announcement

workshop on

Data assimilation applications in large-scale models

November 7-8 2006
Aula, Mekelweg 5
Delft University of Technology
Delft

The ability to combine observations with a numerical model is critical to understanding and predicting geophysical systems. Large-scale numerical models are an important tool for making forecasts and for analysis in many areas. Data assimilation designates the use of a dynamical model, in combination with sparse and inaccurate, data, irregularly distributed in space and time, to infer the evolving state of the system being modeled. Two complementary approaches to data assimilation are currently in use, based respectively on *sequential estimation* and *variational methods*. The current research is focussed on the development of *computationally efficient methods* (reduced rank filters), the use of *non-linear and non- gaussian assumptions* (Ensemble type filters and particle filters) and application of advanced methods to real-life problems.

The workshop will provide participants with an understanding of the most recent advances and the most critical unsolved problems in this rapidly growing field. The aim of the workshop are to stimulate interaction about methods used in the various disciplines and the insights gained from engineering practice.
The use of the Kalman filters for *prediction* (EnKF, Particle filter, adjoint methods) and for *parameter estimation* (Kalman smoothers) will be highlighted and the attention in the workshop will be focussed on recent developments that are of interest to more than one application (atmospheric chemistry, oceanography, reservoir engineering).
Systematic errors of the models or of the observations(especially satellite observations) play a key role in data assimilation applications. The *bias* should be taken into account and demands a robust design to reduce their adverse effects in data assimilation schemes.

A number of international experts are invited speakers. There will be plenty of opportunity for discussion during and between sessions and during workshop diner.

Invited speakers

- **Olivier Talagrand**, CNRS- Laboratoire de Météorologie Dynamique, Paris, France.

- **Geir Evensen**, Norsk Hydro, Oil Energy Research Center, Bergen, Norway.

- **Dick Dee**, European Center of Medium Weather Forecast (ECMWF), Reading, England.

- **Dennis McLaughlin**, Department of Civil and Environmental Engineering Massachusetts Institute of Technology, Boston, USA.

- **Greg McRae**, Department of Chemical Engineering Massachusetts Institute of Technology, Boston, USA.

- **Peter Jan van Leeuwen**, Institute for Marine and Atmospheric Research Utrecht, Utrecht, The Netherlands.

- **Martin Verlaan**, Delft Insitute of Applied Mathematics, TU Delft, Delft, The Netherlands.

Abstract submission

We will have a mixture of invited lectures and shorts talks, as well as posters. Due to the fact that the workshop is only for two days will be a limited number participants (maximum of 40 participants (with or without presentation or poster), including the invited speakers).If you want to present a short talk or poster, you must send an abstract to Remus Hanea at r.g.hanea@ewi.tudelft.nl or Arnold Heemink to a.w.heemink@ewi.tudelft.nl before 30 Sept 2006. Include a title and abstract with the names of the presenter and co-authors and affiliation. Applicants will receive notice of acceptance after 6 October 2006. The abstract should be in ASCII text format (.txt or simply an ASCII email text) and not more that 500 words. You can assume that the readers know what the basic concepts are (Kalman filter, adjoint model, 4DVAR, etc.). Please indicate if whether you prefer a poster or oral presentation, although the final decision will be that of the organizers.

Registration

Registration is possible using the attached registration form or by E-mail to Remus Hanea. The conference fee is 60 Eur,- and includes, workshop dinner, lunches, tea/coffee. Please, register before 15 October 2006.

The organising committee,

R.G. Hanea (TU Delft)
A.W. Heemink (TU Delft)

For further information or comments please contact:

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Registration form

surname and initials:
first name:
title:
affiliation:
address:
telephone number:
fax number:
E-mail:
Internet page or ftp-site containing recent articles:
will attend workshop diner: Y/N
Remarks:

The above data will be used for the list of participants, which will be given to participants only, and for correspondence. If you want to exclude part of the information from the list of participants please add this as a remark. Some information on a nearby hotel is included. Reservations should be made directly with the hotel.