



## Variability and climate change monitoring tools at the Meteorological Service of Catalonia

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It is well-known that climate shows great variability over different time scales, from seasons to decades to thousands of years and more. These variations and potential changes can have serious impacts on human health, security and safety. At a regional and local scale, it is essential to keep accurate, dense and long-term records of the atmosphere and other climate indicators in order to extract the climate variability.

This work shows several products and services provided by the Meteorological Service of Catalonia (SMC) to reach this objective, providing the information freely to the final user. They are grouped into three main areas.

- Climate yesterday: within this category SMC offers several products informing about the main characteristics of Catalan climate and linked resources: climate atlas, local climatology normals, monthly homogeneous and quality controlled series, data-rescue activities and analysis on severe weather episodes.
- Climate today: monitoring of present climate with continuous updated data is provided in this section. Periodical bulletins (monthly, seasonal, yearly, hydrological year) with the description of the weather and the main anomalies reported, detailed drought monitoring, observed climate trends and indices reports, and phenology observations are the main products offered.
- Climate tomorrow: SMC also provides information on future climate change scenarios for Catalonia by means of two approaches: dynamical and statistical downscaling. In recent months, 1-km resolution outputs using the new AR5 scenarios have been developed.