Dr. Pablo S. Moya

PERSONAL INFORMATION

Work Address: Departamento de Física, Facultad de Ciencias, Universidad de Chile.
Las Palmeras 3425, Ñuñoa, Santiago, Chile.
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e-mail: pablo.moya@ug.uchile.cl
Nationality: Chilean
Birth: October 8th, 1983
Researcher-ID: http://www.researcherid.com/rid/C-3163-2011
Google Scholar: http://scholar.google.com/citations?user=1bzmmc0AAAAJ
ResearchGate: http://www.researchgate.net/profile/Pablo_Moya3

ACADEMIC BACKGROUND

Postdoctoral Fellowship, NASA Goddard Space Flight Center, USA (2013–2014).
Becas-Chile Postdoctoral Fellowship, CONICYT, Chile.

Ph.D. in Physics, University of Chile (2011).
Title: Acceleration and heating of minor ions in solar wind plasma.
Advisors: Juan Alejandro Valdivia and Víctor Muñoz.

B.Sc. in Physics. University of Chile, Chile (2007). Cum Laude.

ADDITIONAL KNOWLEDGE

2010: Doctoral internship at NASA Goddard Space Flight Center, Greenbelt, MD, USA.

2008: Tenth Winter school Giambiaggi "Principles and applications of fluid dynamics", University of Buenos Aires, Buenos Aires, Argentina.

2005: Second Spring school "Quantum Optics", Milenium group of Quantum Optics, University of Concepción, Concepción, Chile.

GRANTS, AWARDS

2018 : Top 100 read papers in Physics 2017, Scientific Reports Journal.

2012 : Becas-Chile Postdoctoral Fellowship 2012, Chile.

2010 : Becas-Chile grant for Doctoral Internships 2010, Chile.

2007 : CONICYT National PhD Scholarship, Chile.

2007 : Best GPA B.Sc. Physics, Faculty of Science, University of Chile, Chile.

2003 : Best score for admission to B.Sc. Physics. Faculty of Science, University of Chile.

WORK EXPERIENCE

2017–Present: Assistant Professor, Physics Department, Faculty of Sciences, University of Chile, Santiago, Chile.

2015–2017: Instructor Professor, Physics Department, Faculty of Sciences, University of Chile, Santiago, Chile.

2015–2015: Visiting Researcher, NASA Goddard Space Flight Center, Greenbelt, Maryland 20771, USA.

2015–2015: Research Associate, Institute for Astrophysics and Computational Sciences, Catholic University of America, Washington, DC 20064, USA.

2013–2014: Postdoctoral Fellow, NASA Goddard Space Flight Center, Greenbelt, Maryland 20771, USA.

2013–2014: Postdoctoral Researcher, Institute for Astrophysics and Computational Sciences, Catholic University of America, Washington, DC 20064, USA.

2012–2012: Postdoctoral Researcher, Physics Department, Faculty of Sciences, University of Chile, Santiago, Chile.

2011–2012: Lecturer, Faculty of Dentristy, University of Chile, Santiago, Chile.

2011–2012: Lecturer, Faculty of Engineering and Sciences, Universidad de los Andes, Santiago, Chile.

2009–2009: Lecturer, School of Medicine, Universidad del Desarrollo, Santiago, Chile.

2007–2007: Lecturer, Physics Department, Faculty of Sciences, University of Chile, Santiago, Chile.

2005–2008: Teaching Assistant, Physics Department, Faculty of Sciences, University of Chile, Santiago, Chile.

RESEARCH PROPOSALS

2019–2023: Principal Investigator, *Kinetic instabilities and wave-particle interactions in non Maxwellian plasmas. Linear, quasi-linear, and non-linear analysis* (Grant 1191351), FONDECYT, Chile.

2015–2018: Principal Investigator, *The effect of non-thermal particles in the relaxation of nearly collisionless plasmas: a study using theory, simulations, and data analysis* (Grant 11150055), FONDECYT, Chile.

2015–2018: Research Associate, *Fundamental processes in space plasma physics, combining instrumentation, observations, theory, and simulations*, (Grant Anillo ACT1405) CONICYT, Chile.

2013–2015: Co-Principal Investigator, *Waves generated by Magnetic Storms in the Earth* (Grant NNG11PL10A-362469) Catholic University of America, USA.

2013–2015: Colaborative Researcher, *Long-Period Investigation of Ion Cyclotron Waves in the Solar Wind and Inner Heliosphere* (Grant NNX13AI65G), NASA, USA.

2013–2015: Postdoctoral Researcher, *Van Allen Probes Mission Funds at NASA Goddard Space Flight Center*, NASA, USA.

2013–2014: Postdoctoral Researcher, *Modeling of kinetic processes in the formation of suprathermal electrons*, CONICYT-Becas Chile (N° 74120041), performed at NASA Goddard Space Flight Center, USA.

2011–2012: Technical Support, *Complex Dynamics in city traffic* (Grant 1110135), FONDECYT, Chile.

