







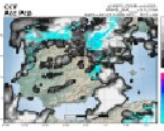
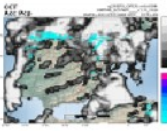
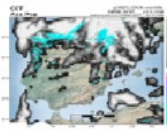
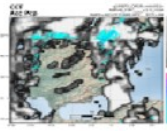
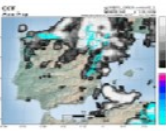

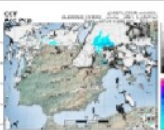

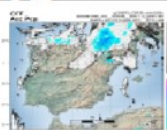




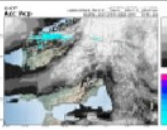
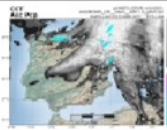
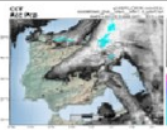



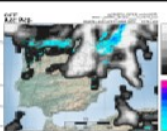
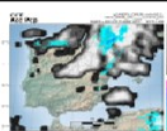

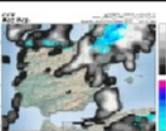
# Main improvements at AEMETs Forecast System

**Juan Manuel Sancho**  
*Chief Forecaster at AEMET*

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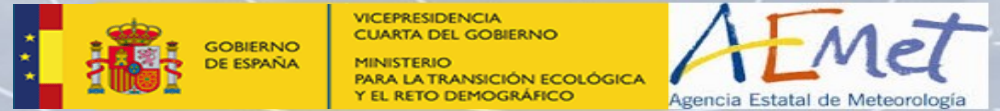
# Non-hydrostatic multi-model ensemble $\Upsilon$ -SREPS

- Operational at the end of 2019
- Characteristics:
  - Multi-model
  - Multi- initial conditions
  - Limited area
  - 2,5 km resolution
  - 48 h range
  - 20 members

Multi-BCs	ECMWF / IFS	NCEP / GFS	MF / ARPÈGE	JMA / GSM	CMC / GEM
Multi-NWP					
HARMONIE-AROME 					
HARMONIE-ALARO 					
WRF ARW 					
NMMB 					



# New supercomputer CIRRUS



- CIRRUS has been put into operations during 2021.
- Sysmet composed by two *clusters* of 8 *racks* each one.
- Models run in CIRRUS: HARMONIE-AROME, MOCAGE, AEWAN and  $\gamma$ -SREPS
- Comparison with the previous computer NIMBUS:

Characteristics	NIMBUS (2014-2020)	CIRRUS (2021- mid 2023)	CIRRUS (mid 2023 – 2025)
Processors	Intel Xeon E5 2600V2 (12 cores)	AMD EPYC Rome 7742 (64 cores)	AMD EPYC Rome 7742 (64 cores) + AMD EPYC Genoa (64 cores)
Nodes	324	280	376
Nº of processors	648	560	752
Memory (TB)	31.5	70	106
Storage (TB)	360	1000 (production) + 2500 (I+D)	1300 (production) + 3000 (I+D)
Computing pick power (TFlops)	168	1350	1680

# Other Improvements and changes related to forecasting

## Changes in staff positions:

- New Head of Operational Forecasting since 2021: **Jesús Barroso**
- New Head of Production Department since 2020: **Ana Casals**

## Improvements and new tools applied to forecasting:

- **New field for snow forecasting: Snow potential:** Atmosphere potential, in %, that snow stays at frozen state while it is falling. It increases with precipitation intensity (2020).
- **NivoGraM:** Interactive tool for snow forecast (2020).
- **CATAPLOGO:** New catalog of forecasting products (end 2020).
- **PANEL 2.0** in October 2020.

