



*Latinamerican Association of Space Geophysics  
Asociación Latinoamericana de Geofísica Espacial  
Associação Latino-americana de Geofísica Espacial*

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*Ciencia hay una sola y comunidad  
científica una sola.*

*Juan G. Roederer (Cuba 1993)*

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Diretoria 2011-2013

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Carrasco

## **1. Editorial**

Quero aqui enviar um agradecimento todo especial aos membros da diretoria anterior da ALAGE e também aos membros do Comitê local organizador da IX COLAGE pelo excelente trabalho realizado. Em especial a Inez Batista e Polinaya Muralikrisna por providenciarem a Ata da Assembléia em Puntarenas, Costa Rica e também a Lela Taliashvili e Francisco Frutos pelo relatório da IX COLAGE.

Este é o primeiro boletim editado pela atual diretoria da ALAGE escolhida na última reunião em Puntarenas, Costa Rica e está dedicado principalmente à divulgação dos eventos ocorridos na IX COLAGE.

Esta reunião tratou de cobrir todas as áreas da Geofísica Espacial de modo a atender às expectativas dos participantes. O apoio inestimável dos convidados e a calorosa acolhida dos donos da casa tornaram muito agradável e frutífera a nossa estadia em Punta Leona.

Paulo Prado Batista

## 2. IX Conferência Latinoamericana de Geofísica Espacial

A IX COLAGE cobriu cinco grandes áreas de pesquisa às quais se dedicaram distintos números de seções em concordância com o número de trabalhos apresentados. Um relatório da nona COLAGE nos foi proporcionado pelos organizadores da mesma.

### 2.1 La Novena Conferencia Latinoamericana de Geofísica Espacial (IX COLAGE) - Informe Final

**Por la Dra. Lela Taliashvili y Dr. Francisco Frutos, organizadores locales de IXCOLAGE**

La Conferencia Latino Americana de Geofísica Espacial (COLAGE) tiene como objetivo principal el de promover el intercambio académico entre investigadores y estudiantes latinoamericanos que trabajan principalmente en el área de la Geofísica Espacial.

Objetivos particulares son los de mantener el espíritu de desarrollo y colaboración científica entre la comunidad de los investigadores latinoamericanos que trabajan en Geofísica Espacial, y cuya mayor parte acude a todas las COLAGE, así como presentar un panorama actualizado de esta ciencia, promover el intercambio de ideas, difundir sus resultados y brindar a los estudiantes de posgrado una oportunidad de participar e interactuar con otros colegas latinoamericanos e internacionales.

La **IX Conferencia Latino Americana de Geofísica Espacial**, se realizó con el apoyo de la Rectoría, Vicerrectoría, Centro de Investigaciones Espaciales (CINESPA) y el Planetario de San José de la Universidad de Costa Rica (UCR), Consejo Nacional de Ciencia y Tecnología de Costa Rica (CONICIT), Centro Latinoamericano de Física (CLAF) y Committee on Space Research (COSPAR).

La IX COLAGE se organizó en ocho sesiones:

- Sesión 1: Sol y Heliosfera (Chairs: S. Dasso y M. Machado)
- Sesión 2: Magnetosfera (Chair: W. González)
- Sesión 3: Ionosfera y Atmósfera (Chairs: I. Batista y J. Chau)
- Sesión 4: Física de plasmas del Sistema Solar (Chairs: D. Gomez y V. Jatenco)
- Sesión 5: Clima Espacial y Climatología Espacial (Chair: B. Mendoza)
- Sesión 6: Procesos no Lineales en Geofísica Espacial (Chairs: A. Chian y J. Valdivia)
- Sesión 7: Planetas, Cuerpos Pequeños y Exoplanetas (Chairs: C. Bertucci y H. Pérez)
- Sesión 8: En Honor del Dr. Mario Acuña (Chair: J. Valdes)

La distribución del número total de **132** contribuciones aparece en el **cuadro 1**:

**Cuadro 1. Número de Contribuciones**

Tipo de Presentación	Sesión								Total
	1	2	3	4	5	6	7	8	
<b>Oral</b>	19	8	22	5	13	5	4	4	<b>80</b>
<b>Poster</b>	14	5	18	0	10	2	3	-	<b>52</b>
<b>Total</b>	<b>33</b>	<b>13</b>	<b>40</b>	<b>5</b>	<b>23</b>	<b>7</b>	<b>7</b>	<b>4</b>	<b>132</b>

El número total de participantes fue de **110**, 31 estudiantes (1 sin graduar, 3 estudiantes de Maestría y 27 estudiantes de Doctorado) y 79 investigadores, como se aprecia del **cuadro 2**. Asistieron participantes de 18 países; por Latinoamérica: Argentina (13 participantes), Brasil (28), Chile (2), Costa Rica (8), Cuba (3), México (23), Perú (2), Puerto Rico (3) y Venezuela (1). También tuvimos participantes internacionales: Alemania (1), Bélgica (1), Dinamarca (1), España (2), Estados Unidos (14), Francia (2), Finlandia (1), Italia (2) y Rusia (2). Se presentaron **28** conferencias invitadas, que se pueden ver en la página web de la COLAGE: <http://www.colage.cinespa.ucr.ac.cr/>, a cargo de los siguientes investigadores:

- Prof. Frank McDonald (EE.UU.)
- Dr. Cesar Bertucci (Argentina)
- Dr. Adolfo Figueroa Viñas (EE.UU.)
- Dr. Marcos Machado (Argentina)
- Dr. Bruce Lites (EE.UU)
- Dr. Brigitte Schmieder (Francia)
- Dr. Cristina Mandrini (Argentina)
- Dr. Guillermo Stenborg (EE.UU.)
- Dr. Luciano Rodríguez (Bélgica)
- Dr. Janet Kozyra (EE.UU.)
- Dr. Ramón López (EE.UU.)
- Prof. Vytenis Vasyliunas (Alemania)
- Dr. Lutz Raestetter (EE.UU.)
- Dr. Walter González (Brasil)
- Dr. Aline de Lucas (Brasil)
- Dr. Jorge Chau (Perú)
- Dr. Marco Milla (Perú)
- Dr. Torsten Neubert (Dinamarca)
- Dr. Américo González (México)
- Dr. Leonty Miroshnichenko (Rusia)
- Dr. Alisson Dal'Lago (Brasil)
- Dr. Ilya Usoskin (Finlandia)
- Dr. Merav Opher (EE.UU.)
- Dr. Roberto Bruno (Italia)
- Dr. Gaetano Zimbardo (Italia)
- Dr. Pablo Dmitruk (Argentina)
- Dr. Xochitl Blanco (México)
- Dr. Alexander Lazarian (EE.UU.)
- Dr. María Josefina Olascoaga (EE.UU.)
- Dr. Francisco Beron-Vera (EE.UU.)

