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Mesoscale modelling of atmospheric circulation for the Black Sea region

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Mesoscale MM5-based model was applied for the purposes of forecast and analysis of weather over the Black Sea. The model was configured for downscaling GDAS or GFS input data in nested domains with spatial resolution 27 and 9 km, using Pleim-Chang parameterization scheme for the boundary layer. The results of regional reanalysis for winter and summer 2007 were compared with coastal stations data and satellite (QuikScat) observations of surface wind. Estimated quality of modeling results was close to similar forecast/analysis systems ALADIN and SKIRON.

Two cases of severe weather forecast (quasi-tropical cyclone on September 24-30, 2005 and recent catastrophical event on November 11, 2007) were thoroughly analysed to reveal the role of model configuration in predicting hazardous storms on the Black Sea.