



Determination of storm precipitation zones based on radar data on the example of the city of Kraków

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Availability of media makes the occurrence of intensive rainfall in the large cities a media phenomenon and initiate the questions concerning the place and time of rainfall as well as its amount. These questions are asked not only by the scientists but also by ordinary city residents who are considering buying a flat in a specific location, for example.

Despite the fact that increasingly developed measurement networks are built in cities, the availability of data useful for precipitation detection and monitoring in the cities is very weak. This is because point measurements are not representative for precipitation analysis, especially for the extreme ones. Therefore, data from meteorological radars are more often used for rainfall analysis and scientific research. Their unquestionable advantage is the resolution of acquired data, both temporal (10 min) and spatial one (1 km).

In the poster, the method for radar data application to analyze the storm precipitation distribution over Krakow is presented. The method includes processing of measurement data as well as thoroughly verified proxy data, what allowed for the analysis of the relationship between precipitation and its effect. As the results, the map of the incidence of intensive rainfall in the city of Kraków in the recent years in an unprecedented spatial resolution of 1 km was created. Additionally, a detailed analysis of the time course and spatial distribution of many storm precipitation events was performed, what allowed for a better understanding of the precipitation mechanism in the city of Kraków and the application of gained knowledge to improve the quality of meteorological expertise carried out at IMGW-PIB.

In the poster, the results obtained with the developed method will be presented. Additionally, the city districts most often affected by intensive precipitation were identified and will be showed in the poster.