

Report IV Workshop on Lidar Measurements in Latin America

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Report of the IV Workshop on Lidar Measurements in Latin America.
(Ilha Bela, Brazil, 17-23 June, 2007)

Participants:

Lidar researcher and graduate students from Latin America and the rest of the world attended the workshop. The Latin America's attendees were 30 from Argentina (4), Brazil (17), Colombia (5) and Cuba (4). Twelve (12) attendees from the rest of the world came from Greece (3), India (1), Italy (2), Netherlands (1) and United States (5). Also representatives from ESA, NASA and EARLINET participated in the workshop. The total of participants was 42, 20 of them students and the rest scientists and engineers.

Sponsors and Supporters:

Sponsors were the National Council for Scientific and Technological Development of Brazil (CNPq), European Space Agency (ESA), the São Paulo State Foundation for Research Support (FAPESP), Latin American Center of Physics (CLAF), International Coordination group on Laser Atmospheric Studies (ICLAS), Quantum Tech, Campbell Scientific and Laser Tools Ltda. Crucial support was also provided by the Instituto de Pesquisas Energeticas e Nucleares (IPEN), Instituto Nacional de Pesquisas Espaciais (INPE) and Camagüey Meteorological Centre from the Cuban Institute of Meteorology (INSMET). The institutions contributed with the time of members of the International and Local Organizing Committees, local facilities and communications in Brazil, design, construction and maintenance of the workshop homepage. Hosting of the web page was provided also by the three institutions. The Grupo de Óptica Atmosférica of the University of Valladolid, Spain, will provide the funding necessary for publishing the papers presented at the Workshop. The papers will be published in Óptica Pura y Aplicada (OPA) the journal of the Optical Society of Spain.

Oral Presentations and Posters:

A total of 45 presentations took place, 29 of them oral and 16 as posters. An award committee selected the best student presentations in oral and poster sessions. The prizes consisted in 450.00 USD for the Best Oral Presentation and 350.00 USD for the Best Poster Presentation. The award committee was chaired by Dr. Errico Armandillo (ESA). The rest of the members were Dr. Gelsomina Papalardo (EARLINET), Dr. S. L. Jain (NPL-India), Dr. Ruben Delgado (UMBC-ESA) and Dr. Upendra N. Singh (NASA). The individual evaluation of the members of the committee took place during the sessions. A joint session of the award committee decided to award the Best Oral Presentation to Dr. Elian Wolfram, for the presentation "Ozone DIAL measurements in Argentina as part of SOLAR Campaign". The award for the Best Poster Presentation was divided between two students. Eliane Goncalves for her poster "Detection subvisual cirrus from LIDAR system and implementation of cloud mask to satellite images" and Fabio J. S. Lopes for the poster "Multi-Instrumental Study of Aerosol Optical Properties over the city of São Paulo: LIDAR, Sunphotometer and CALIPSO Satellite".

Discussion Session:

As in the three previous workshops the Discussion Session showed itself to be an important component of the workshop. Conducted by Dr. Juan Carlos Antuña jointly with Dr. Eduardo Landulfo and Dr. Barclay Clemesha the exchanges were focused in five main subjects. They were:

1. The Network's Future.
2. Capacity Building
3. Books donation
4. V WLMLA (2009)
5. Publication of Papers in the journal *Optica Pura y Aplicada*

Regarding the first point broad discussions took place. Attendees from EARLINET, ESA and NASA provided their different points of view on how to proceed for creating the Lidar Network in Latin America. The consensus among the Latin American attendees was to make the effort to constitute an official Latin American body of the network under the umbrella of one scientific institution in the region. It will be necessary to draft the organizational rules for the network operation. Dr. Eduardo Landulfo offered to conduct this effort in Brazil. There was a general consensus to accept Dr. Landulfo's offer.

Another suggestion was to prepare a draft proposal for the next CYTED call in parallel to the effort to officially create the network. This proposal will be aimed at creating working groups among the members of the lidar community in Latin America to address particular issues of the network. They will concentrate on standardizing measurements, processing algorithms and quality control, as well as the archiving rules and policies. Dr. Antuña offered to conduct the proposal drafting process, receiving the consensus of the attendees.

