1) COPS and AMF science

Quantitative precipitation forecasting (QPF) is a key issue in atmospheric science. Accurate predictions of precipitation, particularly of extreme events, are of extraordinary value for economy and society. QPF problems are related to deficiencies in the representation of the whole life cycle of precipitation events from the preconvective environment, to the development of clouds, to the onset, development, and decay of precipitation. Corresponding errors are interwoven and propagate in a nonlinear cascade in the model system. As model physics and spatial scales in weather and climate simulations are becoming more and more similar, improved simulations of precipitation will contribute to forecast skills on all time scales. Particularly in complex terrain, two prominent QPF problems have been identified:

1. Windward/lee effect
2. Diurnal cycle of precipitation

2) European summer experiments 2007

To address these topics, a series of research programs has been initiated, which is coordinated by the World Weather Research Program (WWRP). Process and predictability studies are strongly related to World Climate Research Program (WCRP) and Atmospheric Radiation Measurement (ARM) Program, respectively.

Within these research programs, intense global and mesoscale modeling activities are coordinated with a series of experiments providing a unique data set.

3) Set up of AMF site, coordination with COPS and GOP

Mission planning is performed by the COPS ISSC and the COPS PIs. Mission preparation and performance is organized at the COPS Operations Center. Particularly challenging is the coordination of the airborne platforms with scanning and mobile ground-based measurements. Long-term statistics of synergistic retrievals will be used for model evaluations.

4) Strategy for reaching the science goals

Mission planning is performed by the COPS ISSC and the COPS PIs. Mission preparation and performance is organized at the COPS Operations Center. Particularly challenging is the coordination of the airborne platforms with scanning and mobile ground-based measurements. Long-term statistics of synergistic retrievals will be used for model evaluations.