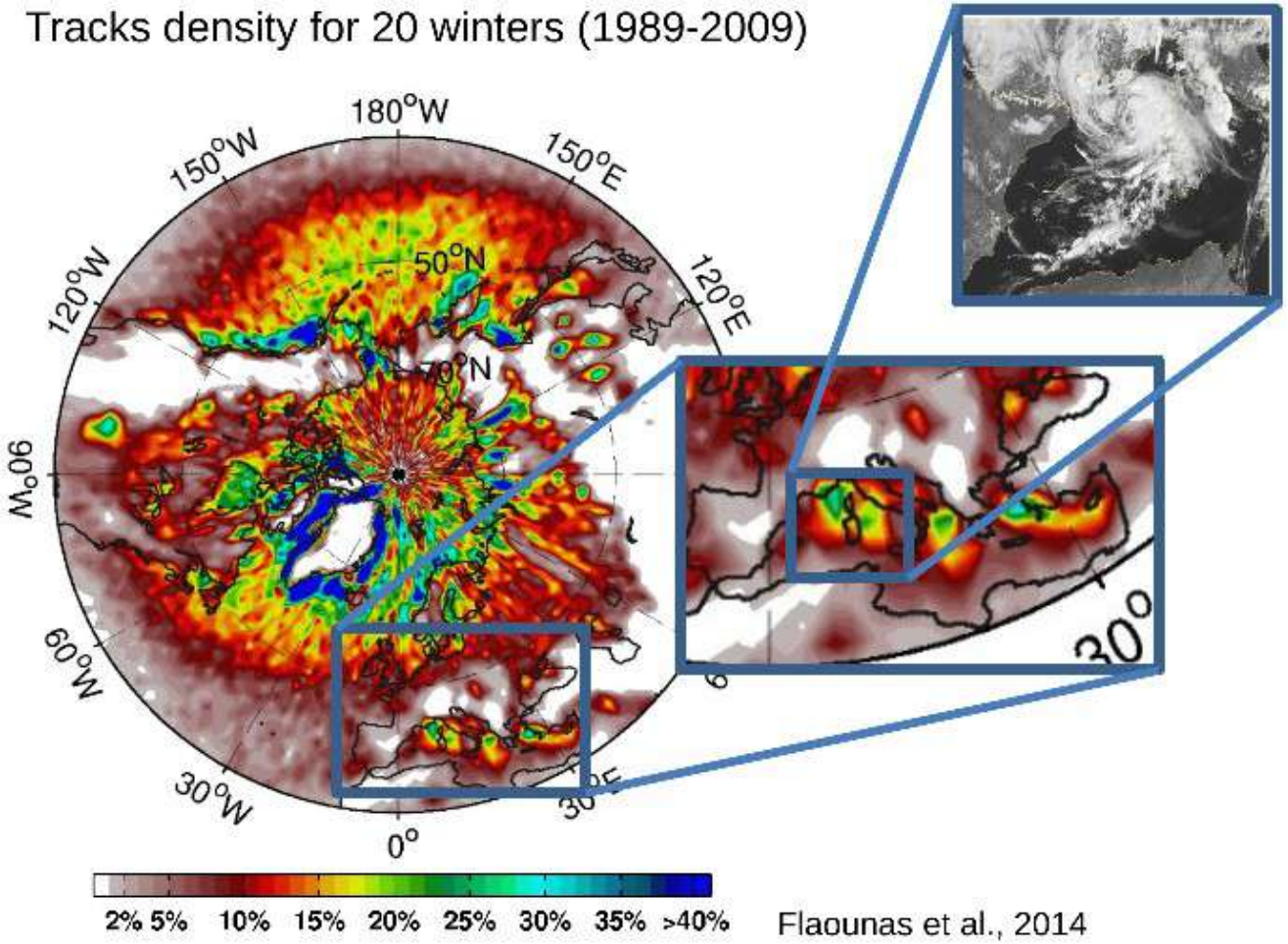
MedCyclones: A community effort to coordinate scientific research

Flaounas E, Davolio S, Pantillon F, Patlakas P, Raveh-Rubin S, Hochman A, Kushta J, Khodayar S, Dafis S, Liberato M, Hatzaki M

MedCyclones in a nutshell



Why Mediterranean cyclones?:

