

Forecast of mediterranean cyclones from NWP models in AEMET: Status and future plans

M.A. Picornell

D T AEMET en Illes Balears

TRAMPAS (PID2020-113036RB-I00 / AEI / 10.13039/501100011033)

3D-structure of Mediterranean cyclones

- The goal of this project:
to present on a website different aspects of the 3D structure of Mediterranean cyclones, paying special attention to those cyclones that may be related to severe weather events and, in particular, quasi-tropical cyclones or medicanes.
- The two central axes of the project are:
 - ① to follow and forecast the evolution and track of these cyclones
 - ② the documentation of some events.
- Since March 2019, the real-time cyclone forecast from the HRES-IFS model is implemented in AEMET, as a tool for operational prediction.

Estructura 3D de los ciclones mediterráneos



INICIO

TRAYECTORIAS DE CICLONES

MEDICANES

Inicio

• Contacta

Predicción

Análisis

Documentación

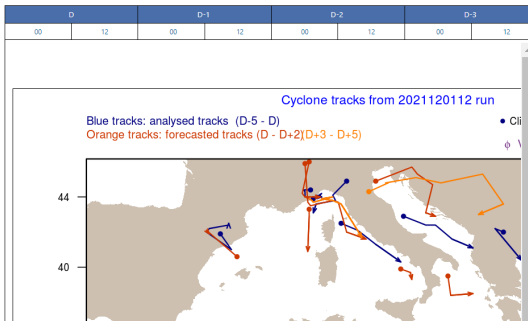
Estructura 3D de los ciclones mediterráneos

Buscar...

INICIO ▶ TRAYECTORIAS DE CICLONES ▶ MEDICANES

Previstos

• HRES-IFS



Cyclone tracks from 2021112912 run

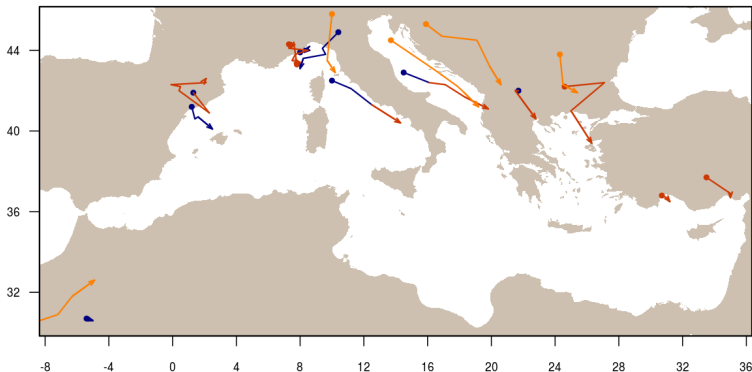
Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2)(D+3 - D+5)

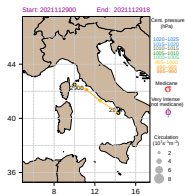
• Click on cyclone to see evolution

♦ Very Intense

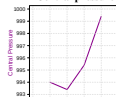
σ Mediane



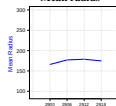
Track



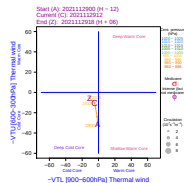
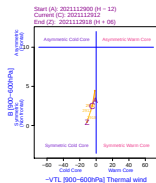
Central pressure



