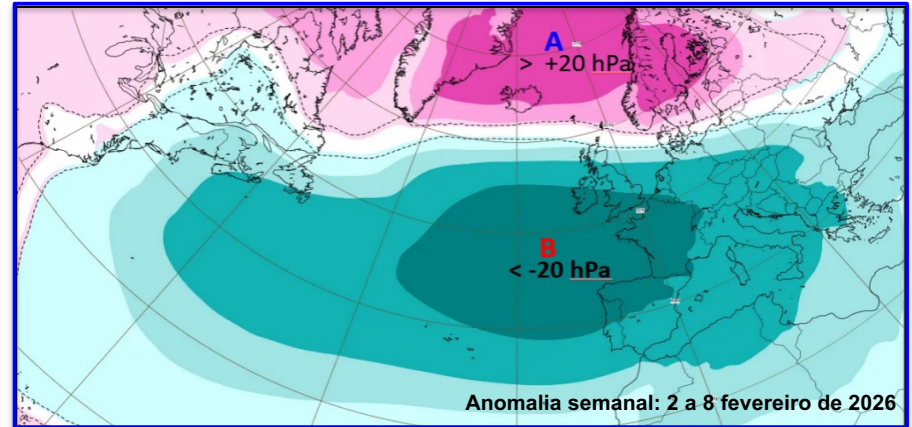
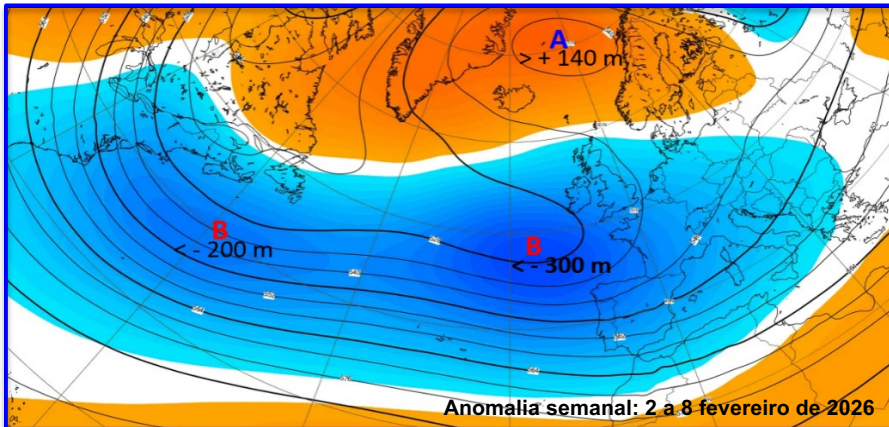
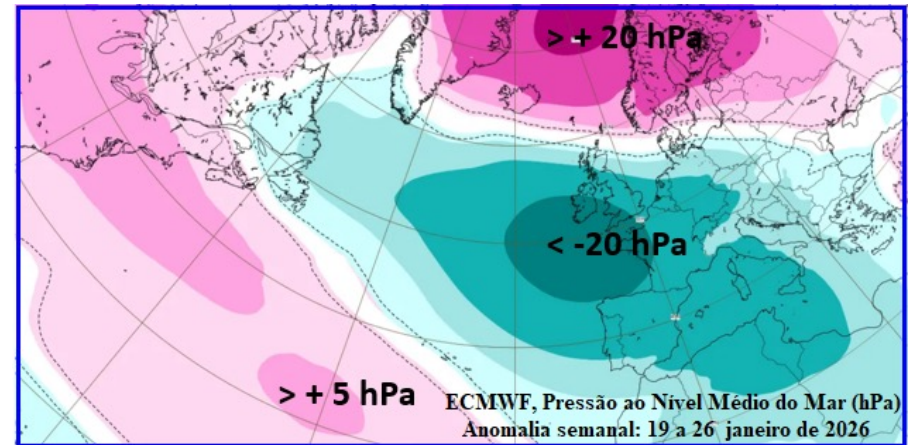
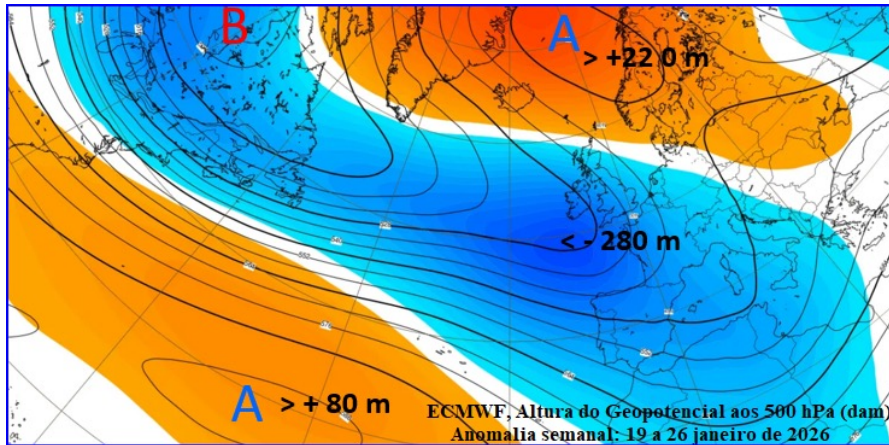


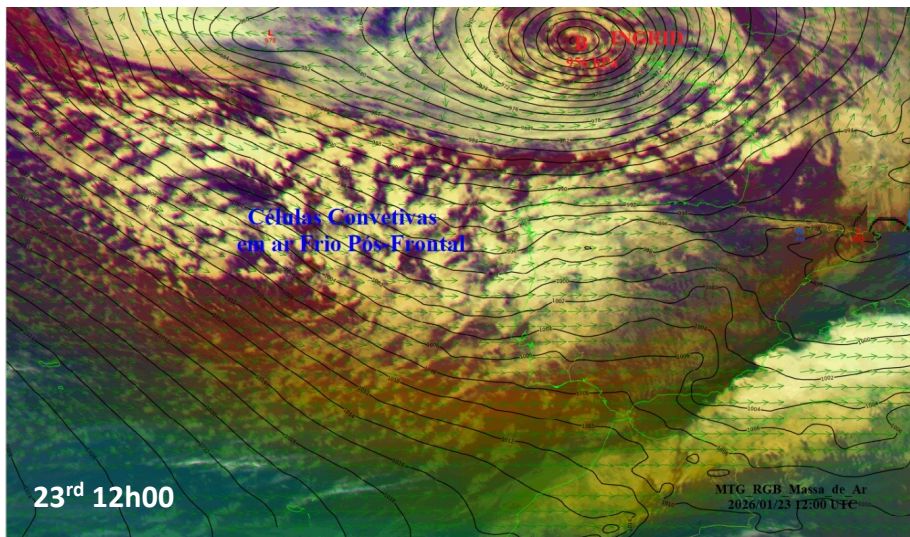
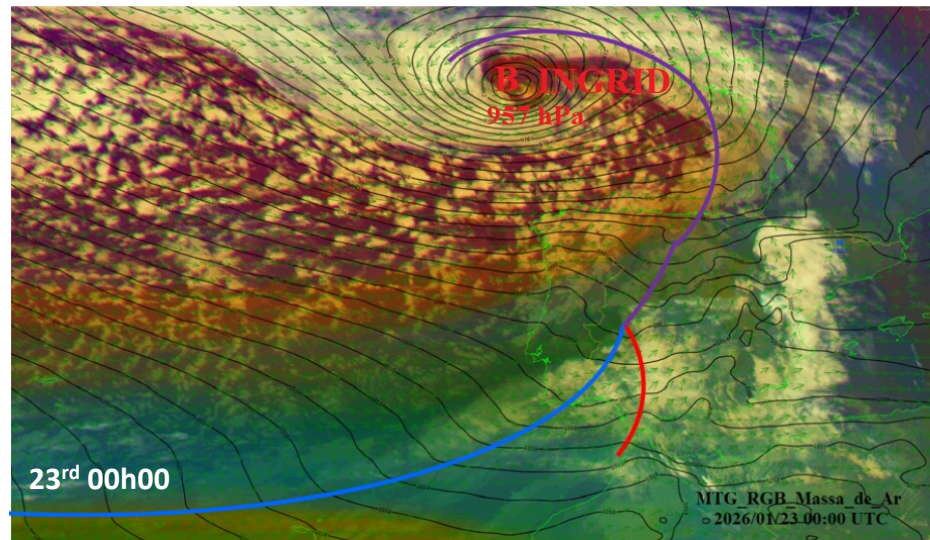
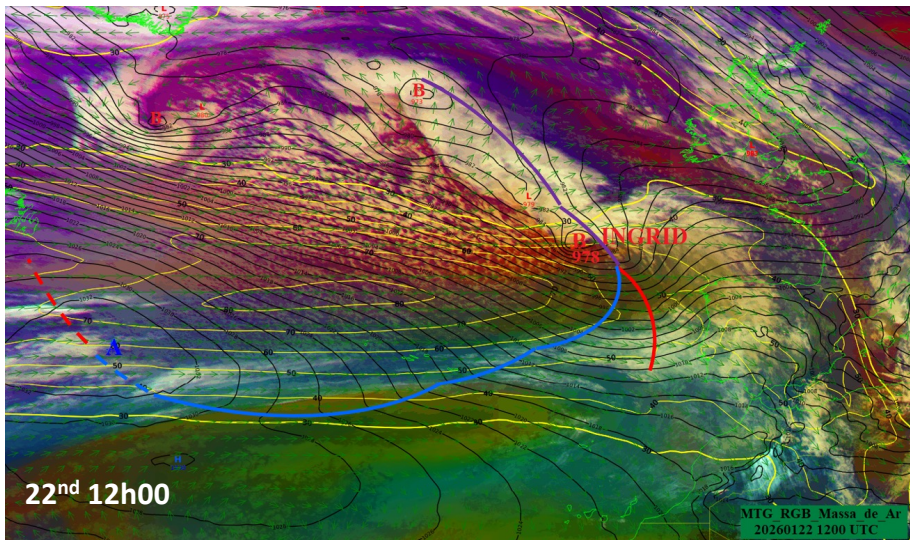
Storms Ingrid, Joseph and Kristin (23 – 30th january)

