

A LABORATORY EXPERIMENT TO STUDY THE EFFECT OF TURBULENCE ON DROPLET GROWTH AND SIZE DISTRIBUTIONS IN CLOUDS

PROJECT LEADERS

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RESEARCH THEME

Complex dynamics of fluids

PARTICIPANTS

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COOPERATIONS

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FUNDED

NWO-ALW

1st 20% 2nd 80% 3rd -

START OF THE PROJECT

2007

INFORMATION

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PROJECT AIM

The aim of the project is to increase the understanding of cloud microphysics, in particular the effect of turbulence on droplet growth and coalescence in convective clouds which affect both the optical properties of clouds and the formation of precipitation. Issues like preferential concentration, turbulence enhanced settling velocities and turbulence enhanced collision coalescence will be addressed. Phase Doppler Anemometry (PDA) is to be used for simultaneously measuring droplet velocities and droplet size distributions.

PROGRESS

After the start of the project in December 2007, an extensive literature study has been performed. In addition, a tunnel has been designed and built to produce droplets and study their swarm behaviour in a turbulent environment. The first measurements by means of PDA have been carried out.

DISSERTATIONS

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SCIENTIFIC PUBLICATIONS

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