



## MEETING REPORT to VarSITI/SCOSTEP

**Title: The 7th Brazilian Symposium on Space Geophysics and Aeronomy**

**Reporter: Dr. José Valentin Bageston**

The 7th SBGEA Symposium was held at the Southern Regional Space Research Center (CRS) of the Brazilian National Institute for Space Research (INPE) from 5 to 9 November 2018, in Santa Maria-RS, Brazil. The Brazilian Space Geophysics and Aeronomy Association encourage and promote the achievement of this scientific event every two years. In this seventh edition of the SBGEA symposium, the organization was in charge of the CRS/INPE in association with the Federal University of Santa Maria (UFSM). The CRS/INPE is located in the UFSM main campus in Santa Maria, the geographical center of the Rio Grande do Sul state in the Sothern Brazil.



**Figure 1:** VII SBGEA Symposium official photo taken at CRS/INPE, Santa Maria-RS, on November 8, 2018.



# VII Simpósio Brasileiro de Geofísica Espacial e Aeronomia

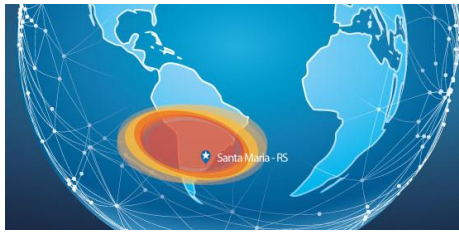
05 a 09 de Novembro de 2018 - CRS/COCRE/INPE, UFSM - Santa Maria - RS

## **SBGEA National Scientific Committee:**

Alisson Dal Lago - Instituto Nacional de Pesquisas Espaciais (INPE)  
Amauri Fragoso de Medeiros - Universidade Federal de Campina Grande (UFCG)  
Andrei Piccinini Legg - Universidade Federal de Santa Maria (UFSM)  
Arian Ojeda - Universidade do Vale do Paraíba (UNIVAP)  
Clezio Marcos De Nardin - Instituto Nacional de Pesquisas Espaciais (INPE)  
Fábio do Egito Gomes - Universidade Federal do Recôncavo da Bahia (UFRB)  
Ignacio Malmonge Martin - Instituto Tecnológico de Aeronáutica (ITA)  
Igo Paulino - Universidade Federal de Campina Grande (UFCG)  
Jean Carlo Santos - Universidade Tecnológica Federal do Paraná (UTFPR)  
Jean-Pierre Raulin - Universidade Presbiteriana Mackenzie (UPM)  
José Henrique Fernandez - Universidade Federal do Rio Grande do Norte (UFRN)  
José Ricardo Abalde - Instituto Tecnológico de Aeronáutica (ITA)  
José Valentin Bageston - Instituto Nacional de Pesquisas Espaciais (CRS/INPE)  
Lourivaldo Mota Lima - Universidade Estadual da Paraíba (UEPB)  
Mangalathayil Abdu - Instituto Tecnológico de Aeronáutica (ITA)  
Marcio Tadeu A. H. Muella - Universidade do Vale do Paraíba (UNIVAP)  
Maurício Bolzam - Universidade Federal de Goiás (UFG)  
Nelson Jorge Schuch - Instituto Nacional de Pesquisas Espaciais (CRS/INPE)  
Paulo Alexandre Bronzato Nogueira - Instituto Federal de São Paulo (IFSP)  
Ricardo Yvan de la Cruz Cueva - Universidade Estadual do Maranhão (UEMA)  
Damaris Kirsch Pinheiro - Universidade Federal de Santa Maria (UFSM)  
Inez Staciarini Batista - Instituto Nacional de Pesquisas Espaciais (INPE)

## **Local Organizing Committee:**

José Valentin Bageston (Chair) - INPE  
Juliano Moro - INPE  
Cristiano Sarzi Machado - INPE  
Nelson Jorge Schuch - INPE  
André Luís da Silva - UFSM  
Nattan Roberto Caetano - UFSM  
Damaris Kirsch Pinheiro - UFSM  
Andrei Piccinini Legg - UFSM



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## Introduction

The Brazilian Symposium on Space Geophysics and Aeronomy is a traditional scientific event that takes place every two years since 2006, when INPE organized the first Symposium at São José dos Campos, SP. Then the next events were organized at different cities and regions in Brazil. The previous one was organized in 2016 by the Federal University of Goiás, at the campus of Jataí, Goiás, central region of Brazil.