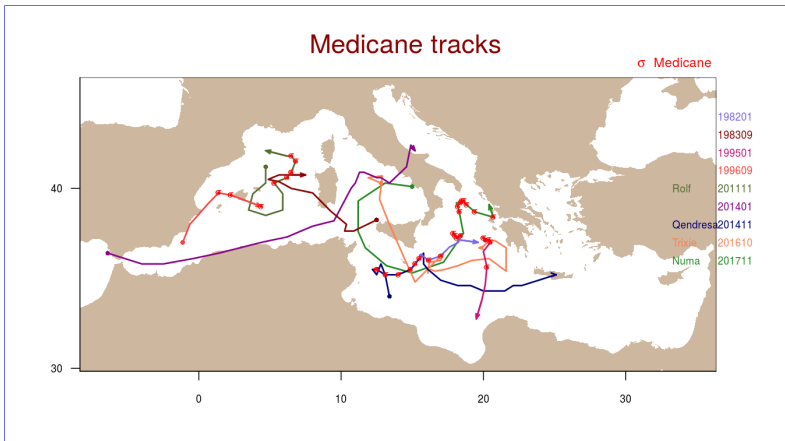
Mean radius



Hart diagrams



Medicane database



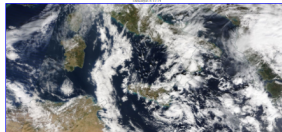
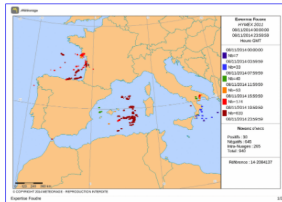
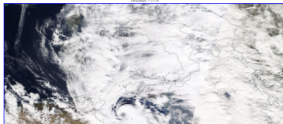
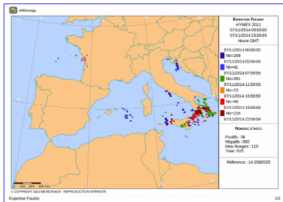
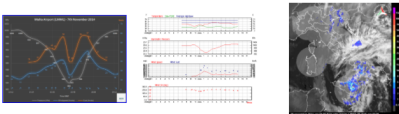
Medicane Qendresa

Medicane QENDRESA

6 - 9 NOVEMBRE DE 2014

- a. El día 1 de la presente se llevó a cabo una visita técnica a la zona de Lohas que fue profesionalizada a medida que se desplazaba hacia el norte y experimentó una transición tropical asociada de los 123 °E del día 7. En las imágenes radar se observó una actividad nubosa entre Tancitaro y Toluca, acompañada de convección y de un tipo central. El día 8, una tormenta, comenzó a debilitarse en su desplazamiento hacia el este.

References



Medicane Rolf

Medicane Rolf

6 - 9 NOVIEMBRE DE 2011

- Un ciclón muy intenso afectó al Mediterráneo Occidental del 6 al 9 de noviembre de 2011.
- A partir del reanálisis ERA5 se identifica un ciclón **muy intenso** con una estructura térmica **cálida y simétrica**
- Este ciclón lleva asociada una estructura nubosa en forma de espiral con un 'ojo' central. Se registraron rachas fuertes de viento y caída de presión.

Imágenes de satélite

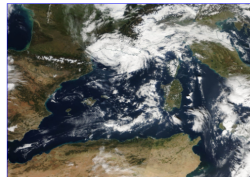
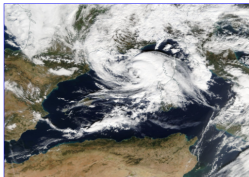
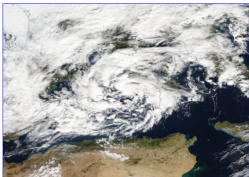
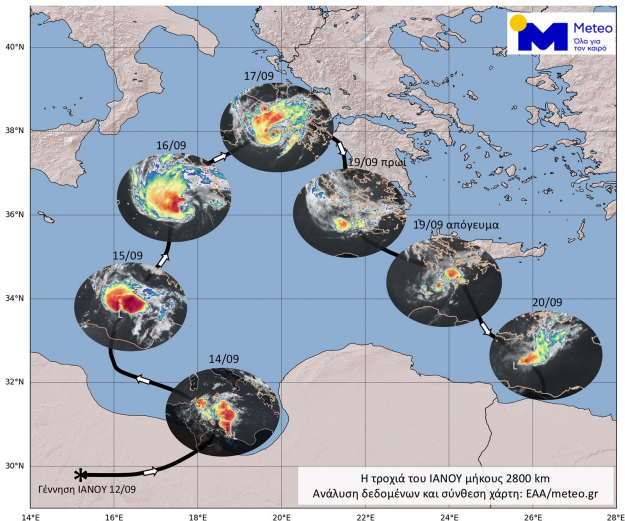
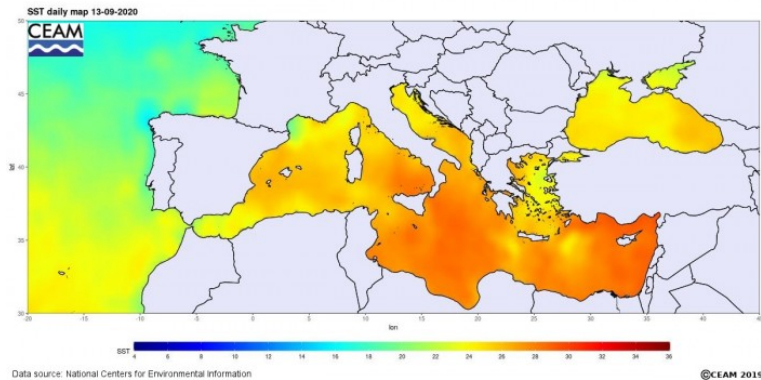


