

## Tropospheric vertical profiles of aerosol optical parameter at Brazilian Northeastern: Preliminary results

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**Abstract:** For understanding the dust transport processes and retrieving essential data for continuing validation and improvement of satellite products as for evaluating and improving aerosol and dust simulations with global and regional models as well, a multi-wavelength elastic depolarizing LIDAR system, developed by the Center of lasers and applications at IPEN, has been collocated with a sunphotometer CIMEL at Natal, northeastern city of Brazil. Through vertical profiling of dust optical and microphysical properties i.e, backscatter and extinction coefficients and particle depolarization ratio at 532 nm, the LIDAR system is planned to be a crucial point for progress on the assessment of aerosol radiative impact and aerosol-cloud interaction research. In this work, the first measurements carried out with the depolarization channels during February, March and April 2016, and the retrieved vertical profiles of aerosol backscatter coefficient are presented. Three-dimensional air mass back trajectory analysis was also conducted to determine the source regions of aerosols observed during this study.

**Keywords:** LIDAR, LALINET, Aerosols, Depolarization

**IXWLMLA Topic:** Lidar technologies and methods