Jorge Ponte

INLINE workshop, Lisbon 26 – 28th may 2026



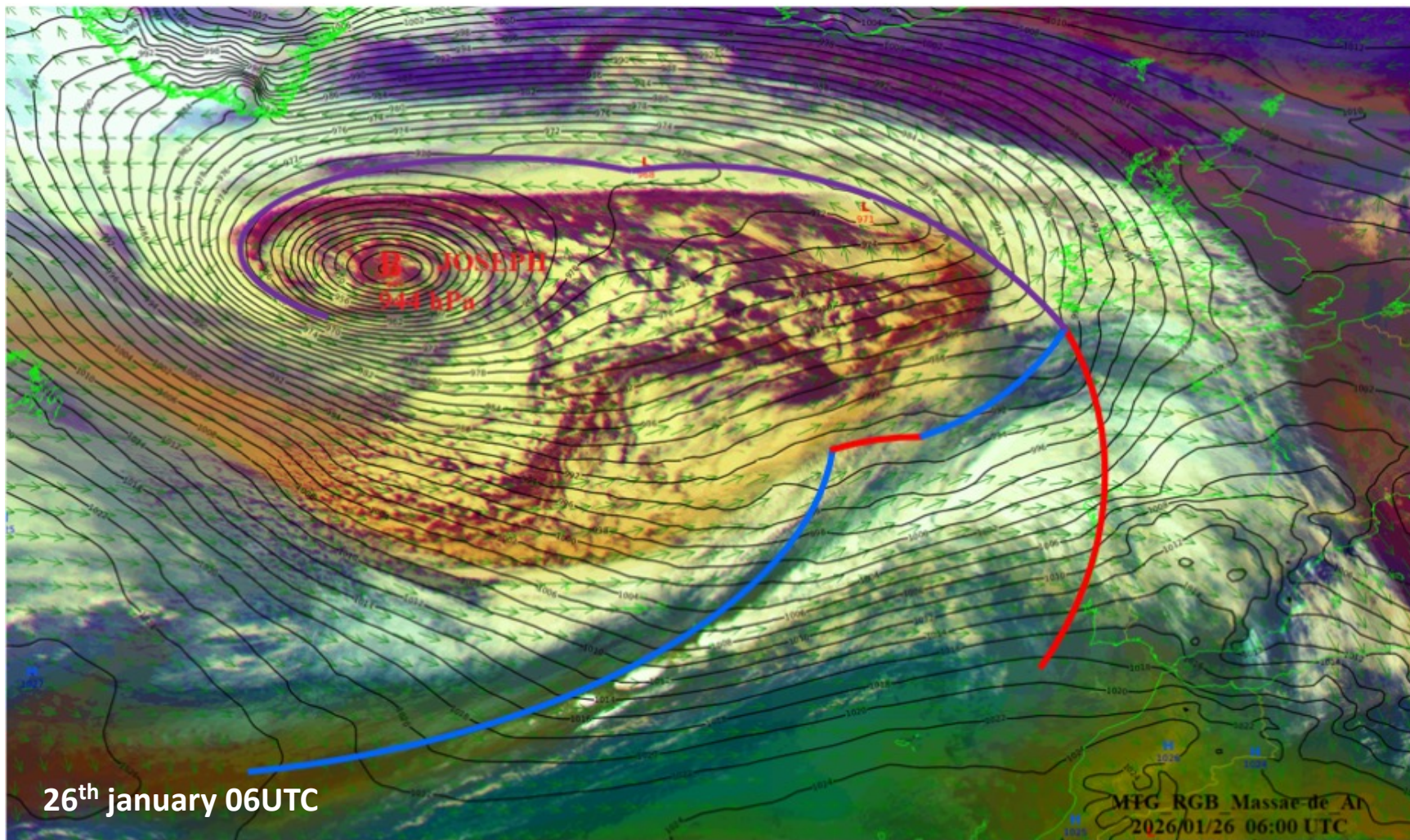
- Negative anomalies of MSLP and Geop500 at Iberia latitudes

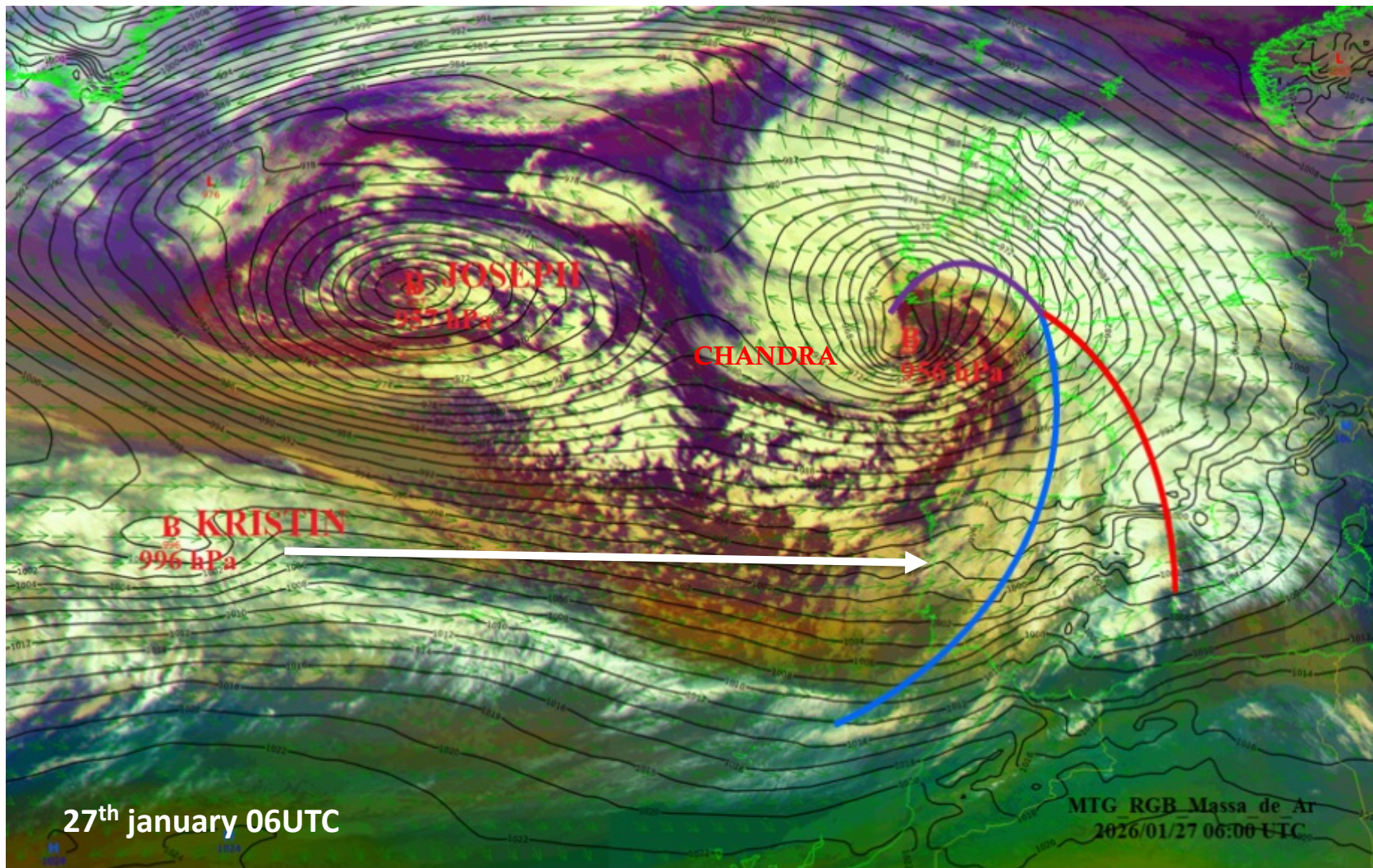


- Rain, wind gusts, high seas, low temperatures and heavy snowfall in Portugal mainland.

