IBERA-Suelo: Reanálisis en superficie de precipitación y temperaturas extremas

IBERA-Land: Surface reanalysis of precipitation and extreme temperatures

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RESUMEN

IBERA is the high-resolution regional reanalysis currently being developed at AEMET (Spanish State Meteorological Agency) and expected to end the production by the end of 2026. The system is based on a regional configuration of HARMONIE-AROME with a horizontal resolution of 2.5 km, 90 levels and ERA5 as lateral boundary conditions. The domain covers the Iberian Peninsula, the Balearic Islands, and the Canary Islands, and the initial production period spans from 1990 to 2021. Within the IBERA project, AEMET is also developing a land component for near-surface temperature and precipitation. This component is designed to complement the HARMONIE-AROME surface analysis, which does not include precipitation and extreme temperatures. Besides, this offline component gives more freedom for the analysis settings and allows to include additional sources of observations. Several Optimal Interpolation (OI) schemes have been evaluated, using HARMONIE-AROME fields as first guess and observations from different meteorological networks. In this contribution, we present results obtained with Gridpp (HYPERLINK "https://github.com/metno/gridpp"), a Python-based open-source post-processing tool developed by MET Norway and the so called ROCIO scheme used in previous precipitation analysis performed by AEMET. The results show a clear improvement over ERA5-Land and CERRA-Land for both temperature and precipitation, with performance comparable to classical interpolation methods such as Kriging. Gridpp emerges as a robust alternative, offering similar skill while benefiting from a physically based framework and seamless integration with numerical model output.