

**Report of the V Workshop on Lidar Measurements in Latin
America**

Buenos Aires, November 30 – December 3, 2009





V Workshop on Lidar Measurements in Latin America
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1. Participants

The fifth edition of the Workshop on Lidar Measurements in Latin American met researchers and students from Latin America and the rest of the World as never before. A total of 65 participants attended this meeting, which was held at the Instituto Tecnológico de Buenos Aires (ITBA), from November 30 to December 3, 2009. Latin American participants account for 65% of the total, with the other 35% coming from the rest of World (see. Fig 1). Table 1 shows the distribution per country.

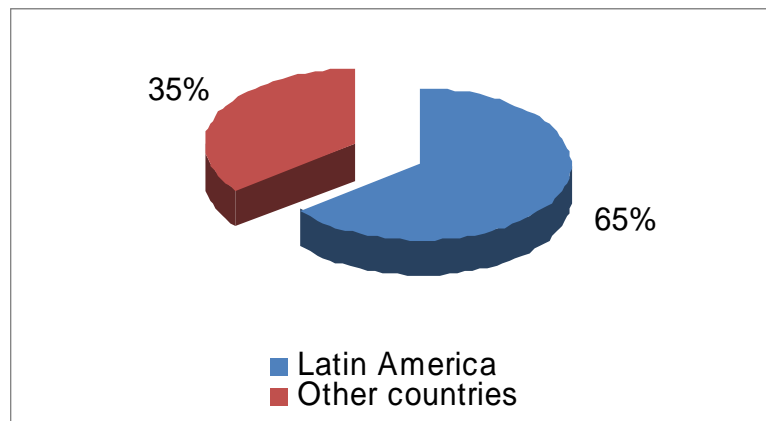


Figure 1. Region Participant Distribution. Of 65 participants, 42 (65%) came from Latin America and 23 (35%) from the rest of the World.

Table 1. Distribution per Country

Country	Nr. of Participants
Argentina	14
Bolivia	3
Brazil	13
Chile	1
Colombia	3
Costa Rica	2
Cuba	4
Spain	7
France	3
Greece	2
Holland	3
Japan	1
Panama	1
Peru	1
Russia	1
USA	6
Total	65



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The academic composition of the participants is shown on Table 2. A total of 21 students attended this event, representing 32% of the total, which shows the fulfilment of the main goal of the V WLMLA: to join Latin American researchers and students not only amongst their countries, but also between them and the rest of the leaders of the international lidar teams (Fig. 2). The number of participants in this edition of the WLMLA experienced a 47% increase regarding the previous edition in Brazil.

Table 2. Academic composition

Degree	Nrs.	Percentage
PhD Students	19	29%
Doctors	29	45%
Professors	7	11%
Sponsors	4	6%
Grad Students	2	3%
Eng. and Tech.	4	6%
Total	65	100%

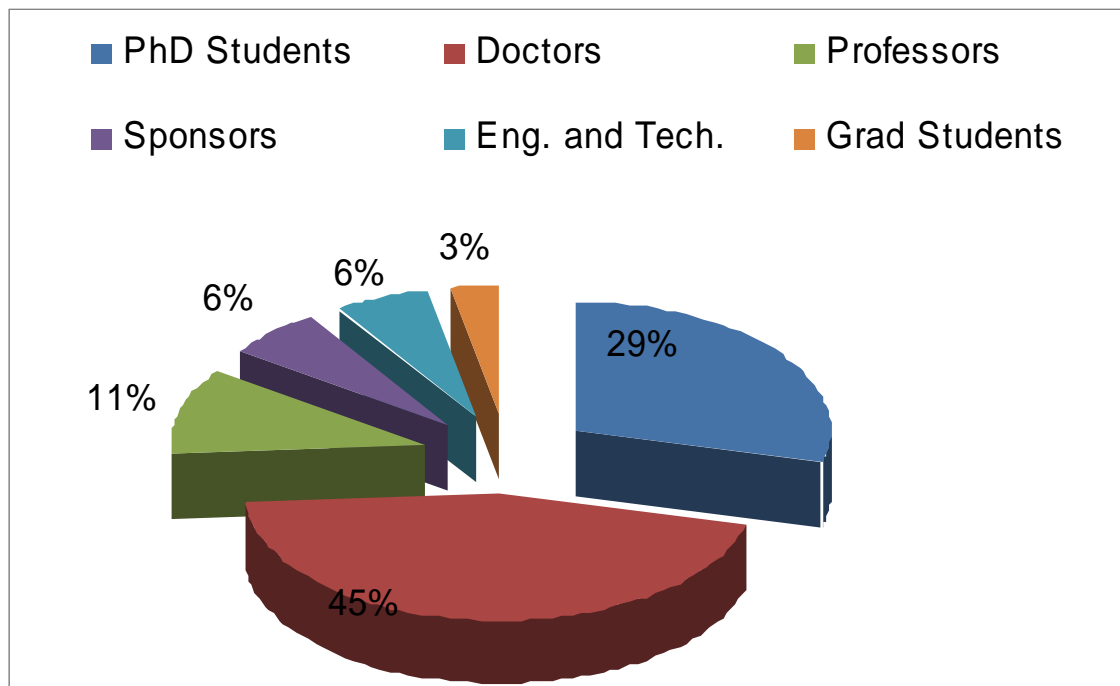


Fig. 2. Participant composition.



