

## **COPS Working Group "Aerosols and cloud microphysics"**

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### **Science questions**

What is the role of the aerosol in the initialization of convection?

Does sub-cloud aerosol variability affect convective precipitation?

Does cloud turbulence promote condensation, coalescence and aggregation and thus precipitation?

### **The issue of ice formation**

Is there a correlation between measurable aerosol properties (IN, depolarization) and ice formation?

What statistical information about ice formation in COPS can we derive from present satellite sensors?

ETH: builds ground based CFDC ice nucleation chamber to be deployed

### **Measurement strategy**

Climatic prestudies should define the deployment of aerosol and lidar sites

### **Links to other WGs**

Question to Radar: could a cloud be flagged in the radar data when ACTOS has to leave it? Maybe microrainradars (mobile?) could be used.

### **Instrument strategy**

Helipod has larger range and should cover as much as possible of the area in between the supersites

ACTOS should be stationed near a super site not in too complex terrain

A number of ground-based and airborne lidar systems are proposed for COPS. All these systems detect aerosols and are very valuable to investigate the science questions of the WG ACM. Of special interest are Raman lidar systems which allow to derive information on aerosol and cloud microphysical properties (e.g., multi-wavelength Raman lidar of IfT, scanning rotational Raman lidar of IPM, 2 Italian Raman lidars).

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