



Manual PV modifications of initial conditions; application to windstorm Klaus

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It appears that some short-range weather forecast failures may be attributed to initial conditions errors. In some cases it is possible to anticipate the behavior of the model by comparison between satellite imagery with the model analysis (its PV or simulated satellite pictures). In the case of extratropical cyclone development one may qualify the representation of the upper-level precursors described in terms of PV in the initial conditions by comparison with either satellite ozone or water-vapor. A step forward has been made in developing a tool based upon manual modifications of dynamical tropopause (i.e. height of 1.5 PV units) and PV inversion. After five years of experimentations it turns out that the forecasters eventually succeed in improving the forecast of some strong cyclone development. However the present approach is subjective per se. To measure the subjectivity of the procedure a set of 15 experiments has been performed provided by 7 different experts (senior forecasters and scientists involved in dynamical meteorology) in order to improve an initial state of the global model ARPEGE leading to a poor forecast of the wind storm Klaus (24 January 2009). This experiment reveals that the manually defined corrections present common features but also a large spread.