| EGU.eu | | EGU Journals | Contact |

Home

Online Library

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

RSS Feeds

General Information

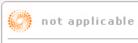
Submission

Review

Production

Subscription





SCOPUS SNIP 0.287

SCOPUS SJR 0.054

Definitions



■ Volumes ■ Contents of Volume 25

Adv. Geosci., 25, 111-117, 2010 www.adv-geosci.net/25/111/2010/ doi:10.5194/adgeo-25-111-2010 © Author(s) 2010. This work is distributed under the Creative Commons Attribution 3.0 License.

Preliminary evaluation of polarimetric parameters from a new dual-polarization C-band weather radar in an alpine region

H. Paulitsch, F. Teschl, and W. L. Randeu
Department of Broadband Communications, Graz University of Technology, Austria

Abstract. The first operational weather radar with dual polarization capabilities was recently installed in Austria. The use of polarimetric radar variables rises several expectations: an increased accuracy of the rain rate estimation compared to standard Z-R relationships, a reliable use of attenuation correction methods, and finally hydrometeor classification. In this study the polarimetric variables of precipitation events are investigated and the operational quality of the parameters is discussed. For the new weather radar also several polarimetric rain rate estimators, which are based on the horizontal polarization radar reflectivity, $Z_{\rm H^{\prime}}$ the differential reflectivity, $Z_{\rm DR}$, and the specific differential propagation phase shift, K_{DP} , have been tested. The rain rate estimators are further combined with an attenuation correction scheme. A comparison between radar and rain gauge indicates that $Z_{\rm DR}$ based rain rate algorithms show an improvement over the traditional Z-R estimate. K_{DP} based estimates do not provide reliable results, mainly due to the fact, that the observed K_{DP} parameters are quite noisy. Furthermore the observed rain rates are moderate, where K_{DP} is less significant than in heavy rain.

■ Full Article in PDF (PDF, 1517 KB)

Citation: Paulitsch, H., Teschl, F., and Randeu, W. L.: Preliminary evaluation of polarimetric parameters from a new dual-polarization C-band weather radar in an alpine region, Adv. Geosci., 25, 111-117, doi:10.5194/adgeo-25-111-2010, 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