

2.25 LONG-TERM CHARACTERISTICS OF WEATHER RADAR PRODUCTS DERIVED FROM 15-YR DATASET OF VOLUMETRIC MEASUREMENTS

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Since the 90's, the Czech Hydrometeorological Institute (CHMI) has been operating digital Czech weather radar network (CZRAD) covering whole area of the Czech Republic and its neighbourhood. Additionally CHMI has been utilizing lightning data from the Central European Lightning Detection Network (CELDN) over the same domain. Both types of data are operationally used in CHMI meteorological and hydrological forecast offices and they proved to be very useful for operational detection, monitoring and nowcasting of convective storms.

Archive of both datasets (volumetric CZRAD measurements and CELDN lightning detections) is available in CHMI. Data from fifteen-year period 2002-2016 have roughly the same quality, therefore this time period was used to calculate long-term spatial and temporal characteristics of various weather radar and lightning products. These long-term characteristics show many quality issues of weather radar products and are also very useful for definition of decision thresholds of convective storms severity in automatic nowcasting applications.

The presentation will present these long-term characteristics and their utilization. It will discuss relation between radar and lightning characteristics and will present also long-term characteristics of convective storms identified by the cell-oriented nowcasting algorithm CELLTRACK.