Background

Cloud droplet distribution retrieval is a near ubiquitous microphysical in-situ study element. Distribution characteristics provide information central to droplet formation, precipitation development, and macro scale dynamic research. Simulated droplet distributions and their evolution are central to binned cloud models. Improved measurement confidence is mutually beneficial for observationally and model-focused studies –finish this thought---.

Motivation

Objectives

Develop a laboratory optical probe water droplet calibration system

* Uses probe’s intended media (eliminates refractive index complications)
* Creates droplets of highly repeatable size and velocity
* Incorporates independent droplet characteristic verification
* Employs autonomous, highly precise digital micropositioning stages
* Capability to operate with a range of optical probes