

Kotowski, A., Danczewicz, A., Kazmierczak, B. Space-time Distribution of Precipitation in the City of Wroclaw. *Ochrona Srodowiska* 2010, Vol. 32, No. 4, pp. 37–46.

Abstract: Analysis of the space-time distribution of precipitation for the city of Wroclaw obtained from many years' measurements has demonstrated that the existing network of gauging stations fails to provide reliable data for the design or modernization, and primarily for the hydrodynamic modeling of draining systems. This finding holds true particularly for high-intensity rainfalls of a short duration, as they pose a real threat to the functioning of the storm water drain and combined sewage systems. The results of the study have revealed considerable differences in the amount and intensity of precipitation between particular parts of the city. Within the area of the Wroclaw-Strachowice station (in the western part of the city) the amount of precipitation received was by approx. 20% higher as compared to that within the Wroclaw-Swojec station (in the eastern part of the city). Drawing conclusions based on the data obtained from the two meteorological stations may lead to the underestimation of the precipitation amounts received in the northern and southern parts of the city, as can be inferred from the higher values of daily precipitation amounts measured in Wroclaw-Psie Pole and Wroclaw-Oporów. It is therefore recommendable to increase the number of stations that will provide automatic records of the precipitation amounts received with time. This will guarantee a more efficient protection of the municipality of Wroclaw against local flooding or outflow from the sewerage system.

Keywords: Rainfall, precipitation amount, rainfall intensity, network of gauging stations.