SESSION IV

RAPID SCAN AND HIGH RESOLUTION STUDIES

Chairperson: J. Le Marshall

Madison, Wisconsin, and, in particular, the Space Science and Engineering Center, was a particularly appropriate environment for the reporting of 'Rapid Scan and High Resolution' studies. It was here, in the late 1970s, that Johnson and Suchman summarised the characteristics of vectors, generated from rapid scan imagery.

In this Session, the first study was from Nakamura et al. who reported on numerical weather prediction impact experiments, performed at JMA with Rapid Scan winds. They found that, although Rapid Scan winds are produced only once per day, around 04 UTC when a typhoon is present, their use in the JMA Global Spectral Model and typhoon models, the forecast typhoon location, central pressure and maximum wind speed are improved by using AMV data, in comparison with forecasts not using this high resolution data.

In a second study, by de Smet and Gustafsson at EUMETSAT, operational AMV products, derived from METEOSAT 6 Rapid Scan data, have been produced, every 30 minutes, using triplets of non-overlapping images. Their results showed that the number of high quality Rapid Scan winds is larger that that found from normal scan winds, for example from Meteosat-7, especially for visible and infrared channels. The results from these studies are being used in preparation for wind extraction for MSG, which is to be launched in mid-2002 and provide imagery, every 15 minutes.

The final study in this session was that of Berger and Velden, from the University of Wisconsin/CIMSS, which discussed the assimilation of GOES Rapid Scan winds into an experimental ETA model, during the 2000 and 2001 Atlantic hurricane seasons. Their study covered the use of Rapid Scan data for a number of assimilation experiments. They showed the initial upper air environment over some of these hurricanes and their initial assimilation results were promising.

Overall, the Session provided examples of a continuing trend towards the use of high spatial, temporal and, later, spectral resolution data for many applications, including numerical weather prediction. It is to be expected that increasing use of these data will be made as modern data assimilation methods such as 4-D variational assimilation become widespread.