New Ion-Nucleation Mechanism Relevant for the Earth's Atmosphere: Experimental Set-up

An experiment has been set up in order to investigate the role of ionization in Earth's climate. We have chosen to start our investigation at the smallest scales, namely by studying the effect of cosmic ray produced ions on atmospheric aerosol nucleation and growth processes. This experiment is conducted at the Danish National Space Center, Center for Sun-Climate Research. It comprises a 7 m³ reaction chamber where atmospheric conditions can be simulated. The number of ions can be increased by exposure to radioactive sources and decreased by applying an electric field; this will enable experiments to be performed both with and without the presence of ions, thus providing information as to the potential role of ions in aerosol processes. This presentation describes the experimental setup and reveals its abilities to control and measure the required parameters.

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