

Report of the 3rd COPS & GOP Workshop

held on April 10 and 11

at University of Hohenheim

62 persons participated in the 3rd COPS & GOP Workshop

The list of participants and copies of all presentations are available at the COPS webpage at http://www.uni-hohenheim.de/spp-iop/3rd_COPS_WS/3rd_COPS_workshop.html.

1) Funding of COPS and GOP by DFG

COPS Coordination and COPS Project Office will be continued as planned.

COPS Coordinator: Andreas Behrendt, University of Hohenheim

COPS Project Office at University of Hohenheim, Stuttgart, Germany

The GOP is funded as proposed. For details see presentation at COPS webpage.

GOP Coordinator: Mario Mech, University of Cologne.

Half a scientist position is funded for each the COPS Operations Center and the COPS/GOP/DPHASE data archive (see below).

For a list of the COPS instruments for which funding by the German Research Foundation is confirmed see Appendix 1.

For instruments proposed by international partners, see presentations at COPS webpage.

Aircrafts:

Overall flight coordination is performed by Heinz Finkenzeller, DLR.

DLR Falcon FA20, 45 flight hours, end of June - early August, based in Oberpfaffenhofen

TU-BS Do 128, 100 flight hours, mid of June - mid of August, based in Karlsruhe/Baden-Baden

French SAFIRE FA20 (proposed), 40-45 flight hours in July, with LEANDRE2 water vapor DIAL

UK Cessna (proposed), based in Karlsruhe/Baden-Baden

UK FAAM BAe 146 (proposed), based in UK, 40 - 50 flight hours in July

Learjet, Max-Planck Institute for Chemistry Mainz, 20 flight hours within TRACKS

Zeppelin NT, Research Center Jülich, within TRACKS, (in preparation but not yet confirmed)

For additional flight hours: **EUFAR proposals**

10 - 12 flight hours per proposal

proposal by "young" applicants for foreign aircraft

e.g., intercomparisons etc.

Webpage: <http://www.eufar.net/?page=TA>

2) Common Data Implementation Plan for COPS/GOP/DPHASE is in preparation

The data archive for COPS, GOP, and MAP DPHASE data will be organized by the Model & Data group of the Max Planck Institute for Meteorology (MPIfM), Hamburg, who is also hosting the World Data Center for Climate (WDCC, <http://www.mad.zmaw.de/wdcc/>). After syntax quality checks, the observation data acquired within COPS and GOP will be archived with quicklooks and together with related model outputs (forecasts and analyses of models of weather services and research models). Access to the data will be by a data bank structure, which allows for extracting data by a range of selection criteria.

Responsible coordinator for the archive: Claudia Wunram.

A data implementation workshop was held on 26.-28.4. in Offenbach. Real-time data assimilation issues, requirements for DPHASE, visualization of model results for mission planning were discussed.

A draft version of the Common Data implementation Plan for COPS/GOP/DPHASE has been prepared and will be distributed before the next COPS workshop.

All observational data shall be stored in NetCDF format (prescribed format; if feasible in the same structure as the AMF data for the same types of instruments; consistent during COPS)

Instrument intercomparisons before COPS at AMF site?
Intercomparisons DLR-DIAL, LEANDRE2 with ground-based water vapor profiling instruments.

Data policy see COPS Science Overview Document.

3) COPS Operations Plan

The scientific and logistic management of the COPS campaign will be subject of the COPS Operations Plan (OP). The OP will contain all information necessary and critical for the successful operations (see, e.g., MAP Implementation Plan, <http://www.map.meteoswiss.ch/map-doc/mip.htm>, IHOP_2002 Operations Plan, http://www.atd.ucar.edu/dir_off/projects/2002/IHOPdocs/opsplan.doc) and will be updated continuously until the field phase.

The OP will contain the following information

- Descriptions of the COPS missions with typical meteorological situations,
- Description of all instruments with measured parameters, operation modes, logistical requirements (for the German instruments proposed here, this information has already been collected),
- Briefing and debriefing procedures,
- Communication plan for sites, operation center, airbase, aircraft, and scientists,

- Communication plan for data flow (operational and COPS-specific data),
- Forecasting system, responsible forecasters,
- Air traffic control issues,
- Alerting procedures for the investigators in the field,
- Names and responsibilities of operation manager, missions leaders, supersite managers,
- Details of the Operation Center Data Management System
- Procedures for decision making
- Data management (but details will be described in the Common Data implementation Plan for COPS/GOP/DPHASE)

The COPS OP is in preparation. A first version will be distributed in early September when (probably) the outcome of the large UK, French and US proposals are decided.

4) COPS Operations Center

The **COPS Operations Center** will collect and distribute all information necessary for guiding COPS, i.e., the closely coordinated operation of all participating measurement systems. It also is the interface between modelers and experimentalists. The OC tasks are defined to:

- Monitor meteorological conditions and alerting all COPS investigators
- Allow decisions about missions,
- Collect all data and information needed to make decisions,
- Distribute all operational information to the COPS investigators
- Inform all COPS investigators about ongoing activities on intensive observations periods within COPS,
- Assist COPS investigators logistically,
- Manage an advanced information system (see below).

Members of the OC will be the WG Chairs, the COPS coordinator, members of the ISSC, Principal Investigators, and other experienced scientific and technical staff. The center will be either located at IMK, University of Karlsruhe, or at the airport Karlsruhe Baden-Baden. The center will be equipped with state-of-the-art communication technique.

