

ACCOUNTING FOR ATMOSPHERIC MOTION VECTOR ERROR CORRELATIONS IN THE ECMWF 4D-VAR AND ENSEMBLES OF DATA ASSIMILATIONS

Lars Isaksen and Gabor Radnoti

ECMWF

ABSTRACT

ECMWF has implemented and tested a new method to account for observation error correlations in 4D-Var. This has been evaluated extensively for AMV observations, where we have knowledge about the horizontal error characteristics from previous research. The method is based on a highly truncated Eigen-value representation of the error correlation matrix where typically 100 leading Eigen-pairs have been used. The method will be described in this paper. But the focus will be on presenting and interpreting the promising AMV results. The representation of AMV error correlations in ECMWF's Ensembles of Data Assimilations will also be discussed.