



A STUDY OF THE AEROSOL OPTICAL PROPERTIES AT TWO AERONET STATIONS FROM ROMANIA

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Abstract

The data on aerosol optical properties from the Aerosol Robotic Network (AERONET) stations on the coast of the Black Sea (North Eforie: 44:03N; 28:53E) and suburban area, Magurele (44:20:55N; 26:20:56E, closed to Bucharest) have been analyzed and compared. The sun-photometer #397 of AERONET is placed close to the Black Sea shore and the instrument #395 of AERONET is installed at INOE2000 from Magurele. For the simultaneous ground-based measurements in June 2010 under cloud-free skies it was found that, on average, the value of AOD(λ) from #395 (Magurele) was about 0.02 higher than those from the #395 (North Eforie). The median value of Ångström's wavelength exponent (α) for wavelengths between 500 nm and 870 nm was 1.290, for North Eforie AERONET station and 1.268 for Magurele AERONET station, indicating that the dominant aerosol is more of a continental than of a pure maritime type and at Magurele the aerosol size is larger than at North Eforie. The Single Scattering Albedo (SSA) values have shown different characteristics due to the influence of local and meteorological conditions. It is concluded that air mass characteristics strongly influence the optical properties of the aerosols.

Key words: aerosol optical depth, Ångström exponent, back trajectories, single scattering albedo, water content

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