

6.209 First Lidar measurements in the Brazilian Northeast to study transatlantic transport of Saharan aerosols.

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Abstract:

The Lidar technique has been widely used in atmospheric sciences in recent years because it provides effective information about atmospheric aerosol optical properties and its evolution. The presence of Saharan aerosol particles in the Brazilian Amazon region has long been observed during intensive measurements of Lidar field campaigns, however long term measurements are required to improve and complement the satellite observations, by providing highly time and altitude resolved data. The Laser Environmental Application Laboratory (LEAL) at the Nuclear and Energy Research Institute (IPEN, São Paulo, Brazil) has developed a depolarization lidar system which was recently installed at the Department of Atmospheric and Climate Sciences of the Federal University of Rio Grande do Norte (UFRN) in the city of Natal in the Brazilian Northeast (5°50'29 S, 35°11'57 W, s.l.). This new Latin American Lidar station has started operation in early February 2016 to provide routinely vertical profiles with high spatial and temporal

resolution of aerosol optical properties mainly for identifying aerosol layers originating in the African desert. This work presents the first results retrieved from these Lidar observations between February and August 2016, focused into time series evolution of aerosol backscattering coefficients during the period of measurements and including the identification of aerosol layers with potential dust particles by depolarization sensitive backscatter profiles.