The seventh edition (7th SBGEA) was held in the city of Santa Maria, localized in the central region of Rio Grande do Sul state, Southern Brazil. The main goal of this event is to bring together the Brazilian Space Geophysics and Aeronomy community for discussing recent scientific results, establish and strengthen cooperation and academic interchange, besides to plan future actions for these science areas in Brazil. Also, an important objective of the SBGEA meeting is to facilitate the approaches of students to professors and researchers, promoting a fruitful interchange of ideas and experiences.

The scientific objective of the 7th SBGEA Symposium was to show results of observational, theoretical and modeling studies obtained in recent years that will allow a better understanding of the Space phenomena, with origin in the Sun and in the interplanetary medium, which affects the whole atmosphere and Earth's climate.

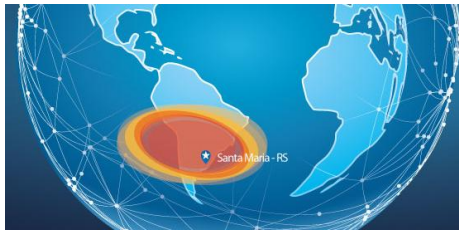
## Technical Report

The main scientific highlights from the 7th SBGEA Symposium are summarized below.

We have the attendance of more than 150 participants, including researcher, professors and students. The most of them were from Brazil, but several (around 10) came from abroad, specifically from United States of America, Germany, China, Mexico and Argentina. From Brazil, the most of the attendants came from Sao Paulo (65) and locally of Rio Grande do Sul (71). From northeast Brazil, 13 attendees came to Santa Maria for the 7th SBGEA, whilst other participants came from states like Goiás, Minas Gerais, Federal District (Brasília) and Paraná.

In the official opening of the 7th SBGEA we have the presence of the following authorities: table of the Rector of the Federal University of Santa Maria, Dr. Paulo Afonso Burmann; the INPE's general Director representative, Dr. Maria Virginia Alves; the president of the SBGEA, Dr. Igo Paulino, and the general coordinator (Chair) of the 7th SBGEA Symposium, Dr. José Valentin Bageston. We highlighting the presence of the band of the third Arm Division of Santa Maria that played the national and state anthems, and also the presence of general coordinators of research areas and graduation program of INPE and directors of the Technology Center and Center of Natural and Exact Sciences of UFSM, besides other under-graduation and graduation coordinators. After the opening ceremony it was started the first technical session: Solar Physics and Planetary Magnetospheres, with the invited speaker Dr. Marcos Silveira (GSFC/NASA and Catholic University of America), given the talk titled





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"Magnetic reconnection and flux transfer events observed in the Earth's dayside magnetopause". After this presentation we have a break (coffee), and after that the oral presentations of this session. In the afternoon we have the session of "Ionosphere: Earth and Planets", starting with the invited speaker Dr. Fabiano da Silveira Rodrigues (The University of Texas at Dallas). The details of the invited speakers, including the link for their abstracts, can be found at: <http://www.sbgea.org.br/en/vii-sbgea-2/invited-speakers/>. The 7th SBGEA was organized in 8 scientific sessions (<http://www.sbgea.org.br/en/vii-sbgea-2/scientific-sessions/>), with 7 invited talks (plenary of 40 minutes duration) and 43 normal oral presentations (20 minutes), totalizing 50 oral talks. Also, we have about 130 poster presentations on Thursday, November 8. Besides the technical presentations we scheduled during the official dinner (second day of the event) one regional presentation of typical dancing and history of the southern Brazilian people (gauchos), and in the following days also it was programmed three technical visits to the UFSM's planetarium, the China-Brazil Joint Space Weather Laboratory at Santa Maria (Digisonde antenna) and to the Southern Space Observatory (SSO) of INPE in São Martinho da Serra-RS, about 60 km north of Santa Maria, where several instruments (multidirectional Muon detector, magnetometers, airglow cameras, imaging riometer and many other sensors), are operated by several national and international institutions. The detailed program of the 7th SBGEA can be found at <http://www.sbgea.org.br/en/vii-sbgea-2/program-and-book-of-abstracts/>.