**Cuadro 2. Lista de participantes**

#	Apellido	Nombre	País	Estatus	Correo Electrónico
1	Guizzelli	Laís	Brasil	Est. Under	<a href="mailto:lais@dae.inpe.br">lais@dae.inpe.br</a>
2	Azambuja	Rodrigo	Brasil	Est. Msc.	<a href="mailto:rodrigoaza@gmail.com">rodrigoaza@gmail.com</a>
3	Salas Matamoros	Carolina	Costa Rica	Est. Msc.	<a href="mailto:carolina.salas@planetario.ucr.ac.cr">carolina.salas@planetario.ucr.ac.cr</a>
4	Vieira	Lucas	Brasil	Est. Msc.	<a href="mailto:lucas.vieira@dge.inpe.br">lucas.vieira@dge.inpe.br</a>
5	Aguado	Jesús	España	Est. PhD.	<a href="mailto:jesus.aguado@uah.es">jesus.aguado@uah.es</a>
6	Álvarez-Castillo	Jesús	México	Est. PhD.	<a href="mailto:jac@geofisica.unam.mx">jac@geofisica.unam.mx</a>
7	Andrade M.	Ernesto	México	Est. PhD.	<a href="mailto:eandrade@geofisica.unam.mx">eandrade@geofisica.unam.mx</a>
8	Cervantes Núñez	Sandro	México	Est. PhD.	<a href="mailto:scervantes@atmosfera.unam.mx">scervantes@atmosfera.unam.mx</a> <a href="mailto:alainguzman@msn.com">alainguzman@msn.com</a>
9	Cipagauta Lara	Elsy Carolina	México	Est. PhD.	<a href="mailto:carocipa@gmail.com">carocipa@gmail.com</a>
10	Collado-Vega	Yaireska	EE.UU.	Est. PhD.	<a href="mailto:yaireska.m.colladovega@nasa.gov">yaireska.m.colladovega@nasa.gov</a>
11	Corona-Romero	Pedro	México	Est. PhD.	<a href="mailto:piter.cr@gmail.com">piter.cr@gmail.com</a>
12	da Silva	Caítano Luiz	Brasil	Est. PhD.	<a href="mailto:supercaitano@gmail.com">supercaitano@gmail.com</a>
13	De la Luz Rodriguez	Victor Hugo	México	Est. PhD.	<a href="mailto:itztli@gmail.com">itztli@gmail.com</a>
14	Egito	Fábio	Brasil	Est. PhD.	<a href="mailto:fabioegito@dae.inpe.br">fabioegito@dae.inpe.br</a>
15	Gonzalez	Luis Xavier	México	Est. PhD.	<a href="mailto:xavier@geofisica.unam.mx">xavier@geofisica.unam.mx</a>
16	Guimarães Guedes	Márcia Regina	Brasil	Est. PhD.	<a href="mailto:mrguedes@gmail.com">mrguedes@gmail.com</a> <a href="mailto:heidy.gutierrez@ucr.ac.cr">heidy.gutierrez@ucr.ac.cr</a>
17	Gutiérrez Garro	Heidy	Costa Rica	Est. PhD.	<a href="mailto:heidygutig@gmail.com">heidygutig@gmail.com</a>
18	Kajdič	Primož	México	Est. PhD.	<a href="mailto:primoz@geofisica.unam.mx">primoz@geofisica.unam.mx</a>
19	López Montes	Rebeca	México	Est. PhD.	<a href="mailto:rebeca@geociencias.unam.mx">rebeca@geociencias.unam.mx</a>
20	Mejia-Ambriz	Julio Cesar	México	Est. PhD.	<a href="mailto:julio@ifm.umich.mx">julio@ifm.umich.mx</a>
21	Molina	María Graciela	Argentina	Est. PhD.	<a href="mailto:gmolina@herrera.unt.edu.ar">gmolina@herrera.unt.edu.ar</a>
22	Moro	Juliano	Brasil	Est. PhD.	<a href="mailto:juliano@dae.inpe.br">juliano@dae.inpe.br</a>
23	Muñoz Gutberlet	Pablo Rubén	Brasil	Est. PhD.	<a href="mailto:pmunoz@dge.inpe.br">pmunoz@dge.inpe.br</a>
24	Osorio Rosales	Jaime Arturo	México	Est. PhD.	<a href="mailto:jaime@geofisica.unam.mx">jaimed@geofisica.unam.mx</a>
25	Pazos Espejel	Marni	México	Est. PhD.	<a href="mailto:marni@geofisica.unam.mx">marni@geofisica.unam.mx</a>
26	Resende	Laysa	Brasil	Est. PhD.	<a href="mailto:laysa@dae.inpe.br">laysa@dae.inpe.br</a>
27	Rodríguez-Martínez	Mario	México	Est. PhD.	<a href="mailto:mariorm@geociencias.unam.mx">mariorm@geociencias.unam.mx</a>
28	Santos	Ángela M.	Brasil	Est. PhD.	<a href="mailto:angela@dae.inpe.br">angela@dae.inpe.br</a>
29	Vargas Cárdenas	Bernardo	México	Est. PhD.	<a href="mailto:bernardo@geofisica.unam.mx">bernardo@geofisica.unam.mx</a>
30	Velázquez Sánchez	Raúl	México	Est. PhD.	<a href="mailto:ravelsa@geofisica.unam.mx">ravelsa@geofisica.unam.mx</a>
31	Vogel Ely	Cláudia	Brasil	Est. PhD.	<a href="mailto:claudia.ely@dae.inpe.br">claudia.ely@dae.inpe.br</a>
32	Argall	Matthew	Costa Rica	Investigador	<a href="mailto:argallmr@gmail.com">argallmr@gmail.com</a>
33	Ballereau	Dominique	France	Investigador	<a href="mailto:dominique.ballereau@obsppm.fr">dominique.ballereau@obsppm.fr</a>
34	Batista	Paulo	Brasil	Investigador	<a href="mailto:ppbatista@laser.inpe.br">ppbatista@laser.inpe.br</a>
35	Batista	Inez Staciardini	Brasil	Investigador	<a href="mailto:inez@dae.inpe.br">inez@dae.inpe.br</a> <a href="mailto:daniel.b.berdichevsky@nasa.gov">daniel.b.berdichevsky@nasa.gov</a>
36	Berdichevsky	Daniel B.	EE.UU.	Investigador	<a href="mailto:dbberdi@yahoo.com">dbberdi@yahoo.com</a>
37	Beron-Vera	Francisco	EE.UU.	Investigador	<a href="mailto:fberon@rsmas.miami.edu">fberon@rsmas.miami.edu</a>
38	Bertucci	Cesar	Argentina	Investigador	<a href="mailto:cbertucci@iafe.uba.ar">cbertucci@iafe.uba.ar</a>
39	Blanco Cano	Xochitl	México	Investigador	<a href="mailto:xbc@geofisica.unam.mx">xbc@geofisica.unam.mx</a>
40	Bruno	Roberto	Italia	Investigador	<a href="mailto:roberto.bruno@ifsi-roma.inaf.it">roberto.bruno@ifsi-roma.inaf.it</a>
41	Carboni	Rodrigo	Costa Rica	Investigador	<a href="mailto:rcarboni@fisica.ucr.ac.cr">rcarboni@fisica.ucr.ac.cr</a>
42	Carrasco	Alexander	Venezuela	Investigador	<a href="mailto:layerf2@yahoo.com">layerf2@yahoo.com</a>
43	Carrillo Vargas	Armando	México	Investigador	<a href="mailto:armando@geofisica.unam.mx">armando@geofisica.unam.mx</a>
44	Chau	Jorge Luis	Peru	Investigador	<a href="mailto:jorge.chau@jro.igp.gob.pe">jorge.chau@jro.igp.gob.pe</a>
45	Chian	Abraham	Brasil	Investigador	<a href="mailto:achian@dge.inpe.br">achian@dge.inpe.br</a>
46	Clemesha	Barclay Robert	Brasil	Investigador	<a href="mailto:brc@laser.inpe.br">brc@laser.inpe.br</a>
47	Clúa de Gonzalez	Alicia L.	Brasil	Investigador	<a href="mailto:alicia@dge.inpe.br">alicia@dge.inpe.br</a>
48	Cordero Tercero	Maria Guadalupe	México	Investigador	<a href="mailto:gcordero@geofisica.unam.mx">gcordero@geofisica.unam.mx</a>
49	Dal'Lago	Alisson	Brasil	Investigador	<a href="mailto:dallago@dge.inpe.br">dallago@dge.inpe.br</a>
50	Dasso	Sergio	Argentina	Investigador	<a href="mailto:dasso@df.uba.ar">dasso@df.uba.ar</a>
51	de Lucas	Aline	Brasil	Investigador	<a href="mailto:adelucas@gmail.com">adelucas@gmail.com</a>
52	De Nardin	Clezio Marcos	Brasil	Investigador	<a href="mailto:denardin@dae.inpe.br">denardin@dae.inpe.br</a>