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2. Travel grants

Name	Country	Grant given
Glauber Lopes Mariano	Brazil	Full housing
Elisa Sena	Brazil	Full air ticket
Vânia Fátima Andrioli	Brazil	Full housing
Fábio Juliano da Silva Lopes	Brazil	Full housing
Fernanda Tortosa Fernandes	Brazil	Full housing
Daniel José Nisperuza Toledo	Colombia	Full
Álvaro Efraín Bastidas Gustín	Colombia	Full
Rodrigo Jiménez Pizarro	Colombia	Full
Eliecer Duarte	Costa Rica	Full air ticket
Carlomagno Soto Castro	Costa Rica	Full
Carlos Hernández Bruneta	Cuba	Full
René Estevan Arredondo	Cuba	Full
Juan Carlos Antuña	Cuba	Full
Boris Barja González	Cuba	Full
Elena Montilla	Spain	Registration fee
Elina Giannakaki	Greece	Full
Elena Lobo López	Panama	Full
José Daniel Yokota de la Fuente	Peru	Full
Igor Veselovskiy	Russia	Full air ticket

	Amount spent (USD)
Air tickets	17,555
Housing	5,750
Meals	1,784
Total Travel Grants	25,089

3. Sponsors

International	Amount of contribution (USD)
ESA	7,144
JICA	2,604
Kipp & Zonen	2,500
Licel	2,144
OSA	2,000
ICO	1,000
CLAF	1,000
Campbell Scientific Brasil	Air tickets for 10 people
NASA	Air tickets and housing for 4 people
ITBA	Venue
Subtotal 1	18392



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Argentinian	
MINCYT	3,906
CITEDEF	2,604
ANPCYT	2,578
CONICET	1,302
UNSAM	781
FIUBA	520
COASIN	312
Laser Optics	286
Subtotal 2	12289
TOTAL	30,681

4. Oral and poster presentation

For the Oral presentations, see PDF File: “Annex 1_Oral Presentations”

For the Poster presentations, see PDF File: “Annex 2_Poster Presentations”

5. PDF files of PP Oral presentations

Up to this date, we have received written authorization from speakers of 23 out of 31 oral presentations that took place during the meeting. We will upload them tomorrow on an internet host in order to have them available for participants only.

6. Selected papers to be published in OPA

The deadline for the submission of the final articles is March 31st, 2010. Afterwards, a selection of those papers will be sent in due time to *Optica Pura y Aplicada* magazine to be refereed and published.

7. Open Discussion Session

The Open Discussion Session took place at the end of the afternoon session on December 2nd. It was conducted by Dr. Juan Carlos Antuña, Chair of the International Organizing Committee (IOC) of the V Workshop, with the active participation of Dr. Eduardo Quel, Chair of the Local Organizing Committee (LOC), and the rest of the leaders of the lidar teams in Latin America.

The fulfilment of agreements and commitments decided at the Open Discussion Session of the IV Workshop (Ilhabela, Brazil, 2007) were evaluated. Among the suggestions already successfully implemented were the addition of pages for lidar literature and fellowship opportunities to the Workshop web site; the publication in *Pure*



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and Applied Optics (OPA, Óptica Pura y Aplicada) of the peer reviewed papers presented at the IV Workshop and the organization and execution of the V Workshop. The drafting and submission of proposals for the CYTED calls of 2008 and 2009 was not possible because of a lack of appropriate lines of research in both these calls. The drafting of the organizational rules and the organization of lidar summer schools were not realized because of a lack of appropriate conditions.

Next, an exchange of opinions took place concerning the future of the lidar community in Latin America, including the continuation of the Workshops and the convenience or not of formalizing a lidar network. The general consensus was to continue hosting the Workshops with the same periodicity. Dr. Barclay Clemesha suggested affiliation to ALAGE (Asociación Latinoamericana de Geofísica Espacial). It was decided that the leaders of the various lidar teams should evaluate this possibility together.

Dr. Francesco Zaratti, leader of the lidar team from Bolivia, offered La Paz, Bolivia for hosting the VI Workshop in 2011. He explained the facilities and options available at this location. The general consensus was to accept the offer, with some suggestions about selecting a location in the vicinity of La Paz with the lowest altitude possible, because of health concerns. It was pointed out that the VI Workshop will mark the 10th anniversary of this enterprise. It was announced that the lidar team leaders had agreed that Dr. Eduardo Landulfo will be the Chair of the IOC of the VI Workshop and Dr. Francesco Zaratti will be the Chair of the LOC. The composition both of the IOC and the LOC will be decided in future contacts between the lidar team leaders.

The process for the publication in OPA of the peer reviewed papers presented at the V Workshop was explained by Dr. Eduardo Quel. The submission deadline for the extended abstracts was set for March 31st, 2010. An appeal was made for the contribution of some of the attendees as referees for the peer review process.