Among all the attendees, 151 besides others that come eventually (not officially registered) to see specific presentations, 87 were students (58%) and 40 was female attendees (26%). Considering only the student group, 25 were female that represents about 29% of this group, a little more than the general percentage of the female attendees in the event. This is important since the young female students are interested in science, have been attending meeting like the SBGEA Symposium and other regional or national events.

After finishing the scientific sessions, with very interesting talks and poster presentations, on Friday, November 9, the event was officially closed and the Chair of the event emphasize the importance of the obtained financial support, mainly for young students and researcher in the beginning of career, which include the great support from Varsit/SCOSTEP and the SBGEA own funds, which allowed to support 18 students from different regions of Brazil and of different education levels since the under graduation till Ph.D. candidates. Also, we received important support from CAPES (Brazilian national Coordination for Improvement of Level of Professional who act in Universities and Research Institutes), FAPERGS (Rio Grande do Sul foundation for research support), and from the China-Brazil Joint Space Weather Research Labs. The President of the SBGEA, Dr. Igo Paulino, highlighted the importance of the event to encourage young students to follow the research career and also the need to publish the results of the research results presented in the 7th SBGEA in a special issue that will contain the main scientific contributions from this event.



Final General Program (summarized here and available at <http://www.sbgea.org.br/en/vii-sbgea-2/program-and-book-of-abstracts/>)

TIME	MONDAY (05)	TUESDAY (06)	WEDNESDAY (07)	THURSDAY (08)	FRIDAY (09)
07:30	Registration				
08:30	Official opening of the VII SBGEA	Opening Speech of Session 3: Dr. Clezio Marcos De Denardin	Opening Speech of Session 5: Dr. Pierre-Dominique Pautet	Opening Speech of Session 6: Dr. Jörg A. E. Büchner	General Meeting: Choose of the new city for the VIII SBGEA, and elections for the new SBGEA administration
09:10					
09:30	Opening Speech of Session 1: Dr. Marcos V. D. Silveira	Oral presentations of Session 3	Oral presentations of Session 5	Oral presentations of Session 6	
10:10	Coffe Break				
10:30	Oral presentations of Session 1	Oral presentations of Session 3	Apresentações orais da Sessão 5	Poster Section	Closing of the VII SBGEA
11:50	Almoço				
13:30	Opening Speech of Session 2: Dr. Fabiano S. Rodrigues	Opening Speech of Session 4: Dr. Leandro T. Hoffmann	Opening Speech of Session 7: Dra. Gabriela Viviana Müller	Visit to the Southern Space Observatory (OES/CRS/COCRE/INPE) at São Martinho da Serra	FREE AFTERNOON
14:10	Oral presentations of Session 2	Oral presentations of Session 4	Oral presentations of Session 7		
15:10	Coffe Break				
15:30	Coffe Break				
15:40					
16:00	Oral presentations of Session 2	Oral presentations of Session 8	Visit to the UFSM's Planetarium and the China-Brazil Joint Laboratory for Space Weather		
17:40	End of the day activities	End of the day activities *	End of the day activities	End of the day activities	

\* Official dinner (20:30) at Centro de Tradições Gaúchas Sentinela da Querência.

## List of supported students from VarSITI/SCOSTEP, including their distribution by gender and regions of Brazil

**Table 1:** List of attendees at the 7th SBGEA Symposium supported by VarSITI/SCOSTEP.

Name (alphabetical order)	Gender	Country
Francisco Vieira	Male	Sao Paulo
Giulia Ribeiro Herdies	Female	Rio Grande do Sul
Isabelle Cristine Pellegrini Lamin	Female	Sao Paulo
Izabelle Cristina Silva Albuquerque	Female	Paraiba
Lyara Villanova	Female	Brasilia

The student above mentioned as beneficiated of the partial support are undergraduate (one from Sao Paulo, one from Brasilia and one from Rio Grande do Sul) and graduate (Master and Ph.D.) students (one from Sao Paulo and one from Paraiba). The complement of the partial support given by VarSITI/SCOSTEP was supported by SBGEA. Besides that, SBGEA also supported other 13 students (some fully and other, partially). In the total we received 40 request of support, but we could not attend everybody due to the funding limitation. However, all the other Brazilian students that could not be supported by us were supported by the Graduation Program in Space Geophysics of INPE and other Universities (UNIVAP and Makenzie), or by their own scholarship grants. The only one group of students that were not able to attend the event was the foreign students (two from African countries).