Imagen VIS del sensor MODIS del satélite Aqua de la NASA 7, 8 y 9 de noviembre

MEDICANE IANOS: September 14-18 2021

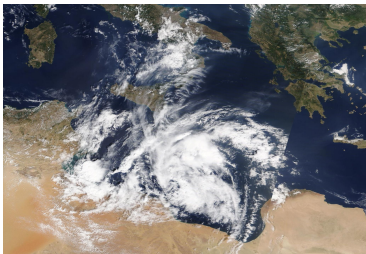


(From Twitter @Stravos_Dafis)

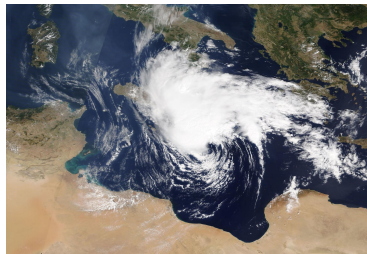


SST September 13

Genesis and intensification phase 14-16 September

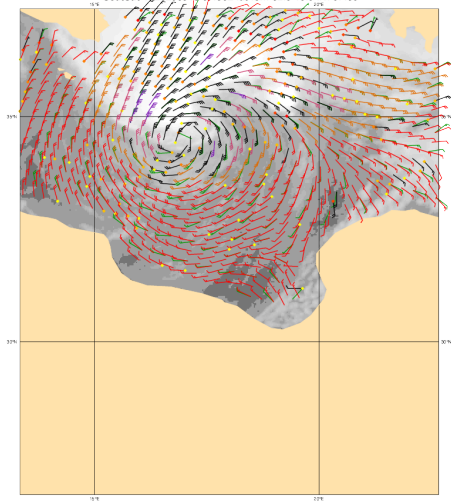


Sep 15



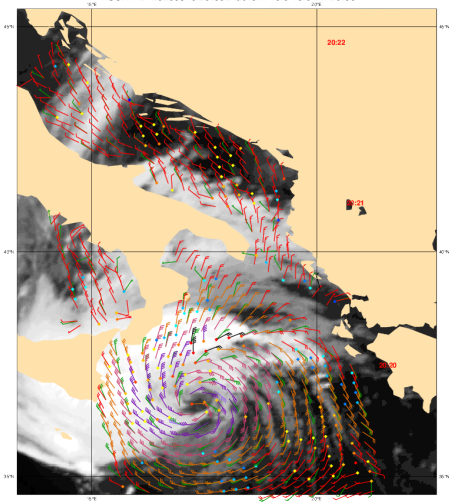
Sep 16

ScatSat-1; 20200916 07:30Z lat lon: 32.0 18.0 IR: 07:30



Sep 16 07:30

ASCAT-B; 20200916 20:30Z lat lon: 40.0 18.0 IR: 20:30

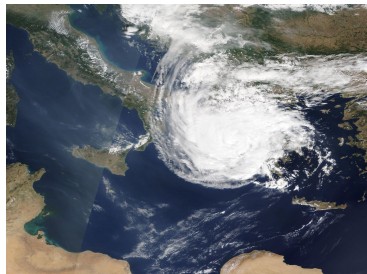


20:30

