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Leibniz-Institut für
Troposphärenforschung

Leipzig Graduate School Clouds, Aerosols and Radiation (LGS-CAR)

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| Module name | Effective radiative forcing due to aerosol-cloud interactions |
| Number | LGS-CAR-12 |
| Aims | Understanding and quantification of the radiative effects of aerosol-cloud interactions at a climate-relevant scale from remote sensing observations |
| Basics | Top-down perspective on aerosol-cloud interactions, i.e. from global forcing to processes; Aerosol relationship with cloud droplet number concentration; response of cloud liquid water path and cloud horizontal extent to droplet concentration perturbations; response of top-of-atmosphere radiation to cloud changes; anthropogenic perturbation to CCN; remote sensing of CCN and cloud properties |
| Contents | Fundamentals (Johannes Quaas) Lab (Heike Wex) Remote sensing (Hartwig Deneke, Odran Sourdeval, Patric Seifert, Matthias Tesche) Effective forcings (Edward Gryspeerdt) |
| Methods | Active and passive (satellite) remote sensing |
| Type | Two-day online block course (2 x ½ days lectures) |
| Date | 11 – 12 June 2020 |
| Time | 9.00 – 13.00 h (Thursday), 9.00 – 12.00 h (Friday) |
| Location | https://tinyurl.com/atmaci |
| Work load | 7 hours presence / 60 hours self-study |
| Examination | Online examination |
| Credit points | 2 |
| Responsible scientist | Johannes Quaas |
| Guest lecturers | Edward Gryspeerdt, Imperial College London Odran Sourdeval, Univ. Lille |
| Recommendations for literature | Bellouin et al. Rev. Geophys. 2020 doi:10.1029/2019RG000660 Gryspeerdt et al. Atmos. Chem. Phys. 2019 doi:10.5194/acp-19-5331-2019 |



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Program schedule

Thu, 11 June 2020

- 9.00 h Welcome, opening remarks (Johannes Quaas)
- 9.15 h Fundamentals on aerosol-cloud interactions (Johannes Quaas)
- 10.00h Discussion/break

- 10.15 h Passive remote sensing of aci (Hartwig Deneke)
- 11.00 h Discussion/break

- 11.15 h Ground-based active remote sensing of aci (Patric Seifert)
- 12.00 h Discussion/break

- 12.15 h Satellite remote sensing of Nd and Ni (Odran Sourdeval)
- 13.00 h End day 1

Fri, 12 June 2020

- 9.00 h Atmospheric INP and CCN (Heike Wex)
- 9.45 h Discussion/break

- 10.00 h Satellite active remote sensing of CCN and INP (Matthias Tesche)
- 10.45 h Discussion/break

- 11.00 h Effective radiative forcing (Edward Gryspeerdt)
- 11.45 h Discussion
- 12.00 h End