



ÅNGSTRÖM TURBIDITY IN THE LOWER LAYERS OF THE TROPOSPHERE

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Abstract

The Ångström turbidity (β) is the optical parameter which characterizes the air masses and consequently air quality. It can be determined using AOD (Aerosol Optical Depth) for one wavelength and Ångström exponent. This paper is focused on testing methods to assess the turbidity using remote sensing measurements from equipments as Lidar, Cimel sun-photometer and Nephelometer. The AOD values were obtained from sun-photometer and computed from Lidar using extinction coefficient data. For the Ångström exponent the three types values were used: (i) values from AERONET for #395 sun-photometer situated at Magurele (INOE2000, 44°21'N; 26°1'E); (ii) values computed from nephelometer data also at Magurele (Faculty of Physics); (iii) a constant value of 1.3 from scientific literature. In addition, the dependence of the turbidity on temperature and wind for Magurele was tested. The expected results for turbidity were similar but not the same. The explanation consists in the differences between methods used to obtain the AOD. The results show that, for Magurele, in summer the averaged Ångström turbidity has the value 0.13 (at 500 nm), which are related to moderate turbidity.

Key words: Aerosol Optical Depth (AOD), meteorology, turbidity parameter, wavelength parameter

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