



## **Sahara dust impact on precipitation in severe storm events: a possible realtime CCN calibration in NWP.**

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The dust impact on precipitation has been studied using both theoretical and atmospheric models since so far revealing many interesting, surprising and unexpected aspects of cloud dynamics and behaviour. Its Consequences cover a wide range of human activities from environment stress, due to radiation reduction and precipitation suppression, to errors in the mesoscale and climatic models skills. Actually Sahara dust intrusions can change significantly concentration and type of cloud condensation nuclei (CCN) present in the air masses. Such disturbances can determine important changes both in the total rainfall amount, especially during warm and cold Atlantic front events , and in the characteristics of precipitation itself. Due to its particular structure and geographical position the Mediterranean area shows a particular vulnerability from these aspects. A CCN initialization strategy, based on the total aerosol amount coming from the TOMS satellite, is used to infer proper RAMS microphysics settings. Such objective method shows a positive impact on QPF both for total rainfall amount and evolution. Its implementation, in a real time mode, along with its benefits, are shown for forecast operational purposes.