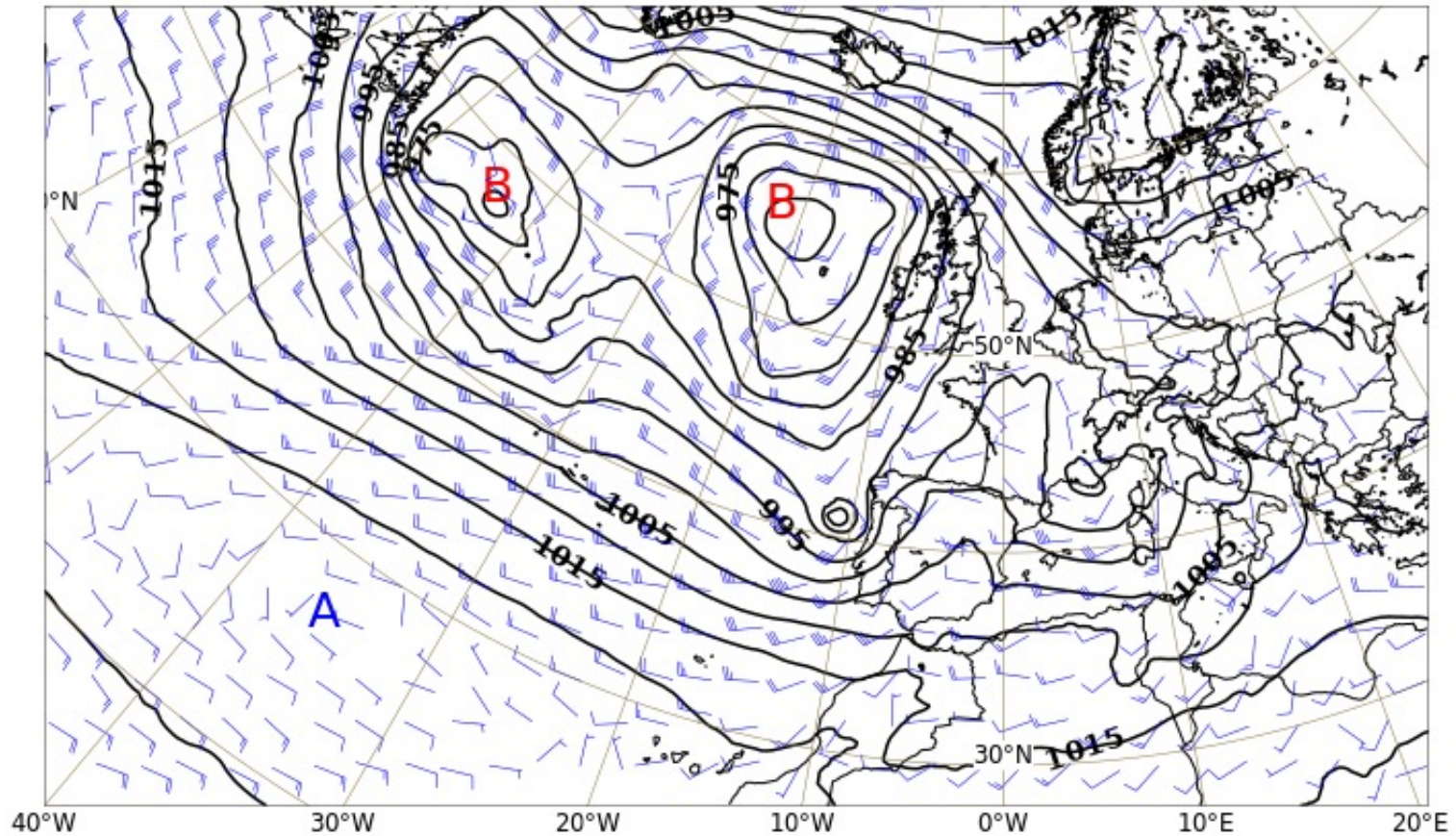






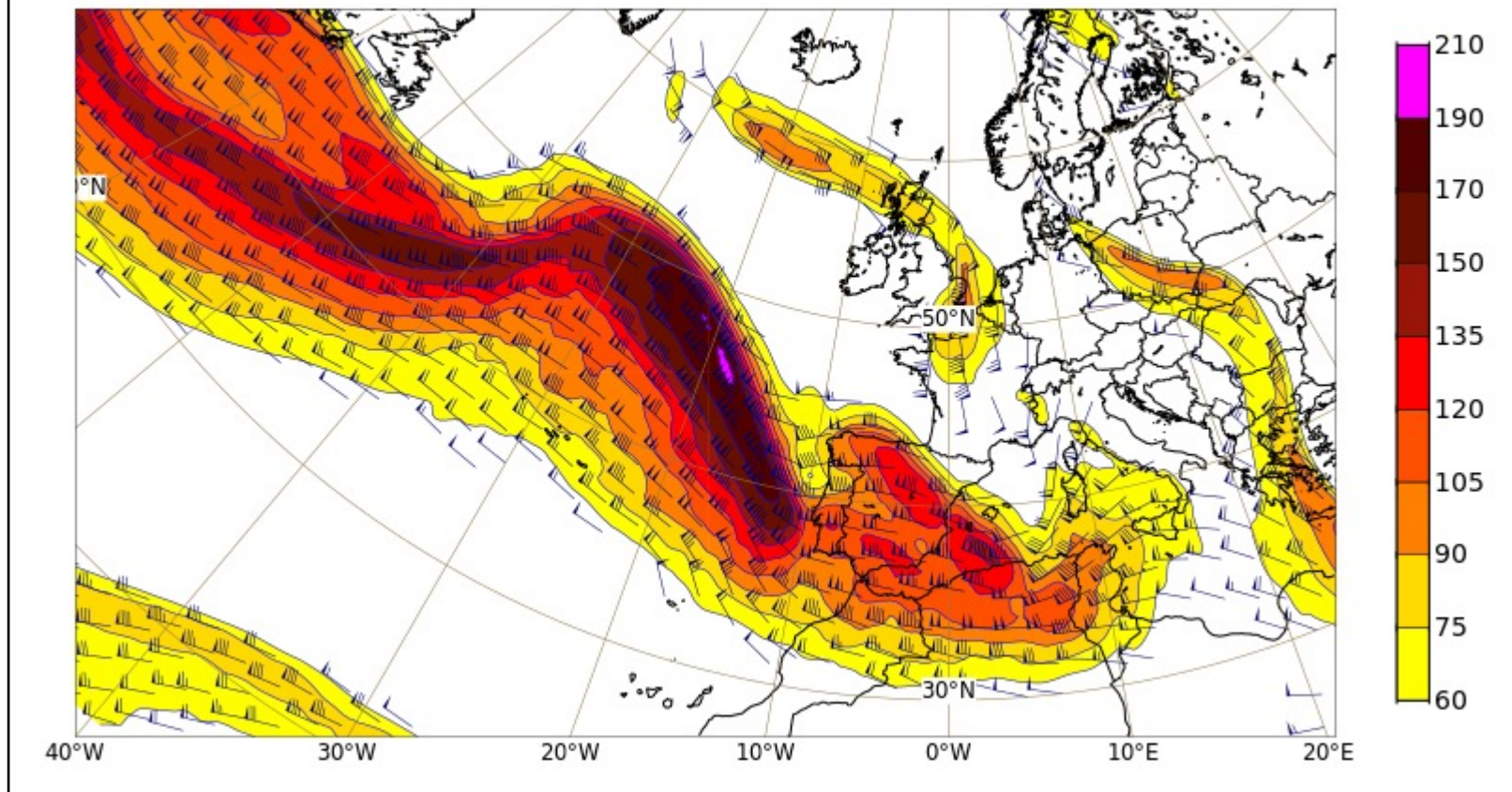


ECMWF: Pressão ao n.m.m. (hPa) e vento a 10m (kt)
Tue 27-Jan-26 00UTC Previsão H+27 para Wed 28-Jan-26 03UTC



ECMWF: Vento e isotáxicas (> 60 kt) aos 300 hPa

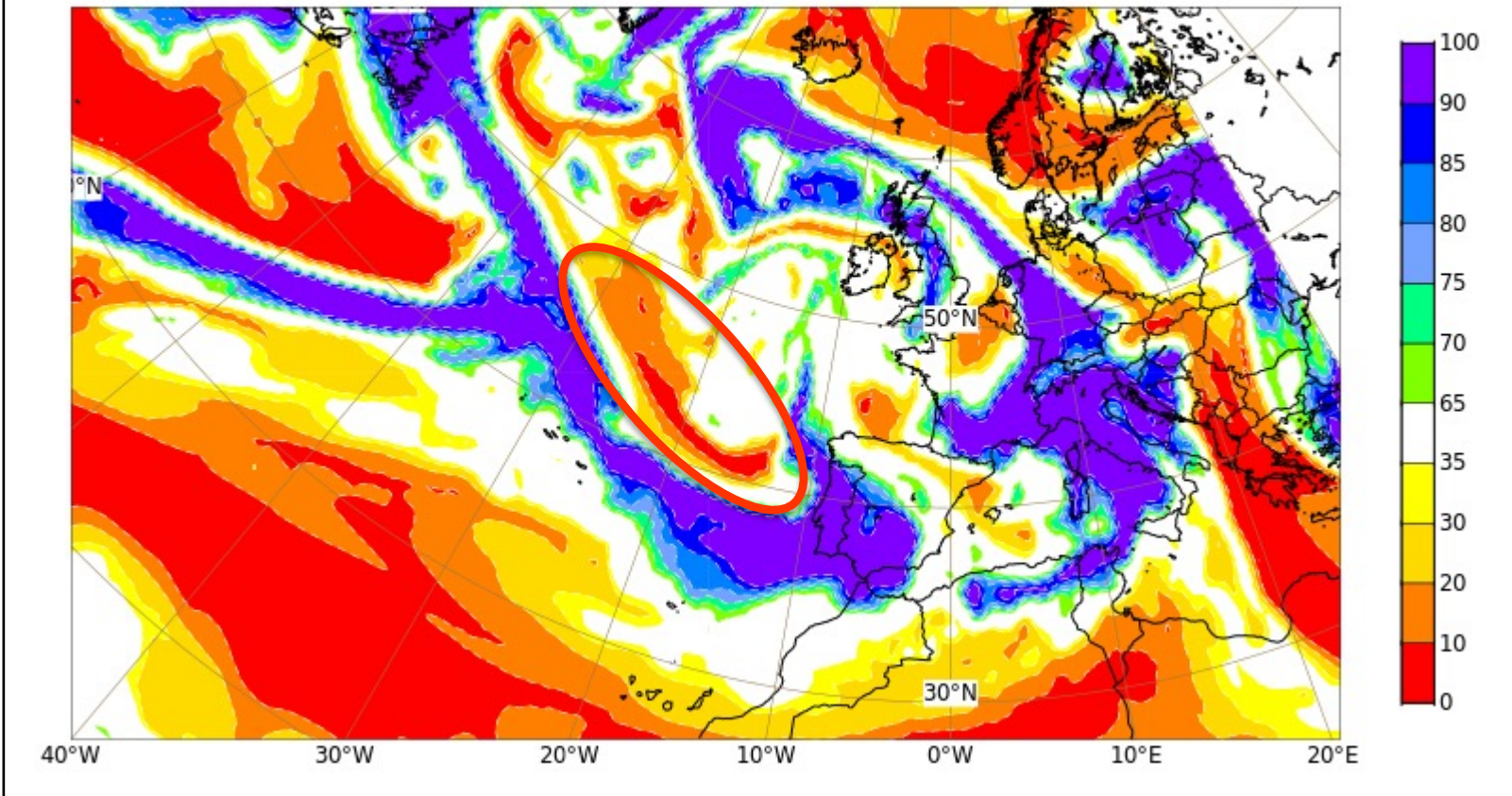
Wed 28-Jan-26 00UTC Previsão H+03 para Wed 28-Jan-26 03UTC



- Very strong jetstream over Iberia.