### Summarized statistics of the attendees at the 7th SBGEA:

The attendees came from seventeen (17) different Brazilian institutions (Universities and Research Institutes) and from seven (7) foreign institutions of five (5) distinct countries (United States of America, Germany, China, Mexico and Argentina).

Total of attendees: 151

Total of male attendees: 111

Total of female attendees: 40 (~26% of the total)

Brazilian attendees: 141 (~93% of the total)

Foreign attendees: 10

Total of students attendees: 87 (~58% of the total)

### List of recipients of VarSITI/SCOSTEP grant, stating amount, Brazilian state, student level, and gender

Table 2 shows the information of the VarSITI/SCOSTEP grant recipient. We highlight that the total amount received from VarSITI/SCOSTEP (~ 1,000 US dollars) was complemented by SBGEA funds to fully support the students, that is, their travel and hotel expenses. Other two potential abroad candidates to receive the partial support were not able to attend the meeting without a minimum of USD 2000, so these two students could not attend the event. However, all the other Brazilian students/young scientist received partial or full support from their institutions or used from their own scholarship grant.

**Table 2: List of recipients of VarSITI/SCOSTEP grant**

Name / Institution	VarSITI grant	SBGEA complement	State	Student level	Gender
Francisco Vieira	USD 150	USD 111	Sao Paulo	Ph.D. candidate	Male
Giulia Ribeiro Herdies	USD 140	USD 0.00	Rio Grande do Sul	Undergraduate	Female
Isabelle Cristine Pellegrini Lamin	USD 158	USD 141	Sao Paulo	Undergraduate	Female
Izabelle Cristina Silva Albuquerque	USD 316	USD 244	Paraiba	Undergraduate	Female
Lyara Villanova	USD 211	USD 190	Brasilia	Undergraduate	Female
Total (net amount) supported to the students	USD 975	USD 687			
Bank discount (services taxes)	USD 25				
<b>Total received</b>	<b>USD 1000</b>				

**Total of supported to the five (5) students (VarSITI + SBGEA): US\$ 1,662.00**

**Copy of the receipt to the VarSITI signed by Mr. Francisco Vieira**



**RECEIPT**

I received from VII SBGEA Local Organizing Committee the amount of R\$ 571.00, equivalent to USD 150.00 US Dollars, originally supported from VarSITI/SCOSTEP, as partial financial support to cover round trip transportation to attend the 7<sup>th</sup> Brazilian Symposium on Space Geophysics and Aeronomy at CRS/INPE, Santa Maria (SP), Brazil, from 4<sup>th</sup> to 9<sup>th</sup> November, 2018. It is important to inform that the complementary support for the round trip transportation and hotel expenses were given from the SBGEA own funds as a counterpart to the student's support.

Santa Maria (RS), Brazil, 9<sup>th</sup> November, 2018.

Francisco Vieira

Francisco Vieira




Copy of the receipt to the VarSITI signed by Ms. Giulia Herdies



RECEIPT

I received from VII SBGEA Local Organizing Committee the amount of R\$ 533.00, equivalent to USD 140.00 US Dollars, originally supported from VarSITI/SCOSTEP, as partial financial support to cover ground round trip transportation and hotel expenses to attend the 7<sup>th</sup> Brazilian Symposium on Space Geophysics and Aeronomy at CRS/INPE, Santa Maria (SP), Brazil, from 4<sup>th</sup> to 9<sup>th</sup> November, 2018. It is important to inform that the complementary support for the hotel expenses was given from the SBGEA own funds as a counterpart to the student's support.

