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# Tuning and validation of WRF ARW in BULATSA, first phase of its implementation as a driver for new aeronautical meteorological forecasting products

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Increasing the air traffic in the last few years at Bulgarian air space requires from BULATSA, as an Aeronautical service provider, a continuously development of meteorological services. A better quality of the forecasts could be achieved by improving the use of NWP. The models which are used now in BULATSA cannot well describe the local weather phenomena at the airports. That is why series tests were performed during last few years using different WRF ARW domain and physics configurations. Part of test included 3D VAR data assimilation. The domain covers Bulgaria with spatial resolution of 5km. A second domain with resolution 1.5km is used to cover Sofia airport area. The vertical coordinate system is sigma terrain-following with up to 65 levels. Several numerical experiments are performed to configure and tune the model parameters to obtain adequate mode results. This report presents some results for the following meteorological elements – visibility, surface wind and cloud amount. The problem to forecast these meteorological elements is well known, as a result from the complex of processes, acting in the boundary layer. A verification of different configuration according the meteorological observation at Bulgarian international airports is done. Because of the verification an optimal model physics is defended. The optimal configuration is used for integrating the meteorological fields, according which new graphical and text written products will be developed. Examples for them are presented on the final part of this poster.