ECMWF: Humidade relativa (%) aos 700 hPa

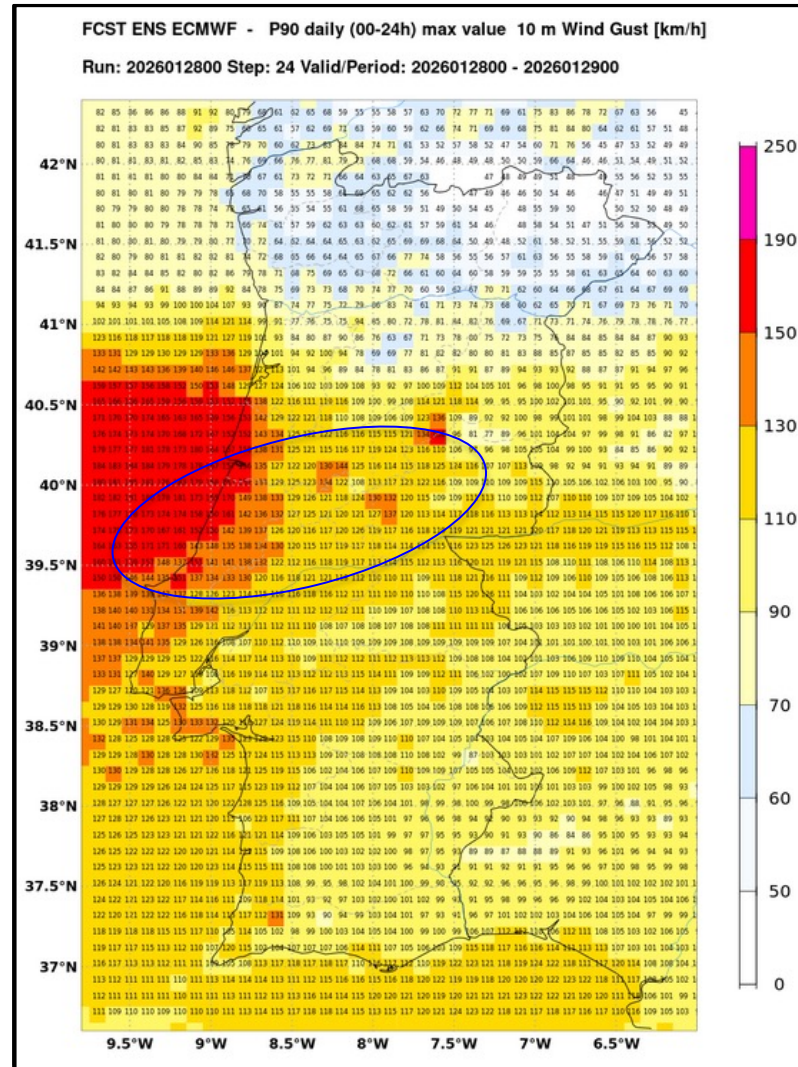
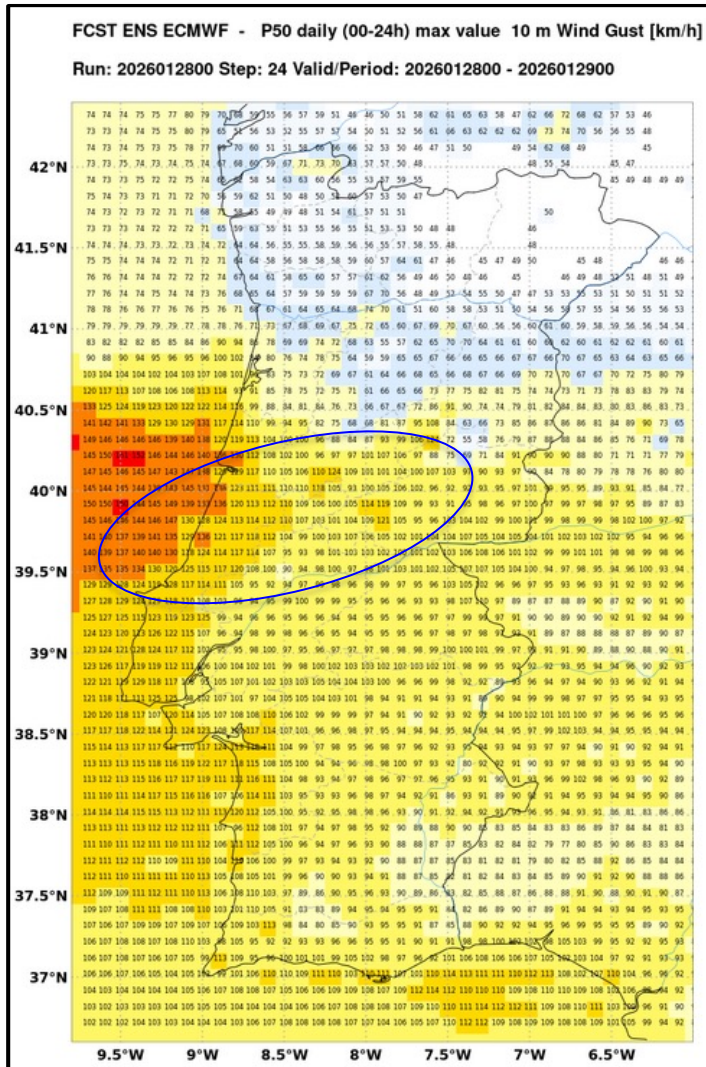
Tue 27 Jan 26 12UTC Previsão H+15 para Wed 28 Jan 26 03UTC



- Dry air intrusions in the low troposphere.



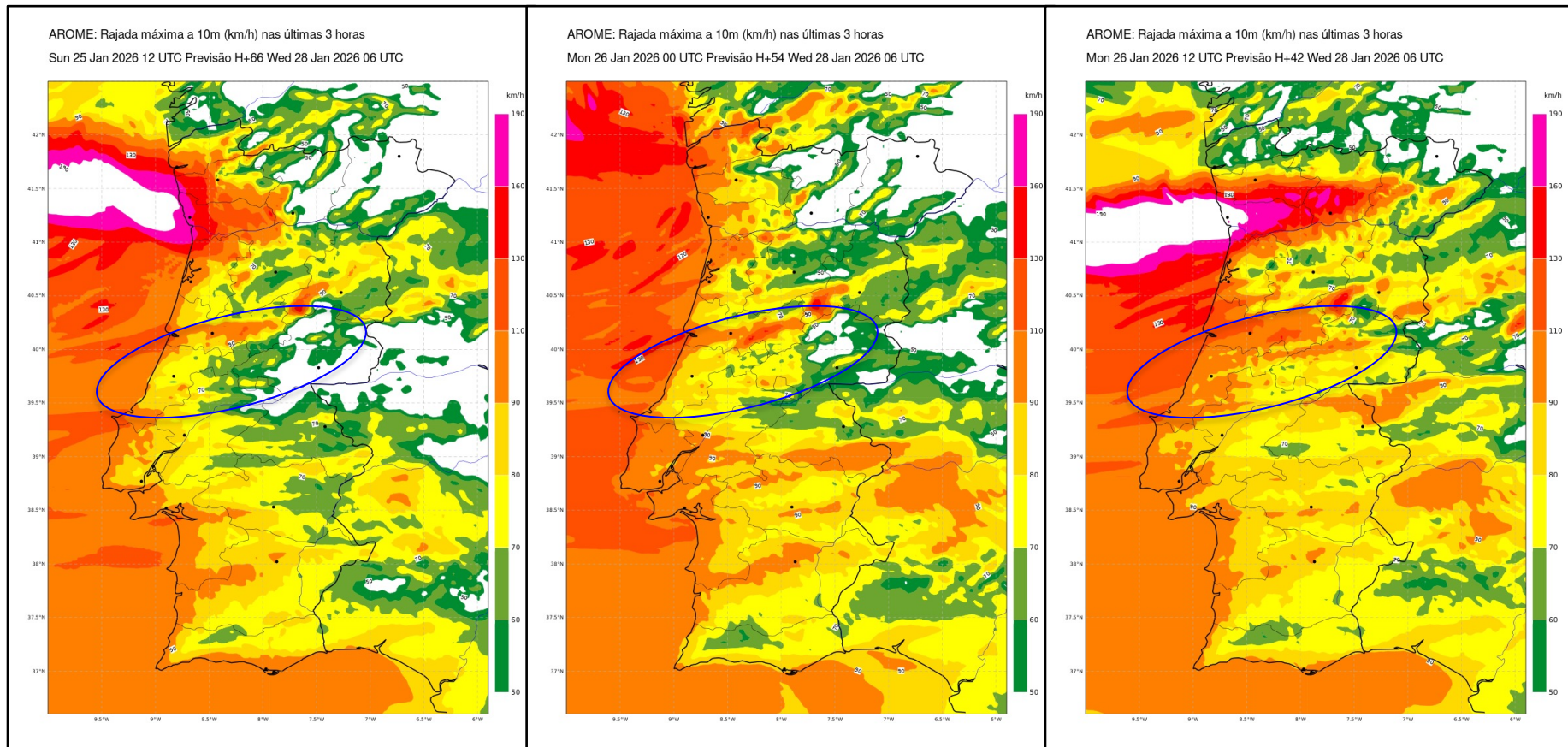
Forecasting - Storm KRISTIN



Previsão dia 25 às 12h00

Previsão dia 26 às 00h00

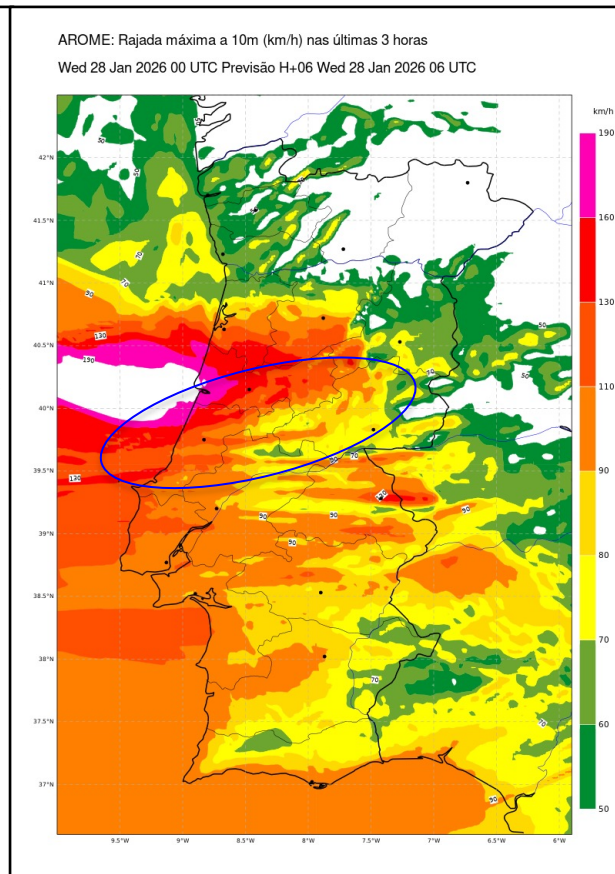
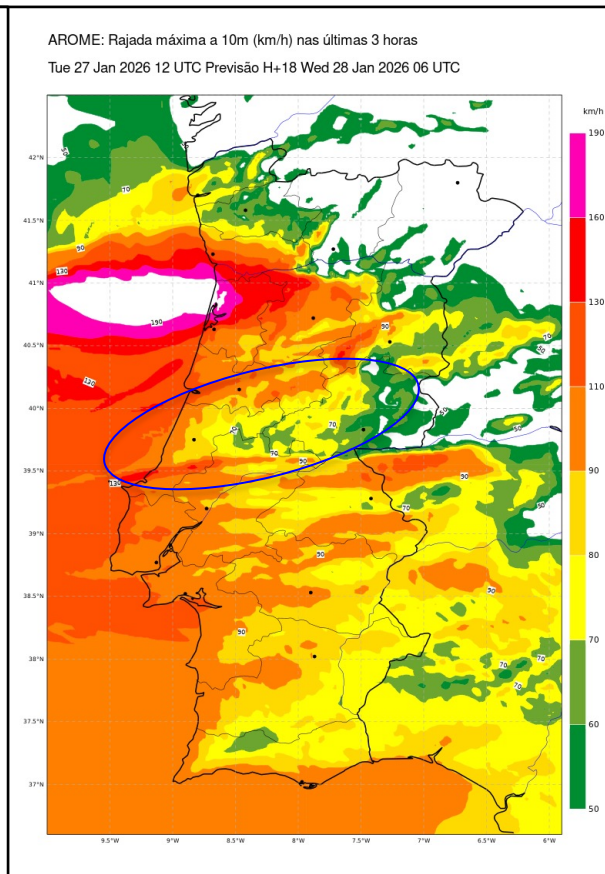
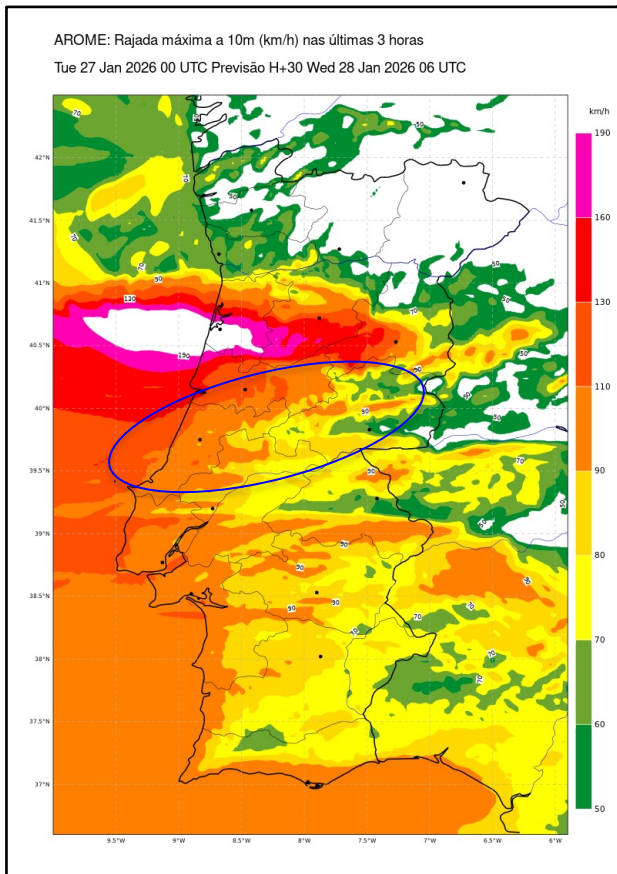
Previsão dia 26 às 12h00