Santa Maria (RS), Brazil, 9<sup>th</sup> November, 2018.



Giulia Herdies

Brazilian Association on Space Geophysics and Aeronomy (SBGEA)  
officially registered under the CNPJ N°: 21.433.288/0001-68

Copy of the receipt to the VarSITI signed by Ms. Isabelle Lamin



RECEIPT

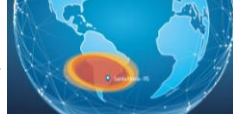
I received from VII SBGEA Local Organizing Committee the amount of R\$ 600.00, equivalent to USD 158.00 US Dollars, originally supported from VarSITI/SCOSTEP, as partial financial support to cover round trip transportation to attend the 7<sup>th</sup> Brazilian Symposium on Space Geophysics and Aeronomy at CRS/INPE, Santa Maria (SP), Brazil, from 4<sup>th</sup> to 9<sup>th</sup> November, 2018. It is important to inform that the complementary support for the round trip transportation and hotel expenses were given from the SBGEA own funds as a counterpart to the student's support.

Santa Maria (RS), Brazil, 9<sup>th</sup> November, 2018.



Isabelle Cristine Pellegrini Lamin

Brazilian Association on Space Geophysics and Aeronomy (SBGEA)  
officially registered under the CNPJ N°: 21.433.288/0001-68



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Copy of the receipt to the VarSITI signed by Ms. Izabelle Albuquerque



**RECEIPT**

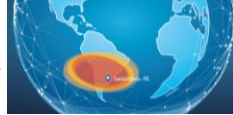
I received from VII SBGEA Local Organizing Committee the amount of R\$ 1,200.00, equivalent to USD 316.00 US Dollars, originally supported from VarSITI/SCOSTEP, as partial financial support to cover round trip transportation to attend the 7<sup>th</sup> Brazilian Symposium on Space Geophysics and Aeronomy at CRS/INPE, Santa Maria (SP), Brazil, from 4<sup>th</sup> to 9<sup>th</sup> November, 2018. It is important to inform that the complementary support for the round trip transportation and hotel expenses were given from the SBGEA own funds as a counterpart to the student's support.

Santa Maria (RS), Brazil, 9<sup>th</sup> November, 2018.

*Izabelle Cristina Silva Albuquerque*

Izabelle Cristina Silva Albuquerque

Brazilian Association on Space Geophysics and Aeronomy (SBGEA)  
officially registered under the CNPJ N°: 21.433.288/0001-68



VII Brazilian Symposium on  
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Copy of the receipt to the VarSITI signed by Ms. Lyara Villanova Silverio



RECEIPT

I received from VII SBGEA Local Organizing Committee the amount of R\$ 800.00, equivalent to USD 211.00 US Dollars, originally supported from VarSITI/SCOSTEP, as partial financial support to cover round trip transportation to attend the **7<sup>th</sup> Brazilian Symposium on Space Geophysics and Aeronomy** at CRS/INPE, Santa Maria (SP), Brazil, from 4<sup>th</sup> to 9<sup>th</sup> November, 2019. It is important to inform that the complementary support for the round trip transportation and hotel expenses were given from the SBGEA own funds as a counterpart to the student's support.

Santa Maria (RS), Brazil, 9<sup>th</sup> November, 2019.

Lyara Villanova Silverio

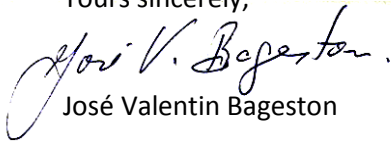
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**Acknowledgements:** The 7th SBGEA Local Organizing Committee would like to thank for the financial support of USD 1000 from VarSITI/SCOSTEP, that was used to partially support five (5) students from four (4) states of Brazil. Also, we thank to the SBGEA for the complementary support to these five students and also for the support to the other 13 students. We are grateful to CAPES, FAPERGS and CBJLSW/NSSC/CAS for the support given to the support the invited speakers and researcher/professors from northeast Brazil, the local transportation (from Porto Alegre to Santa Maria, and locally every day), the snacks during the coffee break, the event announcement, and other local expenses during the event.

Yours sincerely,

  
José Valentin Bageston