- Frequent occurrence in winter, autumn and spring.
- Smaller size, weaker intensity and shorter life than mid-latitude storms
- Responsible for climate extremes and HIW
- Important role in regional water cycle, dust transport and affect marine environment

Coordination of research in the past:

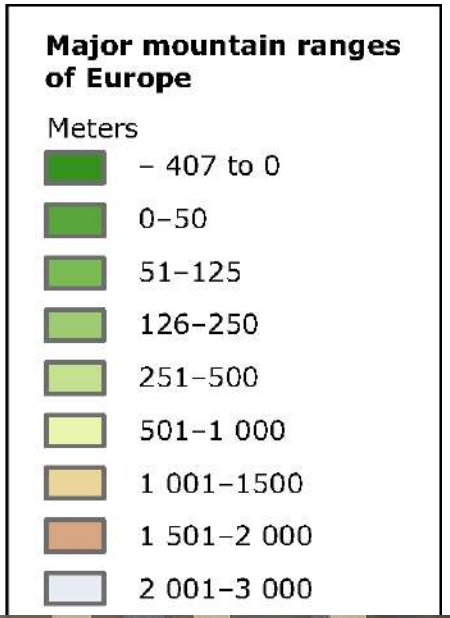
- **2000-2010:** The Mediterranean Experiment on Cyclones that produce High Impact Weather in the Mediterranean (**MEDEX**)
- **2010-2020:** The Hydrological Cycle in the Mediterranean Experiment (**HyMeX**)
- **2020-2024: MedCyclones** COST Action (WWRP)
  - 4-year project (ends in October 2024)
  - Funds networking
  - Open for everyone to join
  - Annual workshops and Training schools

MedCyclones core group:

Chair:	*Flaounas E (GR)*
Co-Chair:	*Davolio S (IT)*
WG1 leaders:	*Pantillon F (FR), Patlakas P (GR)*
WG2 leaders:	*Raveh-Rubin S (IL), Hochman A (IL)*
WG3 leaders:	*Kushta J (CY), Khodayar S (SP)*
Communication:	*Dafis S (FR), Liberato M (PT)*
Grants:	*Hatzaki M (GR)*

Flaounas, E., Davolio, S., Raveh-Rubin, S., Pantillon, F., Miglietta, M. M., Gaertner, M. A., Hatzaki, M., Homar, V., Khodayar, S., Korres, G., Kotroni, V., Kushta, J., Reale, M., and Ricard, D.: **Mediterranean cyclones: current knowledge and open questions on dynamics, prediction, climatology and impacts**, *Weather Clim. Dynam.*, 3, 173–208, https://doi.org/10.5194/wcd-3-173-2022, 2022.

MedCyclones: Mobility…



MedCyclones
Workshop and Training school
2024?

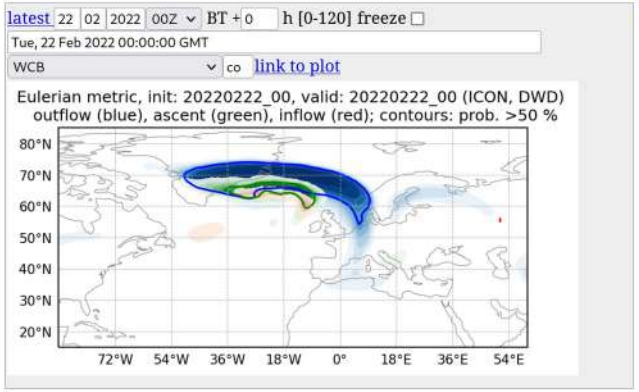
MedCyclones in a nutshell

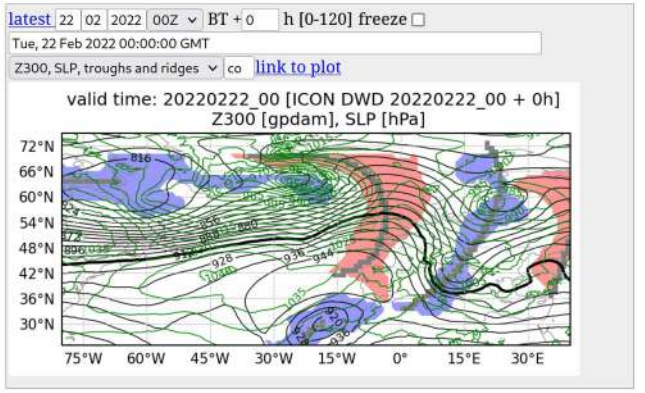
WG1*:** ***Weather scale processes
Leaders: *Florian Pantillon, LA-France; Platon Patlakas, UoA-Greece*
DynForMed: Operational prototype of cyclone forecasting website. Collecting operational model forecasts since Feb 2021 evaluation of cyclone tracks