2010–2011: PhD Student, *Modeling the heating and the acceleration of multi-ion solar wind plasma* (Grant NNX10AC56G), NASA, USA.

2007–2010: PhD Student, *Self-organization processes in plasmas, and its relevances to the Earth's magnetospheric dynamics* (Grant 1070854), FONDECYT, Chile.

2007–2010: PhD Student, *Nonextensive statistics in complex systems: a study in plasmas, seisms and traffic/pedestrian flow* (Grant 1080658), FONDECYT, Chile.

RESEARCH INTERESTS

Theoretical Plasma Physics, Kinetic Theory of Plasmas, Space and Astrophysical plasma physics, Observational studies of space plasmas, Numerical modelling and computer simulations of plasmas, Non-linear modelling of wave-particles interactions, wave propagation and non-linear phenomena in non-extensive and relativistic plasmas, Acceleration and Heating of the Solar Wind, Magnetospheric and Solar Wind Turbulence, Geomagnetic Storms, Quantum and relativistic plasmas, Complexity in plasmas, Relativistic Thermodynamics, Relativistic Statistical Mechanics, Interdisciplinary problems in Geophysics.

STUDENTS

PhD

- **Beatriz Zenteno (2018–Present)**, "Kinetic theory of wave particle interactions in collisionless space plasmas", Unversity of Chile.
- **Iván Gallo (2018–Present)**, "Statistical Mechanics of non-Maxwellian plasma distributions", University of Chile.

Master degree

- **Natalia Gallo (2017)** Thesis: "Study of paterns of magnetic fluctuations in the solar wind", Unversity of Chile, 2015-2017.
- **Paula Reyes (2018–Present)** "Statistical analysis of geomagnetic indices and magnetic storms", Unversity of Chile.

Undergraduate

- **Beatriz Zenteno (2017)**, "Linear analysis of the stability of Kinetic Alfven Waves in the solar wind", Unversity of Chile.
- **Iván Gallo (2017)**, "Linear analysis of the stability of Kinetic Alfven Waves in the Earth's magnetosphere", Unversity of Chile.
- **Javier Silva (2017–Present)**, "In situ data analysis on the relation between electrons and magnetic field fluctuations in the solar wind", University of Chile.
- **Abiam Tamburrini (2018–Present)**, "On the relation between plasmas and superstatistics theory", University of Chile.
- **Christopher Lara (2018–Present)**, "N-body simulations of plasma collisions", University of Chile.

- **Sebastián Echeverría (2018–Present)**, "Complexity analysis of non-Maxwellian plasmas", University of Chile.
- **Belén Acosta (2018–Present)**, "Plasmas as complex networks", University of Chile.
- **Cristian Valdebenito (2018–Present)**, "In situ data analysis of space plasmas", University of Chile.

OTHER INFORMATION

Member of the Curricular Innovation Committee, Physics and Math Pedagogy, Physics Dept., Faculty of Sciences, University of Chile, Santiago, Chile (2018–Present).

Member of welfare and communication Committee, Physics and Math, Physics Department, Faculty of Sciences, University of Chile, Santiago, Chile (2018–Present).

First-year coordinator Professor, Bs. in Physics, Faculty of Sciences, University of Chile, Santiago, Chile (2017–2017).

Member of the ethics and animal safety Committee, Faculty of Sciences, University of Chile, Santiago, Chile (2016–Present).

Paper reviewer for

- The Astrophysical Journal Letters
- The Astrophysical Journal
- Physics of Plasmas
- Journal of Geophysical Research: Space Physics
- Scientific Reports - Nature
- Planetary and Space Science
- Frontiers in Astronomy and Space Sciences
- Frontiers in Physics
- Journal of Plasma Physics
- Physical Science International Journal

Scientific Societies

- American Geophysical Union (AGU)
- Asociación Latinoamerica de Geofísica Espacial (ALAGE)
- Sociedad Chilena de Física (SOCHIFI)

Meetings Local (LOC) and Scientific (SOC) Committees

- The Mechanics of the Magnetosphere, Torres del Paine, Chile (LOC), 2013.
- The Magnetosphere: New Tools, New Thinking, and New Results, Puerto Varas, Chile (SOC and LOC), 2017.
- School on Space Science and Technology, Universidad de Chile, Santiago, Chile (SOC, LOC), 2017.
- Solar and Stellar Magnetic Fields: Origins and Manifestations, Copiapó, Chile (SOC, LOC), 2019.
- The Plasma Physics of the Magnestospher, Pollenzo, Italy (SOC), 2019.

PUBLICATIONS

Peer-reviewed articles

29. M. Stepanova, E. E. Antonova, **P. S. Moya**, V.A. Pinto, and J. A. Valdivia (2019), Multi-satellite analysis of plasma pressure in the inner magnetosphere during the 1 June 2013 geomagnetic storm, *Journal of Geophysical Research*, accepted for publication.

