

## Comparison of online and offline methods for the characterization of atmospheric Ice nucleating particles



In the atmosphere more than 90% of precipitation over land relies on the formation of ice crystals on airborne aerosol particles (Lohmann et al., 2004). However, from what we currently know only a tiny fraction of all atmospheric particles can initiate ice growth. These scarce IN particles are crucial to Earth's climate, where they can have a significant effects on the radiation budget, but are also responsible for precipitation, where water in clouds can only freeze to form rain, snow, sleet or hail, when they are present.

Characterizing these scarce particles in the atmosphere is technically challenging with the need of sophisticated instruments that are capable of generating extreme atmospheric conditions (those found at altitudes greater than 10, 000 m). A number of different techniques exist today with different specificities and capabilities. In October 2018, an intercomparison of these sophisticated instruments will take place at the GAW and ACTRIS Puy de Dome station. Among the participants include world renowned international researchers: Paul DeMott, from Colorado State University, USA Dan Cziczo from Massachusetts institute of Technology, USA, Luis Ladino from Mexico national University, Stephan Mertes from Liepzig Institute of tropospheric research, Germany, Ottmar Mohler from Karlsruhe Institute of Technology, and Zamin Kanji from Institute for Atmospheric and Climate Science, ETH, in Zurich.

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In addition to this intercomparison exercise, a series of seminars on the subject of aerosol cloud interactions, and ice crystals in the atmosphere will be organized by the Laboratoire de meteorology physiques, Friday 19<sup>th</sup> October at the University Blaise Pascal in Clermont Ferrand, where the participants will talk about their research experiments and future challenges in this field of research.