DynForMed:

Diagnostics:

- Cyclone tracks
- WCB
- Troughs/Ridges
- Wind & Precipitation

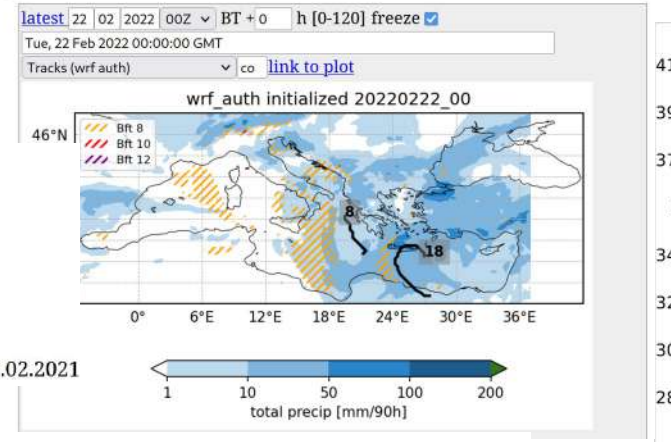


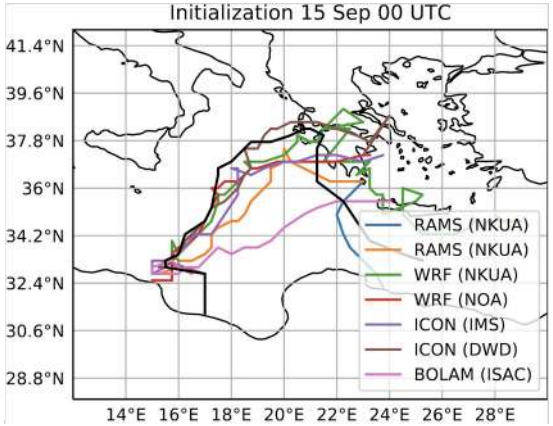


Objectives:

1) Improve/enrich diagnostics
2) Promote collaboration among weather services
3) Understand processes behind forecasted variables

- BOLAM (ISAC), 00 UTC, available since 24.02.2021
- ICON (DWD), 00/06/12/18 UTC, available since 04.03.2021
- ICON (IMS), 00/12 UTC, available since 02.03.2021
- RAMS (NKUA), 00 UTC, available since 01.03.2021
- WRF (AUTH), 12 UTC, available since 01.02.2021
- WRF (NKUA), 00 UTC, available since 29.01.2021
- WRF (NOA), 00/12 UTC, available since 31.03.2021
- ARPEGE (Meteo France), 00/06/12/18 UTC, available since 01.02.2021

