Department

Department of Atmospheric Sciences, S.O.E.S.T., University of Hawai'i at Mānoa
2525 Correa Road, HIG 350; Honolulu, HI 96822 ☎956-8775

Mr. Mark Bauman
Meteorology M.S. Candidate
Department of Atmospheric Sciences
5ÎÉÖÅÒÓÉÔÙ Ï‡ (Á×ÁÉßÉ ÁÔ - ànoa

Date: Wednesday, November 18, 2015
Seminar Time: 3:30pm
Location: Marine Sciences Building, MSB 100

Abstract:

An increase in cloud condensation nuclei from biomass burning and urban pollution can increase the overall number of cloud droplets in a given volume, thereby lowering cloud effective radius (re) assuming a fixed liquid water content. This reduction in re is known as the first indirect or "Twomey" effect, and can delay precipitation resulting in increased cloud lifetime and thickness. This study assesses the prediction of the first aerosol indirect effect in regions of varying levels of pollution using Random Forest regression. We use in situ DC8 aircraft data from NASA's Studies of Emissions and Atmospheric Composition Clouds and Climate Coupling by Regional Surveys (NASA-SEAC4RS) project. The data are standardized, filtered to include only in cloud samples, and divided into 3 categories based on pollution amount: clean, polluted, and all-inclusive. We then use recursive feature elimination to rank several different atmospheric variables based on their relative importance in predicting re in each of the pollution categories.