



## **An overview of operational AMV products extracted at EUMETSAT**

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Atmospheric Motion Vectors (AMVs) derived from satellite imagery constitute a significant part of the observation data assimilated in Numerical Weather Prediction (NWP) models because they are the only upper wind observations with good global coverage for the tropic, mid-latitudes and polar regions. AMVs are routinely extracted from the Meteosat geostationary satellites at EUMETSAT as well as from the EUMETSAT low orbit Polar System satellite Metop. Recent research activities have led to important changes in the EUMETSAT operational AMV algorithms, like the introduction of CCC method in Meteosat Second Generation (MSG) AMV extraction algorithm in 2012, and the use of the new Optimal Cloud Analysis (OCA) product to set AMV altitude more recently. These research areas have also contributed generally to a better understanding of the AMVs and have led to improving their use in NWP models. Since 2010 EUMETSAT has investigated AMV extraction over Polar Regions from AVHRR instruments. The algorithm uses only a pair of AVHRR images to derive AMVs instead of the usual triplet, which allowed an increase in the coverage area of AMV extraction. After a long period of testing and successive improvements, the current version of the EUMETSAT AVHRR polar winds product has reached a level of quality that allows its assimilation in NWP models. The same strategy has been applied recently to develop a new dual Metop global coverage wind product which should help to fill the 50-70° latitude gaps between geostationary and polar winds observations.

This paper will give an overview of all the current AMV operational products derived at EUMETSAT, highlighting the most important improvements of the recent changes implemented in the algorithms, together with information on the short-term perspective.