



Relationships between data measured by meteorological radars and Meteosat Second Generation for convective storms

V. Bliznak (1,2) and Z. Sokol (1)

(1) Institute of Atmospheric Physics, Department of Meteorology, Prague, Czech Republic (bliznak@ufa.cas.cz), (2) Charles University, Faculty of Science, Department of Physical Geography and Geoecology, Prague, Czech Republic

The study is focused on determination of qualitative and quantitative relationships between data measured by weather radars, rain gauges and the meteorological satellite Meteosat second generation (MSG) for convective storms in the warm part of the year. The relationships should be used for improving of high-resolution precipitation estimates and nowcasting of precipitation. The investigations will be done for the Czech Republic using the Czech radar network and the Czech rain gauge network.

The first part of the study will be focused on evaluation of accuracy of rainfall estimates based on MSG data. Various algorithms will be tested and compared with the Satellite Application Facilities (SAF) algorithms, recommended by EUMETSAT, which will be used as a reference method. The impact of considering advection in localization of rainfalls will be evaluated.

The second part will be aimed at finding relationships between MSG data and vertically integrated liquid water content (VIL), top of radar echo (ECHOTOP), which is defined as the maximum height (in km) where at least 4 dBZ are measured, and rain rates derived from radar reflectivity measurements. Such relationships could be used in assimilation of MSG data into a NWP model.