SESSION 2

WIND TRACKING FROM ABSORPTION CHANNEL DATA

Chairperson: A. Thoss

In this session papers were given on the use of various channels onboard METEOSAT and GOES satellites for wind tracking and height assignment.

The papers of A. Szantai and M. Desbois and the paper of H. Laurent demonstrated the great potential of METEOSAT WV channel for the tracking of high level winds. The coverage of winds near cloudy areas could be enlarged using WV imagery and the density of the field was increased. Motion fields derived were internally consistent.

The algorithm presented by H. Laurent has been run twice daily for several months on the operational suite at ESOC and verification results are encouraging. There is however scope for further improvements of the height assignment. Also some effort will have to go in the development of a refined automated quality control, since no resources are available for manual editing of this additional wind set.

Difficulties with METEOSAT WV winds occurred in dry regions. Due to a broad spectral definition of the WV channel, motions in these regions represent deep layer means of the middle troposphere. No research has been done to date in how to interpret or utilize these winds. They are only sparsely available although the research paper given by G. Büche demonstrated that the number of medium level motion vectors could be increased by using appropriate image filtering techniques.

P. Menzel gave the paper of R. Merrill on CIMSS algorithms. He explained concepts of height assignment using CO_2 slicing, computation of VAS WV winds and quality control using the auto editor. G. Kelly presented case studies using CIMSS WV and CO_2 winds in the ECMWF analysis system. Results are very encouraging and the quality seemed at least comparable with operational GOES IR winds.

To summarize it was demonstrated that there is a great potential in the WV channel for tracking of high level winds. Algorithms for both METEOSAT and GOES are very close to the stage of being implemented operationally. All efforts should be made to ensure a speedy operational implementation since the data could be of great value for the NWP community. Research activities need to continue to assess the potential value of deep layer WV motions derived in dryer regions.

Anke Thoss, Chairperson of Session 2
ECMWF