

TERMS OF REFERENCE FOR THE INTERNATIONAL WINDS WORKING GROUP (IWWG)

Background

The International Winds Working Group (IWWG) was established in 1991 and became a formal scientific group of the Coordination Group for Meteorological Satellites (CGMS) in 1994.

IWWG was initially established to focus on cloud track winds from geostationary satellite data. As the satellite observing system has evolved, the IWWG has broadened its interest to cover the range of wind datasets derived from all appropriate current and future operational and research satellite missions. Alongside the (i) atmospheric motion vectors (AMVs) produced by tracking features (clouds and water vapour) in geostationary and polar imagery sequences, IWWG now covers the derivation and utilisation of wind information from the full variety of space-borne systems, including: (ii) ocean surface winds derived from, inter alia, radar scattering, ocean reflection and microwave radiometers, (iii) cloud-tracked winds derived from multi-angle imaging spectroradiometers, (iv) vertical wind profiles derived from space-borne lidar measurements, and (v) 3-D wind fields derived from hyperspectral infrared sounders.

IWWG provides a forum to discuss and coordinate research and developments associated with the quantitative retrieval of atmospheric winds from state-of-the-art algorithms and to support increasing utilization of satellite wind information within Numerical Weather Prediction (NWP), climate monitoring, and by field weather forecasters with the primary goal of achieving ever increasing impacts on the accuracy of weather forecasts and observed climate records.

Objectives

The objectives of IWWG are:

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- To promote increased scientific activity in the field of satellite-derived winds and to establish routine means of exchanging scientific results and progress;
- To establish and encourage a regular dialogue and information exchange between producers and users of satellite-derived wind data. This should include both scientific and operational exchanges in order to:
 - agree on modifications to data formats and codes, including provision of additional information, e.g., quality flags;
 - discuss developments to the wind derivation methodology, including likely impacts and operational implementation details and recommendations for further developments;
 - discuss error estimates and characterizations of derived wind product datasets;
 - discuss assessments of the usefulness, representativeness and quality of the data for numerical analysis and prediction;
- To promote harmonization and, where feasible/practical, the standardization of operational procedures and retrieval methods for deriving satellite-based atmospheric and ocean winds;
- To exchange results on novel developments regarding the use of satellite-derived winds, in particular for numerical weather prediction;
- To support and stimulate training of the operational and scientific community;
- To support and perform routinely scheduled wind inter-comparison activities in close collaboration with the CGMS International Cloud Working Group (ICWG) or other (CGMS) scientific working groups, as appropriate;
- To establish agreement for standards in the verification and validation of satellite-derived winds:
 - choice of data sources for validation;
 - standardization of statistics;
 - standardization of verification and quality criteria;
- To support the definition of users requirements and gap analysis for atmospheric wind parameters in the framework of future Global Observing System (WIGOS, WMO OSCAR database);
 - To make recommendations to CGMS and to national and international agencies regarding the utilization of current and the development of future satellite instruments on polar and geostationary satellites.

Ocean Surface Winds Task Group (OSW TG)

The OSW TG has become an official sub group of the IWWG. The above objectives are inclusive in the OSW TG. Objectives exclusive to the OSW TG include:

- The OSW TG convenes as a subgroup of the bi-annual IWWG, being informed by the Committee on Earth Observing Satellites (CEOS), the Ocean Surface Vector Wind Virtual Constellation (OSVW-VC), and the International Ocean Vector Winds Science Team (IOVWST).
- The OSW TG is co-chaired (separate from IWWG co-chairs) who coordinate the information exchanges, actions and recommendations.
- The OSW TG interacts with the CGMS plenary through the IWWG and informs CEOS.

Membership

The IWWG shall include representatives nominated by the satellite operators of the CGMS, other members of CGMS and relevant research satellite operators. The Working Group shall also be widely open to participation from users of satellite-derived wind products.

Working Arrangements

The Working Group shall be chaired by two Co-Chairpersons (incoming) to be nominated by the current IWWG representatives and appointed by the plenary of the CGMS. At the same time, the two past Co-Chairs (outgoing) enter a supporting function so that continuity is ensured. Although no term limits were required in the past, a 3-workshop commitment (approximately 6 years) will be adopted. The Co-Chairpersons shall compile a report on relevant activities for the scheduled plenary meetings of the CGMS. Participation in the CGMS WGII intersessional virtual meetings is required. The co-chairs are responsible for ensuring that the aims of the Working Group are accomplished and will coordinate the required reporting between the IWWG and the CGMS. The interactive connection with satellite

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operators will be performed through the use of a Rapporteur who will attend and report to the CGMS meetings. This rapporteur shall attend IWWG's biennial Workshops and report on IWWG activities and recommendations at CGMS annual meetings. A new CGMS rapporteur will be chosen along with the new co-chairs.

Under the lead of the two Co-Chairs, the IWWG will organize Workshops, co-sponsored by CGMS, the WMO, and a local host approximately every two years. The Workshops will promote the exchange of scientific and operational information between the producers of satellite wind products, the research community, and the user community.