28. V. A. Pinto, J. Bortnik, **P. S. Moya**, L. R. Lyons, D. G. Sibeck, S. G. Kanekal, H. E. Spence, and D. N. Baker (2018), Characteristics, Occurrence and Decay Rates of Three-Belt events in the Earths Radiation Belts, *Geophysical Research Letters*, 45, 12099–12107. DOI:10.1029/2018GL080274

27. E. Antonova, M. V. Stepanova, **P. S. Moya**, V. A. Pinto, V. V. Vovchenko, I. L. Ovchinnikov, and N. V. Sotnikov (2018), Processes in auroral oval and outer electron radiation belt, *Earth, Planets and Space*, 70, 127. DOI:10.1186/s40623-018-0898-1

26. C. M. Espinoza, M. Stepanova, **P. S. Moya**, E. E. Antonova, and J. A. Valdivia (2018), Ion and electron κ–distribution functions along the plasma sheet, *Geophysical Research Letters*, 45, 6362–6370. DOI:10.1029/2018GL078631

25. M. Lazar, P. H. Yoon, R. A. López, and **P. S. Moya** (2018), Electromagnetic electron cyclotron instability in the solar wind, *Journal of Geophysical Research*, 123, 6–19. DOI:10.1002/2017JA024759

24. C. A. Farías, V. A. Pinto, and **P. S. Moya** (2017), What is the temperature of a moving body?, *Scientific Reports*, 7, 17657. DOI:10.1038/s41598-017-17526-4

23. **P. S. Moya**, V. A. Pinto, D. G. Sibeck, S. G. Kanekal, and D. N. Baker (2017), On the effect of geomagnetic storms on relativistic electrons in the outer radiation belt: Van Allen Probes observations, *Journal of Geophysical Research*, 122, 11100–11108. DOI:10.1002/2017JA024735

22. M. L. Adrian, A . F. Viñas, **P. S. Moya**, and D. E. Wendel (2016), Solar wind magnetic fluctuations and electron non-thermal temperature anisotropy: Survey of Wind-SWE-VEIS observations, *The Astrophysical Journal*, 833, 49. DOI:10.3847/1538-4357/833/1/49

21. R. A. López, **P. S. Moya**, R. Navarro, J. Araneda, V. Muñoz, A. F. Viñas, and J. A. Valdivia (2016), Relativistic cyclotron instability in anisotropic plasmas, *The Astrophysical Journal*, 832, 36. DOI:10.3847/0004-637X/832/1/36

20. J. A. Valdivia, B. A. Toledo, N. Gallo, V. Muñoz, J. Rogan, M. Stepanova, **P. S Moya**, R. E. Navarro, A. F. Viñas, J. A. Araneda, R. López, and M Díaz (2016), Magnetic Fluctuations in Anisotropic Space Plasmas: the effect of the plasma environment, *Advances in Space Research*, 58, 2126–2133. DOI:10.1016/j.asr.2016.04.017

19. R. T. Wicks, R. L. Alexander, M. Stevens, L. B. Wilson III, **P. S Moya**, A. F. Viñas, L. K. Jian, D. A. Roberts, S. O'Modhrain, J. Gilbert, and T. H. Zurbuchen (2016), A proton cyclotron wave storm generated by unstable proton distribution functions in the solar wind, *The Astrophysical Journal*, 819, 6. DOI:10.3847/0004-637X/819/1/6

18. Y. G. Maneva, A. F. Viñas, **P. S. Moya**, R. T. Wicks, and S. Poedts (2015), Dissipation of parallel and oblique Alfvén-cyclotron waves - Implications for heating of alpha particles in the solar wind, *The Astrophysical Journal*, 814, 33. DOI:10.1088/0004-637X/814/1/33

17. R. A. López, R. E. Navarro, **P. S. Moya**, A. F. Viñas, J. A. Araneda, V. Muñoz, and J. A. Valdivia (2015), Spontaneous electromagnetic fluctuations in a relativistic magnetized electron-positron plasma, *The Astrophysical Journal*, 810, 103. DOI:10.1088/0004-637X/810/2/103

16. G. I. Korotova, D. G. Sibeck, K. Tahakashi, L. Dai, H. E. Spence, C. A. Kletzing, J. R. Wygant, J. W. Manweiler, **P. S Moya**, K.-J. Hwang, and R. Redmon (2015), Van Allen Probe observations of drift-bounce resonances with Pc 4 pulsations and waveparticle interactions in the pre-midnight inner magnetosphere, *Annales Geophysicae*, 33, 955–965. DOI:10.5194/angeo-33-955-2015

15. **P. S. Moya**, V. A. Pinto, A. F. Viñas, D. G. Sibeck, W. S. Kurth, G. B. Hospodarsky, and J. R. Wygant (2015), Weak Kinetic Alfvén Waves Turbulence during the 14 November 2012 geomagnetic storm: Van Allen Probes observations, *Journal of Geophysical Research*, 120, 5504–5523. DOI:10.1002/2014JA020281

