



Minutes of the VI-ACI kickoff meeting, May 14/15, Karlsruhe.

Participants:

Forschungszentrum Karlsruhe GmbH, Institut für Meteorologie und Klimaforschung (IMK-AAF):

Thomas Leisner, Ottmar Möhler, Stefan Benz, Khaled Megahed, Daniel Rzesanke, Harald Saathoff, Martin Schnaiter, Roland Schön, Ulrich Schurath, Robert Wagner, Stefan Schäfer (project administration), Christine Bertheau (legal department).

Deutsches Zentrum für Luft- und Raumfahrt e.V., Institut für Physik der Atmosphäre (IPA):

Bernd Kärcher, Ulrike Burkhard, Johannes Hendricks

Forschungszentrum Jülich GmbH, ICG-1:

Martina Krämer

Forschungszentrum Jülich GmbH, ICG-2:

Thomas Mentel

Leibniz-Institut für Troposphärenforschung (IfT):

Frank Stratmann, Alexej Kiselev

Universität Mainz, Institut für Physik der Atmosphäre:

Johannes Schneider

Universität Frankfurt, Institut für Atmosphäre und Umwelt:

Heinz Bingemer

Universität Heidelberg, Physikalisch-Chemisches. Institut:

Volker Ebert

ETH Zürich, Institute for Atmospheric and Climate Science:

Ulrike Lohmann, Olaf Stetzer

University of Hertfordshire, Science and Technology RI:

Zbigniew J. Ulanowski

Tel Aviv University, Cloud and Precipitation Physics Laboratory:

Zev Levin

Protocol: Ottmar Möhler

Thomas Leisner: Welcome and introduction to the meeting.

- Virtual institute should strengthen cooperation between Helmholtz Institutes and Universities
- Funding is for three years, but cooperation should last longer, we have to find ways to sustain cooperation and to initiate follow-up activities.
- Need to develop management structure

All speakers are asked to present the planned contributions to the Virtual Institute, show links to other partners of the VI-ACI, and leave ample time for discussions.

Ottmar Möhler: Overview and introduction to the VI-ACI



Presentations by the work package coordinators and partners about their ongoing work and planned contributions to the VI-ACI:

Ottmar Möhler: Laboratory workpackages overview and contribution by IMK-AAF to WP-L1 and the process modelling work (WP-M1). Two AIDA campaigns are planned in 2008, one with focus on the mixed-phase cloud temperature regime and one on the cirrus cloud temperature regime (see discussion of work plan time table below).

Martina Krämer: Contribution of ICG-1 to WP-L1 AIDA experiments with FISH and TDL water vapour measurements and to process modelling (WP-M1)

Volker Ebert: Contribution of Uni Heidelberg to AIDA experiments with improved and accurately calibrated TDL water vapour spectrometers. Absolute measurements with high accuracy, in particular at low temperatures, seem to be of special importance.

Johannes Schneider: Contribution of Uni Mainz to work packages WP-L1 (AIDA), WP-L2 (LACIS), and WP-L4 (SAPHIR) with AMS and single particle aerosol mass spectrometers. A new aerodynamic lens with particle diameter transmission range 300 to 3000 nm could be used for experiments with mineral dust aerosols. Wind tunnel experiments on immersion and contact freezing modes are also planned.

Heinz Bingemer: Contribution of Uni Frankfurt with new FINCH ice nuclei chamber and static diffusion chamber FRIDGE. FINCH was already successfully used during CLACE measurements on Jungfraujoch station. FRIDGE shall provide climatology of IN concentrations in lower troposphere.

Zbigniew J. Ulanowski: Contribution of Uni Hertfordshire, in particular getting information about shape and scattering properties of ice crystals in both mixed-phase and cirrus clouds. Modelling of ice crystal scattering properties are also planned, with RTDF model approach from geometric optics.

Frank Stratmann: Overview of WP L2 with LACIS experiments at IfT in Leipzig. Focus on hygroscopic growth (up to 99.5 % RH) and CCN activation (from 0.1% supersaturation), but IN investigations are also planned to temperatures of -50°C. The same aerosols and, if possible, aerosol generators should be used in the different labs. Aerosols of interest are soot and minerals coated with sulphuric acid, ammonium sulphate, dicarboxylic acids. Process modelling will contribute to WP-M1.

Olaf Stetzer: Work of ETH Zurich within WP-L3 and contribution with novel ZINC and PINC ice nuclei chambers to AIDA experiments within WP-L1. Own IN experiments in Zurich are also planned. The group could also contribute to experiments within WP-L2 and WP-L4.

