

ABSTRACT

The dissertation deals with the influence of orography on the spatial distribution of heavy precipitation in the territory of the northeast Moravia and Silesia. The area was chosen because of the specific distribution of daily precipitation for heavy rainfall events in the past and also in May 2010. Cases of heavy rainfall for the period 1961 - 1995 are balanced with morphometric characteristics in the place and in the surrounding the station, defined in face of direction air flow. For the calculation of the direction air flow are used data from 850 hPa level from reanalysis ERA-40, topographic characteristics are calculated by ArcGIS and they are correlated with the rain gauge data from stations ČHMÚ. The results show us that only the altitude does not have effect on the spatial distribution of precipitation, but it should be think over more topographic parameters. During the north and partially during the west air flow, where the precipitation are mostly from the stratiform clouds, appears a stronger orography influence on the measurement and on the spatial distribution, if we consider the morphometric characteristics behind the station in the direction of air flow. The case of south and east air flow showed us a weaker orography effect, which can be perhaps explained by a higher part of precipitation convective source at the flow from these directions.

KEY WORDS: orography, spatial distribution of precipitation, direction air flow, northeast Moravia and Silesia, morphometric characteristics, rain gauge data