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# High resolution reanalysis of historical storms in France

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Météo-France is involved in a several years project, named ANTHEMIS, aiming at characterizing storms that have affected French territory during the last decades. Various complementary methods were followed: wind gust data, geostrophical wind estimation and atmospheric reanalysis. The final goal is to give complete diagnoses on these climatic extremes thanks a web site open to the public at the end of 2015. This site will integrate information on the historic storms of the last 200 years, knowledge of dynamical processes and description of climatic variability, trends and future evolution.

More specially, a study was led on a high-resolution original dataset over France (hourly and 2,5 square km). These data come from a statistical process including wind gust observations, geographical parameters and data of the weather model AROME. The dataset takes into account continuous operational data since 2009 but also replayed data in event mode for more than 500 storms days between 1980 and 2009.

The study has experimented a new method of storm characterization for identification, spatial extension, duration and severity of the phenomena. At the end, around 150 events experienced during the last 35 years such as Lothar and Martin in December, 1999 or Xynthia in 2010 were qualified. The method has also been defined to be applicable in real time and give original new tools for climate monitoring of these extreme events.