14. A. F. Viñas, **P. S. Moya**, R. E. Navarro, J. A. Valdivia, J. A. Araneda, and V. Muñoz (2015), Electromagnetic Fluctuations of the Whistler Cyclotron and Firehose Instabilities in a Maxwellian and Tsallis-Kappa-like Plasma, *Journal of Geophysical Research*, 120, 3307–3317. DOI:10.1002/2014JA020554

13. R. Navarro, V. Muñoz, J. A. Araneda, A. F. Viñas, **P. S. Moya**, and J. A. Valdivia (2015), Magnetic Alfvén-Cyclotron Fluctuations of Anisotropic Non-Thermal Plasmas, *Journal of Geophysical Research*, 120, 2382–2396. DOI:10.1002/2014JA020550

12. R. Navarro, J. A. Araneda, V. Muñoz, **P. S. Moya**, A. F. Viñas, and J. A. Valdivia (2014), Theory of Electromagnetic Fluctuations for Magnetized Multi-Species Plasmas, *Physics of Plasmas*, 21, 092902. DOI:10.1063/1.4894700

11. R. A. López, **P. S. Moya**, V. Muñoz, A. F. Viñas, and J. A. Valdivia (2014), Kinetic transverse dispersion relation for relativistic magnetized electron-positron plasmas with Maxwell-Juttner velocity distribution functions, *Physics of Plasmas*, 21, 092107, DOI:10.1063/1.4894679

10. R. Navarro, **P. S. Moya**, V. Muñoz, J. A. Araneda, A. F. Viñas, and J. A. Valdivia (2014), Solar wind thermal induced magnetic fluctuations, *Physical Review Letters*, 112, 245001. DOI:10.1103/PhysRevLett.112.245001

9. **P. S. Moya**, R. Navarro, A. F. Viñas, V. Muñoz, and J. A. Valdivia (2014), Weak turbulence cascading effects in the acceleration and heating of ions in the solar wind, *The Astrophysical Journal*, 781, 76. DOI:10.1088/0004-637X/781/2/76

8. A. F. Viñas, **P. S. Moya**, J. A. Araneda, and Y. G. Maneva (2014), Reconstruction of a broad-band spectrum of Alfvénic fluctuations *The Astrophysical Journal*, 786, 86. DOI:10.1088/0004-637X/786/2/86

7. A. F. Viñas, **P. S. Moya**, R. Navarro, and J. A. Araneda (2014), The role of higher-order modes on the electromagnetic whistler-cyclotron wave fluctuations of thermal and non-thermal plasmas *Physics of plasmas*, 21, 012902. DOI:10.1063/1.4861865

6. **P. S. Moya**, R. Navarro, V. Muñoz, and J. A. Valdivia (2013), Comment on "Sensitive test for ion-cyclotron resonant heating in the solar wind", *Physical Review Letters*, 111, 029001. DOI:10.1103/PhysRevLett.111.029001

5. **P. S. Moya**, A. -F. Viñas, V. Muñoz, and J. A. Valdivia (2012), Computational and Theoretical study of the wave-particle interaction of proton and waves, *Annales Geophysicae*, 30, 1361–1369. DOI:10.5194/angeo-30-1361-2012

4. **P. S. Moya**, V. Muñoz, J. Rogan, and J. A. Valdivia (2011), Study of the Cascading Effect During the Acceleration and Heating of Ions in the Solar Wind, *Journal of Atmospheric and Solar-Terrestrial Physics*, 73, 1390–1397. DOI:10.1016/j.jastp.2011.01.009

3. L. Ofman, A. -F. Viñas, and **P. S. Moya** (2011), Hybrid models of solar wind plasma heating, *Annales Geophysicae*, 29, 1071–1079. DOI:10.5194/angeo-29-1071-2011

2. M. Lagos, F. A. Asenjo, R. Hauyón, D. Pastén, and **P. S. Moya** (2010), Line Shapes in Infrared Absorption by Solids and by Atomic or Molecular Species Embedded in Solids, *The Journal of Physical Chemistry A*, 114, 7353–7358. DOI:10.1021/jp103459p

1. **P. S. Moya**, M. Ramírez and, M. I. Molina (2007), Bistable transmission of plane waves across two nonlinear delta functions, *American Journal of Physics*, 75, 1158–1161. DOI:10.1119/1.2785191

Proceedings, Books, and Preprints

1. A. F. Viñas, R. Gaelzer, **P. S. Moya**, R. Mace, and J. A. Araneda (2017), Linear Kinetic Plasma Waves in a Non-thermal Plasma described by Kappa distributions, in G. Livadiotis (Ed.), *Kappa distributions: Theory and Applications in Plasmas*, Elsevier, pp. 329–361, ISBN: 9780128046388, DOI:10.1016/B978-0-12-804638-8.00007-3

2. E.E. Antonova, V.G. Vorobjev, M.O. Riazantseva, P. Kirpichev, O.I. Yagodkina, I.L. Ovchinnikov, V.V. Vovchenko, M.S. Pulinets, S.S. Znatkova, A.I. Demianov, N.A. Sotnikov, M.V. Stepanova, **P.S. Moya**, and V.A. Pinto (2017), Auroral oval and outer electron radiation belt, *Physics of Auroral Phenomena*, Proc. XL Annual Seminar, 6-10.

