Abstract

Title: Convective storms development in remote sensing data

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Systems of remote sensing and computing technologies are nowadays at such a developed level, they are providing tools for identifying and tracking convective storms as well as for measuring their parameters. In this study, the nowcasting algorithm CELLTRACK is used to identify convective cells as a high reflectivity cores ($\geq$44 dBZ) in the radar data (CZRAD). CELLTRACK is also used to obtain parameters of these cells from radar data and lightning detection data (CELDN) over the territory of Czech Republic. Six single isolated cells and six cells producing severe convective phenomena were selected from the years 2010 - 2014. The development of selected parameters during the life cycle of convective cells in both groups is demonstrated and threshold values of these parameters, that can potentially help to identify severe convective cells, are proposed.

key words: convective cell, severe convective storm, remote sensing of convective storms, nowcasting, CELLTRACK, CZRAD, CELDN