Mature phase 17-18 September

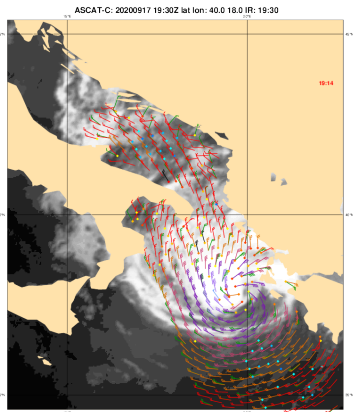


17 Sep
167mm/7h Calabria

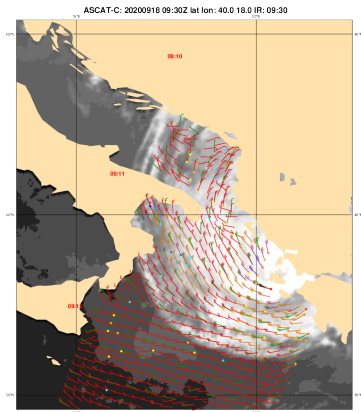


18 Sep
Kefalonia 644mm/24h

Mature phase 17-18 September

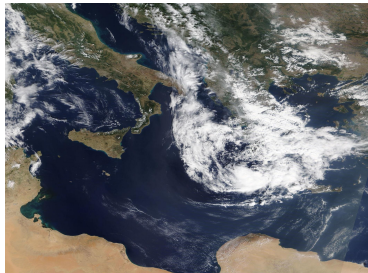


Sep 17 19:50

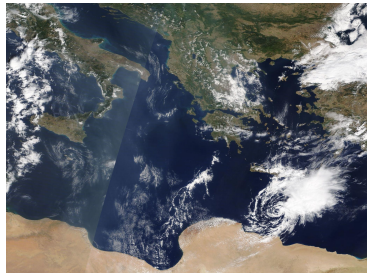


Sep 18 09:56

Dissipation phase 19-20 September

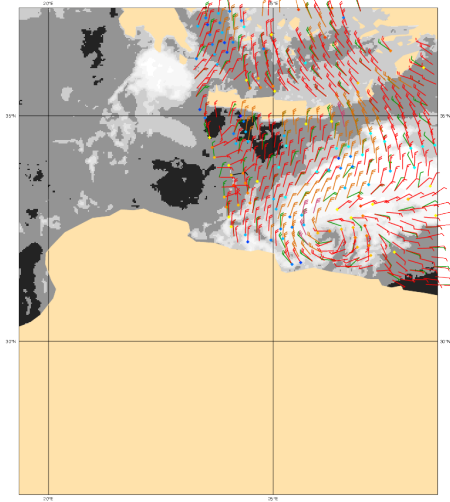


Sep 19



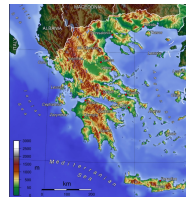
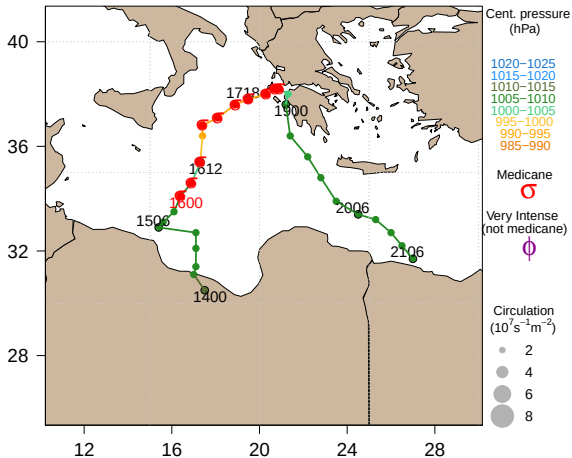
Sep 20

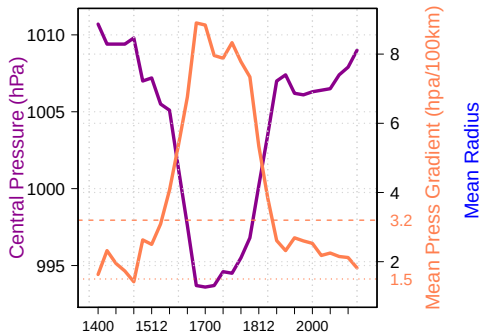
ASCAT-C: 20200920 19:30Z lat lon: 32.0 24.0 IR:19:30