53	del Pozo García	Eduardo	Cuba	Investigador	<a href="mailto:pozo@iga.cu">pozo@iga.cu</a>
54	Dmitruk	Pablo	Argentina	Investigador	<a href="mailto:pablo@bartol.udel.edu">pablo@bartol.udel.edu</a>
55	Fentzke	Jonathan	Puerto Rico	Investigador	<a href="mailto:fentzke@cora.nwra.com">fentzke@cora.nwra.com</a>
56	Fernandez de Campra	Patricia Monica	Argentina	Investigador	<a href="mailto:pfernandez@herrera.unt.edu.ar">pfernandez@herrera.unt.edu.ar</a>
57	Fernández	Walter	Costa Rica	Investigador	<a href="mailto:wfer@cosmos.ucr.ac.cr">wfer@cosmos.ucr.ac.cr</a>
58	Figueroa-Viñas	Adolfo	EE.UU.	Investigador	<a href="mailto:adolfo.figueroa-vinas-1@nasa.gov">adolfo.figueroa-vinas-1@nasa.gov</a>
59	Foppiano B.	Alberto J.	Chile	Investigador	<a href="mailto:foppiano@udec.cl">foppiano@udec.cl</a>
60	Frutos Alfaro	Francisco	Costa Rica	Investigador	<a href="mailto:frutos@fisica.ucr.ac.cr">frutos@fisica.ucr.ac.cr</a>
61	Garbanzo	Marcial	Costa Rica	Investigador	<a href="mailto:mgarbanzopcm@gmail.com">mgarbanzopcm@gmail.com</a>
62	Garnett Marques Brum	Christiano	Puerto Rico	Investigador	<a href="mailto:cbrum@naic.edu">cbrum@naic.edu</a>
63	Gómez	Daniel	Argentina	Investigador	<a href="mailto:dgoomez@df.uba.ar">dgoomez@df.uba.ar</a>
64	Gonzalez	Walter	Brasil	Investigador	<a href="mailto:gonzalez@dge.inpe.br">gonzalez@dge.inpe.br</a>
65	Gonzalez Esparza	J. Americo	México	Investigador	<a href="mailto:americo@geofisica.unam.mx">americo@geofisica.unam.mx</a>
66	Hidalgo Moreno	Miguel Ángel	España	Investigador	<a href="mailto:miguel.hidalgo@uah.es">miguel.hidalgo@uah.es</a>
67	Ishkov	Vitaly	Rusia	Investigador	<a href="mailto:ishkov@izmiran.ru">ishkov@izmiran.ru</a>
68	Kozyra	Janet U.	EE.UU.	Investigador	<a href="mailto:jukozyra@umich.edu">jukozyra@umich.edu</a>
69	Larocca	Patricia	Argentina	Investigador	<a href="mailto:plarocc@fi.uba.ar">plarocc@fi.uba.ar</a>
70	Lazarian	Alexander	EE.UU.	Investigador	<a href="mailto:lazarian@astro.wisc.edu">lazarian@astro.wisc.edu</a>
71	Lites	Bruce	EE.UU.	Investigador	<a href="mailto:lites@ucar.edu">lites@ucar.edu</a>
72	López	Ramón	EE.UU.	Investigador	<a href="mailto:relopez@uta.edu">relopez@uta.edu</a>
73	Luoni	María Luisa	Argentina	Investigador	<a href="mailto:mluoni@iafe.uba.ar">mluoni@iafe.uba.ar</a>
74	Machado	Marcos	Argentina	Investigador	<a href="mailto:machado@conae.gov.ar">machado@conae.gov.ar</a>
75	Mandrini	Cristina	Argentina	Investigador	<a href="mailto:mandrini@iafe.uba.ar">mandrini@iafe.uba.ar</a>
76	Mansilla	Gustavo Adolfo	Argentina	Investigador	<a href="mailto:gmansilla@herrera.unt.edu.ar">gmansilla@herrera.unt.edu.ar</a>
77	McDonald	Frank	EE.UU.	Investigador	<a href="mailto:fmcdonal@umd.edu">fmcdonal@umd.edu</a>
78	Mendes da Costa	Aracy	Brasil	Investigador	<a href="mailto:amdcosta@uol.com.br">amdcosta@uol.com.br</a>
79	Mendoza	Blanca	México	Investigador	<a href="mailto:blanca@geofisica.unam.mx">blanca@geofisica.unam.mx</a>
80	Milla	Marco Antonio	Peru	Investigador	<a href="mailto:marco.milla@jro.igp.gob.pe">marco.milla@jro.igp.gob.pe</a>
81	Miranda Cerda	Rodrigo Andres	Brasil	Investigador	<a href="mailto:rmiranda@ita.br">rmiranda@ita.br</a>
82	Miroshnichenko	Leonty	Rusia	Investigador	<a href="mailto:leonty1937@yahoo.com">leonty1937@yahoo.com</a>
83	Muella	Marcio	Brasil	Investigador	<a href="mailto:mmuella@dae.inpe.br">mmuella@dae.inpe.br</a>
84	Muralikrishna	Polinaya	Brasil	Investigador	<a href="mailto:murali@dae.inpe.br">murali@dae.inpe.br</a>
85	Neubert	Torsten	Dinamarca	Investigador	<a href="mailto:neubert@space.dtu.dk">neubert@space.dtu.dk</a>
86	Olascoaga	Maria Josefina	EE.UU.	Investigador	<a href="mailto:jolascoaga@rsmas.miami.edu">jolascoaga@rsmas.miami.edu</a>
87	Opher	Merav	EE.UU.	Investigador	<a href="mailto:mopher@gmu.edu">mopher@gmu.edu</a>
88	Pacini Schmidt Marques	Alessandra	Brasil	Investigador	<a href="mailto:pacini@univap.br">pacini@univap.br</a>
89	Pérez de Tejada	Hector	México	Investigador	<a href="mailto:apacini@mail.student.oulu.fi">apacini@mail.student.oulu.fi</a>
90	Pérez Enríquez	Román	México	Investigador	<a href="mailto:perezdet@geofisica.unam.mx">perezdet@geofisica.unam.mx</a>
91	Prestes	Alan	Brasil	Investigador	<a href="mailto:roman@geociencias.unam.mx">roman@geociencias.unam.mx</a>
92	Rastaetter	Lutz	EE.UU.	Investigador	<a href="mailto:aprestes@gmail.com">aprestes@gmail.com</a>
93	Rocha Fernades	Francisco C.	Brasil	Investigador	<a href="mailto:prestes@univap.br">prestes@univap.br</a>
94	Rodríguez	Luciano	Bélgica	Investigador	<a href="mailto:lutz.rastaetter-1@nasa.gov">lutz.rastaetter-1@nasa.gov</a>
95	Rodríguez Taboada	Ramón E.	Cuba	Investigador	<a href="mailto:guga@univap.br">guga@univap.br</a>
96	Santos	Pedrina Terra	Puerto Rico	Investigador	<a href="mailto:rodriguez@oma.be">rodriguez@oma.be</a>
97	São Sabbas	Fernanda	Brasil	Investigador	<a href="mailto:ramone@iga.cu">ramone@iga.cu</a>
98	Schmieder	Brigitte	France	Investigador	<a href="mailto:pterra@naic.edu">pterra@naic.edu</a>
99	Sierra Figueredo	Pablo	Cuba	Investigador	<a href="mailto:pedrinaterra@hotmail.com">pedrinaterra@hotmail.com</a>
100	Stenborg	Guillermo	EE.UU.	Investigador	<a href="mailto:fernandasaosabbas@gmail.com">fernandasaosabbas@gmail.com</a>
101	Taliashvili	Lela	Costa Rica	Investigador	<a href="mailto:Brigitte.schmieder@obspm.fr">Brigitte.schmieder@obspm.fr</a>
102	Toso	María Victoria	Argentina	Investigador	<a href="mailto:sierra@iga.cu">sierra@iga.cu</a>
103	Trivedi	Nalin	Brasil	Investigador	<a href="mailto:guillermo.stenborg.ctr.ar@nrl.navy.mil">guillermo.stenborg.ctr.ar@nrl.navy.mil</a>
104	Tsurutani	Bruce	EE.UU.	Investigador	<a href="mailto:lela.taliashvili@cinespa.ucr.ac.cr">lela.taliashvili@cinespa.ucr.ac.cr</a>
105	Usoskin	Ilya	Finlandia	Investigador	<a href="mailto:toi1986@gmail.com">toi1986@gmail.com</a>

106	Valdes	José	México	Investigador	<a href="mailto:direccion@geofisica.unam.mx">direccion@geofisica.unam.mx</a>
107	Valdivia Hepp	Juan Alejandro	Chile	Investigador	<a href="mailto:jfvaldes@geofisica.unam.mx">jfvaldes@geofisica.unam.mx</a>
108	Vasyliunas	Vytenis	Alemania	Investigador	<a href="mailto:alejo@macul.ciencias.uchile.cl">alejo@macul.ciencias.uchile.cl</a>
109	Zimbardo	Gaetano	Italia	Investigador	<a href="mailto:vasyliunas@linmpi.mpg.de">vasyliunas@linmpi.mpg.de</a>
110	Zossi de Artigas	Marta	Argentina	Investigador	<a href="mailto:gaetano.zimbardo@fis.unical.it">gaetano.zimbardo@fis.unical.it</a>
					<a href="mailto:martazossi@yahoo.com.ar">martazossi@yahoo.com.ar</a>
					<a href="mailto:mzossi@herrera.unt.edu.ar">mzossi@herrera.unt.edu.ar</a>

Los resúmenes de todos los trabajos presentados se pueden ver también en la página de la IX COLAGE.

