

## Seminar über Microwave Physics and Atmospheric Physics

**Referent/in:** Ulrike Lohmann, Department of Environmental Systems Science,  
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**Titel:** Orographic mixed-phase clouds from cloud remote sensing and in-situ  
observations and modelling

Clouds are not only fascinating to observe for their myriad of shapes, but are also scientifically challenging because their formation requires both knowledge about the large-scale meteorological environment as well as knowledge about the details of cloud droplet and ice crystal formation on the micro-scale. The ice phase in clouds remains enigmatic because ice crystal number concentrations can exceed the number concentrations of those aerosol particles acting as centers for ice crystals (so-called ice nucleating particles, INPs) by orders of magnitude. Thus, other sources of ice crystals must exist as well. Two commonly discussed mechanisms are secondary ice formation and the seeder-feeder process.

Secondary ice formation refers to the production of ice splinters caused by break-up of cloud droplets during freezing, by splinter ejections when riming occurs or mechanical break-up of ice crystals. The seeder-feeder process refers to an external source of cloud particles. A typical setting is an overlying cloud from which sedimenting ice crystals enter a lower-lying cloud and cause an enhancement of precipitation.

We conducted field experiments in the Swiss Alps and obtained in-situ and remote sensing observations of orographic mixed-phase clouds. We investigated the importance of secondary ice formation and the seeder-feeder process in these clouds from observations and modelling as I will discuss in my talk.

**Zeit:** Freitag, 8. April 2022, 10:15 Uhr

**Ort:** Raum A97, ExWi, Sidlerstrasse 5, 3012 Bern  
<https://unibe-ch.zoom.us/j/97081325603?pwd=d0ozME5xOS9pQVNxallLem81VHQyZz09>  
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