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Long-term characteristics of convective storms over the Czech Republic derived from 15-Yr datasets of lightning detection and weather radar measurements

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Since the 90's, the Czech Hydrometeorological Institute (CHMI) has operated digital Czech weather radar network (CZRAD) and also has utilized lightning data from the Central European Lightning Detection Network (CELDN). Both datasets cover whole area of the Czech Republic and its neighborhood. These data are operationally used in CHMI forecast offices and they proved to be very useful for operational detection, monitoring and nowcasting of severe convective storms. Climatological characteristics of lightning and radar data are very useful for the evaluation of their quality and for defining decision thresholds that are valuable for human forecasters as well as for automatic nowcasting applications.

Archive of both datasets (CELDN and CZRAD) is available in CHMI. The fifteen-year period from 2002 to 2016, which had relatively even-quality data, will be used to calculate long-term spatial and temporal distributions of lightning and weather radar data characteristics. Paper will discuss relation between lightning and radar characteristics and will also present long-term characteristics of convective storms identified by the cell-oriented nowcasting system CELLTRACK.