Se ha anunciado la invitación para que los trabajos presentados se sometan a la revista “*Advances in Space Research*”, para su publicación en un número especial: “*Advances in Theory and Observation of Solar System Dynamics*”, organizado por la Dr. Vera Jatenco.

Una novedosa inclusión dentro del marco de la COLAGE, fue la organización de “**Advanced School of Space Environment (ASSE)**”, organizado por el Dr. A. Chian y Dr. V. Jatenco, destinada principalmente a los estudiantes de Maestría y Doctorado, y fue impartida por los siguientes profesores:

- Dr. Bruce Tsurutani (EE.UU.)
- Dr. Jorge Chau (Perú)
- Dr. Daniel Gómez (Argentina)
- Dr. Fernanda São Sabbas (Brasil)
- Dr. Juan Valdivia (Chile)
- Dr. María Josefina Olascoaga (EE.UU.)
- Dr. Merav Opher (EE.UU.)
- Dr. Gaetano Zimbardo (Italia)

**La organización general de la conferencia puede verse en el cuadro 3.**

**Cuadro 3. IX COLAGE 4-10 abril 2011**



Hora	Lunes	Martes	Miércoles	Jueves	Viernes	Sábado	Domingo
08:30-09:00		Sesión 1 Parte I	Sesión 2 Parte I	Sesión 3 Parte I	Sesión 5 Parte I	Sesiones 4,6 y 7 Parte I	ASSE Parte III
09:00-09:30							
09:30-10:00							
10:00-10:30							
10:30-11:00		Café	Café	Café	Café	Café	Café
11:00-11:30		Sesión 1 Parte II	Sesión 2 Parte II	Sesión 3 Parte II	Sesión 5 Parte II	Sesiones 4,6 y 7 Parte II	ASSE Parte IV
11:30-12:00							
12:00-12:30							
12:30-13:00							
13:00-13:30		Registración	Almuerzo	Almuerzo	Almuerzo	Almuerzo	Almuerzo
13:30-14:00							
14:00-14:30							
14:30-15:00							
15:00-15:30	Coctel	Sesión 1 Parte III	Sesión de Posters I Café	Sesión 3 Parte III	Sesión 5 Parte III	Sesiones 4,6 y 7 Parte III	
15:30-16:00					Sesión de Posters II		
16:00-16:30		Café	Café	Café	Café		
16:30-17:00							
17:00-17:30	Sesión VIII: en honor de Dr. Mario Acuña	ASSE Parte I	ASSE Parte II	Sesión 3 Parte IV	ALAGE Asamblea General	Café	
17:30-18:00						Tempo Libre	
18:00-18:30		Cena	Cena	Cena	Cena		
18:30-19:00							
19:00-19:30	Cena	Cena	Cena Típica	Viaje en Bote	Telescopiada y Noche de Karaoke	Banquete de Clausura	
19:30-20:00							
20:00-20:30							
20:30-21:00							
21:00-21:30	Concierto de Tango	Noche de Antorchas	Telescopiada y Noche de Bebidas	Viaje en Bote	Telescopiada y Noche de Karaoke	Banquete de Clausura	
21:30-22:00							
22:00-22:30							
22:30-23:00							

### Premios y Reconocimientos

Durante la IX COLAGE se otorgaron los siguientes reconocimientos:

#### 1. Premio Roberto Manzano:

I Lugar:

- Pablo Muñoz Gutbertlem (Brasil), "Cluster Observation of Currents Sheets and Magnetic Reconnections at the Leading Edge of an ICME"
- Caitano Luiz da Silva (Brasil), "Influence of the Electron Density Profile in the Sprite Initiation Mechanism"

II Lugar:

- Pedro Corona-Romero (Mexico), "Interplanetary Evolution of Fast CME's Shocks and Type II Burst Emission"
- Laysa Resende (Brasil), "Statistics of the Abnormal Enhancement the Blanketing Frequency Associated with Es-Layer in the Equatorial Ionosphere during Disturbed Periods"

## **2.2 Ata da Nona Assembléia Geral da Associação Latino Americana de Geofísica Espacial (ALAGE)**

Elaborada por Dr. Polinaya Muralikrishna e Dra. Inez Batista.

### MINUTES OF ALAGE GENERAL ASSEMBLY

A General Assembly of ALAGE took place on April 8, 2011 during the IX COLAGE at Puntarenas, Costa Rica. The Assembly started at 17:15 hours. The number of persons present in the Assembly was 85 according to the list presented in Annex 1. The President of ALAGE Dr. Inez S. Batista, the Vice President Dr. Blanca Mendoza and the Treasurer Dr. Polinaya Muralikrishna assumed the dais and conducted the Assembly.

Dr. Inez S. Batista (President of ALAGE) opened the Assembly session with opening address and presented the agenda for the session:

- 1- Reading of the minutes of the previous Assembly
- 2- Report from the Directive Board: Treasurer, President
- 3- Election of the new Directing Board
- 4- Ratification of the National Representatives
- 5- Selection of location for the next COLAGE
- 6- Election of members of the Prize Committees
- 7- Nomination of the Program Committee for X COLAGE
- 8- General topics

The minutes of last ALAGE General Assembly held at Mérida, Mexico during the VIII COLAGE was read by Dr. Blanca Mendoza (Vice-President of ALAGE) in the absence of the Secretary of ALAGE. These minutes were published in the ALAGE Bulletin number 31 of March 2008. The minutes were approved unanimously in the Assembly.

Dr. Polinaya Muralikrishna (Treasurer of ALAGE) presented the accounts that were approved unanimously in the Assembly (Annex 2).

Dr. Inez S. Batista delivered the presidential address (Annex 3) where she reported on the ALAGE activities since the last meeting at Mérida, Mexico in 2007. She extended the sincere thanks to the Local Organizing and Scientific Committees of the Meeting and others who participated in the meeting. She also remembered the services of late Dr. Mario Acuña to ALAGE.

This was followed by the elections for the new directing board of ALAGE. Following the rules and regulations Dr. Blanca Mendoza (present Vice-President) assumed

the position of President of ALAGE. The Assembly then elected the following members unanimously:

Dr. Marcos Machado – Vice-President  
Dr. Paulo Prado Batista – Information Secretary  
Dr. Adolfo Viñas – International Secretary  
Dr. Juan Américo Gonzalez Esparza – Treasurer

The Assembly then unanimously confirmed the following National Representatives indicated by the participants of each country:

Argentina: Dr. Sergio Dasso  
Bolivia: Dr. René Torres (continuation – no participants)  
Brazil: Dr. Fernanda São Sabbas  
Colombia: Dr. Carlos Alberto Vargas Jimenez (continuation – no participants)  
Costa Rica: Dr. Lela Taliashvili  
Cuba: Dr. Adolfo Mendez Berhondo  
Chile: Dr. Juan Alejandro Valdía  
México: Dr. Guadalupe Cordero  
Peru: Dr. Walter Guevara Day  
Uruguay: Dr. Gonzalo Tancredi (continuation – no participants)  
Venezuela: Dr. Alexander Carrasco

The Assembly then started discussions on the selection of location for the next COLAGE. The two candidates for the next COLAGE were Argentina and Peru.

