CGMS-XXIX EUM-WP-27
Prepared by EUMETSAT
Agenda Item: III
Discussed in WG III

CGMS WORKING GROUP ON CLOUD MOTION WINDS: REPORT AT CGMS XXIX

The paper provides a report to CGMS from the Rapporteur for the Working Group on Cloud Motion Winds. The paper addresses the following points:

- The meeting summary of the 5th International Winds Workshop appeared in the Bulletin of the American Meteorological Society.
- The 6th International Winds Workshop will be held in Madison, USA, 7 – 10 May 2002.
- Input from the Japan Meteorological Agency on the use of Atmospheric Motion Vectors at NWP centres has been put on the EUMETSAT web page.
- The winds monitoring by the NWP Satellite Application Facility of EUMETSAT .
- A revised version of the 'Terms of Reference of the CGMS Working Group on Cloud Motion Winds' is presented for discussion at the WG meeting and subsequent approval by the CGMS 29 plenary.

CGMS WORKING GROUP ON CLOUD MOTION WINDS: REPORT AT CGMS XXIX

1. INTRODUCTION

The paper provides a report from the rapporteur of the CGMS Working Group on Cloud Motion Winds. It addresses the following topics:

a) Report from the 5th International Winds Workshop held at Lorne, Australia
b) Announcement of the 6th International Winds Workshop, to be held at Madison, USA, 7 – 10 May 2002
c) The use of Atmospheric Motion Vectors at NWP centres, which has been put on the EUMETSAT web page using the information provided by Japan Meteorological Agency in a paper to CGMS 28 entitled 'Summary of comments from NWP Centers represented in WGNE on the large differences in satellite wind observation errors assigned at NWP Centers'
d) Winds monitoring by the NWP Satellite Application Facility of EUMETSAT
e) A revised version of the 'Terms of Reference of the CGMS Working Group on Cloud Motion Winds'. It is also suggested to rename the working group 'CGMS Working Group on Satellite Winds'.

a) Report from the 5th International Winds Workshop held at Lorne, Australia

The Fifth International Winds Workshop (IWW5) was held in Lorne, Australia from 28 February – 3 March 2000. The Workshop was organized jointly by the University of Wisconsin Co-operative Institute for Satellite Studies (UW-CIMSS), EUMETSAT and the Australian Bureau of Meteorology (BoM). The BoM was successful in providing excellent workshop facilities in Lorne. The IWW5 was attended by 40 scientists from thirteen countries (Australia, China, Denmark, France, Germany, India, Japan, The Netherlands, Spain, Switzerland, Taiwan, United Kingdom and United States of America) and four international organizations (ECMWF, WMO, ESA and EUMETSAT). It is noteworthy that all satellite operators producing Atmospheric Motion Vectors (AMVs) operationally, and most global NWP centers were present. Scientists from both the research and scientific community working in this field were also well represented.

IWW5 also incorporated the recommendations given by the CGMS in the discussions that were held in three topical working groups. IWW5 concluded with a plenary session reflecting on the achievements of the workshop. The main achievements were found to be the increased utilization of AMVs including the quality indicators in global NWP. For the first time an NWP center (ECMWF) reported that AMVs have a positive impact not only in the Southern but also in the Northern Hemisphere. Of note is that the positive impact is comparable to that of the conventional rawinsonde network. Also, the large number of impact studies using different types of limited area and climate models was found to be encouraging, showing the huge potential of the AMVs in the future. The efforts to unify wind extraction and quality control procedures were also found to be a positive development as well as the flexibility of the new systems to adapt themselves to various kinds of observations. Especially the potential of rapid scans and new channels should be thoroughly evaluated. Also the extended potential of current and near future satellite platforms was encouraging.
A detailed report has been published in the Bulletin of the American Meteorological Society, 2001, Vol. 82, p. 1193 –1201, 'Fifth International Winds Workshop' by K. Holmlund, C.S. Velden and J.

LeMarshall.

b) Announcement of the 6th International Winds Workshop

The 6th International Winds Workshop will be held at Madison, USA, 7 – 10 May 2002. The Workshop is co-organised by Mr. Christopher Velden of CIMMS, Madison and Dr. Kenneth Holmlund of EUMETSAT. The first circular is in preparation and will be out well before the 29th CGMS meeting.

CGMS members are kindly requested to encourage and approve participation of their staff working on the development and monitoring of satellite tracked winds.

c) Use of Atmospheric Motion Vectors at NWP Centres

At CGMS-XXVIII the Japan Meteorological Agency provided a paper entitled 'Summary of comments from NWP Centers represented in WGNE on the large differences in satellite wind observation errors assigned at NWP Centers'. The paper presented a summary of comments from NWP Centers represented in WGNE on the large differences in satellite wind observation errors assigned at NWP Centers. This was done by JMA in response to an action from CGMS 27. The paper was very well received at CGMS-XXVIII and in subsequent discussions it was felt that the information shall be put on the EUMETSAT web page. This information is now avaialable under http://www.eumetsat.de/en/dps/mpef/windsuse.htm**.**

CGMS members are asked to consult this web page and provide feedback and updates as required.

d) NWP SAF integrated satellite winds monitoring

The NWP SAF has started to compile an 'Integrated Satellite Wind Monitoring Report (ISWMR)'. The monitoring is published on a web site and reports differences between satellite wind observations and short-range NWP model forecasts. A more detailed paper has been provided by Pauline Butterworh of the UK Met Office and is presented as paper CGMS-XXIX EUM-WP-25 entitled 'Update on the NWP SAF integrated satellite winds monitoring report'.

