

**Dual-wavelength estimates of X-band radar signal attenuation characteristics in rain**

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X-band radar systems have been actively used for different meteorological applications over the last decade and half. X-band frequency signals, however, are noticeably attenuated in rain thus correcting observed polarimetric radar variables for attenuation and differential attenuation effects when observing rainfall is necessary. In this presentation the results of estimating the coefficients in the correction-scheme relations from dual-wavelength polarimetric radar measurements of rainfall involving attenuating and nonattenuating frequencies are described. Such coefficients are found directly from measurements and are essentially free from different assumptions about drop shapes, drop size distributions and/or relations between different radar variables which are typically utilized in many attenuation and differential attenuation correction schemes which are currently in use. Experimentally-based estimates derived using dual-wavelength radar measurements conducted during a project in Northern Colorado indicate values of the coefficients in the attenuation - differential phase quasi-linear relations at X-band in the approximate range of 0.20 - 0.31 dB deg<sup>-1</sup>. The corresponding coefficients in the differential attenuation – differential phase relations are in the range of 0.051 - 0.065 dB deg<sup>-1</sup>.