3. L. K. Jian, **P. S. Moya**, A. F. Viñas, and M. Stevens (2016), Electromagnetic Cyclotron Waves in the Solar Wind: Wind Observation and Wave Dispersion Analysis, *AIP Conference Proceedings*, 1720, 040007, DOI:10.1063/1.4943818

4. F. A. Asenjo and **P. S. Moya** (2010), Induced plasma magnetization due to magnetic monopoles, arXiv:1010.3462

5. **P. S. Moya** and F. A. Asenjo (2010), The effect of spin magnetization in the damping of electron plasma oscillations, arXiv:1005.2573

6. F. A. Asenjo, C. A. Farías and **P. S. Moya** (2009), Statistical relativistic temperature transformation for ideal gas of bradyons, luxons and tachyons, arXiv:0712.4368

7. C. A. Farías, **P. S. Moya**, and V. A. Pinto (2008), On the Relationship between Thermodynamics and Special Relativity, arXiv:0712.3793

CONFERENCES

2018 AGU Fall Meeting, San Francisco CA, USA.

- How collisionless are solar wind electrons? The role of skewed kappa distributions in the solar wind heat-flux transport,
  P. S. Moya, A. F. Viñas, R. López, M. L. Adrian, and J. I. Silva.

- Characteristics, Occurrence and Decay Rates of Three-Belt events in the Earth's Radiation Belts,
  V. A. Pinto, J. Bortnik, **P. S. Moya**, L. R. Lyons, D. G. Sibeck, S. G. Kanekal, H. E. Spence, and D. N. Baker.

- Spatial characterization of relativistic electron enhancements in the Earths outer radiation belt during the Van Allen Probes era,
  V. A. Pinto, J. Bortnik, **P. S. Moya**, L. R. Lyons, D. G. Sibeck, and S. G. Kanekal.

- Preliminary results of the first year of operation of the SUCHAI-1 Cubesat: Langmuir probe and particle counter measurements,
  M. A. Díaz, **P. S. Moya**, C. González, and M. Martínez Ledesma.

2018 XXI Simposio Chileno de Fsica, Antofagasta, Chile.

- Spontaneous magnetic fluctuations and collisionless regulation of the Earth's plasma sheet,
  P. S. Moya, J. A. Valdivia, C. M. Espinoza, M. Stepanova, and E. Antonova.

- Análisis de multifractalidad en plasmas turbulentos en la escala cinética,
  S. Echeverría, **P. S. Moya**, and D. Pastén.

- Evolución temporal de un sistema de N partculas cargadas en un medio eléctricamente neutro,
  C. Lara, and **P. S. Moya**.

- Análisis de la ocurrencia de tormentas geomagnéticas y su dependencia respecto del ciclo solar,
  P. Reyes, V. A. Pinto, and **P. S. Moya**.

- Análisis observacional de la relación entre las propiedades de los electrones y las fluctuaciones magnéticas en el viento solar,
  J. I. Silva, and **P. S. Moya**.

- Evolución temporal de la distribución de velocidades en sistemas descritos por la ecuación de Vlasov: resultados analíticos y computacionales,
  A. Tamburrini, S. Davis, and **P. S. Moya**.

- Dispersion properties and stability of Kinetic Alfvén Waves in the Earths Magnethosphere,
  I. Gallo, and **P. S. Moya**.

- Analysis of the dispersion properties of Kinetic Alfven Waves in the Solar Wind,
  B. Zenteno, and **P. S. Moya**.

- Ion and electron κ-distribution functions along the plasma sheet,
  C. M. Espinoza, M. Stepanova, **P. S. Moya**, E. Antonova, and J. A. Valdivia.

2018 42nd Committee on Space Research (COSPAR) Scientific Assembly, Pasadena, CA USA.

- Formation and properties of kappa distributions in the magnetosphere and magnetosheath of the Earth,
  E. Antonova, I. Kirpichev, M. Stepanova, C. Espinoza, **P. S. Moya**, I. Ovchinnikov, N. Sotnikov, and J. A. Valdivia.

- Auroral oval mapping and electrons of the outer radiation belt,
  E. Antonova, M. Stepanova, I. Kirpichev, V. Vovchenko, V. Vorobjev, O. Yagodkina, **P. S. Moya**, V. A. Pinto, and I. Ovchinnikov.

2018 Fifteethn International Solar Wind Conference, Brussels, Belgium.

- How collisionless are solar wind electrons? The role of non-thermal skewed kappa distributions,
  P. S. Moya, A. F. Viñas, and M. L. Adrian.

- Evolution of supra-thermal ions and related electromagnetic fluctuations,
  Y. Maneva, and **P. S. Moya**.