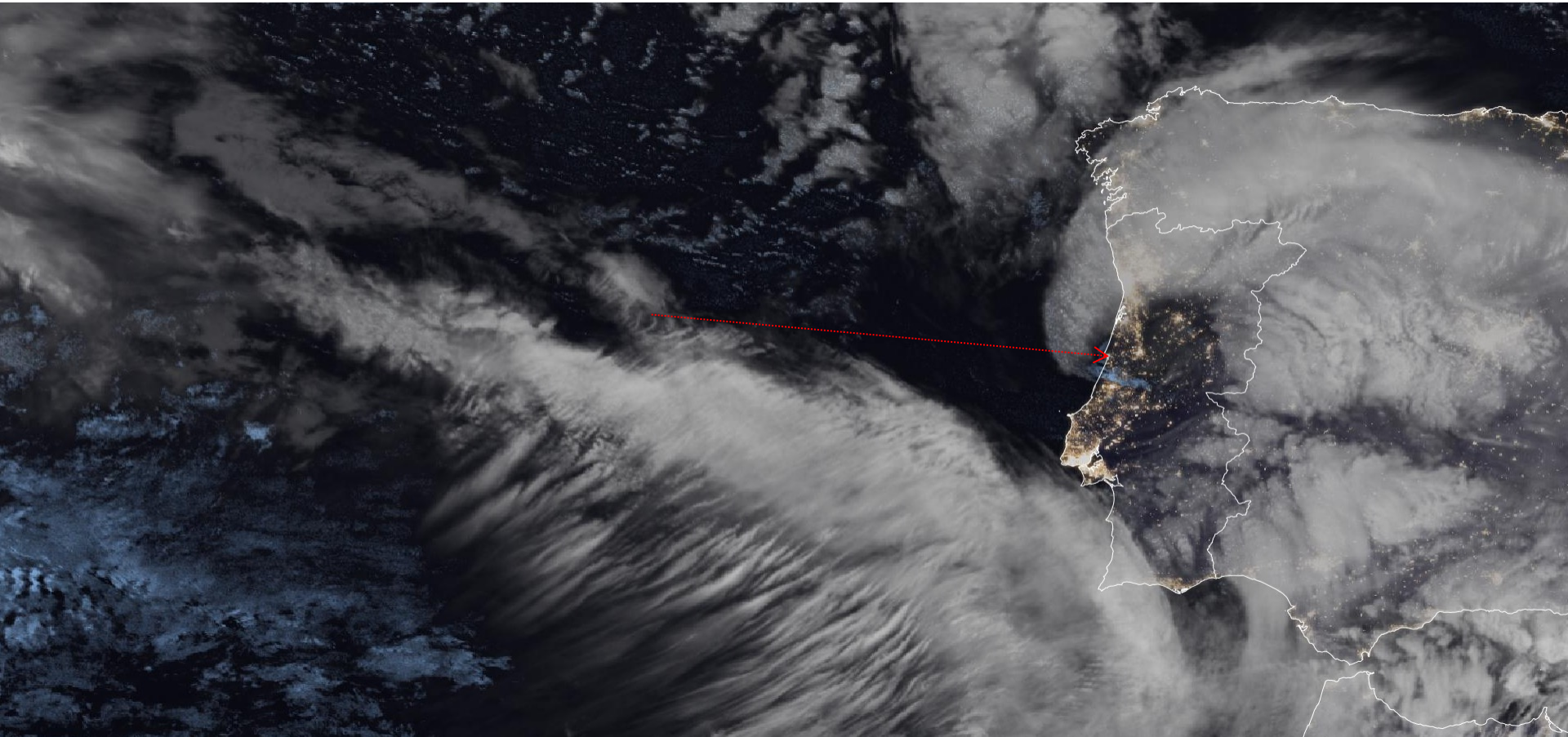


Previsão dia 27 às 00h00

Previsão dia 27 às 12h00

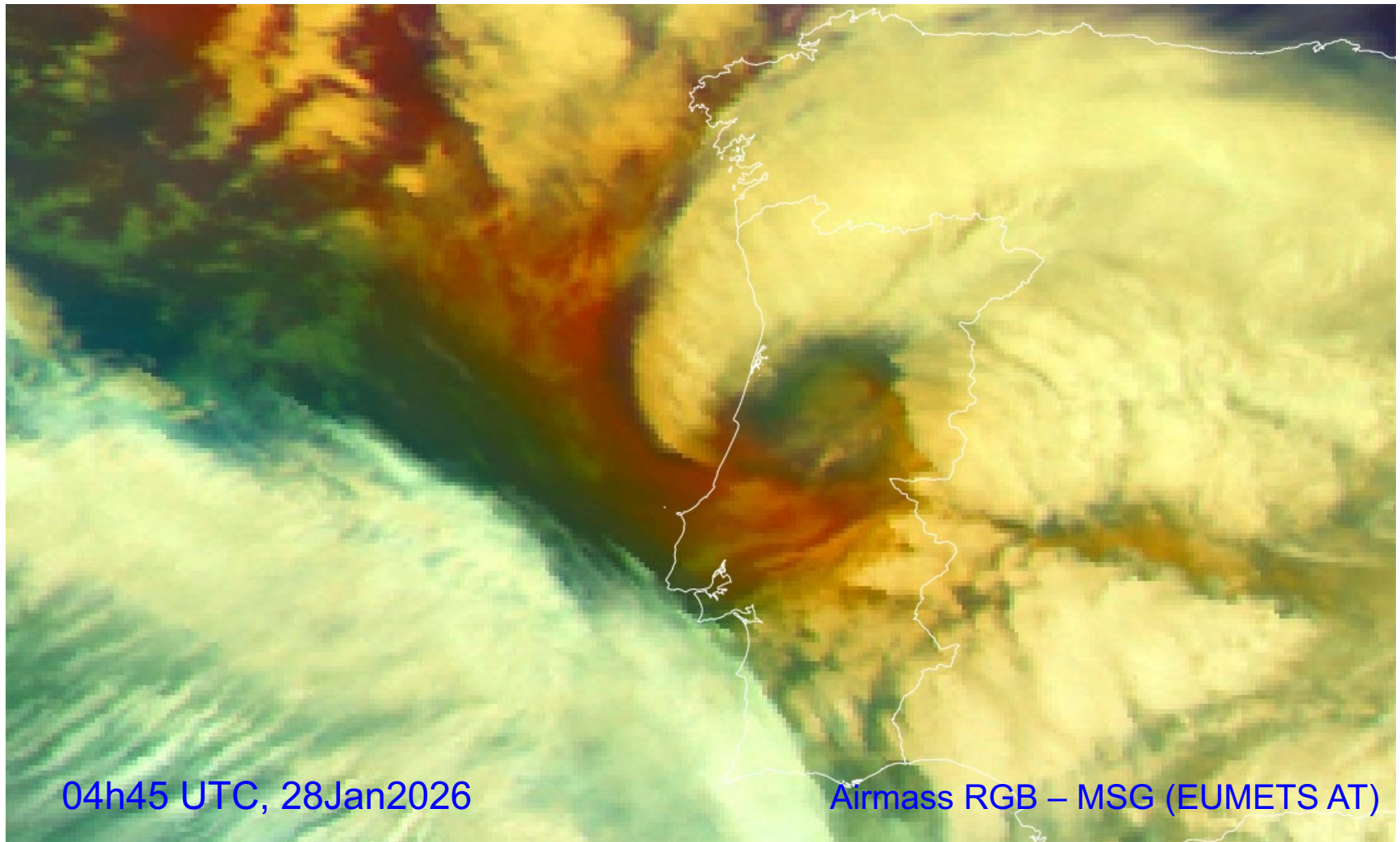
Previsão dia 28 às 00h00





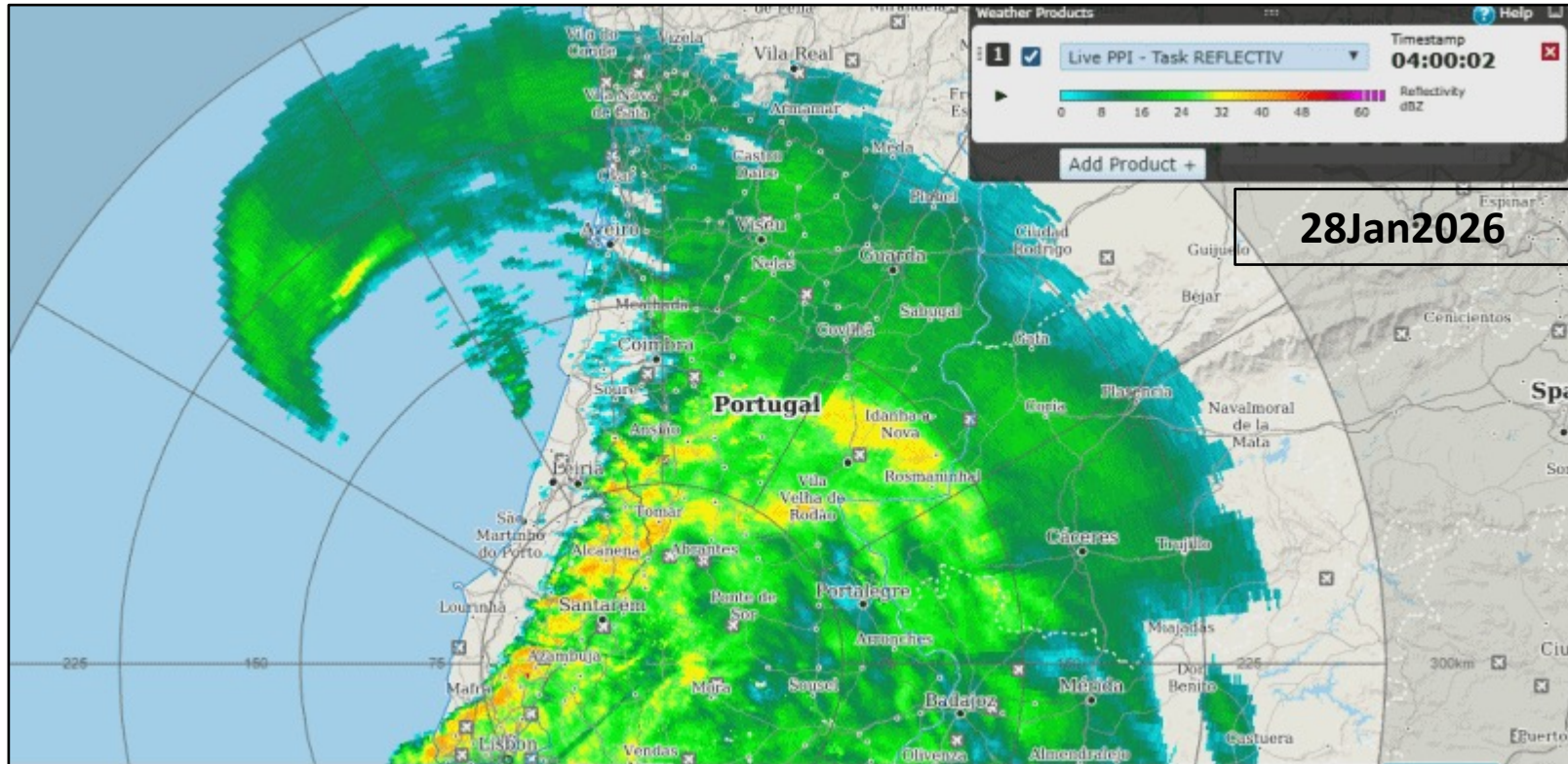
00h00 to 05h00 UTC, 28Jan2026

GeoColour RGB – MTG (EUMETSAT, NASA)



Overview of KRISTIN on weather radar

PPZ (dBZ), low elevation, 04:00-07:00 UTC, 28Jan2026

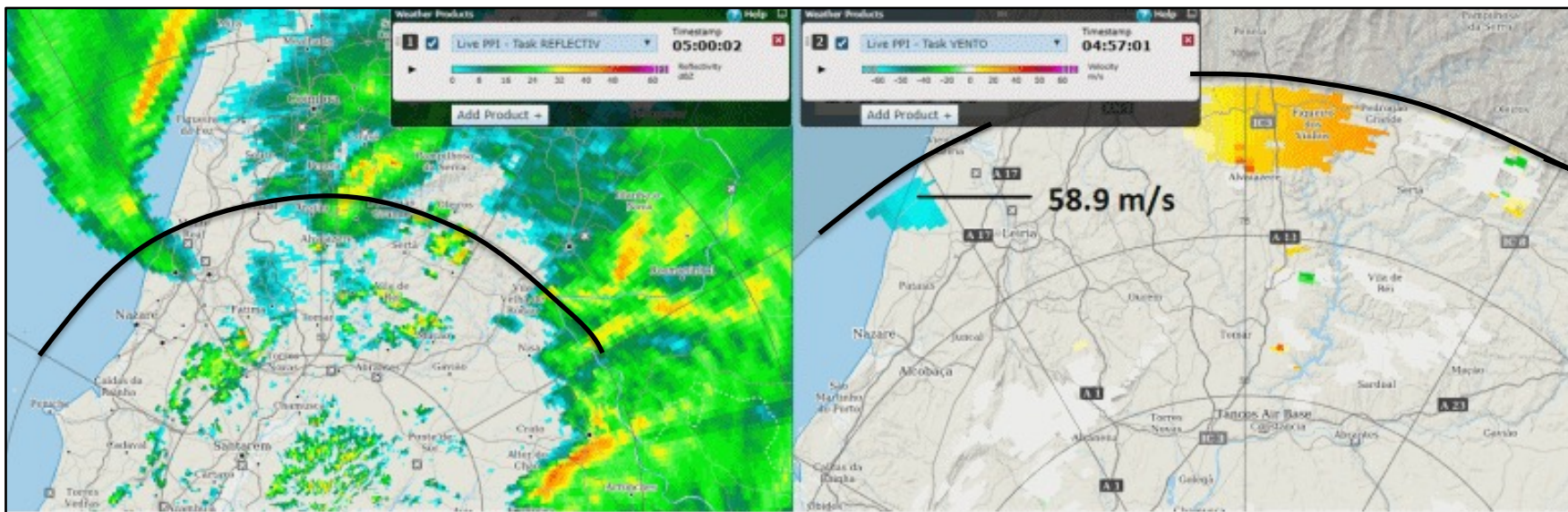


(Kristin advection 25,4 m/s, 276°)

Reflectivity bands (40-45 dBZ)

