

Working Group 4 Meeting – 28 June 2005

Hans-Stefan Bauer and George Craig

Participants:

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At the start of the discussion, each participant briefly described what he/she is doing and is planning to do for COPS. This is summarised by the following keywords (for details please contact the individuals directly):

George Craig:

- Limited-area ensembles (COSMO-LEPS)
- Latent heat nudging of radar data
- Ensemble-Kalman Filter
- Predictability (relative importance of large-scale versus local forcing)

Reinhold Steinacker:

- Experience from MAP FDP
- Real-time validation / verification software available
- Operational modes for models used at the Austrian Met Service, ECMWF, ...
- Independent of the COPS funding
- Needs real-time data access

Günther Zängl:

- Model sensitivity experiments using MM5
- Interaction of different physical packages

- Interesting for ensembles with different physical packages, which gives a better spread of the model for short-range forecasts
- 2nd phase of the SPP1167 – non-COPS related funding

Heini Wernli:

- Verification study (2nd phase of the SPP 1167 – non-COPS related funding)
- Model sensitivity studies (COSI TRACKS) with LM

Olivier Riviere:

- Sensitivity of model to humidity
- At the moment large-scale models à extension to mesoscale models is planned.

Evelyn Richard:

- Point of contact for the French participation to COPS
- Water Vapour measurements during COPS (Cyrille Flamant)
- Mesoscale modelling
- Precipitation interaction with topography
- AROME 3DVAR using radar reflectivity data
- Forcing of mesoscale model from observations instead of analysis.

Galina Dick:

- Integrated water vapour from GPS (~ 200 stations)
- First assimilation experiences with LM (code to assimilate the data into LM available)
- Slant path measurements
- Tomography
- Verification of tomography results in the COPS domain with a high-resolution network.

Michael Bender:

- GPS water vapour tomography
- Program code available which calculates 3D water vapour information from the different GPS data sets.
- Variable resolution depending on the station density

Hans-Stefan Bauer, Matthias Grzeschik:

- Assimilation of new observing systems using existing assimilation systems
- MM5, WRF, LM

- At the moment airborne DIAL data and drop sondes
- Implementation of water vapour Raman lidar and wind lidar is also planned.
- Implementation of additional systems planned for LAUNCH 2005
- Investigation of the influence of the assimilation of the additional observing systems

Hans-Volkert:

- MAP experience à COPS
- Data handling à GTS system
- Wind lidar / Poldirad
- Close the gap between modellers and the “research managers” who are planning the missions

Leonhard Gantner:

- Verification of precipitation in the LM using different resolutions
- With a minor focus: variation of physics
- Model verification during COPS
- Funded by COPS
- COPS planning and preparation group

Cornelia Schwierz:

- Verification of aLMo precipitation forecasts
- Model domain of aLMo covers the COPS region
- Modelling studies for selected cases
- Influence of boundary conditions to model forecasts
- Funded by Switzerland

Outcome of the Discussion

Contribution to COPS Proposal:

Three groups are considering applying for support with the COPS proposal for real-time or near real-time modelling activities: Hohenheim (Bauer), DLR (Craig) and Karlsruhe (Gantner). Real-time is here defined as production of forecasts using data measured in COPS, with the potential of providing forecast information to the operations centre; near real-time is production of hindcasts using COPS measurements within a couple of days. In both cases the goal is to support the experiment by providing feedback on data impact that can be used in the design of subsequent missions, and, in the case of real-time data assimilation to provide forecasts of specific events.

Needed data:

As input to the other working groups, a list was prepared of data that could potentially be assimilated, along with a list of additional data that might not be assimilated but would be important for verification.

Verification (in addition to assimilation data)	Assimilation
<ul style="list-style-type: none"> • Rain Gauges • All kinds of ground based instruments providing data at least in near-real time. • Soil moisture 	<ul style="list-style-type: none"> • Analyses data • Special data collected during the campaign (lidar data for water vapour and wind, dropsondes, ...) • GPS (real time) • MWR • Polarization radar (reflectivities and more) • GTS observations providing conventional meteorological observations

Timetable:

It was emphasised during the discussion that it will be very important to set a suitable timetable for data availability to enable real-time applications.