

## SESSION 3

# VERIFICATION AND IMPACT STUDIES OF OPERATIONAL WIND DATA

*Chairperson: D. E. Hinsman*

The session on verification and impact studies was lively and spirited. The dialogue and audience participation led to several important recommendations which will be summarized at the end of these comments. Setting the tone for the session were presentations by two keynote speakers.

The first keynote speaker, T. Fujita presented detailed arguments showing that it should be possible to achieve accuracies for wind extractions of the order of 1 m/s. His clear and well illustrated examples showed the need for more frequent scanning for use in wind extraction schemes than the present 30 minute interval. While not setting an absolute value, he showed that 5 or 7.5 minute intervals would be more conducive to improved accuracy and use in Numerical Weather Prediction. The audience strongly urged satellite operators to review their present modes of operations. A mix of rapid scans in small geographic areas which would cover the globe over a set period of time, for instance 6 or 12 hours, and full disc imagery could better optimize the overall system from not only a Numerical Weather Prediction viewpoint but also for forecasters.

The second keynote speaker, A. Thoss, presented the latest verification statistics from ECMWF for all the different wind producers. Her statistics included the performance during 1990 and clearly showed that Japan had made a major improvement in the accuracy of their winds based on a new technique which was described elsewhere during the Workshop. ECMWF has a comprehensive analysis system which identified all the standard statistical properties and showed the trends for accuracy during the last year. Based on ECMWF's analysis, they have developed a new "black list" which was also presented. A. Thoss indicated that the present analysis cycle at ECMWF was extremely robust with respect to satellite winds and that if more information was available concerning the satellite wind observations, then further improvements in model accuracies could be expected. Based on dialogue with the audience, it was most apparent that flag information and other auxiliary data should be included with the satellite observations when it is forwarded from the wind producer.

Other presentations covered detailed verification procedures and how satellite wind data has had a positive impact on numerical weather prediction for certain case studies. It was also noted that in the case of Australia, a non-satellite operator was producing satellite winds which will shortly be placed on the GTS. The potentiality for such a trend further highlighted the need for optimization.

To summarize the key recommendations from this session, the Workshop was of the opinion that:

- accuracies of 1 m/s could be locally achievable in the future with new and improved systems (e.g. rapid scan),
- the current mode of satellite operations may need to be changed,
- a more consistent verification procedure should be identified to enable a clear comparison of different satellites and different algorithms and,
- that there is a need for more information in the satellite wind observations to take advantage of numerical analysis schemes.

*Donald E. Hinsman, Chairperson of Session 3*  
*WMO*