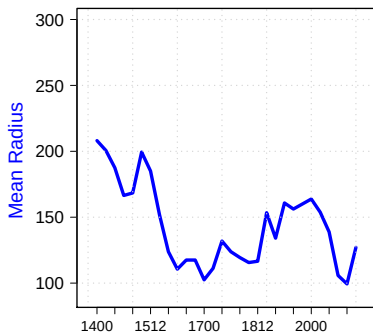
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End: 2020092106



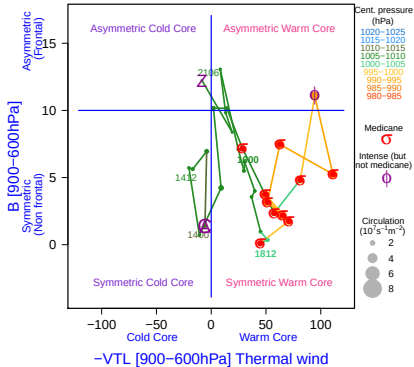


$$\Delta P = -11,5hPa/18h$$

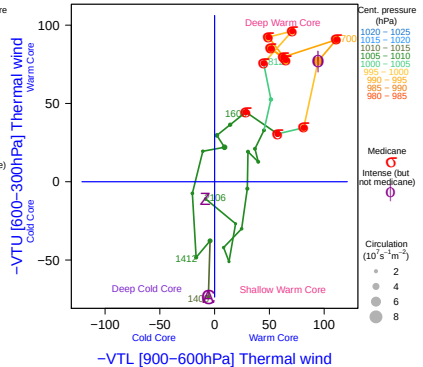


$$\Delta R = -89km/24h$$

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 Current (C): 2020091400
 End (Z): 2020092106 (H + 00)

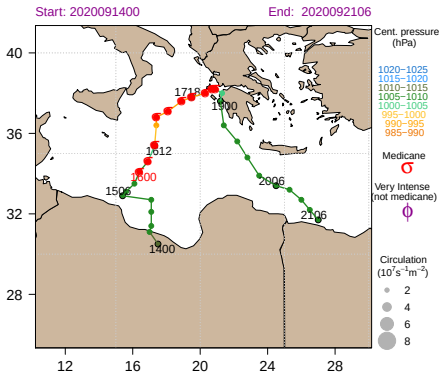


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 Current (C): 2020091400
 End (Z): 2020092106 (H + 00)

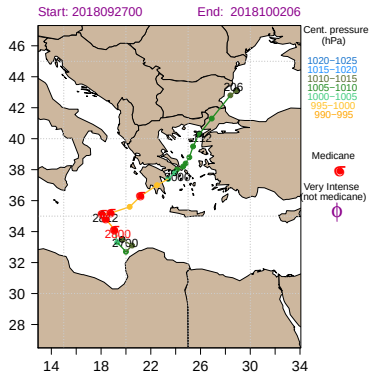


Phase diagrams

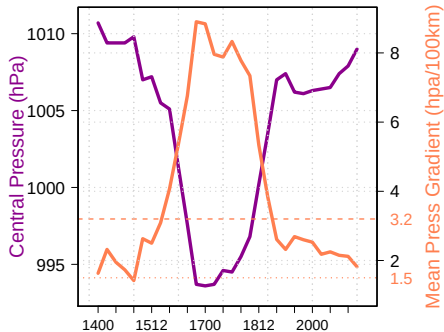
lanos



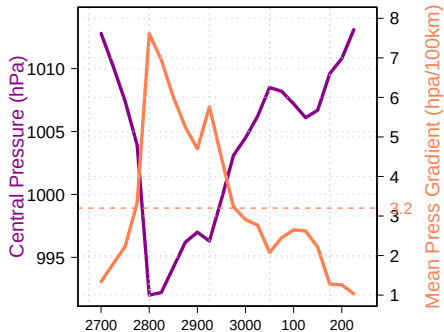
Zorba



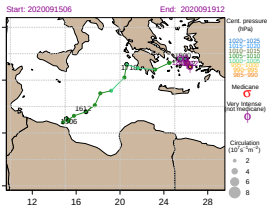
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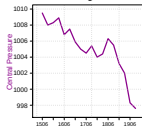
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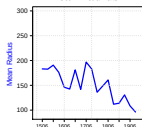
Track



