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Study of the Low- Level jet characteristics in winter season between 1959 and 1982 for Bucharest's airports

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The LLJ is one of the meteorological hazards that aircraft have to face on the takeoff/ landing path. The region affected by this very strong wind shear is Romanian Plain, where the two airports of Bucharest- "Henri Coanda" and "Aurel Vlaicu", are placed. This study is based on the re-analysis project ERA-40 from ECMWF which was used at the National Meteorological Administration in Bucharest, Romania, in order to obtain a re-analysis of the data valid for Romania, using the regional climate model RegCM3. Taking the data from this re-analysis, we studied the cases in winter season (December- February) between 1959 and 1982 in which low- level jets appeared. The low- level jet cases were extracted from the wind data using the software GRADS; after that, a separate treatment of cases was considered. The cases in which LLJs are associated with upper jets were considered one class of LLJs and the others, a second one. In the first class, the upper jet appeared simultaneously with or before the LLJ. A statistical analysis was made for these classes, regarding the time of manifestation of the LLJ, the number of cases of LLJ as function of the depth of the LLJ or the pressure level at which LLJ appeared. The synoptic patterns were analyzed for all the cases. The criteria concerning the manifestation of a low- level jet in the area of Bucharest's airports are extracted related to atmospheric condition to be used in forecasting the LLJ.