



Attenuation correction of a C-band weather radar, validated by surrounding radar stations

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When using C-band weather radar data for quantitative applications, the rain attenuation can not be neglected. Especially convective rain cells located on the path between radar site and area of interest pose a problem. These events associated with high rainfall rates attenuate the radar signal and eventually lead to an underestimation of precipitation.

The present study applies an attenuation correction procedure where the specific attenuation is obtained from the rain rate using a power-law relationship. The approach is iterative, correcting the measured volume elements along the path starting with the first one.

The thus corrected radar measurements are validated by the data of other radars. The usually highly attenuated last volume element of one radar along the path between two radar sites is the first measured volume of the other radar where attenuation is normally negligible. First results show that the radar measurements taking attenuation into account are in better agreement with the measurements of a rain gauge network.