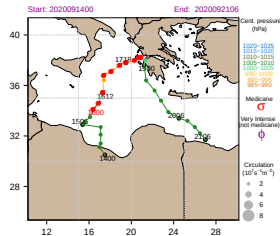
Central pressure



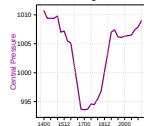
Mean radius



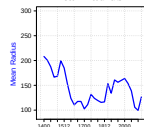
Track

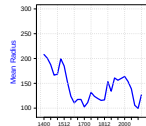
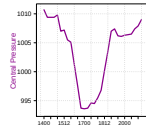
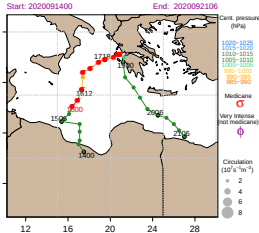
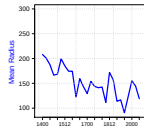
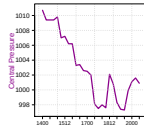
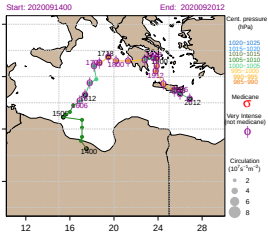


Central pressure

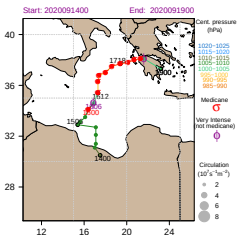


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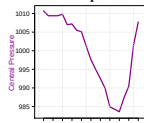




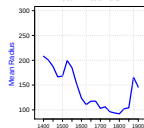
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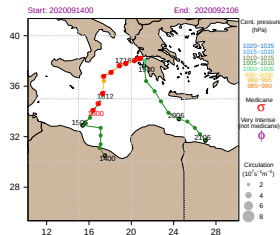
Central pressure



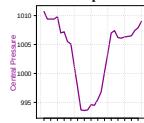
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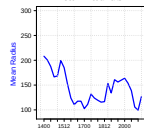
Track

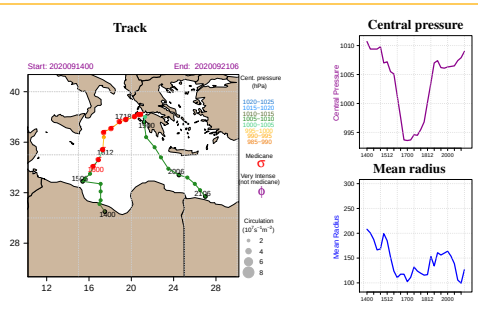
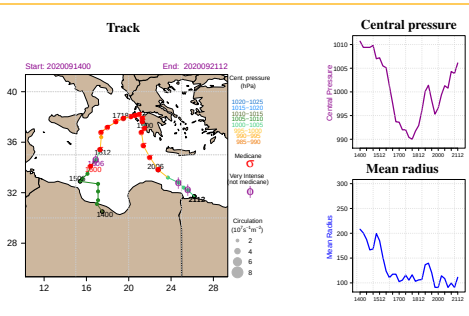


Central pressure

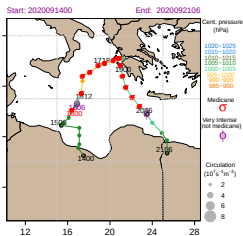


Mean radius

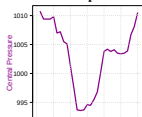




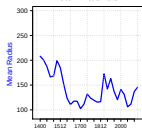
Track



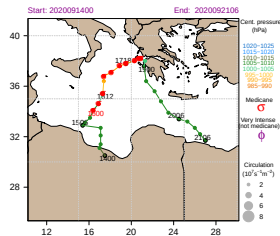
Central pressure



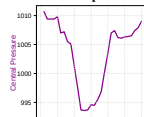
Mean radius



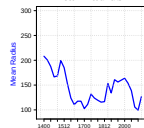
Track



Central pressure



Mean radius

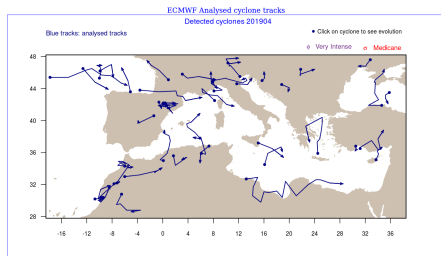


Towards a Medicane definition

COST Action CA19109 “European network for Mediterranean cyclones in weather and climate” (MEDCYCLONES)