Thomas Mentel: Overview of work planned within WP-L4 with SAPHIR experiments at Forschungszentrum Jülich, and short description of planned contribution to AIDA and LACIS experiments with gas-phase and aerosol mass spectrometry. The latter will be coordinated with aerosol mass spectrometry also available from the Uni Mainz and the Uni Manchester (within APPRAISE). The SAPHIR campaigns will be coordinated with activities within the EUCAARI project. Dates for EUCAARI campaigns are Sep/Oct 2007, Jun/Jul 2008, and Aug/Sep 2008. A specific VI-ACI campaign is planned for first half of 2009. A flight of the FZ Jülich Zepellin with aerosol instrumentation could be planned as a follow-up activity of the VI-ACI.



Bernd Kärcher: Overview of work to be done towards the representation of microphysical processes, in particular heterogeneous ice nucleation, in models. The DLR-IPA contributes process, cirrus cloud, and climate modelling studies within WP-M1, WP-M2 and WP-M3, also in cooperation with LMU Munich as a further university partner. One focus will be the indirect effect of aircraft emissions on cirrus clouds. The climate modelling is performed in close cooperation with ETH Zurich.

Ulrike Lohmann: Cloud process and climate modelling contribution of ETH Zurich to WP-M2 and WP-M3.

Zev Levin: Contribution of the Tel Aviv University to WP-L2 with a 2D cloud model with detailed aerosol and ice microphysics. The sensitivity of IN processes on e.g. precipitation will be investigated. A comprehensive IAPSAG report on aerosol-cloud processes is available from Zev.

Summary of the general discussion of the work packages:

Work package WP-L1 (AIDA, O. Möhler):

Four AIDA activities are planned (see also attached time table):

1. AIDA ice nucleation workshop, Sep 2007:

Main goal is comparing ice nucleation instruments.

Participating VI-ACI partners: U-F, U-HD, ETH, U-HS, U-TA.

2. Ice nucleation campaign Nov 2007:

Already scheduled with participation of U Manchester and LaMP Clermont-Ferrand

Main focus on ice nucleation effects of organic coating and organic acids.

Participating VI-ACI partners: ICG-2, U-HD, IfT, U-HS.

3. AIDA VI-ACI campaign Feb 2008:

Main focus on heterogeneous ice nucleation in mixed-phase clouds

Aerosol to look at:

- Untreated and coated mineral dust
- Comparison of manufactured (e.g. montmorillonite) and natural sample
- Bacteria

Participating VI-ACI partners: ICG-1, U-F, U-HD, ETH, U-HS.

4. AIDA VI-ACI campaign Oct 2008:

Main focus on heterogeneous ice nucleation in cirrus clouds

Aerosol to look at:

- Untreated and coated mineral dust
- Comparison of manufactured (e.g. montmorillonite) and natural sample
- Aircraft-emitted soot particles coated with organics and sulphuric acid.

Participating VI-ACI partners: ICG-1, U-F, U-MZ, U-HD, ETH, U-HS.

Work package WP-L2 (LACIS, F. Stratmann):

Work package WP-L3 (ZINC, O. Stetzer):



Work package WP-L4 (SAPHIR, T. Mentel):

Work package WP-M1 (Process modelling, S. Benz):

Work package WP-M2 (Cloud modelling, U. Lohmann):

Work package WP-M3 (Climate modelling, U. Burkhardt):

Further decisions and information:

Mrs. Bertheau (legal affairs) (Christiane.Bertheau@ra.fzk.de) informs about details of the cooperation agreement. Correspondence should be made directly to her.

Mr. Schaefer (finances) (Martin.Schaefer@hf.fzk.de) informs about details of money transfer and reporting. Correspondence in English should be made via Thomas Leisner.

We need to write annual scientific reports, which will be collected from the WP- Speakers and assembled by the steering committee. The annual report is due in February of the following year.

The partners send their budget requests and cost justifications (see contract) to Thomas Leisner.

The official project start remains April 1, 2007. If necessary the duration of the project can be extended.

All presentations during the kickoff meeting will be made available on a password-protected area of the VI-ACI homepage.

Work package WP-M1 (process modelling) will be coordinated by Stefan Benz.

Zev Levin suggests, as the program chair of the ICCP conference July 2008 in Cancun, Mexico, to organize a special session about AIDA campaigns and related work within the VI-ACI and other projects during that conference.

The first annual meeting of the VI-ACI will be hosted by the ETH Zurich. The suggested date is May 5/6, 2008 (needs to be confirmed).



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