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

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**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,  $Z_H$ , the differential reflectivity,  $Z_{DR}$ , 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  $Z_{DR}$  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.

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