WEB SITES

- The ISWMR is available at http://www.metoffice.com/sec5/NWP/NWPSAF/satwind_report
- The First ISWMR Analysis Report is available at http://www.metoffice.com/sec5/NWP/NWPSAF/satwind_report/SAF_2000.html
- The NWP SAF homepage is at http://www.metoffice.com/sec5/NWP/NWPSAF/

CGMS members are invited to provide feedback on the web site to pauline.butterworth@metoffice.com with copy to schmetz@eumetsat.de.

e) Revision of the 'Terms of Reference of the CGMS Working Group on Cloud Motion Winds'

It is proposed to slightly revise the 'Terms of Reference of the CGMS Working Group on Cloud Motion Winds' in order to capture the actual conduct of the work. Modifications are given in **bold** and deletions (current version) are in *italic*.

It is also proposed to change the name of the Working Group to a more comprehensive and general name 'CGMS Working Group on Satellite Derived Winds'.

TERMS OF REFERENCE OF THE
CGMS WORKING GROUP ON (*CLOUD MOTION WINDS)*
SATELLITE DERIVED WINDS

1. Background

The Working Group on **Satellite Derived Winds (WG-SDW)** was established as a permanent Working Group at the 22nd meeting of the Coordination Group for Meteorological Satellites (CGMS) in Annapolis, MD, USA, 11-15 April 1994 **under the name Cloud Motion Winds (WG-CMW)**. **CGMS 29 in Capri, Italy, 22 – 25 October 2001 changed the name of the working group.** The WG-**SDW** (*CMW)* was established to pursue an objective of CGMS which is to encourage complementarity and compatibility in meteorological data products and to complement the work of other international satellite coordination mechanisms. A long time task of CGMS has been the routine exchange of validation statistics of routine inter-comparisons of (*Cloud)* **Atmoshperic** Motion Vectors from the Geostationary satellites. CGMS has also encouraged an increase of scientific research in this field. This WG is established to place greater emphasis on the coordination of operational and research efforts in the derivation of (*Cloud)* **Atmospheric** Motion **Vectors** (*Winds)*. **Although the WG emphasises the derivation of winds from the tracking of features in satellite image, other principles of deriving wind fields from satellite are addressed too.**

2. Purpose

This Working Group on (*Cloud Motion Winds (WG-CMW))* **Satellite Derived Winds** is established to continue and emphasize the CGMS accomplishments and objectives in the area of operational extraction of (*Cloud)* **Atmospheric** Motion **Vectors** (*Winds*) **(AMV)** from satellite data. This emphasis includes the coordination of complementary and compatible operational procedures, the development of common verification and validation procedures, and the encouragement of a robust programme of scientific research in this technology.

3. Objectives

(a) To devise and implement regular procedures for the exchange of data on inter-comparisons of operational **AMV** (*CMW)*;

(b) To promote harmonization and, where feasible/practical, the standardization of operational procedures for deriving **AMV** (*CMW)*;

(c) To establish agreement for standards in the verification and validation of **AMV** (*CMW)* derived from satellite data. This includes the :
- selection of data sources for validation, standardization of statistical parameters to be used for verification and inter-comparison,

- standardization of verification criteria, i.e., standard windows in space and time for collocations and standard criteria for the acceptance (or consideration) of the validation data.

(d) To promote increased scientific activity in this field, and to establish routine means of exchanging scientific results and progress;

(e) To establish and encourage a regular dialogue and information exchange with the users of the data. This should include both scientific and operational exchanges in order to:
- agree on the designation of data quality as a part of the delivery of the data (e.g., quality flags),
- agree on modifications to data formats and codes, and
- discuss means of verifying the usefulness and quality of the data for numerical analysis and prediction.

(f) **To make recommendations to national and international agencies regarding the utilization of current and the development of future satellite instruments on both polar and geostationary satellites**.

4. Membership

The Working Group shall be comprised of representatives nominated by the satellite operators of the CGMS or by other members of the CGMS. The CGMS or the WG-**SDW** (*CMW)* may invite experts from the user community to participate in the activities of the group. (*The CGMS should consider a balance of producers of the (CMW) and scientists working in the field for membership in the Working Group).*

5. Working Arrangements

The Working Group will be chaired by a chairperson or jointly by two co-chairs, who are appointed by the plenary of the CGMS. The interactive connection with satellite operators and the CGMS Plenary will be performed through the use of a Rapporteur who will attend and report to the CGMS meetings. The Rapporteur with the support of the Co-Chairs shall compile a report on relevant activities for the scheduled plenary meetings of the CGMS.

Under the lead of the Chairperson(s), the WG-SDW will organize Workshops, co-sponsored by CGMS and WMO, approximately every two years. The Workshops will promote the exchange of scientific and operational information between the producers of satellite derived wind products, the research community, and the user community.

The Working Group will meet on an ad-hoc basis, but at least once a year to review progress in the field. The CGMS can request a meeting at any time. The Chair of the Working Group is appointed by a plenary of the CGMS, and serves at the pleasure of the plenary. The Chair shall report activities of the committee at the scheduled plenary meetings of the CGMS. The members of the WG-CMW are to forward their contributions to the WG Chair in time for the annual report by the chair to the CGMS plenary.

The WG-CMW will organize Workshops, co-sponsored by CGMS members. The Workshops are to promote the exchange of scientific and operational information between the producers of CMW, the research community, and the user community. The Workshops may be held very

two years, or as required by the judgement of the WG Chair).