

DERIVATION OF WIND VECTORS FROM METOP/AVHRR AT EUMETSAT

Olivier Hautecoeur^{1,2}, Regis Borde¹

1. EUMETSAT, Eumetsat Allee 1, Darmstadt, Germany
2. Metis GmbH, Robert Bosch Str 10, Darmstadt, Germany

Abstract

EUMETSAT is currently deriving Atmospheric Motion Vectors (AMV) operationally from the EUMETSAT Polar System satellite Metop. The launch of *Metop-B* in 2012 permitted to double the product frequency extracting AMVs from both *Metop-A* and *Metop-B* satellite data over the Polar Regions. The tandem configuration with two satellites on the same orbital plane, but with a phase difference provided an interesting opportunity to create global AMVs from satellites with a significant overlap in imagery data. Therefore EUMETSAT has developed a new Global AVHRR winds product derived from a pair of *Metop-A* and *Metop-B* images that have a temporal gap about 50 minutes between the two images. The tandem configuration provides also the possibility to derive wind vectors over polar areas using a triplet of AVHRR images, keeping the same time period necessary to derive Single Metop polar wind product, but allowing a temporal consistency check in the calculation of the AMV quality index. Three different AMV products are extracted from AVHRR imagery at EUMETSAT, using two or three images taken by one or two satellites, having different coverage and time integration.

This presentation described the scientific concept of the AVHRR wind extraction algorithm developed at EUMETSAT and presents the performances of the various AVHRR wind products against the corresponding forecast fields. Intercomparisons of these different products highlight the role of the temporal gap between the images used to extract the wind and the impact of the consistency check on the calculation of the quality index.

The results presented at the Thirteenth International Winds Workshop have been published at Journal of Atmospheric and Oceanic Technology (JTECH) under the following references.

REFERENCES

Hautecoeur, O., and R. Borde, (2016), Derivation of wind vectors from AVHRR Metop at EUMETSAT, submitted to J. Atmos. Oceanic Technol.

Borde, R., O. Hautecoeur, and M. Carranza (2016), EUMETSAT Global AVHRR winds product, J. Atmos. Oceanic Technol, **33**, pp 429-438. [DOI: <http://dx.doi.org/10.1175/JTECH-D-15-0155.1>]