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Abstract
The aim of this paper is to show the applications of the ceilometer's measurements for knowledge of the cloudiness, cloud types and the local characteristics of them. Ceilometer CL-31 is a mini-lidar used in remote sensing measurements, especially for the cloud bases. The data used for this study were obtained as results of the measurements performed at Faculty of Physics in Magurele (44.35N, 26.03E) for the year 2009. The CL-VIEW and Lab-View programs were used for data processing to obtain the images and vertical backscatter profiles. The images allow determining the cloud types, the presence of the aerosol layers, precipitation and the fog. Our study has shown the cloudiness dependence on the season and as expected, the most cases of stratus clouds were in winter. The occurrence frequency of altocumulus or cirrus clouds was connected to the air masses advection. The special cases with precipitation or aerosol intrusions were discussed in connection with meteorological parameters, synoptic situations and by analyzing backward trajectories of air masses, using HYSPLIT4 model. The large cloudiness and precipitation periods were confirmed by meteorological data. All the results emphasize the applicability of the ceilometer's measurements to characterize the clouds and cloudiness.

Keywords: ceilometer, clouds, meteorology