

Abstract Submitted
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Droplet Collisions in the Wind¹ REECE KEARNEY, GREGORY BEWLEY, Cornell Univ — Particle collisions are important in a variety of natural and industrial processes, including rainfall and combustion. In many cases, colliding particles move in and relative to a turbulent fluid. The motion of the fluid between approaching particles affects the way they collide, or indeed whether they collide at all. In our laboratory experiments, the particles are water droplets between 100 and 300 microns in diameter and they move through an air flow. We observe collisions between them with high speed cameras. We vary the relative velocity between the pair of particles and the air flow between 2 and 5 m/s, so that the Weber number is between 5 and 50. We quantify the effect of the air flow on the trajectories of the approaching particles using Lagrangian particle tracking.

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