Dr. Marco Milla presented the candidature of Peru. He mentioned that the possible location for the next COLAGE in Peru could be Mancora, Trujillo, Cusco, Arequipa or Iquitos. Probable period for the COLAGE could be between Aug. 2013 and Aug. 2014. The registration fee of US\$200,00 could be maintained and the students would pay US\$100,00 towards registration. The hotel rate per person per day could be about US\$90,00.

Dr. Daniel Gómez then presented the candidature of Argentina. He mentioned that the location for the next COLAGE in Argentina could be Buenos Aires and the period could be in 2013.

As participants of the assembly Drs. Abraham Chian, Alberto Foppiano and José Valdés gave their opinions on the coming COLAGE meetings. Dr. Chian suggested that the COLAGE meetings should be conducted every two years. Dr. Foppiano supported the idea of Dr. Chian. Dr. José Valdés remembered that as per the bylaws of ALAGE the gap between COLAGE meetings should not be more than 3 years.

The members of ALAGE participating in the Assembly then voted for the selection of the next COLAGE location. The voting result was the following:

Total number of Votes:	78
In favor of PERU:	43

In favor of Argentina:	32
In favor of Chile:	01
Blank Votes:	01
Vote for two locations:	01

Thus the Assembly elected PERU as the location for the X COLAGE meeting.

The Assembly then started discussions on the election of members of the Prize Committees. Dr. Inez Batista informed that there were 16 papers running for the Roberto Manzano Prize of best student paper during the IX COLAGE. The Assembly elected unanimously the following members for the Prize Committee of X COLAGE:

Dr. Lela Taliashvili  
 Dr. Sergio Dasso  
 Dr. Alejandro Valdivia

As per the ALAGE bylaws, Dr. Blanca Mendonça (President – ALAGE) and Dr. Inez S. Batista (Ex President – ALAGE) are also members of the Prize Committee.

The Assembly then started discussions on the nomination of the Program Committee for the next COLAGE meetings in PERU. According to ALAGE bylaws Dr. Blanca Mendoza – President, and Dr. Adolfo Viñas – International Secretary are members of the Committee. The Assembly then suggested the following names:

Dr. Blanca Mendoza – President  
 Dr. Adolfo Viñas – International Secretary  
 Dr. Abraham Chian  
 Dr. José Valdés  
 Dr. Walter Gonzalez  
 Dr. Jorge Chau

The Local Organizing Committee of X COLAGE may include other names to the above list later.

The Assembly was then declared open for suggestions and opinions from the participants. Dr. José Valdés (México) proposed the creation of “Mario Acuña Prize”. For elaborating the nature and other details on the prize, a committee was then nominated consisting of:

Dr. José Valdés  
 Dr. Adolfo Viñas  
 Dr. Marcos Machado

The assembly approved this unanimously.

It was announced that the papers presented during the meeting can be submitted for publication in a special issue in the journal *Advances in Space Research*. 31st July 2011 was fixed as the deadline for the submission of manuscripts.

Dr. Lela Taliashvili then presented a brief report on the meeting (IX COLAGE). Scientists and students from 19 countries participated in the meeting that included 80 researchers and 30 students (1 undergraduate student). In all there were 84 oral presentations including the invited papers and 50 poster presentations.

There were several other comments and suggestion from the participants. Dr. Alicia Gonzales suggested the commemoration of the 25-th Anniversary of ALAGE during the next COLAGE meeting, by launching a book on the ALAGE activities during this period. Dr. Bertucci suggested that ALAGE must take initiatives in promoting collaborative activities between the Latin American countries. Dr. Sergio Dasso supported this view of Dr. Bertucci. Dr. Clezio Denardini suggested conducting a School in South America with the leadership of Dr. Sergio Dasso. Dr. Aracy M. da Costa suggested that efforts should be made to improve the homepage of ALAGE. There were many other suggestions from the participants to improve the activities of ALAGE.

Finally the new Directive Board took over the dais and with this the future activities of ALAGE.

The General Assembly of the IX COLAGE was closed at 19:15. These minutes were prepared by Dr. Polinaya Muralikrishna, Treasurer of ALAGE, in the absence of the Information Secretary.

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## ANNEX 1

### LIST OF PARTICIPANTS GENERAL ASSEMBLY OF ALAGE, 8, APRIL 2011, PUNTARENAS, COSTA RICA.

<b>S. No</b>	<b>Participant</b>	<b>Institution</b>
1	Paulo Prado Batista	INPE, Brazil
2	Marco A. Milla	IGP, Perú
3	Alberto J. Foppiano	Univ. de Concepcion, Chile
4	Alisson Dal Lago	INPE, Brazil
5	Alan Prestes	UNIVAP, Brazil
6	Francisco C. R. Fernandes	UNIVAP, Brazil
7	Fernanda São Sabbas	INPE, Brazil
8	Walter Gonzalez	INPE, Brazil

9	Lucas Ramos Vieira	INPE, Brazil
10	Maria Guadalupe Cordero Tercero	Geofísica, UNAM, Mexico
11	Sergio Dasso	IAFE, Argentina
12	Marcio Muella	UNIVAP, Brazil
13	Cláudia Vogel Ely	INPE, Brazil
14	Aracy Mendes da Costa	INPE, Brazil
15	Rebeca López Montes	UNAM, Mexico
16	Carolina Salas Matamoros	UCR, Costa Rica
17	Juliano Moro	INPE, Brazil
18	Clezio M. De Nardin	INPE, Brazil
19	Alexander J. Carrasco	ULA, Venezuela; INPE, Brazil
20	Rodrigo Azambuja	INPE, Brazil
21	Caitano Luiz da Silva	INPE, Brazil
22	Daniel B. Berdichevsky	Univ. District of Columbia, USA
23	Xochill Blanco Cano	UNAM, Mexico
24	Hector Perez de Tejada	UNAM, Mexico
25	Abraham C.-L. Chian	INPE, Brazil
26	Mathew Argall	Univ. De Costa Rica
27	Pablo Muñoz Gutberlet	INPE, Brazil
28	Juan Alejandro Valdívía	Univ. De Chile
29	Elsy Carolina Cipagauta Lara	UNAM, Mexico
30	Marni Pazos Espejel	UNAM, Mexico
31	Roberto Bruno	INAF-IFSI, Italy
32	Ramóm E. Rodriguez	IGA-CITMA, Cuba
33	Luis Xavier González Méndez	INAOE, México
34	Jesús Alvarez Castillo	UNAM, Mexico
35	Jose Fco. Valdés Galicia	UNAM, Mexico
36	Raúl Velásquez Sanchez	UNAM, Mexico
37	Jaime Osorio Rosales	UNAM, Mexico
38	Rodrigo Andrés Miranda Cerda	CTA/ITA/IFEM, Brazil

39	Lutz Rastaelter	NASA, GSFC, USA
40	Victor H. de la Luz Rodriguez	INAOE, México
41	Mario Rodríguez Martínez	UNAM, Mexico
42	Pedrina T. Santos	Arecibo Obs., Puerto Rico
43	Christiano Brum	Arecibo Obs., Puerto Rico
44	Jonathan Fentzke	Arecibo Obs., Puerto Rico
45	Aline de Lucas	INPE, Brazil
46	Alessandra Abe Pacini	UNIVAP, Brazil
47	Ramón López	Univ. of TX at Arlington, USA
48	Eduardo del Pozo	IGA, Cuba
49	Primoz Kajdic	IGEOF, UNAM, Mexico
50	Yaireska M. Collado-Vega	NASA/CUA, USA (Puerto Rico)
51	Pedro Corona Romero	IGEOF, UNAM, Mexico
52	Julio Cesar Mejía Ambroz	IGEOF, UNAM, Mexico
53	Pablo Dmitruk	DF/FCEN/UBA, Argentina
54	Armando Carrillo Vargas	Geofísica, UNAM, México
55	Marcos E. Machado	CONAE, Argentina
56	Maria Luisa Luoni	IAFE, Argentina
57	Laysa Cristina Araujo Resende	INPE, Brazil
58	Ângela M. S. Valetim	INPE, Brazil
59	Patricia A. Larocca	FI/UBA, Argentina
60	Alícia L. Clua de Gonzalez	INPE, Brazil
61	Juan Americo Gonzalez Esparza	IGF, UNAM, Mexico
62	Luciano Rodriguez	ROB, Belgium
63	Daniel Gómez	IAFE, Argentina
64	Marta M. Zossi	UNT-CONICET, Argentina
65	Patricio M. Fernández	UNT-Tucuman, Argentina
66	Gustavo A. Mansilla	UNT-Tucuman, Argentina
67	Maria Graciela Molina	UNT-Tucuman, Argentina
68	Miguel Ángel Hidalgo Moreno	Univ. de Alcala, Spain

