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**Experimental observations of droplet trajectories for investigation of water jet breakup and atomization** JOSHUA Z. SKOLNICK, LESTER K. SU, Johns Hopkins University — Experimental measurements of droplet trajectories permit investigation of the breakup and atomization processes in water jets. The jets issued at varying angles from the horizontal, with the resulting droplets being collected in a horizontal array of collection bins that provided good spatial resolution of droplet volume fluxes. The experiments encompassed varying jet diameters and exit velocities. Time-resolved imaging of the jet near-field provided information on the initial droplet size distributions, which was used in a model that generated predictions of droplet fluxes in the horizontal plane by Lagrangian tracking. The results of the experiments, interpreted with the assistance of the modeling results, allow direct assessment of the importance of secondary breakup phenomena at different run conditions. The results also reveal that droplet coalescence plays a significant role in determining the local droplet size distribution in the jet far field.

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