



Precipitation monitoring from meteorological satellites using GIS techniques.

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There are many different methods enabling the precipitation mapping. It can be done from the standard surface measurement network that provides localised information about the precipitation. Also, the geostationary and polar orbiting satellite, radar observations provide the continuous information of the state of the atmosphere but with much lower and variable resolution. Combining these data into one system allows analysing the data from different sources in order to estimate the precipitation intensity and range. Such works were undertaken for the Central Europe region for the stratiform and convective precipitation. The analysis results were prepared in the form of maps of precipitation intensity and range. The progress in GIS technology application in the Satellite Research Department in Poland was accomplished. The visible, infrared and microwave derived products are prepared and visualized. The developed system allows displaying the rain field and the precipitation from the satellite data with other ancillary information. The maps of precipitation with additional geographical data and administrative boundaries are available for the weather forecasting units via Intranet. Radar and lightning data layers were also used for the results verification and validation. This approach was tested for the VIS/IR data from the METEOSAT/MSG geostationary satellites in order to estimate the rain intensity and range. The paper will discuss the capabilities as well as shortcomings of GIS applications to the meteorological satellite data with the high spatial and temporal resolution. Some examples showing the discrepancies in particular meteorological fields caused by different measuring techniques will be presented.