- Thermally induced fluctuations and quasi-stable states in the solar wind,
  J. A. Valdivia, **P. S. Moya**, R. Navarro, and R. A. López.

2018 Geospace Environment Modelling (GEM) 2018 Summer Workshop. Santa Fe, NM, USA.

- Spatial characterization of relativistic electron enhancements in the Earth's outer radiation belt during the Van Allen Probes era,
  V. A. Pinto, J. Bortnik, **P. S. Moya**, D. G. Sibeck, L. R. Lyons, and S. G. Kanekal.

2018 19th International Congress on Plasma Physics, Vancouver, Canada.

- The magnetic field turbulence complexity in thermal and non-thermal plasmas,
  P. S. Moya, V. Muñoz, and M. Domínguez.

2018 Treinnial Earth-Sun Summit (TESS) 2018, Leesburg, VA USA.

- Investigating the Electromagnetic Cyclotron Waves in the Inner Heliosphere,
  L. K. Jian, M. Stevens, K. G. Klein, J. Kasper, S. P. Gary, T. Broiles, **P. S. Moya**, and A. F. Viñas.

2018 European Geopysical Union (EGU) General Assembly 2018, Vienna, Austria.

- Evolution of supra-thermal ion distributions and its relation to spontaneous electromagnetic fluctuations, Y. Maneva, and **P. S. Moya**.

2018 XI Conferencia Latinoamericana de Geofísca Espacial (COLAGE) 2018, Buenos Aires, Argentina.

- How collisionless are solar wind electrons? The role of non-thermal skewed anisotropic kappa distributions, **P. S. Moya**, A. F. Viñas, and M. L. Adrian.

- On the polarization and stability of Kinetic Alfven Waves in the Earth's magnetosphere,
  I Gallo, and **P. S. Moya**.

- On the polarization properties of Kinetic Alfven Waves in the solar wind,
  B Zenteno, and **P. S. Moya**.

- The universality of the thermally induced electromagnetic fluctuations in quasi-stable plasmas, J. A. Valdivia, **P. S. Moya**, C. Espinoza, M. Stepanova, and R. Navarro.

2018 17th Annual International Astrophysics Conference, Santa Fe, New Mexico, USA.

- Electromagnetic Cyclotron Waves at 1 AU: Wind Observation and Wave Dispersion Analysis, L. K. Jian, M. Stevens, S. P. Gary, T. Broiles, **P. S. Moya**, A. F. Viñas, and J. Kasper.

2018 AGU Chapman Conference "Particle Dynamics in the Earth's Radiation Belts", Cascais, Portugal.

- Analysis of electron spectra observed by EPT/PROBA-V in the outer radiation belt during geomagnetically quiet and active intervals, G. Lopez-Rosson, **P. S. Moya**, J. A. Valdivia, and V. Pierrard.

2017 AGU Fall Meeting, San Francisco CA, USA.

- Spontaneous magnetic fluctuations and collisionless regulation of the Earth's plasma sheet, **P. S. Moya**, C. M. Espinoza, M. Stepanova, E. Antonova, and J. A. Valdivia.

- Heating of Solar Wind Ions via Cyclotron Resonance, R. Navarro, **P. S. Moya**, A. F. Viñas, V. Muñoz, and J. A. Valdivia.

- Spatial characterization of relativistic electron enhancements in the Earths outer radiation belt during the Van Allen Probes era, V. A. Pinto, J. Bortnik, **P. S. Moya**, D. G. Sibeck, L. R. Lyons, and S. G. Kanekal.

- Ion and electron kappa distribution functions along the plasma sheet, M. Stepanova, C. M. Espinoza, **P. S. Moya**, E. Antonova, and J. A. Valdivia.

2017 The Magnetosphere: New Tools, New Thinking, New Results, Puerto Varas, Chile.

- Spontaneous magnetic fluctuations and collisionless regulation of the Earth's plasma sheet, **P. S. Moya**, C. M. Espinoza, M. Stepanova, E. Antonova, and J. A. Valdivia.

- Study of the dispersion properties of Kinetic Alfven Waves in the Solar Wind, B. Zenteno and **P. S. Moya**.

- Study of the polarization and stability of Kinetic Alfven Waves in the Earth's magnetosphere, I. Gallo and **P. S. Moya**.

- Monitoring relativistic electron enhancements in the Earths outer radiation belt: results from GOES and Van Allen Probes, V. A. Pinto, **P. S. Moya**, J. Bortnik, D. G. Sibeck, and L. R. Lyons.

- Ion and electron kappa distribution functions along the plasma sheet, C. M. Espinoza, M. Stepanova, **P. S. Moya**, E. Antonova, and J. A. Valdivia.

- The universality of the thermally induced electromagnetic fluctuations in quasi-stable plasmas, J. A. Valdivia, **P. S. Moya**, C. M. Espinoza, M. Stepanova, and R. Navarro.

