SESSION 1

OPERATIONAL EXTRACTION OF CLOUD MOTION WINDS FROM CURRENT AND FUTURE GEOSTATIONARY SATELLITE SYSTEMS

Chairperson: T. Hamada

In this session, seven papers were presented by experts from all four operating agencies of geostationary meteorological satellites, NOAA, ESA and EUMETSAT, India and Japan, two operating agencies to be, Russia and China, and a cooperative user, Australian Bureau of Meteorology.

First of all, S. Takata, Meteorological Satellite Center of JMA, reviewed the improvements of Japanese cloud motion winds by the introduction of new height assignment procedures for these years and introduced CMW derivation in typhoon vicinity operated semi-routinely at Meteorological Satellite Center.

J. Schmetz and K. Holmlund, European Space Operations Center, ESA, also showed the improvements of the European CMWs. Both JMA and ESA showed their improvements of the CMWs by computing monthly trends of the differences from radio-sonde observation. This type of figure is very useful to understand these trends.

A. Bailey, NOAA/NESDIS, on behalf of R.J. Walter, Jr., presented the current status and planned upgrades of the operational wind extraction system on NOAA/NESDIS. They will begin producing Meteosat-3 CMWs and use them along with GOES-7 VAS gradient winds for NWP.

R.R. Kelkar, India Meteorological Department, explained recent improvement in cloud motion vectors derived from INSAT starting with the launch of INSAT-2A in July 1992. The CMWs are derived over the entire Indian Ocean at 00 and 12 UTC from INSAT-2A and at 06 UTC from INSAT-1D. Those operational derived CMWs showed a good agreement with both co-located AIREP winds and Japanese GMS CMWs derived by JMA.

A. Karpov and A.B. Uspensky, Hydrological Center of Russia, and J.E. Chen, Satellite Meteorological Center of China State Meteorological Administration, presented their planned cloud motion wind extraction. Both geostationary meteorological satellites, GOMS of Russia and FY-2 of China, will be launched in 1994. The CMWs data to be derived by both new data producers are expected to considerably reduce the data sparse areas on a global scale.

J. Le Marshall, Australian Bureau of Meteorology Research Center, presented operational wind derivation from GMS images in the Australian region and its impact on operational numerical weather prediction. He showed that the CMWs derived locally in the Australian region had improved their operational forecasts of Regional Assimilation and Prediction System and that the use of the winds in the Global Assimilation and Prediction System had resulted in a small but consistent forecast improvement.

Conclusions

1.   All CMW derivation systems implemented at geostationary satellite operating agencies were presented. This information is fundamental when discussing the quality and applications of the CMWs during this Wind Workshop and in future.

2.   Short-term interval images are very useful for deriving winds in the typhoon vicinity.

3.   Height assignment still remains a problem, but has been improved by the efforts of each operating agency.

Tadaaki Hamada, Chairperson of Session 1
Japan Meteorological Agency, Tokyo