SESSION 5

CONCLUSIONS AND RECOMMENDATIONS

Chairperson: G. Szejwach

Introduction

The purpose of this last session was to review the main conclusions and recommendations of the Workshop plenary sessions and the two panel discussions. Most conclusions and recommendations are listed in the dedicated Session Chairperson's report, therefore, the present summary repeats points addressed in these reports.

Main Conclusions

C.1 It is essential that all operational CMWs derivation systems implemented at geostationary satellite operating agencies continue to be presented and discussed to ensure quality of products in future.

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

C.3 Height assignment still remains a problem, but improvements were noted since the last Workshop.

C.4 Water Vapour (WV) winds seem to be of higher quality than IR channel winds for the tracking of HIGH level cloud feature. This is a new finding and changes the concept that WV channels should be considered solely as a gap filler in cloud free areas.

C.5 WV channels provide useful results in clear areas. The height assignment problem will be alleviated as numerical models will, in the foreseeable future, be able to use such wind data as deep layer means.

C.6 Progress has been made towards a continuous (i.e. hourly) extraction of WV wind data.

C.7 The technique using the H_2O channel is a viable alternative to the one using the CO_2 channel in the height assignment of semi-transparent cloud.

C.8 The significance of CMW collocation statistics was recently improved due to the availability of data from automatic aircraft reporting systems.

C.9 A first attempt to demonstrate the feasibility of inferring low level vectors by tracking moisture features in the IR Windows in cloud free regions was noted.

C.10 EUMETSAT announced the introduction of hourly wind fields derivation over the full disk as of the end of 1995.

C.11 Research at NESDIS/CIMSS indicate that the use of an improved autoeditor reduces speed bias and produces quality indicators that are useful for screening the data.

C.12 The problem of the dependence of the retrieved wind field on the model first guess remains an issue and needs further consideration.

C.13 ECMWF is now assimilating satellite derived wind fields from all availble geostationary satellites. The so-called "black-list" has been retired. However, additional efforts are still required on INSAT winds and in data sparse regions such as the Tropics.

C.14 The new ECMWF Variational Analysis offers several improvements over the current Optimal Interpolation.

C.15 Research activities concerning the derivation of CMW from Polar Orbiting satellites are ongoing and show some potential for future operations.

C.16 Tracking features (clouds, moisture gradients) in more frequent and shorter time interval multispectral image loops presents the opportunity to improve wind derivations in data sparse regions such as the Tropics.

Recommendations

R.1 To include where possible a 13μm CO_2 absorption channel on future spacecraft with a CMW mission.

R.2 To improve the temporal and spatial resolution of imaging in a way that improves the yield and quality of operational vectors.

R.3 To explore the feasibility of introducing 15-minute rapid scans on a routine basis for use in motion vector production.

R.4 To continue to provide information on Wind vector determination exchanged between operatorational centres to users.

R.5 To distribute (also) Wind vectors rejected after Quality Control with an appropriate quality flag and ancillary data.

R.6 To investigate the operational use of multi-spectral full resolution data noting their utility in cloud tracking and height assignment.

R.7 To investigate new forecast independent methods of tracking tracers.

R.8 To further investigate the development of a weighting function to be associated with WV winds.

R.9 To develop geometric methods as an aid to improving height assignment.

R.10 To undertake the generation of motion vectors over polar regions and to test their utility.

R.11 To produce hourly winds and to undertake studies of time continuous assimilation with mesoscale winds.

R.12 To conduct more research into the optimal use of forecast first guess fields in wind determination and to provide a clear description of the product generated while checking their quality through forecast impact studies.

R.13 To examine, in the context of the present pathfinder study, the use of WV winds for climate monitoring.

R.14 CMW producers to undertake local verification studies.

R.15 To perform case studies of intercomparisons in satellite overlap areas.

R.16 To add the following elements to the monthly comparison (or statistic) tables:

a) stratification with respect to the type of comparison systems
b) stratification with respect to the wind speed
c) provision of detailed reports twice a year
d) definition of co-location as a function of both space and time
e) provision of an indicator of how reference data were utilized during the CMW production
f) addition of variance to the statistical data base
g) inclusion of some indicator of height of best fit wind or the like in the statistics
h) addition or modification of the presentation method to include geographical distribution of comparison, time series to better view trends and comparisons with NWP

R.17 To continue to work together in a spirit of co-operation.

R.18 The Organisers of the current Workshop to report progress to CGMS and to invite CGMS Members to establish a CGMS Wind Working Group to provide guidance and support in order to facilitate the continuation of work in the field.

R.19 To consider a Third International Wind Workshop towards the end of 1995 in Europe.

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