2017 Latin American Workshop on Nonlinear Phenomena 2017, La Serena, Chile.

- Spontaneous magnetic fluctuations and collisionless regulation of the Earth's plasma sheet, **P. S. Moya** (Invited talk).

2017 Solar Heliospheric & Interplanetary Environment (SHINE) Conference 2017, Saint-Sauveur, Quebec Canada.

- Electromagnetic Cyclotron Waves at 1 AU: Wind Observation and Wave Dispersion Analysis, L. K. Jian, M. Stevens, S. P. Gary, T. Broiles, **P. S. Moya**, and A. F. Viñas.

2017 8th International Conference on the Frontiers of Plasma Physics and Technology, Viña del mar, Chile.

- Solar Wind electron heatflux instability thresholds. The role of non-thermal skewed anisotropic kappa distributions, **P. S. Moya** (Invited talk).

2016 AGU Fall Meeting, San Francisco CA, USA.

- Whistler-cyclotron spontaneous fluctuations. A proxy to identify thermal and non-thermal electrons?, **P. S. Moya**, R. A. López, R. Navarro, A. F. Viñas, V. Muñoz, J. A. Valdivia, and J. Araneda.

- Spatial and temporal characterization of relativistic electron enhancements during the Van Allen Probes era, V. A. Pinto, D. G. Sibeck, **P. S. Moya**, L. R. Lyons, S. G. Kanekal, C. A. Kletzing.

- Magnetic Cyclotron Waves near the Proton Cyclotron Frequency in the Solar Wind: Wind and ACE Observations in 2005, L. K. Jian, T. Broiles, M. Stevens, S. P. Gary, S. Lepri, **P. S. Moya**, A. F. Viñas, and R. Alexander.

- The Role of the Auroral Processes in the Formation of the Outer Electron Radiation Belt, M. V. Stepanova, E. E. Antonova, V. A. Pinto, **P. S. Moya**, M. Riazantseva, and I. Ovchinnikov.

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- Heating of Solar Wind Particles Through Multiple Resonances with Counter-Propagating Ion-Cyclotron Waves: Linear Theory and Hybrid Simulations, R. Navarro, J. Araneda, **P. S. Moya**, A. F. Viñas, V. Muñoz, and J. A. Valdivia.

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- Solar Wind Magnetic Fluctuations and Electron Non-Thermal Temperature Anisotropy: Survey of Wind-SWE-VEIS Observations, M. L. Adrian, A. F. Viñas, **P. S. Moya**, and D. E. Wendel.

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- On the relationship between geomagnetic storms and radiation belts dynamics: A Van Allen Probes study versus local time and geocentric distance during magnetic storms,
  P. S. Moya, V. A. Pinto, A. F. Viñas, D. G. Sibeck, S. Kanekal and C. Kletzing (Invited talk).

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- The role of the strahl and suprathermal electrons on the spontaneous fluctuations of the solar wind, **P. S. Moya** and A. F. Viñas.
- Electromagnetic waves near the proton cyclotron frequency in the inner heliosphere: Observations and Dispersion Analysis, L. K. Jian, S. Boardsen, R. Alexander, M. Stevens, **P. S. Moya**, A. F. Viñas, S. P. Gary, and T. Broiles.
- A proton cyclotron wave storm generated by unstable proton distribution functions in the solar wind, R. T. Wicks, R. L. Alexander, M. Stevens, L. B. Wilson III, **P. S. Moya**, A. F. Viñas, L. K. Jian, D. A. Roberts, S. O'Modhrain, J. A. Gilbert, and T. H. Zurbuchen.

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- Electromagnetic cyclotron waves near the proton cyclotron frequency in the solar wind. L. K. Jian, S. Boardsen, **P. S. Moya**, M. Stevens, R. Alexander, and A. F. Viñas.

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- Heating He^{++} ions by dissipation of parallel and oblique Alfvénic turbulence,
  Y. G. Maneva, A. F. Viñas, **P. S. Moya**, and S. Poedts.
- Electromagnetic cyclotron waves near the proton cyclotron frequency in the solar wind. L. K. Jian, S. Boardsen, R. Alexander, **P. S. Moya**, M. Stevens, R. T. Wicks, C. T. Russell, and A. F. Viñas.

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- On the possible relation between the location of the auroral oval during storms and the appearance of relativistic electrons in the outer radiation belt, **P. S. Moya**, V. A. Pinto, M. Stepanova, D. G. Sibeck, E. Antonova, and O. Kozyreva.

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- Whistler-cyclotron wave fluctuations as a proxy to identify thermal and non-thermal electrons in the solar wind, **P. S. Moya**, A. F. Viñas, R. Navarro, and J. A. Araneda.

- The role of higher-order modes on the electromagnetic whistler-cyclotron wave fluctuations in the solar wind, A. F. Viñas, **P. S. Moya**, R. Navarro, and J. A. Araneda.

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- Van Allen Probes observations of wave-particle interactions in the pre-midnight sector of the magnetosphere. G. Korotova, D. G. Sibeck, H. E. Spence, C. A. Kletzing, J. R. Wygant, **P. S. Moya**, L. Dai, K-J. Kwang, and R. Redmon.