69	Adolfo F. Viñas	NASA/GSFC, Maryland, USA
70	Marcial Grabanzo Salas	DFAOP/UCR, Costa Rica
71	Rodrigo Carboni	School of Physics/UCR, Costa Rica
72	Walter Fernández	School of Physics/UCR, Costa Rica
73	Cesar Bertucci	IAFE, Buenos Aires, Argentina
74	Román Pérez Enriquez	UNAM, Mexico
75	Ernesto Andrade Mascotz	IGEOF, UNAM, Mexico
76	Dominique Ballereau	Meudon Obs., Paris, France
77	Barclay Clemesha	INPE, Brazil
78	Vytenis M. Vasyliunas	MPI, Lindau, Germany
79	Heidy Gutierrez Garro	Univ. de Costa Rica, Costa Rica
80	Lela Taliashvili	Univ. de Costa Rica, Costa Rica
81	Francisco Frutos	Univ. de Costa Rica, Costa Rica
82	Pablo Serra F.	IGA, Cuba
83	Polinaya Muralikrishna	INPE, Brazil
84	Inez Staciarini Batista	INPE, Brazil
85	Blanca Mendoza	UNAM, Mexico



## **ANNEX 2**

### **FINANCIAL REPORT**

#### **ASOCIACIÓN LATINO AMERICANA DE GEOFÍSICA ESPACIAL - ALAGE**

#### **ACCOUNTS**

<b><u>RECEIPTS</u></b>	<b><u>US\$</u></b>
Atibaia, Brazil (VII COLAGE)	1.574,00
Mérida, México - Regular Members	1.210,00
- Student Members	174,70
Through Membership at Puntarenas, Costa Rica	1.580,00
<b>TOTAL FUNDS</b>	<b><u>4.538,70</u></b>
<b><u>EXPENSES</u></b>	
IHY 2008 Latin American School, São Paulo	750,00
Renewal of DOMAIN (Internet) (To Dr. Inez Batista)	105,00
2 Prize Books (To Dr. Carlos Martins)	144,94
<b>TOTAL EXPENSES</b>	<b><u>999,94</u></b>
<b>BALANCE FUNDS (April. 2011)</b>	<b><u>3.538,86</u></b>

#### **ANNEX 3**

### **MESSAGE FROM THE PRESIDENT DR. INEZ STACIARINI BATISTA**

We can say that the idea of creating a Latin American Association for Space Geophysics remounts back to 1988 when the first COLAGE (Latin American Conference for Space Geophysics) was held in Águas de Lindóia, Brazil. After this first conference three other were organized: Cuernavaca, Mexico, in 1991, during which we could appreciate a wonderful total solar eclipse; Havana, Cuba, in 1993, the only COLAGE I missed due to the restrictions imposed by Brazilian government for international travel for their employees; and finally the COLAGE at Tucumán, Argentina, in 1996, during which ALAGE was officially created, and our colleague Dr. Jose Valdés, from Mexico, was elected its first President (1996-1998). From this date on, ALAGE became officially in

charge of organizing the subsequent COLAGEs and five more Conferences were held (San Jose – Costa Rica, Tome – Chile, Atibaia – Brasil, Merida - Mexico and Puntarenas – Costa Rica). During this period ALAGE was presided over by Dr. Walter Demétrio Gonzalez Alarcon (1998-2001), Dra. Marta Rovira (2001-2004), Dr. Alberto J. Foppiano B. (2004-2007) e by me Dr. Inez Staciarini Batista (2007-2011). Our next president will be Dr. Blanca Mendoza, from Mexico, and she will be presiding over the Association from her nomination, at the end of this Assembly, until the next COLAGE, whose date and location will be defined in the course of this Assembly. As you can see, ALAGE is respecting the gender distribution, but we are still a little polarized in terms of the participation of Latin American countries and it is highly desirable to have more countries involved in the decisions of our Association.

ALAGE has officially participated in the following events:

1- ALAGE activities were presented in the URSI Commission F Symposium, held at the Catholic University of Rio de Janeiro (PUC-Rio), RJ, Brazil, on 31 October 2007.

2- Co-sponsorship of the Latin American School IHY, held at the Mackenzie University in Sao Paulo, SP, Brazil, from 14 to 20 February 2008. ALAGE has contributed with US\$ 750.00 to finance the participation of Latin American students to the event.

3- Co-sponsorship of the II Brazilian Symposium for Space Geophysics (II SBGEA) that was held in Campina Grande, PB, Brazil from 8 to 11 September 2008 at the Federal University of Campina Grande (UFCG) and at the State University of Paraiba (UEPB). More than 300 participants attended this Symposium.

4- Co-sponsorship of the International Living With a Star Workshop organized by NASA and INPE, from 4 to 11 October 2009 in Ubatuba, Brazil.

5- Co-sponsorship of the 2010 Joint Assembly of the Americas organized by the American Geophysical Union at Foz do Iguacu, Brasil, from 8 to 13 August 2010.

We have discussed the conditions of a Memorandum of Understanding between ALAGE and AGU, which should be finalized by the next ALAGE board.

A selection of papers presented in the VIII COLAGE was published in *Geofisica Internacional*, Vol. 47, N. 3, July – September, 2008,

Invited editor: R. Pérez Enríquez

Associated Editors: J. A. González, A. Lara, R. Caballero, S. Dasso, D. Maravilla, A. Foppiano

The domain Alage.org held with the Domain Bank was renewed in November 2008 for a three years period (until November 2011). The amount paid was US\$ 105.

We succeeded in our application for sponsorship for the IX COLAGE to COSPAR (COSPAR contributed with 1000 Euros) and the Local Organizing Committee succeeded with their application to CLAF.

We contacted Dr. Alexander Carrasco, from Venezuela, in order that Venezuela can indicate a representative in ALAGE.

Unfortunately we did not succeed in keeping the edition of the ALAGE Bulletin updated (only three numbers were published in the period of almost 4 years). I take this opportunity to stress the importance of having the collaboration of the National Representatives acting together with the Space Geophysics community at their countries to identify and send contributions to the Information Secretary, which is the person in charge of preparing and editing the Bulletin. A collective effort is necessary in order to keep alive this communicating channel.

I take this opportunity to express my gratitude to the following persons:

To Dr. Pérez Enriquez and his Associated Committee for their dedication to the revision process of the articles published in *Geofísica Internacional*.

To the Local Organizing Committee of the IX COLAGE Dr. Francisco Frutos e Dr. Lela Taliashvili and their collaborators, for the excellent organization of this event.

To Dr. Abraham Chian and to all the session chairs for their dedication and competency in the organization of the Scientific Program.

To my colleagues in the Directive Board of ALAGE, Dr. Blanca Mendoza (Vice-president and next president), Dr. Walter Guevara Day (Information Secretary), Dr. Polinaya Muralikrishna (Treasurer).

Finally I could not forget to render honor to our Exterior Secretary Dr. Mário Acuña. We already had, at the beginning of this week, a wonderful session in his honor. Mario was a great person and a competent scientist that has always supported ALAGE and the COLAGE meetings. He worked at one of the most prestigious institutions of the world, NASA, but, despite of that, he was always available for the colleagues and students that approached him looking for advices. We will miss him very much in our COLAGE meetings. I think that the best way to honor him is to follow his simplicity as a person and his dedication as a scientist. Thank you very much Mário!

