

Home

Online Library

- Recent Papers
- Volumes
- Library Search
- Title and Author Search

RSS Feeds

General Information

Submission

Review

Production

Subscription

#### Journal Metrics

 not applicable

SCOPUS<sup>®</sup> SNIP 0.287

SCOPUS<sup>®</sup> SJR 0.054

[Definitions](#)

ARCHIVED IN



[Volumes](#) [Contents of Volume 25](#)

Adv. Geosci., 25, 85-90, 2010

www.adv-geosci.net/25/85/2010/

doi: 10.5194/adgeo-25-85-2010

© Author(s) 2010. This work is distributed under the Creative Commons Attribution 3.0 License.

## Spatial relationships of heavy rains in the Czech Republic

S. Bek<sup>1</sup>, J. Ježek<sup>1</sup>, and V. Bližňák<sup>2,3</sup>

<sup>1</sup>Institute of Applied Mathematics and Information Technologies, Charles University in Prague, Faculty of Science, Czech Republic

<sup>2</sup>Institute of Atmospheric Physics, ASCR, Czech Republic

<sup>3</sup>Department of Physical geography and geoecology, Charles University in Prague, Faculty of Science, Czech Republic

**Abstract.** Study of heavy rain events and their spatial distribution are of great importance. Such events cause local flooding, accelerate soil erosion and cause damage on property. Data for this study were derived by Sokol and Bližňák (2009) from radar reflectivity and daily rain gauge measurements for the period of 2002–2008. We selected heavy rain events using spatial and intensity constrains. We studied relationships between heavy rains, altitude and terrain roughness. Heavy rain totals correlate with both altitude and terrain roughness globally over the Czech Republic. The correlation is also significant for extreme heavy rain totals. The correlation of heavy rain intensities with altitude was not proven. The highest rates of average intensities are located in the south-eastern parts of the Czech Republic. The spatial distribution of heavy rain frequencies strongly corresponds to the spatial distribution of heavy rain totals. The highest percentage of heavy rains in total precipitation is located in the north-west of the Czech Republic. The extreme heavy rains occupy higher altitudes.

[Full Article in PDF](#) (PDF, 1828 KB)

Citation: Bek, S., Ježek, J., and Bližňák, V.: Spatial relationships of heavy rains in the Czech Republic, Adv. Geosci., 25, 85-90, doi:10.5194/adgeo-25-85-2010, 2010. [Bibtex](#) [EndNote](#) [Reference Manager](#) [XML](#)



#### Search ADGEO

Full Text Search [»»](#)

Title Search [»»](#)

Author Search [»»](#)

#### News

- Please Note:** Updated Reference Guidelines

#### Recent Papers

**01 | ADGEO, 22 Nov 2010:** Tropopause and jetlet characteristics in relation to thunderstorm development over Cyprus

**02 | ADGEO, 22 Nov 2010:** Probabilistic prediction of raw and BMA calibrated AEMET-SREPS: the 24 of January 2009 extreme wind event in Catalunya

**03 | ADGEO, 15 Nov 2010:** Investigation of trends in synoptic patterns over Europe with artificial neural networks