CGMS-XXXI EUM-WP-24
Prepared by EUMETSAT
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Discussed in WG III

PREPARATIONS FOR THE 7th INTERNATIONAL WINDS WORKSHOP

The paper provides a brief update on the preparation of the 7th International Winds Workshop (IWW7). This workshop, originally planned for October 2003, had to be postponed and will be held in June 2004 in Helsinki, Finland. The paper recalls actions and recommendations from CGMS XXX to IWW7 and invites Working Group III of CGMS to amend and re-formulate recommendations and actions for IWW7 as required.

PREPARATIONS FOR THE 7th INTERNATIONAL WINDS WORKSHOP

1 INTRODUCTION

This paper provides a summary to CGMS XXXI by the rapporteur to CGMS WG III. As no International Winds Workshop has taken place since CGMS XXX in Bangalore the paper is just a brief summary of points relevant to the conduct of IWW7.

2 7TH INTERNATIONAL WINDS WORKSHOP

The 7th International Winds Workshop was planned to take place in Beijing from 20 - 23 October 2003 back-to-back with the International TOVS Study Conference. Unfortunately both workshops had to be cancelled. IWW7 was postponed and is now planned for 14 - 17 June 2004 in Helsinki, Finland, following an invitation of the Finnish Meteorological Institute.
In preparation of IWW7 the Working Group III on 'Satellite Derived Winds' at CGMS XXXI is kindly asked to formulate a strong plea to the plenary of CGMS XXXI to request all CGMS members to plan for and approve the participation of their experts on “wind retrievals from satellites”. CGMS members should also reach out to their user community (e.g. national numerical weather prediction centres) and trigger participation from that community.

3 RECALLING ACTIONS AND RECOMMENDATIONS PLACED ON IWW7 BY CGMS XXX

At CGMS XXX EUM-WP-24 provided a summary of and recommendations from the Sixth International Winds Workshop (IWW6) held on 7-10 May 2002 in Madison, Wisconsin, USA.

This section recalls the actions and recommendations that CGMS XXX placed on the next International Winds Workshop and gives WG III at GCMS XXXI an opportunity to reconsider and or sharpen the relevant recommendations. The passages in italic are directly taken from the final report of CGMS XXX.

IWW6 featured for the first time a session and working group dedicated to mesoscale applications. Discussions led to the following two actions:

ACTION 30.30
NOAA/NESDIS is invited to report on the ‘auto-nowcaster’ at CGMS XXXI.

ACTION 30.31
The co-chairs of IWW7 are requested to invite representatives of the regional scale modelling community to the next IWW.

As a result of a discussion on height assignment of AMVs and recalling recurrent discussions at previous CGMS meetings, WG III considered it timely to address the

problem in a systematic manner. This was seen as a task for the next IWW, which should establish an inventory of all height assignment methods used for low-, medium- and high-level AMVs.

ACTION 30.32
IWW7 is invited to establish an inventory of all height assignment methods used for low-, medium- and high-level AMVs.

Here it is noted that EUM-WP-27 provides a first cut at the problem by reporting preliminary results from standard height assignment techniques as applied to data from the SEVIRI instrument on Meteosat Second Generation which carries an imager with water vapour channels and a channel sensitive in the CO_2 band at 13 μm.

WG III iterated the potential to extend the processing to MODIS on the Aqua satellite and placed a pertinent action on NESDIS.

ACTION 30.33:
NOAA/NESDIS is invited to present a paper on AMVs from both MODIS instruments on Terra and Aqua satellites, respectively, at IWW7.

In view of the tremendous success of the polar winds from MODIS and the fact that the vast majority of the MODIS polar wind vectors come from tracking water vapour imagery, WG III recommended that water vapour channels should be flown on future imagers in polar orbit.

Recommendation:
Future imaging instruments on polar-orbiting satellites should have imaging channels within strongly absorbing water vapour bands in order to allow for the derivation of AMVs from successive and overlapping overpasses.

Here WG III is informed that the VIRI-M imager, that potentially replaces AVHRR on the 3rd EUMETSAT Polar satellite (Metop series), includes a water vapour channel as additional channel with high priority.

The positive results from rapid scans *reinforce earlier recommendations to satellite operators to perform regular rapid scans, preferably without compromising the data coverage.*

Recommendation:
Satellite operators should make efforts to perform regular rapid scans, preferably without compromising the data coverage, and derive AMVs from the rapid scans.

WG-III is informed that EUMETSAT uses routine rapid scans from Meteosat-6 to derive atmospheric motion vectors (AMV). The AMVs are operationally disseminated to users via the GTS in BUFR since 3 July 2002. The rapid scan based AMVs are now used operationally for regional modelling at the UK Met. Office and are also supporting the North Atlantic THORPEX (The Hemispheric Observing System Research and Predictability Experiment) Regional Campaign.

WG III at CGMS XXX applauded the initiative of JMA and underlined the value of reprocessed AMVs for reanalyses. It referred to the reprocessing of Meteosat winds at EUMETSAT and the positive impact of those winds on ECMWF reanalyses. It was felt that similar activities are worth while to be pursued by other satellite operators. This would also benefit satellite operators as they strive to learn and solve the general problems associated with archiving and subsequent reprocessing. This led WG III to make a pertinent recommendation.

Recommendation:
Satellite operators should conduct reprocessing of AMVs in support of ongoing reanalyses projects at NWP centres.

ACTION 30.34:
CGMS invites WMO's OPAG/IOS to establish jointly with the NWP community reanalysis requirements for reprocessing of satellite data and products

WG III is informed that some discussion with regard to a re-processing of GOES AMVs took place at the meeting of the GCOS AOPC in Asheville in June 2003. NESDIS representatives recalled that a relevant proposal had been presented to the NOAA Council when it discussed long-term observations and received only modest support. Consequently, it has not made it into any of the climate initiatives (see also USA-WP-29 at CGMS XXX which addressed the reprocessing of GOES cloud and moisture tracked winds).

4 POTENTIAL AREAS TO BE CONSIDERED AT IWW7

This section highlights selected scientific and technical topics that could be addressed at IWW7 in response to a request from CGMS. The list does not claim to be complete and WG III is invited to amend the list of topics and pertinent scientific question as required:

- 4-d var assimilation studies on winds versus geostationary radiance assimilation: NWP centres are requested to provide guidance on future efforts to be made in order to improve AMVs and CSR (clear sky radiance) products.
- multispectral height allocation of tenuous clouds: SEVIRI on MSG provides the first opportunity to test CO2-slicing and water vapour intercept methods on the time series of geostationary satellite images thus also enabling tests of temporal consistency.
- WV tracking with MSG: As the NEDT of the SEVIRI water vapour channels is very good the user community is asked to consider dedicated studies on tracking of smaller scale water vapour features.
- use of AMVs in regional models
- reprocessing of winds: Here the efforts of JMA and EUMETSAT in support of re-analysis projects at NWP centres are recalled.
- climatology of upper level divergence patterns
- nowcasting applications of derived displacement vectors

5 CONCLUDING REMARKS

Working Group III at CGMS XXXI is invited:

- to rehearse and amend the actions and recommendations to IWW7 from CGMS XXX as required
- discuss potential areas for discussion at IWW7 as spelled out in section 4
- kindly invite the plenary of CGMS XXXI to instigate approval and support to the participation of their experts at the next meeting of IWW7 from 14 - 17 June 2004 in Helsinki, Finland.