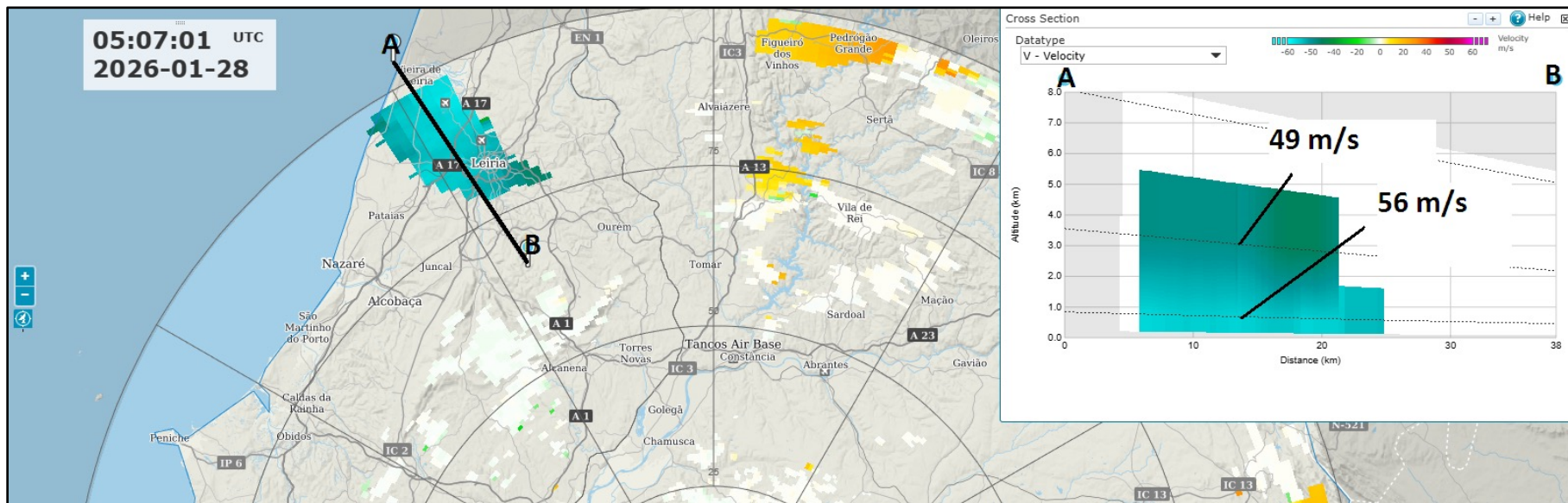
Detailed view of the evaporating tip of the Cloud Head (SJ)

PPZ (dBZ), low elevation (300 km range scan) | PPV (m/s), low elevation (100 km range scan)
05:00-06:20 UTC, 28Jan2026



58.9 m/s by 04:57 UTC, probably equates to a real wind \approx 65 m/s !

SJ: accelerating on descent



Magnitude of ground-relative winds controlling factors...

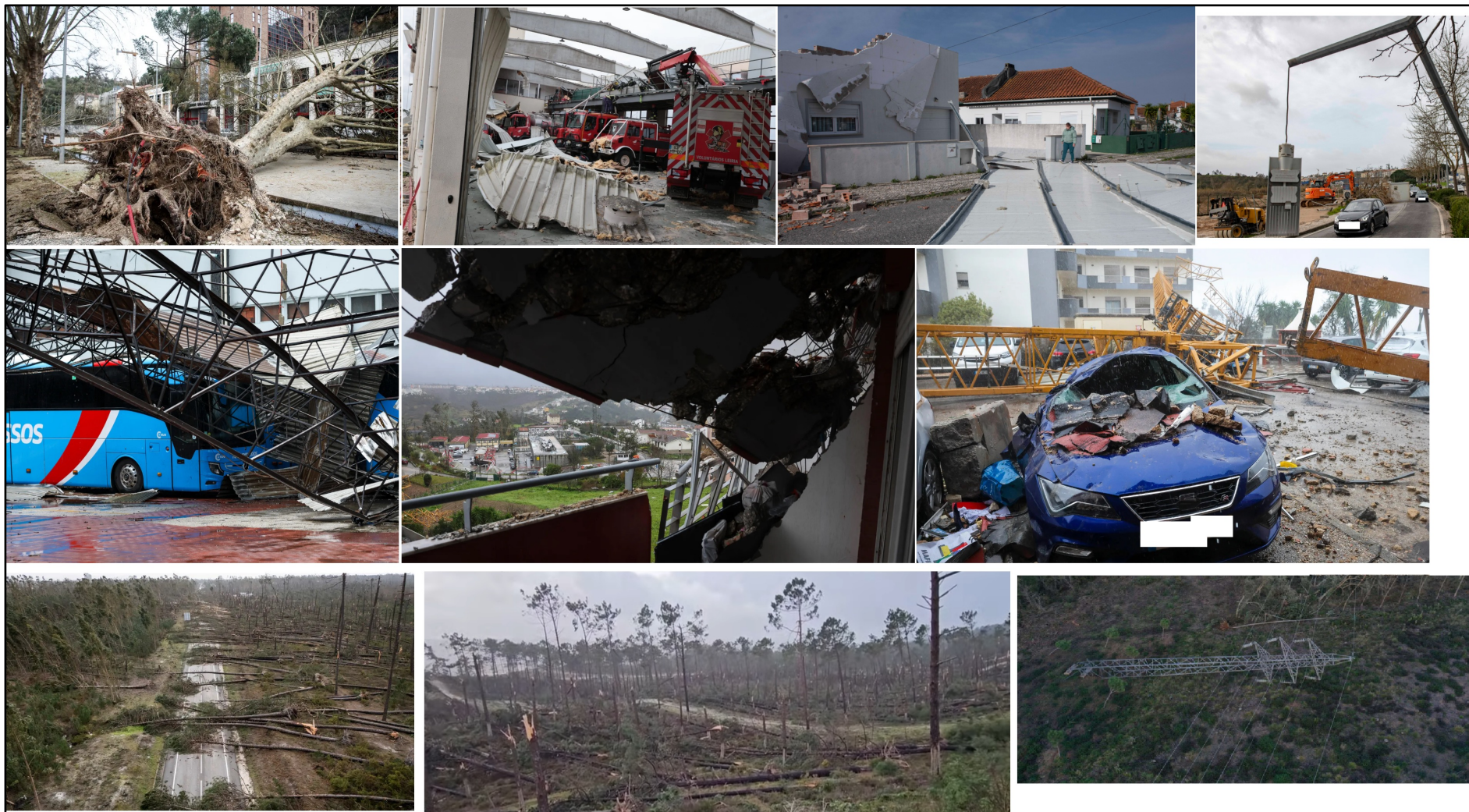
Dry air intrusion process (influences storm-relative winds magnitude)

