

## Kolloquium für Mechanik

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Date: Thursday, July 19, 2018  
Time: 15:45 h  
Location: 10.81, HS 62 (R 153)

Title: **The Göttingen Cloud Physics Experiments**

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### Abstract

We present results from moist convection in a mixture of pressurized sulfur hexafluoride (liquid and vapor), and helium (gas) to model the wet and dry components of the Earth's atmosphere. To allow for homogeneous nucleation, we operate the experiment close to critical conditions. We report on the nucleation of microdroplets in the wake of large cold liquid drops falling through the supersaturated atmosphere and show that the homogeneous nucleation is caused by isobaric cooling of the saturated sulfur hexafluoride vapor. Our results carry over to atmospheric clouds: falling hail and cold rain drops may enhance the heterogeneous nucleation of microdroplets in their wake under supersaturated atmospheric conditions. We also observed that under appropriate circumstances settling microdroplets form a rather stable horizontal cloud layer, which separates regions of super- and subcritical saturation.

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Alle Interessenten sind herzlich eingeladen.

Prof. Dr.-Ing. Markus Uhlmann