



## Performances analysis of a new powerful LIDAR configuration for 3D monitoring of tropospheric aerosols and clouds

Ovidiu-Gelu Tudose (1,3), Marius-Mihai Cazacu (1,3), Adrian Timofte (1,4), Ioan Balin (2,3), and Doina Nicolae (5)

(1) "Al. I. Cuza" University of Iasi, Faculty of Physics, 11 Carol I Blvd., 700506 Iasi, Romania, (2) EnviroScopY SA, PSE - EPFL, Lausanne, Switzerland, (3) ESYRO (EnviroScopY SRL), Tehnopolis – Science & Technology Park, Iasi, Romania, (4) Regional Forecast Center Bacău, 1 Cuza Voda Str., 600274 Bacău, Romania, (5) National Institute of Research & Development for Optoelectronics, INOE, Bucharest - Măgurele, Romania

In the present context of efforts to develop accessible cost effective high-tech techniques for Earth Atmospheric observations of relevant parameters for climate triggering as aerosols and clouds or temperature and water vapor this paper is presenting the status of a LIDAR system development for profiling with high temporal (min) and spatial (m) resolution of aerosols and clouds properties. The new up-gradable configuration of mESYLIDAR is based on a powerful Nd:YAG 30 Hz pulsed laser (35 mJ at 355 nm, 100 mJ at 532 nm, 200 mJ at 1064 nm), a 40 cm Newtonian telescope and on a new opto-mechanics detection module built in an "eye geometry" considerations.

Thus the technical system description in details as well us the example of typical lidar elastic profiles at 532nm, 355 nm but also Raman ones at 387, 607 and 408 nm are expected. The system technical performances and the future improvements will be detailed as well as the explanation and the interpretation of some typical lidar, intercomparison profiles and meteorological context will be addressed.