

Re-processing of Cloud Motion Wind

In response to the Action 28.31, JMA reports to CGMS XXIX on the plan of the re-processing of CMW from the GMS archived data as a part of a research project, the "Japanese Re-Analysis 25 years (JRA-25)".

Action is proposed that satellite wind producers are kindly invited to provide the re-processed CMW data for the JRA-25 project if they would be available.

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1. Background

At the CGMS XXVIII meeting, the Working Group III noted with interest the report of IWW5 on the potential of reprocessing existing archives for the derivation of satellite-tracked winds. It noted the potential of such a reprocessing not only for future reanalysis projects but also as an independent data set for research studies.

ACTION 28.31 CGMS Members to report at CGMS XXIX on plans and progress of the reprocessing of satellite-tracked winds from archived image data with state-of-the-art algorithms.

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2. Outline of JRA-25

In early 1990s, the projects of long-range re-analysis for global climate change were started corresponding to the increasing desires for the solution of factors of global climate change and the global climate monitoring in Europe and the United States.

JMA started to conduct a research project of long-range re-analysis of global atmosphere, called the "Japanese Re-Analysis 25 years (JRA-25)", in cooperation with the Central Research Institute of Electric Power Industry (CRIEPI) foundation in order to provide an essential data set for the following objectives:

- (a) preparation for consistent initial conditions and validation data set which are necessary for dynamical seasonal prediction and global warming study;
- (b) producing a foundation for more accurate operational climate monitoring services.

On the other hand, re-analysis products are useful for:

- (c) various research activities in climate system studies, and as;
- (d) boundary condition of a ocean general circulation model or input for a chemical transport model.

The JRA-25 project is to be implemented for 5 years from April 2001 to March 2006. The re-analysis will be performed using JMA operational numerical weather prediction and assimilation system, and the initial data for re-analysis considerably depends on the satellite data. The period of re-analysis is for 26 years from 1979 to 2004 taking into account the availability of the satellite data. The further information on the JRA-25 project is given at the homepage (<http://www.jreap.org>).

In this regard, the Meteorological Satellite Center (MSC) decided to re-process the

Cloud Motion Wind (CMW) with the archived GMS VISSR data and to provide the JRA-25 project with the re-processed CMW. JMA is asking the European Center for Medium-Range Weather Forecasts (ECMWF) to provide the re-processed CMW data of Meteosat. It would be highly appreciated if the re-processed CMW data of Meteosat could be available for us. JMA considers the use of the re-processed CMW data of GOES satellites if the data could be available from NOAA and in time for the re-analysis in the JRA-25 project.

3. Plan for re-processing of CMW

MSC is planning to derive the high-density winds with high accuracy in re-processing from the archived GMS VISSR data during the period from April 1987 for IR and April 1991 for VIS through December 2004 in which the archived GMS VISSR data are available.

The software and hardware for the re-processing of CMW are to be prepared by the end of March 2002 and the re-processing will spend two years from April 2002 to March 2004. The software is being developed on a workstation and the details including the quality control are given in the working paper, JPN-WP-12 at CGMS-XXIX.

The new software for the re-processing will automatically derive the high-density winds using the quality control with the EUMETSAT Quality Indicator (QI). The re-analysis Numerical Weather Prediction (NWP) data of ERA-15 (1979-1993) of ECMWF are to be used for the height assignment and the quality control with the EUMETSAT QI. The data format for the re-processed CMW is to be determined.

4. Data distribution plan in JRA-25

JMA and CRIEPI will organize an evaluation group of the JRA-25 project, composed of researchers in climatology. The re-analysis data of JRA-25 will be available not only for the members of the evaluation group but also for overseas researchers after the evaluation. The details of the distribution will be determined along with the progress of the re-analysis.