

SPALINET: THE SPANISH AND PORTUGUESE AEROSOL LIDAR NETWORK

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Abstract

The information corresponding to the state of the atmosphere is one of the key inputs of the models of dispersion of the polluting agents. The characterization of the atmosphere not only in the horizontal scale but also in the vertical is an important added value for the models of weather forecast. This information can be obtained by means of lidar measurements.

The Spanish and Portuguese Aerosol Lidar Network (SPALINET) aims at extending and reinforcing the actions of the European network EARLINET (European Aerosol Research Lidar Network to Establish an Climatology Aerosol) initiated through the project “A European Aerosol Research Lidar Network to Establish an Climatology Aerosol: EARLINET”, contract n° EVR1-CT-1999-40003 of the 5th Framework Program, and supported, at present, as far as exchange of knowledge, by the Coordination Action “European Aerosol Research Lidar Network: Advanced Sustainable Observation System: EARLINET-ASOS”, contract n° 025991 (RICA) EARLINET-ASOS. SPALINET started on 1 January 2007, and is financed by the Spanish Ministry of Science and Innovation under the Complementary Actions CGL2006-26149-E/CLI and CGL2007-28871-E/CLI and CGL2008-01330-E/CLI.

The network is formed by 10 lidar stations: 6 elastic backscatter systems, 2 Raman systems in the visible spectrum, and 2 multi-wavelength systems. The geographical distribution is as follows: 8 stations are in the Iberian Peninsula (6 in Spain and 2 in Portugal) and 2 stations are in the Canary Islands. The activities realized during the first two years of the network were the intercomparisons of all systems at the hardware and software (elastic algorithms only) levels. The ongoing activity is the intercomparison of Raman algorithms, and the establishment of a protocol of participation as a whole of the network in national and international field campaigns.

The presentation will be twofold: (i) presentation of the results of the first two years of the network putting emphasis on the main conclusions drawn from the intercomparisons at both hardware and software levels, and (ii) description of the observational approach of the network in order to cover fields such as aerosol aging, transport, radiative forcing, with a special emphasis on desert dust whose intrusions over the Canary Islands and the Iberian Peninsula are more frequent than ever.

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