

Abstract Submitted
for the NES19 Meeting of
The American Physical Society

An Overview of CLidar Studies at Mauna Loa CHRIS OVILLE, JALAL BUTT, NIMMI C.P. SHARMA, Central Connecticut State University, JOHN E. BARNES, CIRES, CU-Boulder; ESRL, GMD, NOAA — In 2006, a novel aerosol detection program was instituted at Mauna Loa Observatory, an important atmospheric baseline station located on the big island of Hawaii. The program employs a bistatic CCD camera Lidar or CLidar which images a 20W 532nm Nd: YAG laser from a distance of 139m. The bistatic configuration allows excellent resolution close to ground level which is a key attribute that avoids the field-of-view effects of traditional monostatic Lidar instruments. Several years of nearly weekly observations have enabled multiple investigations of aerosol extent and character over the island including both long-term baseline measurements and seasonal detection of Asian dust. Owing to Mauna Loa's geography – its mid-Pacific setting, high altitude, and relative isolation – and due to its importance as a calibration station for atmospheric instrumentation, multi-year aerosol extinction trends – especially in the altitudes suited to CLidar measurement – are valuable. In this overview, these trends are detailed, and notable extinction patterns are presented. Persistent altitude-dependent features are identified and further investigated using NOAA's Hysplit back-trajectory model.

Chris Oville
Central Connecticut State University

Date submitted: 12 Mar 2019

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