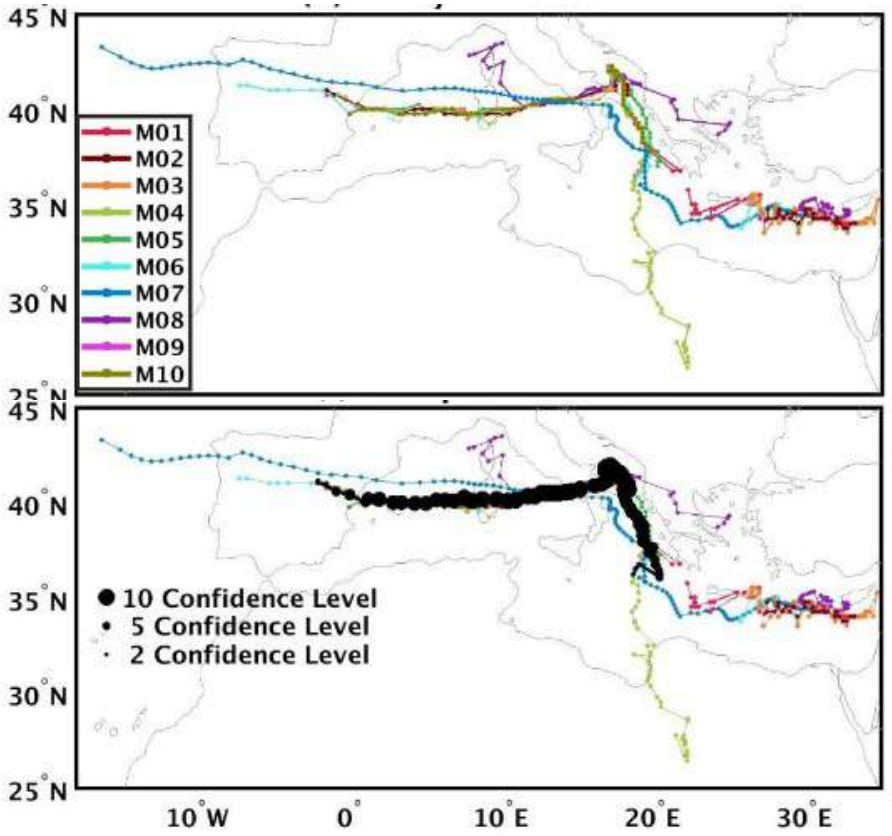




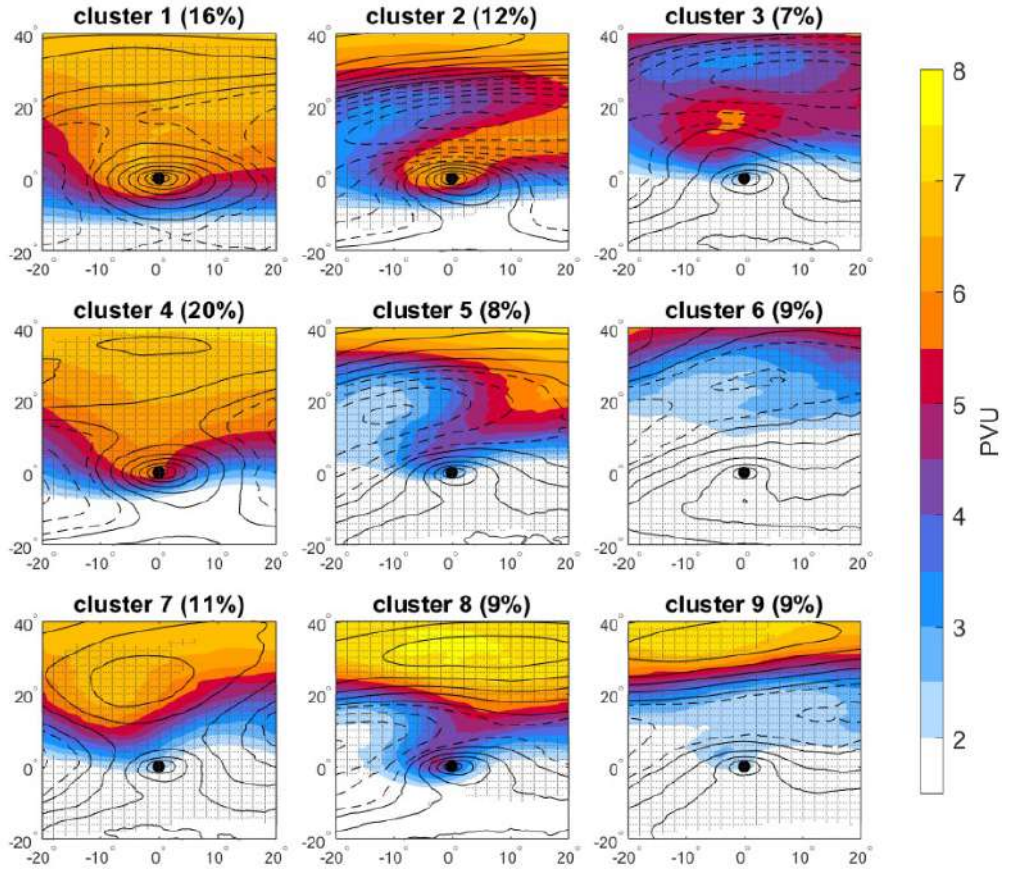
COST is supported by the Horizon 2020 Framework Programme of the European Union