Storm advection magnitude (**KRISTIN > 25 m/s**)

Storm advection direction (**KRISTIN FROM 276°**)

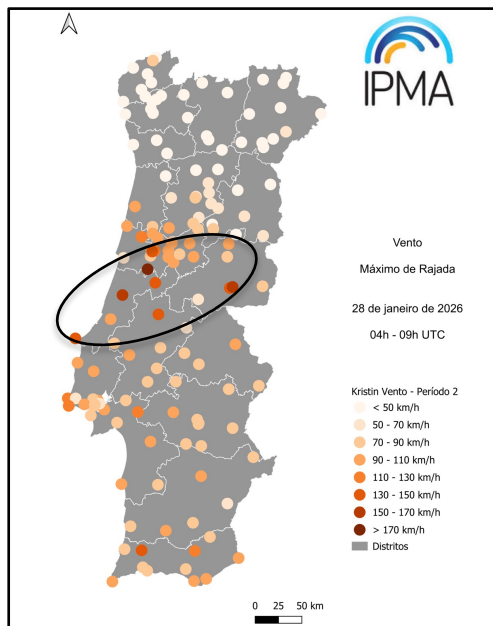
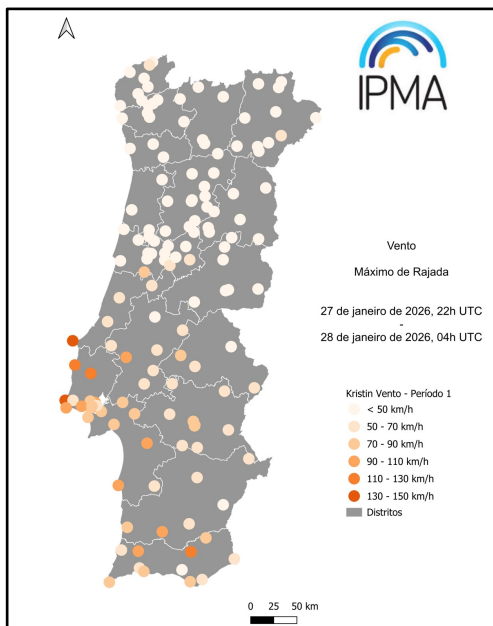


- 5 direct fatalities
- Dozens of families displaced
- Widespread destruction of trees, damage to many buildings, street furniture, and industrial warehouses, as well as the destruction of power lines; telecommunications outages, rail and road disruptions, and the suspension of school activities, commerce, and other damages
- More than 6.000 million euros of losses (estimated values)



Wind gusts

<i>Estação</i>	<i>Rajada (Km/h)</i>
Soure (CIM)	208.8
Ansião	172.4
Leiria / Aeródromo	156.2
Castelo Branco / Aeródromo	150.1
Cabo Carvoeiro / Farol	149.0
Coimbra / Astronómico	149.0
Castelo Branco	136.8
Fóia	135.4
Tomar / Vale Donas	132.8
Cabo Da Roca	131.0
Santa Cruz / Aeródromo	128.9
Loulé Cavalos do Caldeirão	120.2
Coimbra/Geofísico	117.0
Cantanhede-Fonte Dom Pedro	114.5
Pegões	112.3
Torres Vedras / Dois Portos	111.2
Cabo Raso / Farol	110.9
Lisboa / Geofísico	109.8



Note: 178 km/h gust observed in Monte Real airbase

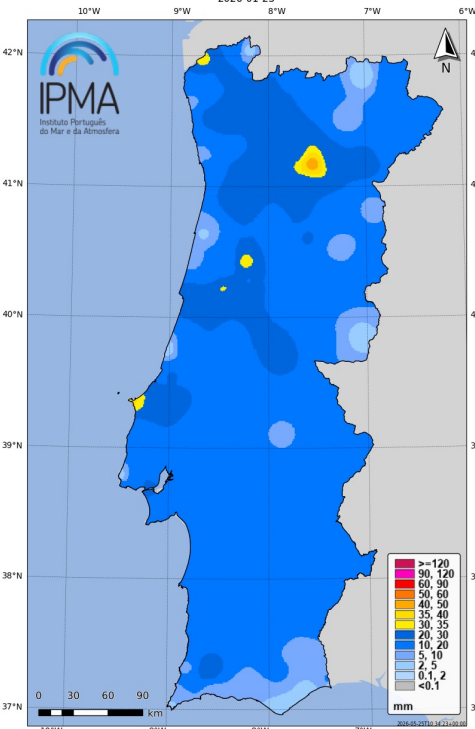
23/01/2026

24/01/2026

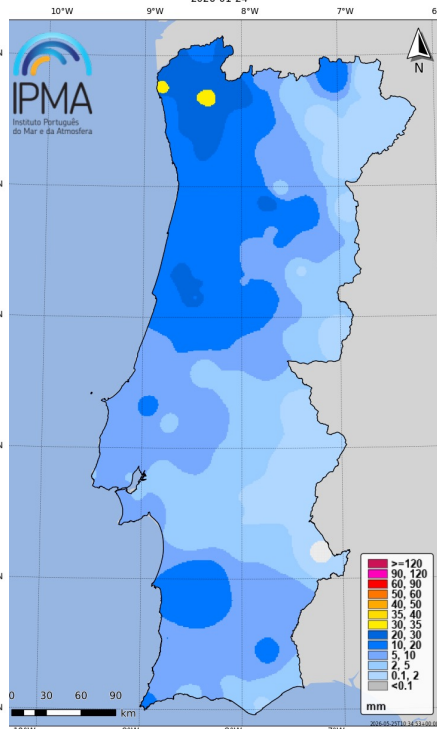
25/01/2026

26/01/2026

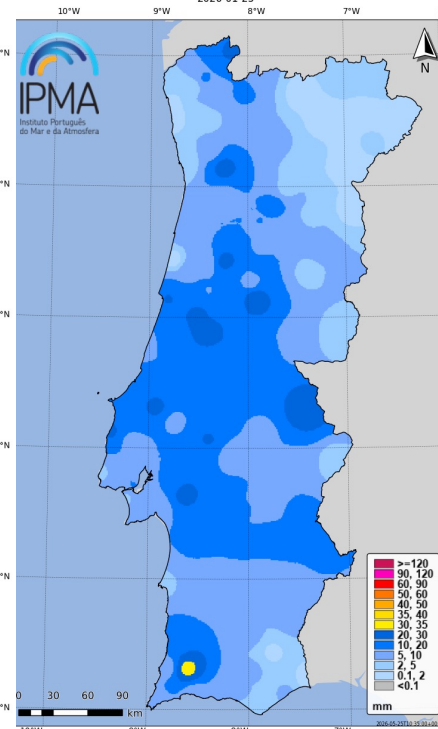
Precipitação, total diário
2026-01-23



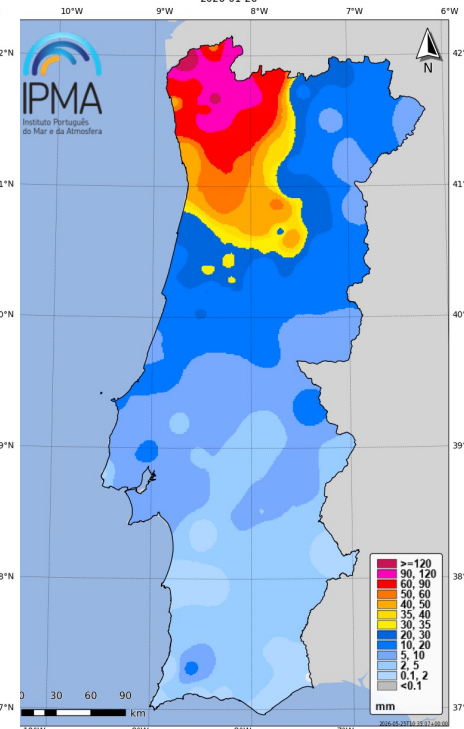
Precipitação, total diário
2026-01-24



Precipitação, total diário
2026-01-25



Precipitação, total diário
2026-01-26



Storm INGRID

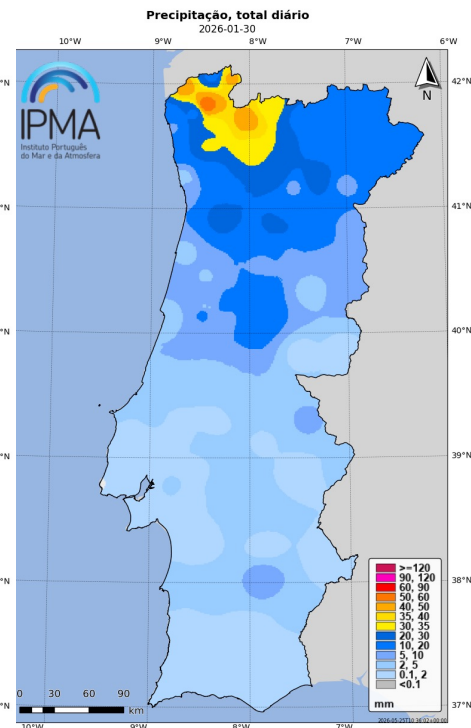
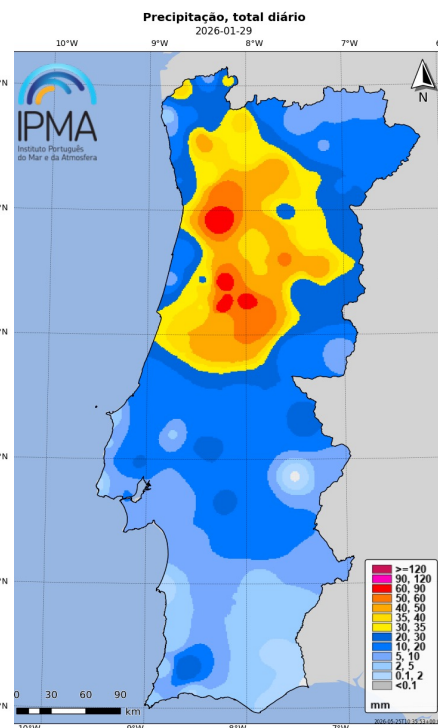
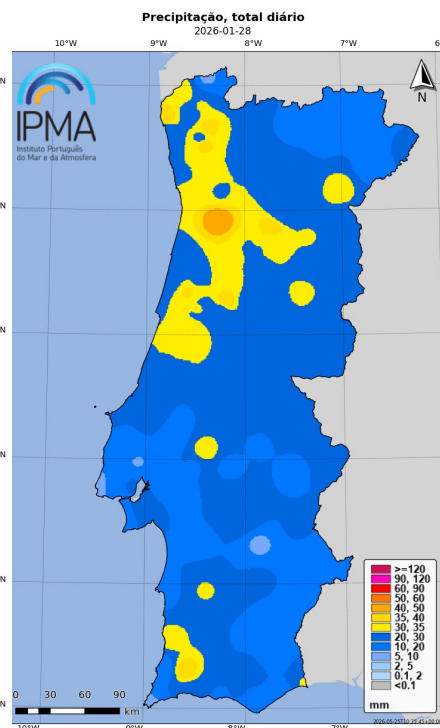
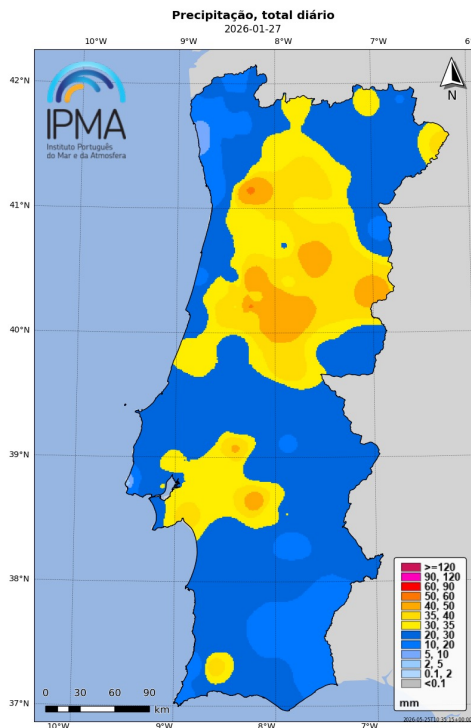
Frontal system
of Storm Joseph