A suggestion was made in the course of the discussions of this topic. This consisted in adding to the existing homepage a page with links to the call for proposals and opportunities, both regional and global.

The discussions on Capacity Building topic were extensive. It was the general consensus to maintain the participation of young scientists and students in the Workshops. It was also considered very important to encourage the incorporation of graduate students from countries with no lidar groups to existing lidar groups in other countries in Latin America. Such exchange will provide a unique opportunity for training students and young scientists and transferring know-how with regional resources. It will also allow the reinforcement of the exchanges among the groups and the establishment of regular contacts.

An important proposal was the organization of a Lidar Summer School in Latin America. On the basis of several opinions and suggestions on organization and the search for funding a general consensus was reached on the importance of trying to implement this proposal. This effort will be headed by Ani Sobral (B. Sc) under Dr. Eduardo Landulfo's guidance.

Also on this topic suggestions were made to add two more pages to the existing homepage. One page will contain links to the most relevant lidar literature. The other will have links to the regional and international opportunities for graduate and undergraduate fellowships in the area of lidar. The attendees agree that it will be crucial for the effectiveness of such pages that anyone with relevant information should contribute.

The topic related to the Books Donation originated in the suggestion made during the 23rd ILRC (Nara July 2006) by Dr. Raymond Hoff. He proposed to the International Lidar

Community to contribute to our future network with the donation of books needed by our lidar teams. To make this possible a list of the most needed books was requested from the leaders of the lidar groups in Latin America. Very few answers have been received up to the present. The July 15th deadline was agreed for the list of needed books to be sent to Dr. Hoff.

The next topic was the hosting of the V Workshop on Lidar Measurements in Latin America in 2009. Dr. Elian Wolfram transmitted the offer of Dr. Eduardo Quel, head of CEILAP in Argentina, to host the next Workshop. Several suggestions of possible funding sources were made. They included those which have contributed in the past as well as others like NASA and WMO. The calendar of organizational activities for the V Workshop will be ready by the end of the year.

The last topic discussed was the publication of the conference papers in *Óptica Pura y Aplicada* (OPA) the journal of the Optical Society of Spain. It was announced that Dr. Angel de Frutos, leader of the Grupo de Óptica Atmosférica of the University of Valladolid, Spain, will provide the funding necessary for publishing the papers presented at the Workshop. A working group has been setup for coordinating the peer review process of the papers already submitted. The chair of the group is Dr. Eduardo Quel. The calendar for the publication is the following:

- August-September: Peer review and return of the accepted papers to authors for final corrections
- October 30th: Dateline for submission of final versions to LOC
- November 30th: Submission to OPA of the Papers

At the end of the session several attendees acknowledged the quality of the organization of the workshop. A general consensus was to praise the LOC and in particular Dr. Eduardo Landulfo and Dr. Barclay Clemesha for the work they have done for organizing the workshop and making it successful.

Visits to INPE and IPEN:

On Friday 22nd June, visits were conducted to the lidar facilities located both at INPE and IPEN. Fruitful exchanges took place at both locations. Visitors expressed their admiration for the expertise and creativity demonstrated at both lidar facilities. Possibilities of cooperation and exchanges between the guests and the visitors were expressed by both sides. Those possibilities are expected to be explored in the next future.

LIST OF SPONSORS

<i>NAME</i>	<i>Amount of contribution (US\$)</i>
European Space Agency (ESA)	5,200.00
Conselho Nacional de Desenvolvimento Científico e Tecnológico	6,400.00
Inter-American Agency for Global Change Research (IAI)	3,000.00
International Coordination-group on Laser Atmospheric Studies	1,000.00
Fundação de Amparo à Pesquisa do Estado de São Paulo	5,000.00 (to be confirmed)
Petrobrás	2,500.00 (to be confirmed)
Latin American Center of Physics	1,000.00
Quantum Tech	Press Material
Campbell Scientific	1,250.00
Lasertools	Laser Engraving Service



Group Photo at Ilha Bela