



Comparison of ceilometer and visually observed cloud base height data

Hela Irha and Dubravka Rasol

Meteorological and Hydrological Service of Croatia , Zagreb, Croatia

The cloud base height is a significant cloud macroscopic characteristic. The information about these observed properties is useful in describing the influence of clouds on the climate system. Given the importance of these data, there is a need to control their quality. In Croatia cloud base height data are mostly received from visual observations. In September 2017, Meteorological and Hydrological Service of Croatia installed the ceilometer Lufft CHM 15k and started with measurements of cloud base height at the Meteorological and Aerological Observatory Zagreb – Maksimir. At the same location visual observations of cloud base height are being done by human observers daily every hour. Meteorological and Hydrological Service of Croatia is currently in the process of modernization and automation of meteorological stations in the whole country. Also, the decreasing trend of number of human observers is present. Cause of these given reasons it's important for us to determine is it possible for ceilometer to replace the human observers if it is needed. In order to do that, we compared ceilometer and visually observed cloud base height data and analysed the results. For bigger discrepancies between the data we studied weather conditions such as cloudiness more closely. Since the cloud base height is linked to cloud type, we also focused on possible difficulties that could appear during measuring the base height of different cloud types, especially clouds on higher levels. Moreover, sounding is performed twice per day at the same location and those data were used as additional information for midnight and noon observations.