

## Detection of electric fields using full polarimetric C-Band radar data

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Measurements of aligned ice particles due to electric fields, was already reported by Henry and McCormick in the late 70's using circular polarization. Although it is known, that all polarization bases include the same information, nothing was reported using the horizontal/vertical polarization basis. Recently, the polarimetric calibration of DLR's POLDIRAD system was largely improved, which made the data show new effect.

Stripes of higher LDR (about -35dB) became visible, which had a high co-cross-correlation-coefficient  $\rho_x$ . This is remarkable as the high LDR value in the melting layer corresponds to low values of  $\rho_x$ . The analysis showed, that the effect is related to a change of the polarization of the radar pulse while travelling through the atmosphere, which may be caused by aligned particles. Using lightning measurement from an independent source proved that the distinctive regions are areas of lightning activities.