Workshop on Eulerian vs. Lagrangian methods for cloud microphysics

The meeting is organised jointly by:
- [Division of Computational Mathematics, Faculty of Math. and CS, Jagiellonian University](#) &
- [Institute of Geophysics, Faculty of Physics, University of Warsaw](#).

The workshop will take place **in Cracow, Poland on April 15-17, 2019** (week after EGU GA in Vienna) in the ``Auditorium Maximum'' of the Jagiellonian University.

LECTURES, TALKS AND POSTERS

- Introductory lectures:

    - **Anna Jaruga** (caltech.edu)
    - **Zachary Lebo** (uwyo.edu)
    - **Athanasios Nenes** (epfl.ch)

- List of contributed talks:

    - **Gustavo Abade** (uw.edu.pl)
      Study of droplet-size distribution in turbulent clouds using stochastic microphysics at unresolved scales
    - **Qian Chen** (nuis.edu.cn)
      Aerosol Impacts on Mesoscale Convective Systems Forming under Different Vertical Wind Shear Conditions
    - **Guy Dagan** (ox.ac.uk)
      Identifying the spatial scales in aerosol-precipitation interactions from a water and energy budget perspective
    - **Piotr Dziekan** (uw.edu.pl)
      UWLCM: a LES Model with Lagrangian Microphysics; turbulent advection, condensation and coalescence
    - **Wojciech Grabowski** (ncar.ucar.edu)
      Separating physical impacts from natural variability using piggybacking (master-slave) technique

- **Adrian Hill** (metoffice.gov.uk)
  The GASS Microphysics Intercomparison Project: How Different Are Aerosol-Cloud-Precipitation Interactions from a Variety of Microphysics Schemes?
- **Alexander Khain** (huji.ac.il)
  Computationally efficient linear semi-Lagrangian scheme for advection of microphysical variables in cloud-resolving models
- **Hugh Morrison** (ncar.ucar.edu)
  Spurious broadening of modeled cloud droplet spectra using bin microphysics in an Eulerian spatial domain
- **Ann Kristin Naumann** (mpimet.mpg.de)
  A glimpse of microphysics in next generation climate models
- **Yign Noh** (yonsei.ac.kr)
  A Cloud Microphysics Parameterization for Shallow Cumulus Clouds Based on Lagrangian Cloud Model Simulations
- **Bogdan Rosa** (imgw.pl)
  Numerical investigation of collision statistics of cloud droplets with the focus on two-way coupling effects
- **Noemi Sarkadi** (pte.hu)
  Simulation of convective development with bin scheme: LBA case study to investigate the interaction between dynamics and microphysics
- **Bernhard Schulz** (mpimet.mpg.de)
  Competing Effects of Droplet Sedimentation and Wind Shear on Entrainment in Stratocumulus
- **Axel Seifert** (dwd.de)
  A similarity model of partially rimed snowflakes and its application in Lagrangian super-particle simulations
- **Raymond Shaw** (mtu.edu)
  Large eddy Simulation of Turbulent Convection and Cloud Microphysics in the Pi Chamber
- **Shin-ichiro Shima** (u-hyogo.ac.jp)
  Performance comparison among three Monte Carlo schemes for collision-coalescence: O'Rourke method, No-Time Counter method, and Super-Droplet method
- **Christoph Siewert** (dwd.de)
  The particle-based mixed-phase cloud microphysics model McSnow
- **Emma Simpson** (manchester.ac.uk)
  Modelling co-condensation of semi-volatile organic compounds using an open access cloud parcel model
- **Juha Tonttila** (fmi.fi)
  Design and applications of the detailed sectional aerosol-cloud model SALSA in a cloud-resolving setup
- **Simon Unterstrasser** (dlr.de)
  Particle-based coalescence/aggregation in a column model: Rigorous evaluation and comparison with bin model solutions

- List of posters:

  - **Sylwester Arabas** (uj.edu.pl)
    particle-based-cloud-modelling.network
  - **Piotr Bartman** (uj.edu.pl)
    Super droplets in OpenFOAM
  - **Jan Bohrer** (tropos.de)
    Implementation of Discrete Particle Methods in a scalable Atmospheric Fluid Dynamics solver
  - **Tom Dror** (weizman.ac.il)
    Ultra-giant CCN's effect on warm clouds
  - **Eshkol Eytan** (weizmann.ac.il)
    Cloud's mixing: a continuous description from the core to the non-disturbed environment
  - **Shuxian Fan** (nuis.edu.cn)
    Effects of aerosol radiative feedback during a severe smog process based on WRF-Chem simulation

- **Markus Karrer** (uni-koeln.de)
  Constraining fall speed of unrimed particles by cloud radar observations and novel modelling techniques
- **Tim Luettmer** (uni-mainz.de)
  Ice formation pathways in Warm Conveyor Belts
- **Hyunho Lee** (giss.nasa.gov)
  Evaluation of water vapor diffusion equation solving schemes for use in forward simulation of cloud Doppler radar spectra of drizzling stratocumulus
- **Jules Lee** (tropos.de)
  How do the vertical distributions of the aerosol sizes and concentrations affect the cloud life-cycle?
- **Keigo Matsuda** (jamstec.go.jp)
  Enhancement of radar reflectivity factor due to turbulent droplet clustering in cumulus clouds
- **Xiang-Yu Li** (uio.no)
  Condensational and collisional growth of cloud droplets in a turbulent environment
- **Michael Olesik** (uj.edu.pl)
  Super droplets and Ostwald ripening
- **Johannes Schwenkel** (uni-hannover.de)
  Demystifying fog microphysics: A high-resolution Large-Eddy Simulation study with coupled particle based microphysics
- **Lulin Xue** (ncar.ucar.edu)
  Aerosol processing simulations by the Eulerian and Lagrangian microphysics frameworks

FUNDING