CORRIGENDUM

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At higher frequencies the linear depolarization ratio (LDR) is affected by the differential attenuation $A_{H\text{-}V} = A_H - A_V$ between horizontally and vertically polarized waves. In principle LDR provides one method for estimating $A_{H\text{-}V}$ as noted in Jameson (1994). However, (11)–(13) in that paper should involve only a single A_H so that the above expressions should be replaced by

$$\mathrm{LDR}_m(r_0) = \mathrm{LDR}_t(r_0) + \int_0^{r_0} [A_H(r) - A_V(r)]dr \tag{11}$$

$$\mathrm{LDR}_m(r) - \mathrm{LDR}_m(r_0) = \int_0^{r_0+\Delta r} [A_H(r) - A_V(r)]dr + \mathrm{LDR}_t(r) - \mathrm{LDR}_t(r_0) \tag{12}$$

and

$$\mathcal{E}(A_{H\text{-}V}) = \frac{\mathrm{LDR}_m(r) - \mathrm{LDR}_m(r_0)}{\Delta r}, \tag{13}$$

where $\mathcal{E}(A_{H\text{-}V})$ is the estimate of the specific differential attenuation.

Consequently, while it may be somewhat easier to use LDR than originally thought in Jameson (1994), using the differential reflectivity Z_{DR} is preferred for estimating $A_{H\text{-}V}$ for two reasons. First, Z_{DR} is affected by two-way attenuation $2A_{H\text{-}V}$, while LDR is affected only by $A_{H\text{-}V}$. As a result, the attenuation signal is twice as large using Z_{DR} as compared to LDR, which allows easier detection, particularly in lighter rain. Second, LDR may at times be influenced by small rotations of the plane of polarization with respect to the scatterers either because of mechanical horn rotation or because of anisotropy in the precipitation. Such rotation not only increases LDR but may also induce more rapid depolarization, particularly when there is significant coherent forward scatter of the cross-polarized waves. The resulting rapid increase in LDR will then be misinterpreted as enhanced differential attenuation.

REFERENCES

Jameson, A. R., 1994: Measuring rainwater content by radar using propagation differential phase shift. *J. Atmos. Oceanic Technol.*, **11**, 299–310.