QUEST MEETING Berlin on 7./8. April 2010: Protocol

Participants

DLR	Christian Keil (CK), Peter Sinigoj (PS)
DWD	Axel Seifert (AS)
FUB	Jürgen Fischer (JF), Stefan Stapelberg (SS), Cintia Carbajal Henken (CC)
IGMK	Susanne Crewell (SC), Sonja Eikenberg (SE), Mario Mech (MM)
KUL	Tim Böhme (TB), Kwinten van Weverberg (KW)
ZMAW	Felix Ament (FA), Anja Ludwig (AJ), Nicole Feiertag (NF), Suraj Polades (SP)

Wednesday, 07 April 2010

11:00 Jürgen Fischer: Welcome
All: Introduction

11:15 Susanne Crewell: *AMF-COSMO*
- QUEST partnerships
- discussion topics
- QUEST strategy
- case study approach
  - (AS) traking of systems difficult due to: different initiation time, mountain drag on synoptic systems, random difference in the synoptics
  - (AS) reflectivity time series are not robust statistics
- long term evaluation
  - How will we get the results together?
- QUEST publications
- upcomming publications (see end of minutes)
- vertical distribution of different clouds in observations and models
- RRTMG implementation into COSMO-DE by Yen Wenchien

12:30 Lunch

14:00 Stefan Stapelberg: *Cloud Mask Comparison: MSG to COSMO-EU/-DE*
- comparison should be done on the same area: coarser grid to get rid of the thresholding problem
- model is constantly changing and one should be aware of these changes when doing long term evaluation
- (AS) is not aware of the lack of a diurnal cycle in cloud fraction
- separation of cloud fraction comparison into land and ocean parts
- Due to (AS) once hydrometeors are transfered from non-precip to precip columns (?) they are not seen by the cloud mask algorithm anymore
- (SE)+(SC) will check if the lack of a convective peak in cloud cover scheme can be reproduced in AMF observations

Sonja Eikenberg: *Validating GME, COSMO-DE, and COSMO-EU IWCs with CloudSat CPR data*
- (AS) PDF-plots are not the ultimate statistics; (SC) it depends on the purpose
- (AS) QUEST should come to a conclusion for the high clouds in the models
- (AS) the cloud mask product derived from CALIPSO and CloudSat observations should be

used

Anja Ludwig: *Validating GME, COSMO-DE, and COSMO-EU IWCs with CloudSat CPR data*

- (JF) Why is the diurnal cycle of the GPS observations not that smooth (especially in the evening)?

17:00 Nicole Feiertag: *Lagrangian verification of COSMO-DE precipitation forecasts*

- radar is best in resolving structures, and this work takes advantage of this in concntrating on cells
- PUBLISH this stuff!!!!
- Bachelor student will continue this work
- this kind of investigation could be installed and run routinely at DWD

Tim Böhme: *Analysis of convective and frontal case studies of summer 2007*

- comparisons are to subjective. it has to be kept in mind that 5dBz is a lot

Thursday, 08 April 2010

10:00 Kwinten v. Weverberg: *Impact of size distribution assumptions on surface precipitation and storm dynamics during a low-topped supercell case*

- (FA)+(AS) random changes in the setup of initial conditions could produce the same results of surface precipitaion differences in the order 10-15%

Kwinten v. Weverberg: *Improvement of clouds and quantitative precipitation forecast during convective and stratiform intense precipitation events on convection-resolving scales*

Axel Seifert: *Current work at DWD*

- Runge-Kutta core reduces accumulated precipitation bias in winter, but increases bias in summer. Besides, orographic structures are smoothed out => too weak orographic enhancement
- Wet bias in COSMO models has not only to do with numerics
- density correction on fall velocity effects orographic precipitation
- densitiy correction might soon be operational in GME (April), introduced in COSMO together with Runge-Kutta
- (AS) writes a publication about changed ccn
- aerosol-cloud-precip effect: polluted situation:
  - decrease in IWC, increase in LWC by a factor 2, increase in snow
  - but: no effect on average precipitation accumulation

Suraj Polades: *Evaluation of the atmospheric water cycle predicted by MAP D-Phase models using GOP observations*

14:30 Wrap up

- PQP kick-out meeting in Bonn
  - talks by (SS), (SE), (TB)+(KW)
  - ideas of QUEST and what did we achieve needs to be well formulated and presented

<u>Publications:</u>

- Akkermans et al.: try to work out whether the uncertainties in snow amount are related to inaccurracies of the measurements or to model deficiencies. MZ
- Ament and Selbach: straight forward but hard to find time for writing
- Polade et al.: due to coordination of the long term efforts, first draft should be delivered

soon. during summer submissionto ACP

- Ludwig et al.: Evaluation of humidity, clouds, and precipitation in COSMO-CLM and MM5. to be submitted to MZ. hurry up!
- Feiertag et al.: perform the tracking of the convective system as well in the microphysical experiments performed by Axel Seifert and create pdfs of the cell sizes
- Eikenberg et al.: long term CloudSat-GME evaluation as a letter publication; distinguish between different regimes

(SS) plans to make some cloud optical thickness comparisons for the COPS period
(AS)+(SC) think about how snow could be included in the COSMO radiation scheme
(CK)+(PS) SynPolRad is now running and first comparisons are in progress

PQP-Special Issue in Meteorologische Zeitung: if we publish something in there „we can buy us free“ of writing a extensive QUEST report. Deadline is June 2010, but will probably extended

Next QUEST meeting in Offenbach, DWD on 20./21. October 2010!!!