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Spatial Structure Analysis of Heavy Short-term Rainfalls in the Czech Republic

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The contribution deals with the geographic aspects of heavy short-term rainfalls bounded to convective storms with high flooding potential. Precipitation amounts can be indirectly measured by weather radars which are capable to detect atmospheric hydrometeors. Two czech weather radars (Skalky, Brdy) cover the whole area of the Czech Republic. When studying the heavy short-term rainfalls, the adjusted precipitation amounts are used. Data derived from radar reflectivity are merged with gauge records for warm seasons (April to Semptember) in the horizontal resolution of 1 kilometer. The dataset for the period of 2002 - 2007 was recently used to study geographic characteristics of the heavy short-term rainfalls in terms of the dependence on altitude and topography. In the contribution, we analyze the spatial structure of the precipitation data with respect to the heavy short-term rainfall events. We use tools of spatial statistics to identify the spatial behavior of the events and examine its relationship with geographic factors.