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Comparative Evaluation of OTT-Parsivel2 Measurements for Raindrop Fall Speed Using a Collocated High-speed Optical Disdrometer (HOD)

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This study evaluates OTT Parsivel^2 raindrop fall speed measurements using measurements from a collocated High-speed Optical Disdrometer (HOD). Raindrop fall speed is an important quantity for calculating precipitation parameters such as raindrop kinetic energy and size distribution that are critical for various hydrological and meteorological applications. In relevant applications, raindrop fall speed has often assumed to be terminal that is typically predicted by using terminal speed – raindrop size relationships obtained from laboratory observations. Nevertheless, recent field studies have shown deviations of raindrop fall speed observations from the predicted terminal speeds; and hence, highlighted the importance of observational raindrop fall speed information. Considering the large userbase of OTT Parsivel^2, this study assesses the raindrop fall speed measurements of this instrument with respect to the HOD measurements during rainfall events with a range of rainfall intensities. The results of this investigation with potential implications will be discussed in this presentation. This material is based upon work supported by the National Science Foundation under Grants No. AGS-1741250.