A Compact Elastic Backscattering Lidar System for Aerosol Monitoring over the City of São Paulo, Brazil

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ABSTRACT

São Paulo is one of the most polluted cities in the world, regarding atmospheric air quality (CO and aerosol particles). In this paper we present a new project for aerosol monitoring over the urban area of the city of São Paulo, Brazil. A compact and portable lidar system will be built for this task in order to perform daytime/night-time measurements of aerosol parameters such as backscattering ratio and extinction coefficient profiles in the Planetary Boundary Layer (PBL) and the lower free troposphere. The system is designed to be able to retrieve aerosol data up to 5 km range and should be used also as a tool to characterise the various layers inside and outside the PBL, specially during winter time when thermal inversion phenomena are more abundant and thus making the pollutant dispersion more difficult.