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Free-Tropospheric Aerosol Detection at Mauna Loa Observatory Using Bi-Static Lidar CHRIS OVILLE, JALAL BUTT, JAMES KULOWIEC, NIMMI SHARMA, Central Connecticut State University — Because of their increased longevity and spatial range, aerosols which become entrained above the planetary boundary layer are thought to have important effects on weather patterns and climate. The study of this phenomenon requires sound determination of atmospheric modeling parameters – namely baseline aerosol levels in areas which are geographically isolated from anthropologic aerosol generation. Due to its location and the proximity of available instrumentation, Mauna Loa Observatory is an ideal setting for this and as such was the site of choice for this investigation in which a CLidar system – a CCD-camera based bi-static Lidar – was used to measure aerosol levels in the atmosphere. Several years of data were analyzed with a focus on free-tropospheric altitudes, and yearly and seasonal trends were evaluated for significant patterns.

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