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BARCELONA DUST FORECAST CENTER: THE FIRST WMO REGIONAL METEOROLOGICAL CENTER SPECIALIZED ON ATMOSPHERIC SAND AND DUST FORECAST

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The World meteorological Organization's Sand and Dust Storm Warning Advisory and Assessment System (WMO SDS-WAS, http://sds-was.aemet.es/) project has the mission to enhance the ability of countries to deliver timely and quality sand and dust storm forecasts, observations, information and knowledge to users through an international partnership of research and operational communities. The good results obtained by the SDS-WAS Northern Africa, Middle East and Europe (NAMEE) Regional Center and the demand of many national meteorological services led to the deployment of operational dust forecast services. On June 2014, the first WMO Regional Meteorological Center Specialized on Atmospheric Sand and Dust Forecast, the Barcelona Dust Forecast Center (BDFC; http://dust.aemet.es/), was publicly presented. The Center operationally generates and distributes predictions for the NAMEE region. The dust forecasts are based on the NMMB/BSC-Dust model developed at the Barcelona Supercomputing Center (BSC-CNS). The present contribution will describe the main objectives and capabilities of BDFC.

One of the activities performed by the Center is to establish a protocol to routinely exchange products from dust forecast models as dust load, dust optical depth (AOD), surface concentration, surface extinction and deposition. An important step in dust forecasting is the evaluation of the results that have been generated. This process consists of the comparison of the model results with multiple kinds of observations (i.e. AERONET and MODIS) and is aimed to facilitate the understanding of the model capabilities, limitations, and appropriateness for the purpose for which it was designed. The aim of this work is to introduce different evaluation approaches and to test the use of different observational products in the evaluation system. It is also intended to find out which approach and which observational data better reflect the model performance.