Dr. Eduardo Landulfo proposed a vote of thanks to the members of the LOC of the V WLMLA. The high quality of the whole organizational process, the selection of a convenient location for the sessions and the guarantee of all the needed resources for the successful implementation of the Workshop were highlighted.

The publication in OPA of the peer reviewed papers presented in the III, IV and V Workshops has been possible thanks to the financial support of the Optical Atmospheric Group of the University of Valladolid, through the personal effort and engagement of Dr. Angel de Frutos Barajas, leader of this group. This important contribution was recognized and acknowledged by the Workshop attendees.

Particular acknowledgement was made to the permanent financial support for all the Workshops, from the 2nd on, provided by the European Space Agency (ESA), via the engagement of Dr. Errico Armandillo. Dr. Armandillo is also the only non-Latin-American scientist to have participated in all but the 5 workshops conducted already. His permanent support has included not only ESA funding, but also his work in several of the Workshop International Organizing Committees, his participation in the Awards Committees in a number of the Workshop and his regular advice and suggestions on how to promote the advance of the lidar community in Latin America.

At the end of the meeting several attendees made suggestions on how to improve the Workshop web page and to make it more active. They include making links to the



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WLMLA site at each lidar web site in Latin America. The preliminary page for the VI WLMLA with the Chairs of the IOC and the LOC, as well as the current available information about the host country will be created before the end of the year. Dr. Angel de Frutos Barajas offered to host a mirror of the Web site at the University of Valladolid.

8. Visit to CEILAP (CITEFA-CONICET)

On December 3rd, a visit to CEILAP's facilities at CITEFA took place for two and a half hours. The visit was focused on Lidar Division, in particular, and also on and the rest of the Divisions. They were welcomed by the respective Division Managers and research staff.

9. Visit to La Mimosa

The attendants were invited in that same afternoon to participate of a field day at La Mimosa Farm Stay, located on Route 6, 60km away from the centre of Buenos Aires, where all of them enjoyed a Creole "Asado" and, afterwards, listened and danced to argentinian folklore music. In addition, they were able to do horse backriding, go around on carts and see classical spectacles from the argentinian countryside. At 18:30 hs everybody returned to their respective hotels.

10. Balance

This information will be provided completely once the remaining subsidies are cashed. Up to this date, there are no further expenses, but two important grants corresponding to two argentinian Agencies are yet to be collected.



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11. Recreation activities



“Asado” and a Day at the Countryside and Creole Festival



Group picture.



12. International and Local Organizing Committee.

International Organizing Committee

Dr. Juan C. Antuña (Chair)	CLS-INSMET, Cuba.
Dr. Eduardo Quel (Co-Chair)	CEILAP, Argentina.
Dr. Eduardo Landulfo	IPEN, Brazil.
Dr. Barclay Clemesha	INPE, Brazil.
Dr. Errico Armadillo	ESA, EC.
Dr. Efraín Solarte	Universidad del Valle, Colombia.
Dr. Francesco Zaratti	Universidad Mayor de San Andrés, Bolivia.
Dr. Angel de Frutos	Universidad de Valladolid, España.
Dr. Gelsomina Pappalardo	IMAA, Italia.
Dr. Upendra Singh	LaRC-NASA, USA.
Dr. David N. Whiteman	GSFC-NASA, USA.

Local Organizing Committee

Dr. Eduardo Quel (Chair)	División Lidar-CEILAP (CITEFA-CONICET)
Dr. Elian Wolfram	División Lidar-CEILAP (CITEFA-CONICET)
Dr. Lidia Otero	División Lidar-CEILAP (CITEFA-CONICET)
Dr. Pablo Ristori	División Lidar-CEILAP (CITEFA-CONICET)
Eng. Juan Pallotta	División Lidar-CEILAP (CITEFA-CONICET)
Eng. Ezequiel Pawelko	División Lidar-CEILAP (CITEFA-CONICET)
Eng. Jacobo Salvador	División Lidar-CEILAP (CITEFA-CONICET) // UNPA
Bioeng. Marcelo Raponi	División Lidar-CEILAP (CITEFA-CONICET)
Grad. Pedro Tiberi	Secretaría de Medio Ambiente - Provincia Santa Cruz
Tech. Germán Montero	Agencia Ambiental de la Municipalidad Río Gallegos
Tech. Raúl D'Elía	División Lidar-CEILAP (CITEFA-CONICET)



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Tech. Evangelina Martorella	División Lidar-CEILAP (CITEFA-CONICET)
Eng. Néstor Cortez	Universidad Nacional de la Patagonia Austral (UNPA)
Mrs. Mirta Rinaldi	Secretaría - CEILAP (CITEFA-CONICET)
Mrs. Silvana Brusca	Secretaría - CEILAP (CITEFA-CONICET)
Ms. Belén Benzo	Secretaría - CEILAP (CITEFA-CONICET)
Ms. Jéssica Mlacak	Secretaría - CEILAP (CITEFA-CONICET)