Puntarenas, Costa Rica  
April 8, 2011

## **3.0 Notícias de interesse geral**

### **3.1 Prêmio Roberto Manzano durante a IX COLAGE**

Enviado por Dra. Inez Staciarini Batista

### Prêmio Roberto Manzano durante a IX COLAGE

O Prêmio Roberto Manzano é conferido aos melhores trabalhos de contribuição apresentados na COLAGE, cujo primeiro autor seja um estudante. Durante a IX COLAGE o Comitê de Prêmios analisou 16 trabalhos inscritos pelos estudantes. Os trabalhos foram agrupados pelo Comitê de Prêmios em dois grupos, de acordo com a sessão científica:

- o grupo I era constituído por 5 trabalhos da sessão Sun and Heliosphere e 1 trabalho da sessão Solar System Plasma Physics and Planetary Science, totalizando 6 trabalhos;
- o grupo II era constituído por 8 trabalhos da sessão Ionosphere and Atmosphere, 1 trabalho da sessão Space Weather and Space Climatology e 1 trabalho da sessão Magnetosphere, totalizando 10 trabalhos.

Os vencedores do Prêmio Roberto Manzano durante a IX COLAGE foram **Pablo Rubén Muñoz Gutberlet**, do INPE/Brasil, pelo grupo I e **Caitano Luiz da Silva**, também do INPE/Brasil, pelo grupo II. Os vencedores receberam um diploma, a isenção do pagamento da anuidade da COLAGE por quatro anos e a isenção do pagamento da taxa de inscrição das próximas duas COLAGES. Cada um dos vencedores do Prêmio Roberto Manzano recebeu também, da ALAGE, um exemplar do livro “Physics of the Solar System Plasmas” por Thomas E. Cravens

O Comitê de Prêmios decidiu também premiar com Menção Honrosa os trabalhos de Pedro Corona Romero da UNAM/México e Laysa Cristina Araújo Resende do INPE/Brasil, pelos grupos I e II respectivamente. Estes dois alunos receberam um Diploma.

O Comitê de Prêmios foi constituído por  
Inez Staciarini Batista – Presidente da ALAGE  
Alberto Foppiano – Ex-presidente da ALAGE  
Carlos Martinis  
Francisco Frutos  
Sergio Dasso



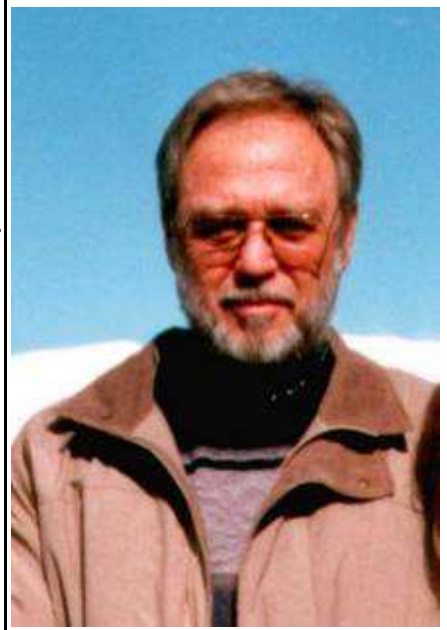
Alunos premiados durante a IX COLAGE - Da esquerda para a direita: Laysa, Caitano, Pablo e Pedro.

### **3.2 Obituário Prof. Luis Gomberoff Jaikles**

Enviado por Dr. Alejandro Valdivia através de Dra. Blanca Mendoza.

**IN MEMÓRIAM:  
PROF. LUIS GOMBEROFF JAIKLES (Q.E.P.D.)**

The Physics Department of the “Facultad de Ciencias” of the “Universidad de Chile” regrets, with respect and acknowledgment, the passing of Prof. Luis Gomberoff Jaikles (Q.E.P.D), one of its most outstanding members.



**The Physics Department of the “Facultad de Ciencias” of the “Universidad de Chile” regrets, with respect and acknowledgment, the passing of Prof. Luis Gomberoff Jaikles (Q.E.P.D), one of its most outstanding members.**

The distinguished scientist and professor of our Departamento de Física of the Facultad de Ciencias of the Universidad de Chile, was born on November 17, 1941, and obtained his M.Sc in Physics in our institution in 1964. In 1967 he obtained a Ph.D. in Mathematical Physics at the London University, England. He was a professor at Tel Aviv University until 1980, and he also worked in France and Princeton.

Among his many academic achievements, we can highlight:

- "Miembro de número de la Academia” of the Chilean Academy of Science, since April 1986.
- He won all of the Fondecyt projects (from Conicyt, the equivalent of the NSF in the USA) that he applied, which included 14 projects as a Principal Investigator.
- He received the "Medalla al Mérito Académico Valentín Letelier" from the Dean of the University, November 22nd, 2005.
- From 1993, he had been consecutively postulated to the National Science Award (Premio Nacional de Ciencias Exactas).
- He is the author of more that 140 ISI publications, with more than 1000 citations. The [last publication](#) was published in 2010. The extensive list of his publications, with the appropriate statistics, can be found in

<http://www.researcherid.com/rid/F-3637-2010>

Furthermore, he has an extensive list of other publications, some peer-reviewed, such as book chapters, proceedings, etc. A list of these publications can be seen in [other work](#), adding to about 200 total publications.

Luis Gomberoff had wide ranging interesting in physics. His first contributions were in particle and quantum field theory. He went to the physics department at Tel-Aviv University in 1970 after completing his Ph.D degree in England. His aim was to continue his research in high energy physics, and developed a fruitful collaboration with Yuval Neeman and other members of the high energy group at the university. During his period at the Tel-Aviv University in Israel he made important contributions in particle physics and in plasma physics. The late 60 and early 70's were a time of great excitement – the host of new particles discovered called for a theory of strong interactions and the first steps were attempts to formulate them in the language of quarks and current algebras. Luis' papers on chiral symmetry breaking, on deformation of current algebra, on scaling and sum rules - show his mastery of the subject, and although many of his results have been subsumed in later more complete theories one still senses the intelligence and intellectual curiosity of his mind.

He then started working in plasmas (ionized material) when there was great hope for controlled nuclear fusion. His work in plasma physics was influenced by high energy physics which led him to work on a quantum field approach to plasma physics. It is precisely in plasma physics that he had some of his most relevant contributions, not only in controlled nuclear fusion, but also in space physics and plasma astrophysics, with important publications about the plasma in the solar wind, the Earth's magnetosphere, the neutron star magnetospheres, among others.

For more than three decades, Prof. Gomberoff has made novel contributions to the theory of linear and nonlinear waves and instabilities in magnetospheric and solar wind plasmas. A consistent theme of his work has been the inclusion of multiple ions species having different temperatures and drifting with respect to each other. This is the situation observed in the solar wind, with the additional complication that the distribution functions of the individual species are usually not Maxwellians. Prof. Gomberoff's work has illuminated many interesting effects whereby the ions affect wave and instability dispersion relations, thereby altering how the particles interact, especially resonantly, with the electromagnetic field. This work offered possible explanations of how the ions acquire drifts, high temperatures, and non-Maxwellian distributions in the first place. He was particularly cognizant of the fact that the solar wind contains large-amplitude MHD waves, and in recent years he devoted much effort to understanding the parametric instabilities of these waves in multi-ion plasmas, and the sometimes surprising effects of the nonlinear waves on other instabilities (such as a stabilizing effect on the same linear instabilities that triggered them, or the onset of explosive instabilities). It is probably fair to say that nowadays the emphasis is on understanding MHD turbulence in the solar wind, with instabilities somewhat in the background. But here Prof. Gomberoff's work has a real future: Kinetic effects in the dissipation range almost certainly produce ion distribution functions which are unstable to a variety of velocity-space instabilities. And it is becoming evident that parametric instabilities play a role in the production and evolution of the turbulence itself, as well as the generation of nonthermal distribution functions in the solar wind plasma.

During the 70's and 80's Dr. Luis Gomberoff published several seminal papers on the convective growth of electromagnetic ion cyclotron waves in the multi-ion magnetospheric plasma. Specifically, he showed how the combination of cold and hot ions in the medium influences both the excitation and the propagation characteristics of these important magnetospheric waves. This work, which is still referred to today, has had a major impact on our understanding of the processes that affect dynamical changes in the Earth's radiation belts.