- Medicane definition initiative

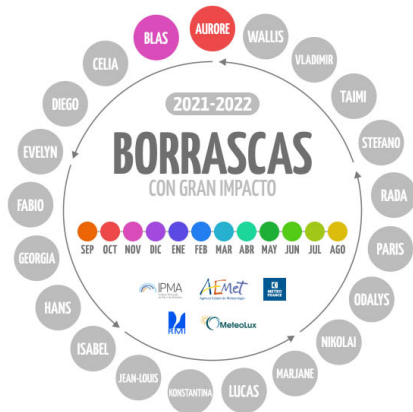
Cyclone database



COST Action CA19109 “European network for Mediterranean cyclones in weather and climate” (MEDCYCLONES)

- 3T: Initiative on cyclone tracks
 - ▶ ERA5: 1979 - 2020, cyclone database (lifetime > 24 horas)

Storm naming Campaign 2021-2022



SW Europe Group: Meteorological Services from Portugal (IPMA), France (Météo-France), Belgium (RMI), Luxemburgo (MeteoLux) and Spain (AEMET).

MEDICANE APOLO Oct 24 - Nov 2

Cyclone tracks from 2021102612 run

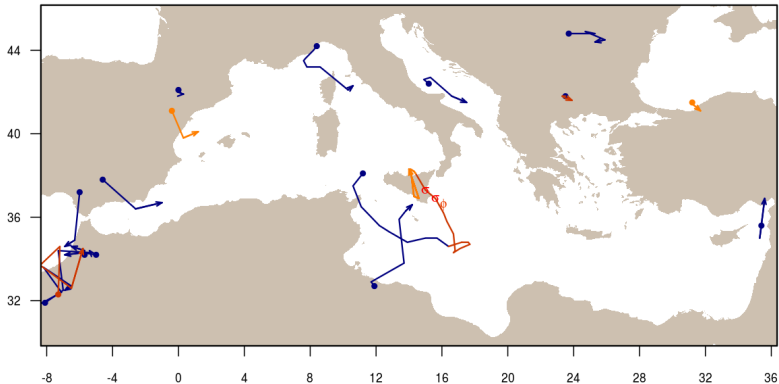
Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2[D+3 - D+5])

• Click on cyclone to see evolution

φ Very Intense

σ Mediane



Cyclone tracks from 2021102900 run

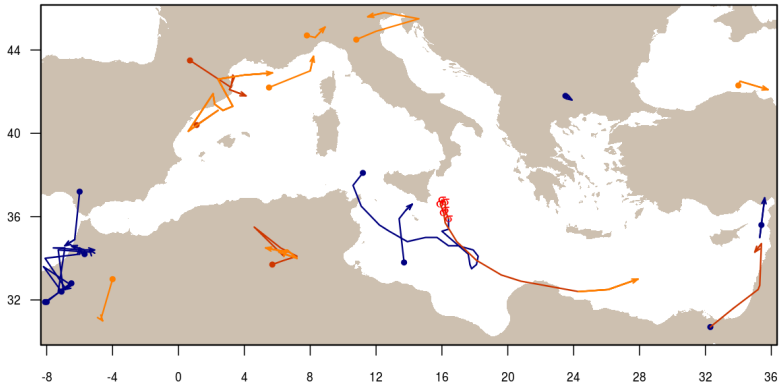
Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2)(D+3 - D+5)

• Click on cyclone to see evolution

ϕ Very Intense

σ Medicane



Cyclone tracks from 2021110100 run

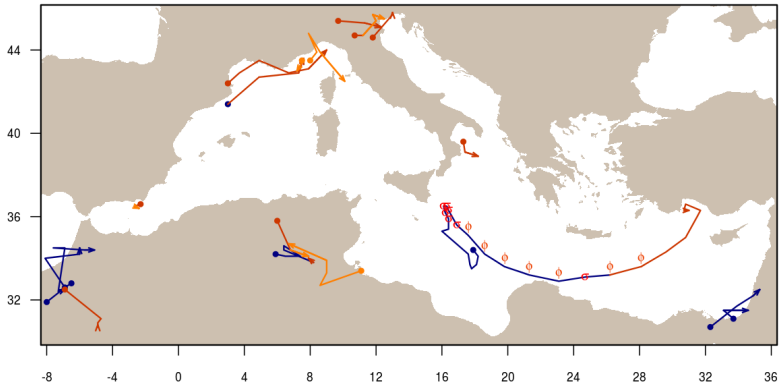
Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2)(D+3 - D+5)

