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Department of Atmospheric Sciences Seminar Announcement

Department of Atmospheric Sciences, S.O.E.S.T., University of Hawai'i at Mānoa
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Observation of Sea Salt Aerosol Size Distribution

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Date: Wednesday, December 4, 2019
Refreshments: 3:00pm at MSB courtyard
Cookies, Coffee & Tea Provided
Seminar Time: 3:30pm
Location: Marine Sciences Building, MSB 100

Abstract:

Sea spray aerosol (SSA) play a significant role in the marine atmosphere. They can scatter radiation, act as a source of halogens, and act as cloud condensation nuclei (CCN). These properties depend on size, so it is important to be able to resolve the SSA size distribution. However, there is great uncertainty in SSA size distribution, particularly for larger SSA (dry radius 3-15 microns). Observations of SSA are limited due to their low concentration and relatively large sizes. At NCAR, the Giant Nucleus Impactor (GNI) was developed to observe large SSA. Optical microscope observations are made of wet particles impacting onto polycarbonate slides exposed to air flow. With the GNI in mind, we developed a new, low-cost, and accessible method for sampling large SSA in the marine boundary layer. Using 3D printing and Arduino microcontrollers and sensors, we designed and built a SSA sampler named the “mini-GNI” that can expose polycarbonate slides to capture large and wet SSA. The mini-GNI can be attached to a kite string, allowing for sampling at multiple altitudes simultaneously. In this presentation, we will discuss the new mini-GNI instrument and our preliminary findings.