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DESCRIPTION OF AEROSOL PROPERTIES OVER CLUJ-NAPOCA DERIVED FROM AERONET SUN-PHOTOMETRIC DATA

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Abstract

This paper presents some optical and microphysical properties of aerosols measured over the Cluj-Napoca city, at the Faculty of Environmental Science and Engineering, Babeş-Bolyai University. This site is part of the Romanian Atmospheric 3D Research Observatory (RADO) and the Aerosol Robotic Network (NASA-AERONET) and is equipped with the only sun and sky tracking radiometer (Cimel CE 318A sun-photometer) in Transylvania. By analyzing Direct Sun measurements like Aerosol Optical Thickness (AOT) and Angstrom Parameter (α), combined with inversion data regarding fine and coarse volume concentration (C_{vc} and C_{vf}), single scattering albedo ($\omega_0(\lambda)$) and real part of refractive index (n), conclusions can be drawn regarding the optical and microphysical properties of the aerosols present in this area. By characterizing the different types of aerosols over Cluj-Napoca, we can better understand how this important atmospheric component influences radiative forcing, and therefore the micro-climate of the studied area.

Key words: AERONET network, aerosol properties, Cluj-Napoca, sun-photometry

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