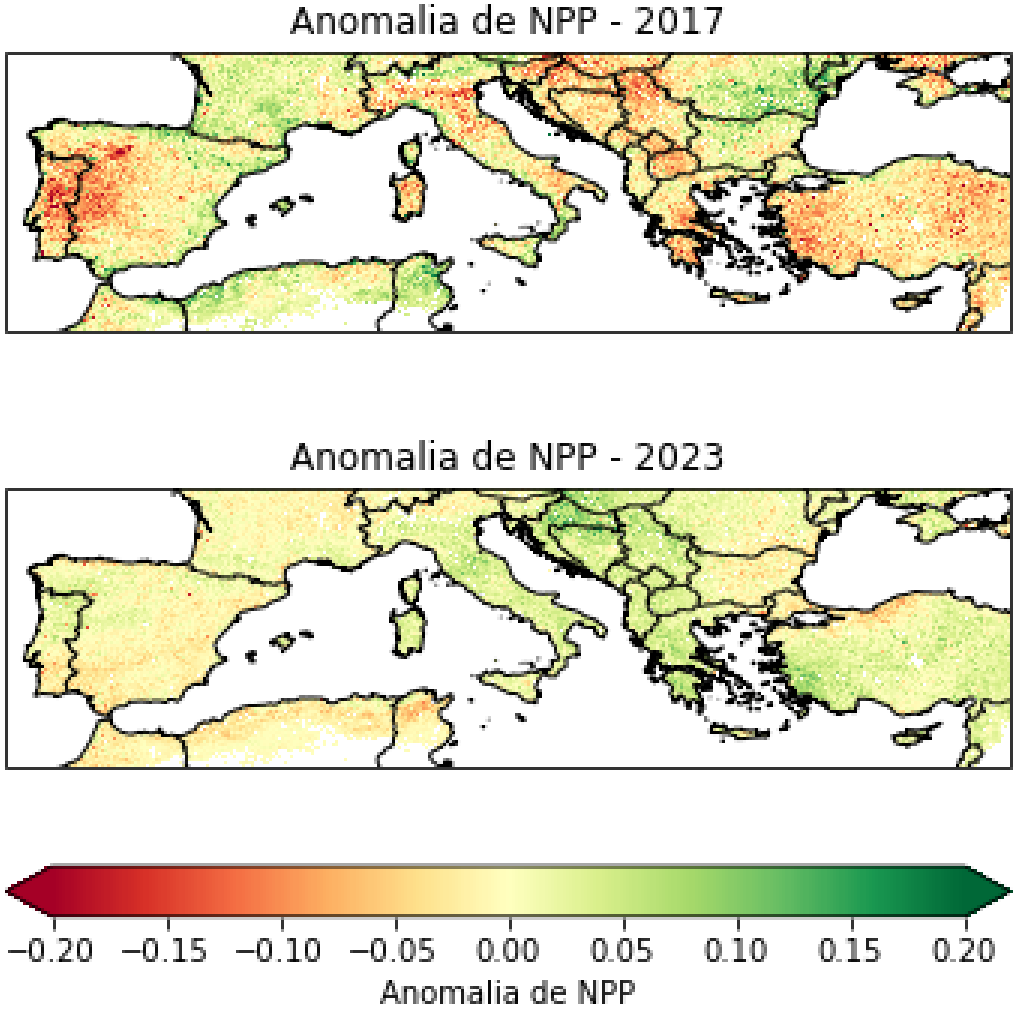




Task 6



∑GPP anomaly since the last fire event



Pedro Lind

- Different method of extreme classification leads to different results
- AI methods are good tools to characterise extreme climate events
- Wildfires Prediction: “conservative” ? → Ignitions

Next steps:

Other definitions of outliers
Combination with public data
Including other variables for wildfire assessment

Francesca Di Giuseppe

- Dead and life-fuel moisture content
    - -Reanalyses and NRT?
    - -Spatial scale?
- SPEI and SPI
    - - ERA5 Reanalysis (ECMWF Data Store)
- Heat
    - - several indices
- Evolution
    - - Compound occurrence, Synchronicity, Cascading effects

TAKE HOME MESSAGES

- **Extreme impacts don't require extreme weather**
- **The analysis of compound events has** particular **advantages**
- **Extreme events have impacts on agriculture, fires and vegetation**
- **Extreme events have impacts on life,** particularly for certain risk groups
- **Compounded events have higher impacts**