Half a scientist position for coordinating the COPS-OC is funded by DFG.

5) International coordination

see presentations on MAP D-PHASE, ETReC07, and TRACKS at COPS webpage

6) Miscellaneous

- A questionnaire will be sent to modeler and instrument PIs for assessing the data archiving needs (UHOH & M&D Hamburg)
 - * Data amount in NetCDF including quicklooks

- * Real-time or non real-time?
- * Definition of variables
- * Error analyses

- Contracts and transfer of DFG funding (UHOH, in preparation)
- Meeting with AMF representatives concerning data handling, data polity, AMF logistics (ARM, M&D, COPS coordinator, middle of May 2006)
 - * To be discussed: link to AMF data or mirror of the data
- Ground-based instrument logistics have been started

Note: **The instrument PIs are responsible for getting the permissions to operate their instrument (radar, lidar etc.)**
- First draft of Operations Plan (UHOH, FZK, COPS Proposal PIs, up to early September 2006)
- Operations Center until Summer 2007
- Data workshop (M&D, Autumn 2006)
- Next COPS Workshop (September 25-26, 2006)

Other related upcoming events:

STISS

The Second THORPEX International Science Symposium (STISS) will be held in Landshut, Germany on 4-8 December 2006.
 Deadline for the submission of short abstracts is 30 June 2006 (deadline was extended).
 More detailed information is being filled in our STISS web-site under <http://www.pa.op.dlr.de/stiss/>
 The online Registration Form will be posted on the THORPEX website http://www.wmo.int/thorpex/2nd_Symposium.html

MAP D-PHASE

The first MAP D-PHASE scientific meeting which will take place from 6-8 November 2006 in Vienna.
 Deadline for short abstracts: 10 July
 Information about acceptance (drafted programme ready): 15 August
 Extended abstracts and early registration deadline: 15 September
 Further Information & Contact:
 More details including venue and hotel information will shortly become available at the websites: http://www.map.meteoswiss.ch/map-doc/dphase/dphase_info.htm and http://www.meteorologie.at/dphase_info.htm (website of the Austrian Meteorological Society) or contact by email: manfred.dorninger@univie.ac.at.

Appendix 1. COPS Instruments for which DFG funding is confirmed

Instrument	Measured Parameters/Type	PI	Institution
Airborne			
DLR Falcon	Aircraft + H2O Lidar + Doppler Lidar + Drospondes	Ehret	DLR
DO 128	Aircraft, in-situ meteorological and turbulent flux measurements, surface temperature	Corsmeier	FZK
Ground-based Lidars			
UHOH Water Vapor DIAL, scanning	4-d high-resolution, high-accuracy water vapor, aerosol backscatter, wind field by aerosol tracking, cloud structure	Wulfmeyer	U. Hohenheim + IFT + U. Potsdam + DLR
UHOH Rotational Raman Lidar, scanning	Temperature & aerosol profiles, cloud structure	Behrendt	U. Hohenheim/ COSI-TRACKS
WindTracer, scanning	LOS wind & aerosol profiles, cloud structure	Wieser	FZK
MWL & WiLi	Multi-wavelength aerosol optical properties, depolarization + vertical wind + radiosondes	Althausen	IFT
Radiometers			
HATPRO, scanning	MW radiometer, temperature and water vapor profiling, stability index, LWP	Crewell	U. Munich
MICCY, scanning	MW + IR radiometer, temperature and water vapor profiling, stability index, LWP	Simmer	U. Bonn
Radars			
POLDIRAD, C-Band, Dopplerized, scanning	Rain rate, hydrometeor distribution, LOS wind, drop size distribution	Hagen	DLR
Karlsruhe Radar, C-Band, Dopplerized	Weather Radar, C-band, scanning	Beheng	FZK
UHOH X-Band	Precip radar	Schaberl	U.Hohenheim
IMK Cloud Radar	Cloud Radar	Beheng	FZK

UHH Cloud Radar	Cloud radar	Peters	U. Hamburg
MRRs	Micro Rain Radars (funded within GOP for 12 months)	Peters	U. Hamburg
GPS			
GPS Network	GPS, 5 additional stations for COPS	Gendt	GFZ
WTR + Sodar + RASS			
WTR	Mobile wind temperature radar	Vogt	FZK
2 Sodars	Sodar	Kalthoff	FZK
Sodar-RASS	Sodar, RASS	Foken	U. Bayreuth
Flat array sodar	Sodar	Mayer	U. Freiburg
Surface in-situ			
2 Energy balance stations		Kalthoff	FZK
5 Turb. Towers		Kalthoff	FZK
SISOMOP	Soil Moisture sensors	Hauck	FZK
Rad.-Tur. Cluster	3 Energy balance stations + Bowen ratio system + Scintillometer	Foken	U. Bayreuth
12 Automatic Weather Stations		Smith	U. München
Masts + tethered balloons			
4 MMM	Micro-Meteorology-masts, comb. w. Drop-up sondes	Kalthoff	FZK
12-m Mast		Foken	U. Bayreuth
Hartheim site		Mayer	U. Freiburg
Tuttlingen site		Mayer	U. Freiburg
Radiosonde stations			
2 Mobile RS Stations		Kalthoff	FZK
Drop-up sondes	Advanced radiosondes (30 sondes, 5 kits)	Corsmeier	FZK