

Third Workshop on Lidar Measurements in Latin America and Second Course on Lidar Measurements

Dr. Alvaro Efraín Bastidas Gústín

Physics School, Universidad Nacional de Colombia Sede Medellín, Antioquia, Colombia, South America

Supported by The Abdus Salam International Centre for Theoretical Physics, (ICTP), Trieste, Italy, The Optical Society of America (OSA), Centro Latinoamericano de Física, (CLAF), Brazil, Universidad del Cauca, Pontificia Universidad Javeriana - Sede Cali, and Universidad del Valle, Cali, the Second Course on Lidar Measurements and the Third Workshop on Lidar Measurements in Latin America were held in the Popayán, Cauca, Colombia, between 11 and 15 July 2005.

The Course took place from July 11 - 12, in Popayán City. 26 students from Equator, Cuba and Colombia attended the course. Ten scientists from Spain, United States, Italy, The Netherlands, Brazil and Cuba, were the lecturers. The issues of the course were given on subjects such as lidar history, mechanisms of optical alignment and optic mechanics applied to systems of remote sensing, engineering issues for Lidar in Space, coupling numerical scattering modelling lidar, stratospheric aerosols lidar measurements, processing and analysis.

Lectures and presentations took place from July 13 - 15, in the same city. Fifty two assistants attended this Workshop. Lectures were also given on PBL Aerosols, Space lidar activities, Analysis of the optical properties of aerosols (Saharan dust) using lidar and sunphotometer; Lidar activities at IMAA-CNR Tito Scalo, Potenza, Italy; Space Weather Applications at ALOMAR/Andøya Rocket Range; Cirrus Clouds Optical Properties Measured With Lidar at Camagüey, Cuba; Lidar Measurements with Ipen's Aerosol Lidar During the Troccibras 2004 Campaign; Monitoring of air pollution and atmospheric parameters using a mobile backscatter lidar system.

Invited talks and papers of this workshop were published in the Spanish Journal of Optics. The Proceedings contains 16 papers presented at the Workshop, 10 oral and 6 poster presentations, and 15 lectures.

The OSA International Council has rewarded to the better works with an OSA Student Travel Award for a student attending the conference. For decision of our colleagues of the conference chairs: Dr. Errico Armandillo, ESA; Dr. Ángel M. de Frutos Baraja, Atmospheric Optical Group, Universidad de Valladolid, Spain; and Dr. Eduardo Landulfo, IPEN, Brazil, have selected two winners: Elena Montilla Rosero, Colombian, the best student poster at the conference:

TROPOSPHERIC LIDAR SYSTEM PROJECT IN CALI, COLOMBIA, and Boris Barja, Cuban the best student paper at the conference: CIRRUS CLOUDS OPTICAL PROPERTIES MEASURED WITH LIDAR AT CAMAGÜEY, CUBA.

The Workshop was centered mainly on instrumentation for lidar systems, quantitative measurements and inversion algorithms, and ALINE (Americas Lidar Network) activities were also coordinated.

With the realization of the Third Workshop “Lidar measurements in Latin-America” it was possible to communicate and share experiences in current techniques of environmental monitoring, to promote means of cooperation and integration, and to consolidate ALINE network activities. In addition, this it was an opportunity to present our interests to the international lidar community, as well as to promote the development of remote sensing techniques that can contribute to our knowledge of the tropical and subtropical atmosphere, and to research and service. The main conclusions were:

- 1. EARLINET (in its present phase) is short of funding, but its support was sought in the ILRC meeting at Matera in 2004. There is still a possibility of new consideration of the proposal by the European Community in the context of phase 2 of EARLINET. Common points for cooperation with EARLINET must be found and made explicit.*
- 2. Regarding ICTP, its funding has decreased, but it is possible to obtain support for researcher mobility and training.*
- 3. MPLNET's primary objectives are satellite validation, aerosol and cloud characterization, and aerosol transport studies. NASA would find cooperation between this network of micro-pulse lidars with ALINE to be of interest, and it could be possible (but not guaranteed) that funding for at least one system for Latin American be obtained from the US agency. That program operates on 3-yr cycles, and the cost of each system (not including installation, site preparation or training) is around US\$130k. AERONET sites are preferred, but conceivably new ones could be set up. Special conditions in potential sites such as significant biomass burning are of particular interest. There is also a need to build competence and technology.*
- 4. Still another opportunity lies with Spain's new RIMA network for aerosol science, which could conceivably provide a CIMEL photometer to complement a future lidar facility in LA. EU mobility programs are already available which offer Latin American scientists the opportunity to participate in European campaigns, as long as the majority of researchers are from the EU.*

5. *Regarding contact with IANABIS, which has not been successful so far, Eduardo Palenque, who is the Bolivian representative to this collaboration, offered to renew the efforts to approach it. Many of IANABIS' objectives are common with ALINE's, so this endeavor must not be abandoned.*
6. *Sao Paulo (Brazil) interested in hosting the event for the next meeting, in 2007.*
7. *Soon will be available a web site to host all matters and materials relevant to ALiNe.*

Note: This report was submitted to the IAI for its publication at the IAI Newsletter, but has never been published according to the information provided by Dr. Alvaro Bastidas at the Discussion Session of the IV Workshop, Ilhabela, Brazil, June 20th, 2007.