Systematic measurements of tropospheric ozone and aerosol vertical profiles using a combined RAMAN-DIAL system over Athens, Greece

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Regular measurements of vertical profiles of ozone and aerosol optical properties (backscatter, extinction and optical depth) using a combined ozone DIAL and Raman lidar system, in the ultraviolet spectral region, have been performed over Athens (37.9^oN, 23.6^o E, 220 m asl.), Greece, since January 2005. The lidar profiles were obtained typically from 500 m to 5000 m asl. The high quality of the lidar aerosol data has been previously assured by extensive inter-comparison at software and hardware levels within the frame of EARLINET project, while the quality of the ozone DIAL data has been assured by extensive inter-comparison with local ozonesonde data. Mean values and variances of the ozone mixing ratios and aerosol optical properties have been evaluated during the first year of operation. The corresponding seasonal cycle of these quantities shows highest values during the summer period and secondary maxima during the autumn/spring period. Small fluctuations have been found only during the winter months.