Luis developed an analytical method in the context of the broadband electrostatic noise in the Magnetotail, which provided a simple way (without the need of complicated numerical simulations) to understand many aspects of the role of ion-ion instabilities and the ion-acoustic instability depending on various parameters. The same ideas were then applied in the context of electrostatic bursts in the Comet Giacobini-Zinner.

The effect of large-amplitude waves on linear instabilities, the occurrence of parametric decays of electromagnetic waves stimulated by ion beams (mentioned above), as well as the influence of damping, was studied in a larger context, and in several areas, such as: fusion plasmas where the parametric coupling between Alfvén wave and plasma with deuterium, tritium, and  $\alpha$  particle ions were applied in Tokomaks; or (b) in electron-positron plasmas, which are considerably different from standard electron-ion plasmas since there are no high and low frequency scales, where used to explain some aspects of the radiation coming from pulsars, suggesting that the electromagnetic waves are self modulated.

The study of multicomponent plasmas and ion cyclotron waves was in part motivated from his early studies in plasma physics His first interest was the effects of a cold plasma component on the ion-cyclotron instability under magnetospheric conditions. He found the conditions for the maximal enhancement of the instability and showed that the presence of heavier particles like lithium may lead to increase in the relevant growth rates. Luis then went on and calculated optimal lithium concentrations for active space experiments in which the magnetosphere is modified by particle injection. Related to that topic, Luis also got interested in multi-streams instabilities. That interest was motivated by the observed half-harmonic shifted electric emission from various areas in the magnetosphere. Thus, Luis and his coworkers showed that that emission is due to the resonance interaction of the cyclotron modes in each of the electron beams as well as the resonance interaction of the beam-cyclotron modes and the stationary background plasma modes. Luis went on and investigated such effects as the temperature of the various electron beams as well as the background plasmas, and the non-resonant interaction between the various plasma components. In particular, when ISEE1 measurements indicated that the electron distribution function is closer to a shell shape rather than the loss-cone one that was expected to generate the half-harmonic electrostatic emission, Luis and his coworkers devised a sophisticated scheme, in which the shell-shape distribution is modeled by a discrete series of beams along the pitch angle, where each pair of beams gives rise to the observed emission, due to the resonance interaction of the cyclotron modes in each of the individual beams.



Another field of interest of Luis is connected with a series of papers about convection in cylindrical current carrying plasmas, with or without boundaries, caused mostly by resistivity (sometimes by viscosity) and thermal conductivity. Hall currents were also considered. This convection is in complete analogy to fluid convection with an onset determined by a Reyleigh number.

Due to his scientific achievements, The Journal of Geophysical Research-Space Physics selected him as a permanent editor, which is a selected group of scientists that determine which articles can be published in the journal.

Luis was also one of the pioneers of plasma physics education in our country and in Latinoamerica, with important participations in scientific and educational conferences and workshops. A large number of graduate, and undergraduate students took his plasma courses in our physics department. Furthermore, he produced a significant number of master and PhD students. Some of them have now academic positions in important national and international universities.

Some appearances in the national media can be seen in [news section](#) of the web page of the Facultad de Ciencias of the Universidad de Chile, and in the [news section](#) web page of the Departamento de Física of the Facultad de Ciencias of the Universidad de Chile.

Joe Hollweg, University of New Hampshire  
Bernie Vasquez, University of New Hampshire  
Richard Thorne, University of California at Los Angeles  
Michael Mond, [Ben-Gurion University of the Negev](#), Israel.  
Armando Brinca, [Universidade Técnica de Lisboa](#), Portugal.  
Nathan Andrei, Rutgers University, USA  
Juan A. Valdivia, Universidad de Chile

A few personal comments by colleagues:

Armando Brinca : “I first got acquainted and impressed with Prof. Gomberoff through his frequent and thoughtful scientific publications. When the opportunity arrived, I invited him to join a research project that lasted until my retirement and proved very fruitful. The periodic meetings in Santiago and Lisbon permitted peering into the human being beyond the plasma physics man and contributed to the consolidation of my profound admiration for Luis Gomberoff.”

Michael Mond: ...“Luis became fascinated with plasma physics and especially with its application to space physics. That encounter changed the course of his scientific career as in the mid 70's he turned to his new found interest and embarked on what eventually became his lifelong passion that lead to seminal contributions to the field of space plasma physics.” .... “Even though Luis loved living in Israel and enjoyed his interaction and collaboration with younger scientists, due to personal reasons went back to Chile in 1980.

This, as time has proven, was a great loss to Israeli science and an important gain to Chile and South America.”

Luis Gomberoff is survived by his wife Fanny, his daughters Nili and Katia, and his 5 grandchildren, Anat, Tamar, Igal, Eitan and Michal.

### **3.3 IPCC and ALAGE**

Enviado por Dra. Guadalupe Cordero

#### **IPCC and ALAGE**

The Intergovernmental Panel on Climate Change (IPCC) has been established by the World Meteorological Organization (WMO) and the United Nations Environmental Programme (UNEP) to assess scientific, technical and socio-economic information relevant for the understanding of Climate Change, its potential impacts and options for adaptation and mitigation. It is open to all Members of the United Nations and of WMO.

On June 2010, the IPCC announced that 831 highly qualified experts had been selected from among 3000 nominations, to participate in the elaboration of the 5<sup>th</sup> Assessment Report (AR5). This report will be the next integral evaluation of all the aspects of Climate Change. The report will be presented in 2014 and will constitute the main reference for all those engaged in the various aspects of Climate Change. The AR5 has three Working Groups (WG): WG1 The Physical Science Basis, WG2 Impacts, Adaptation and Vulnerability and WG3 Mitigation of Climate Change.

The selection of experts was carried out keeping a balance between developed and developing countries, gender and new topics. The experts will contribute as lead authors, coordinating lead authors or review editors.

The WG1 is the closest to the ALAGE activities because it assesses the physical scientific aspects of the climate system and climate change. This group has 258 participants, eleven of them are currently working in Latin-America specifically in Argentina, Brazil, Chile and Mexico.

Among the topics that the WG1 has decided to analyze in depth, is that of the Sun's activity role on Climate Change. This problem has not been treated in detail in the previous reports. This is very good news for the ALAGE community because several of its members work on this area. Even though only one out of the eleven Latin-American experts is reviewing this particular topic (Blanca Mendoza of Mexico) in the AR5, it is encouraging to see that finally the IPCC community has accepted to review the evidences that multiple published works have produced indicating that in fact the Sun seems to be an important forcing of the Climate Change.

## 4. Agradecimentos

Agradeço a todos os colegas que contribuíram para a edição deste Boletim, Dra. Inez Batista, Dra. Blanca Mendoza, Dr. Polinaya Muralikrisna, Dra. Lela Taliashvili, Dr. Francisco Frutos, e Dra. Guadalupe Cordero.

Reforço aqui também, a todos os colegas que tenham notícias de interesse para a divulgação nos próximos Boletins da ALAGE, que me enviem diretamente, ou o façam chegar através de seus representantes regionais. Comentários e sugestões serão bem-vindos.

O Boletim da ALAGE é publicado na página da Web da Associação e difundido a seus membros através de seus representantes nacionais:

**Argentina: Dr. Sergio Dasso**  
**Bolívia: Dr. René Torres**  
**Brasil: Dr. Fernanda São Sabbas**  
**Colômbia: Dr. Carlos Alberto Vargas Jimenez**  
**Costa Rica: Dr. Lela Taliashvili**  
**Cuba: Dr. Adolfo Mendez Berhondo**  
**Chile: Dr. Juan Alejandro Valdívia**  
**México: Dr. Guadalupe Cordero**  
**Perú: Dr. Walter Guevara Day**  
**Uruguai: Dr. Gonzalo Tancredi**  
**Venezuela: Dr. Alexander Carrasco**

Paulo Prado Batista  
ppbatista@[laser.inpe.br](mailto:ppbatista@laser.inpe.br)  
Secretario de Informação - Editor  
<http://www.alage.org>