

Abstract Submitted
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Binary Raindrop Collisions¹ FIRAT TESTIK, KALIMUR RAHMAN,
University of Texas at San Antonio — In this talk, we will present first-time observations of binary raindrop collisions in natural rainfall and discuss the observed raindrop collision outcomes (i.e. breakup, coalescence, and bounce). Binary raindrop collisions have long been hypothesized as a key process in shaping of the raindrop size distribution, an important quantity for a number of meteorological and hydrological applications. Testik (2009) developed a regime diagram to determine the outcomes of a raindrop collision based upon the collision kinetic energies and surface energies of the colliding raindrops. This regime diagram has been validated previously using two different laboratory datasets for the collision of simulated raindrops. A new instrument that we have developed for precipitation microphysical observations, called High-speed Optical Disdrometer (HOD), made raindrop collision observations possible in natural rainfall and provided a valuable small dataset. In the light of these first time field observations of raindrop collisions, we will discuss Testik's diagram in this talk. Testik, F. Y., 2009. Outcome regimes of binary raindrop collisions. *Atmos. Res.*, **94**, 389–399.

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