Geophysical Research Abstracts
Vol. 12, EGU2010-3084, 2010
EGU General Assembly 2010

Last developments of the EUMETSAT Atmospheric Motion Vector product derived from MSG images for assimilation in NWP models

Regis Borde, Jörgen Bertil Gustafsson, Arthur De Smet, and Greg Dew
EUMETSAT, MET, Darmstadt, Germany (regis.borde@eumetsat.int)

Atmospheric Motion Vectors (AMVs) are one of the most important products derived from all geostationary satellites, because they constitute a very important part of the observation data provided to Numerical Weather Prediction models. The Height Assignment (HA) is currently the most difficult task in the AMV extraction scheme. Several sources of error can be introduced at the height assignment step, but one of the main difficulties is to clearly identify the pixels that lead the tracking process in the tracer box, in order to select them for the HA calculation. A good pixel selection process should ensure to keep a direct link between the feature really tracked and the calculation of the height. The most common method sorts the coldest pixels in the target box and uses them to calculate the AMV height. However, recent work showed that some of the coldest pixels can have very small and/or negative contribution to the cross correlation process. Following these findings, it is then proposed to use individual pixel contribution to the cross correlation coefficient information in the pixel selection process, in order to get a closer link between the tracked feature tracked and the HA. This method has been tested on a parallel chain at EUMETSAT for two separated periods of one month. This presentation summarizes the main results of these operational tests, which show some improvements of the new scheme on the AMV product for both the VIS0.8, HRV and IR10.8 channels, increasing the total amount of good AMVs (Quality Index QI>80) and also the amount of good AMV/radiosonde collocations. Speed biases and RMS against radiosonde observations are generally a bit larger, especially the known slow bias observed at high levels for IR10.8 AMVs, but are calculated on a bigger amount of data.