

SESSION V

VERIFICATION AND OBJECTIVE QUALITY ANALYSIS

Chairperson: James Purdom

Session five covered verification and objective quality analysis of AMVs. The AMVs discussed were those determined using geostationary satellite imager data; exclusively visible and infrared data at about 10.8 and 6.7 microns. The first two presentations by C. Velden and K. Holmlund provided information on the two prevalent quality control schemes, the auto-editor (AE) technique of NESDIS and the quality indicator (QI) scheme of EUMETSAT. Both schemes are automated and have advantages and drawbacks; the AE provides better quality control information with regard to tracer height, and the QI provides better quality control information with respect to tracer speed and direction. Participants at the workshop were encouraged by the fact that NESDIS/CIMSS and EUMETSAT were working together to extract the attributes of each scheme into an optimised combined method that will provide complete vector information and reliability estimates for users. It was also encouraging to see that preliminary results from ECMWF using the combined information were positive. A paper by J. Schmetz explored dependencies of thin cirrus cloud height assignment on accurate infrared calibration; a 5% deviation in the water vapour radiance calibration causes about a 1 km height error. Sensitivity studies also indicate that cirrus cloud vectors are best assigned to levels within the cloud. P. Butterworth of UKMO presented their AMV monitoring results; difficulties with the GOES low level wind vector bias were noted but the causes were not understood. ECMWF monitoring results presented by F. Lalaurette noted reduced numbers of GOES AMVs at 600 UTC during the eclipse periods; a daily update of AMV coverage is available on <http://www.ecmwf.int>. It also pointed out the current need to thin high density wind products to about one third of the vectors for use in the analysis. A paper by G. Jedlovec presented an approach for assessing AMVs using structure functions; the proper balance of spatial and temporal resolutions was explored (4 km resolution infrared window images at 10 minute separation produce high quality cloud motion vectors if image registration is maintained to about 1 km). Finally P.N. Khanna presented improved infrared window height assignment approaches, but noted that significant advances are expected when water vapour radiance measurements become available on future INSATs.

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