

The impact of assimilation (using 3D-Var method) of aircraft measurements on forecasts of the numerical model ALADIN is studied in the present work. Methods of measuring several meteorological parameters by aircrafts and their recording to AMDAR message are shown. So called BLUE equation for production of an analysis (the best assessment of the state of atmosphere represented by a numerical model) is deduced. The equivalence between the BLUE equation and a minimization of the quadratic functional used by 3D-Var is shown. Essentials steps of integrating meteorological measurements to assimilation procedure are outlined. The process of assimilation used in Czech Hydrometeorological Institute is shown and the results of aircraft measurements assimilation are presented.