• Click on cyclone to see evolution

◊ Very Intense

σ Medicane



CYCLONE BLAS Nov 09, 2021

Cyclone tracks from 2021110900 run

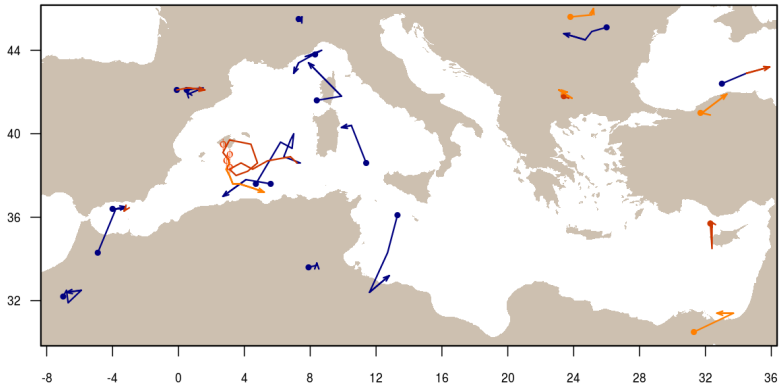
Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2)(D+3 - D+5)

• Click on cyclone to see evolution

φ Very Intense

σ Mediane



Cyclone tracks from 2021111000 run

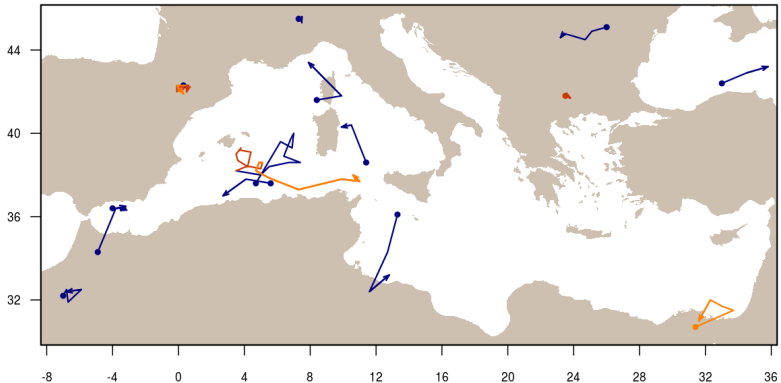
Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2)(D+3 - D+5)

• Click on cyclone to see evolution

ϕ Very Intense

σ Medicane



Cyclone tracks from 2021111200 run

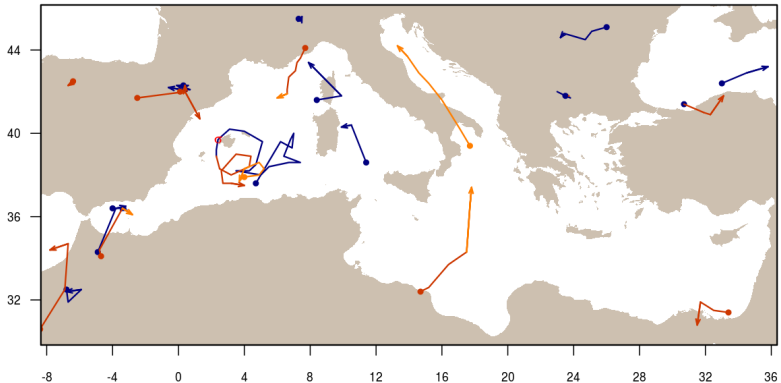
Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2)(D+3 - D+5)

• Click on cyclone to see evolution

ϕ Very Intense

σ Medicane



Cyclone tracks from 2021111600 run

Blue tracks: analysed tracks (D-5 - D)

Orange tracks: forecasted tracks (D - D+2)(D+3 - D+5)

• Click on cyclone to see evolution

ϕ Very Intense

σ Medicane