MedCyclones in a nutshell

WG2*:** ***Climate scale processes
Leaders: *Shira Raveh-Rubin, WI-Israel; Assaf Hochman, HU-Israel*
3T, MedCyClass: Produce reference tracks for the Mediterranean; Classify cyclones according to large scale forcing



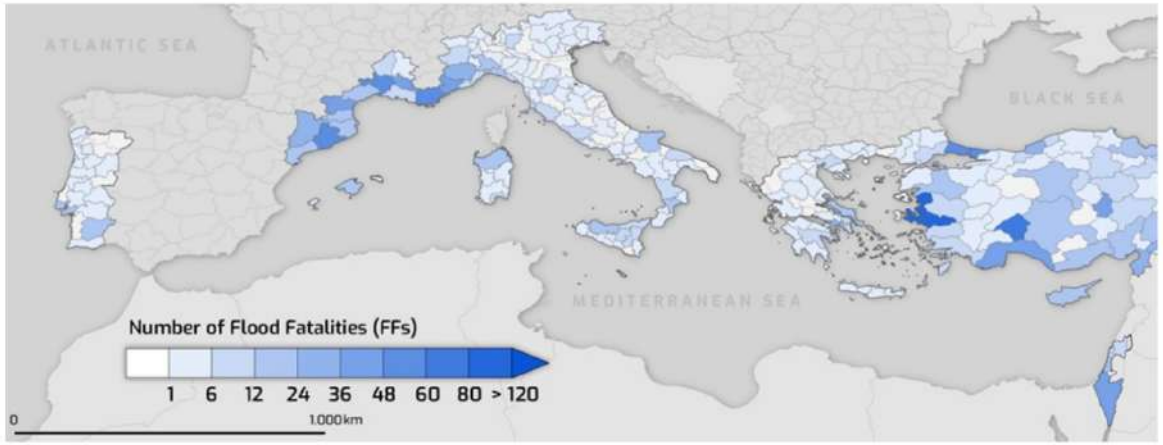
Flaounas et al., 2023



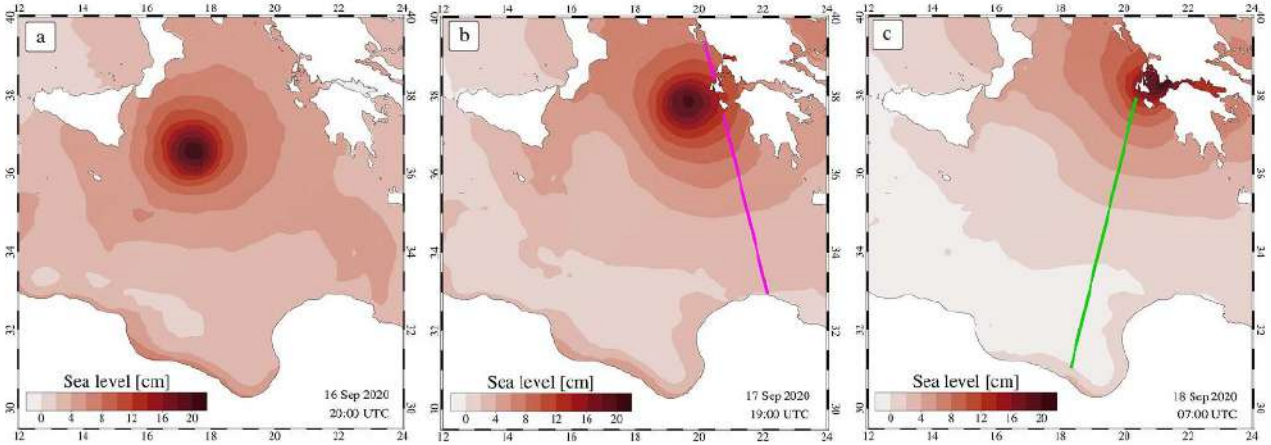
Givon et al., 2023

MedCyclones in a nutshell

WG3*:** ***Cyclone socio-economic and environmental impacts
Leaders: *Jonilda Kushta, CyI-Cyprus; Samira Khodayar, CEAM-Spain*
Review paper, environmental impacts



Khodayar et al., (2023)
Adapted from Papayannaki et al., 2022



Ferrarin et al., (2023)

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