27/01/2026

28/01/2026

29/01/2026

30/01/2026



Frontal system of
Storm Chandra

Storm Kristin

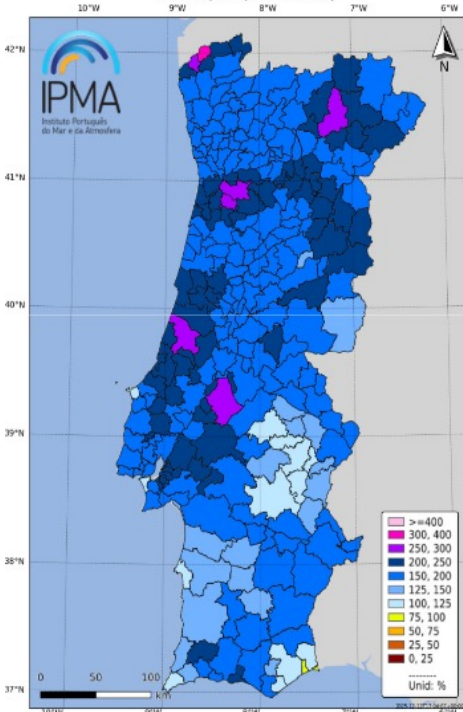
November 2025

December 2025

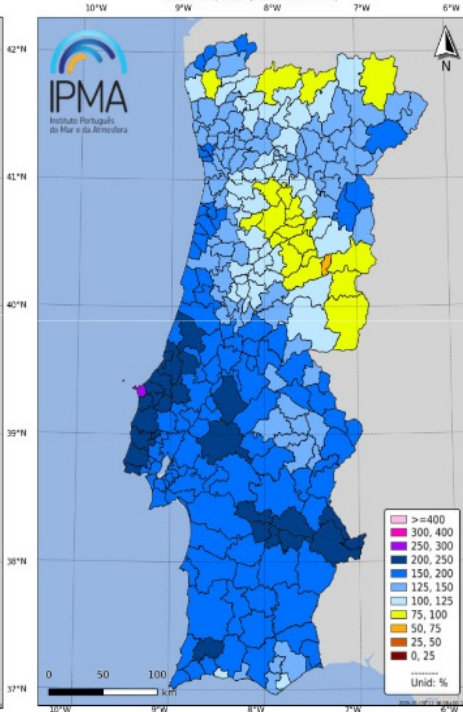
January 2026

February 2026 Days 1 to 15

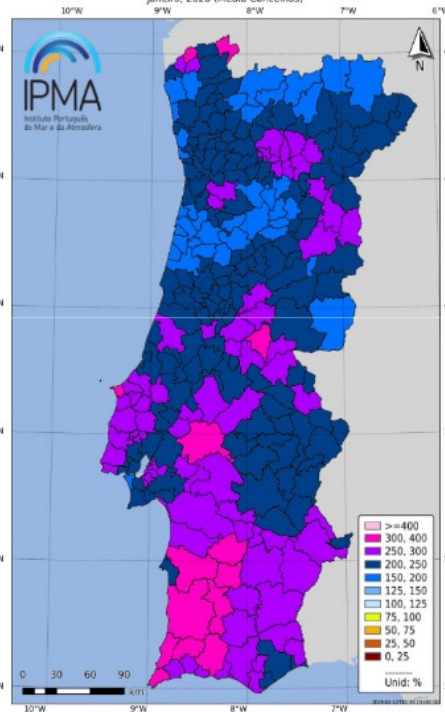
Percentagem de precipitação total em relação à normal 9120
Novembro, 2025 (Média Concelhos)



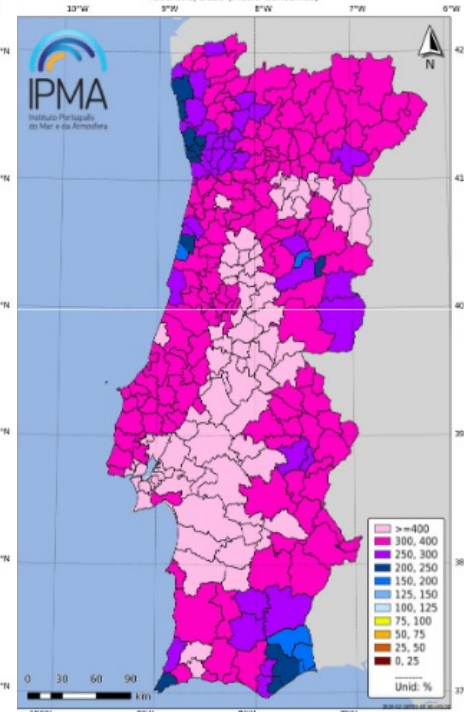
Percentagem de precipitação total em relação à normal 9120
Dezembro, 2025 (Média Concelhos)



Percentagem de precipitação total em relação à normal 9120
Janeiro, 2026 (Média Concelhos)

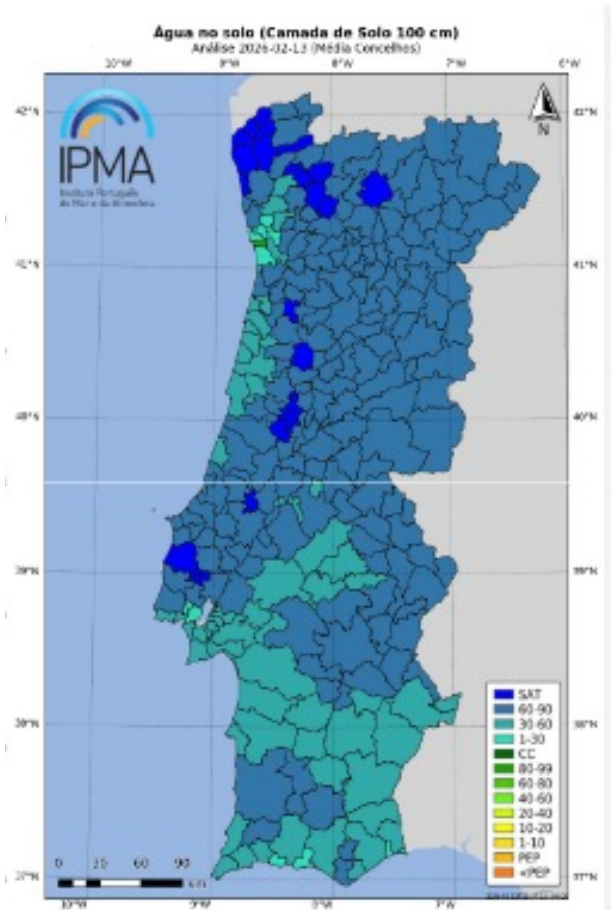


Percentagem de precipitação total em relação à normal 9120
Fevereiro, 2026 (Média Concelhos)

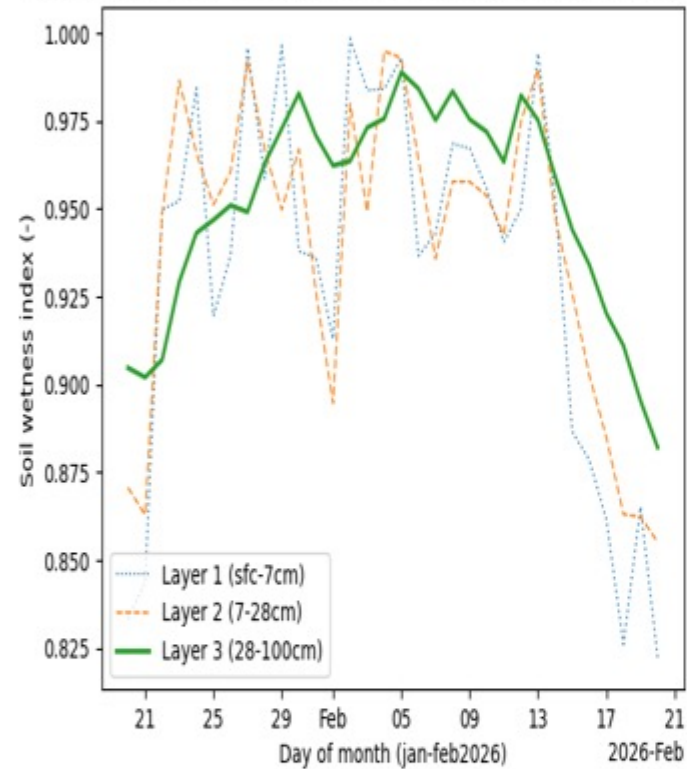


- Several consecutive months with higher than normal rain accumulation (1991-2020).

Soil moisture (100 cm)



RZSM-DR2019-10km Root-zone SWI over Arruda dos Vinhos (39.0N 350.9E)



HSAF product – model and satellite



- Severe floods, countless landslides and disrupted roads all over the country.

Thank you!