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- Weak kinetic Alfvén waves turbulence on the November 14th 2012 geomagnetic storm from Van Allen Probes observations, **P. S. Moya** V. A. Pinto, A. F. Viñas, D. G. Sibeck, W. S. Kurth, G. B. Hospodarsky and J. R. Wygant.

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- Dissipation of Alfvenic turbulence – comparison between parallel and oblique wave propagation, Y. Maneva, A. F. Viñas , **P. S. Moya**, R. Wicks, L. Ofman and S. Poedts.

2014 THEMIS/ARTHEMIS and Van Allen Probes SWG meeting, APL/JHU, Laurel, MD, USA.

- Magnetic spectral properties of the November 14th 2012 Geomagnetic Storm: an early study using EMFISIS Van Allen Probes data, **P. S. Moya**, V. A. Pinto, A. F. Viñas , D. G Sibeck and C. A. Kletzing.

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- Kinetic dispersion relation for a relativistic magnetized electron-positron plasma, R. A. López, **P. S. Moya**, V. Muñoz, A. F. Viñas and J. A. Valdivia.

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- Weak Turbulence Cascading Effects in the Acceleration and Heating of Ions in the Solar Wind. V. Muñoz, **P. S. Moya**, R. Navarro, A. F. Viñas and J. A. Valdivia.

- Electromagnetic Fluctuations in Electron Non-thermal Plasmas. A. F. Viñas, **P. S. Moya**, R. Navarro, and J. A. Araneda (Invited talk).

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- Analyzing the validity of a possible relation between solar-terrestrial magnetic activity and earthquakes. M. J. Tapia, M. Dominguez, V. A. Pinto, **P. S. Moya**, V. Muñoz, J. Rogan and J. A. Valdivia

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- Is there a relationship between geomagnetic and seismic activities? M. J. Tapia, M. Dominguez, V. A. Pinto, **P. S. Moya**, V. Muñoz, J. Rogan and J. A. Valdivia.

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- Magnetic spectral properties of the November 14th 2012 geomagnetic storm: An early study using EMFISIS Van Allen Probes data, **P. S. Moya**, V. A. Pinto, A. -F. Viñas, D. G. Sibeck and C. A. Kletzing (Invited talk).

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- Computational and Theoretical study of the acceleration and heating of ions in the Solar Wind, **P. S. Moya**, A. F. Viñas, V. Muñoz and J. A. Valdivia.

- Non-extensive effects on the quasi-linear heating of ions in the solar wind, R. Navarro, **P. S. Moya**, V. Muñoz and J. A. Valdivia.

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2012 XVII Simposio chileno de Física, La Serena, Chile.

- Non-extensive effects on the quasi-linear heating of ions in the solar wind, R. Navarro, **P. S. Moya**, V. Muñoz and J. A. Valdivia.

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2011 AGU Fall Meeting, San Francisco CA, USA.

- Quasilinear heating of protons due to resonant interaction with Gaussian and Lorentzian electromagnetic wave spectrum, **P. S. Moya**, V. Muñoz and J. A. Valdivia.

2011 Congreso Ciencia Joven, ICBM, Facultad de Medicina Universidad de Chile, Santiago, Chile.

- Estudio computacional y teórico de la acelaración y calentamiento de iones en el viento solar, **P. S. Moya**, A. F. Viñas, V. Muñoz and J. A. Valdivia.

2011 IX COLAGE, Punta Leona, Puntarenas, Costa Rica.

- Computational and Theoretical study of the acceleration and heating of ions in the Solar Wind, **P. S. Moya**, A. F. Viñas, V. Muñoz and J. A. Valdivia.

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- Cascading effects in the acceleration and heating of ions in the Solar Wind, **P. S. Moya**, V. Muñoz, J. Rogan and J. A. Valdivia.
- The effect of spin magnetization in the damping of electrons in semi-classical plasmas, **P. S. Moya** and F. A. Asenjo.
- Line Shapes in Infrared Absorption by Solids and by Atomic or Molecular Species Embedded in Solids, M. Lagos, F. A. Asenjo, R. Hauyón, D. Pastén and **P. S. Moya**.

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2010 AGU Meeting of the Americas, Foz do Iguaçu, Brasil.

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2009 International Living with a Star 2009, Ubatuba, Brasil.

- Acceleration and heating of ions in the Solar Wind, **P. S. Moya**, V. Muñoz and J. A. Valdivia.

2009 Modern Challenges in Nonlinear Plasma Physics: A conference honoring the career of K. Papadopoulos, Halkidiki, Greece.

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2009 The Nonlinear Magnetosphere Conference, Viña del Mar, Chile.

- Acceleration and heating of ions in the Solar Wind, **P. S. Moya**, V. Muñoz and J. A. Valdivia.

2008 XVI Simposio de la Sociedad Chilena de Fisica, Universidad Técnica Federico Santa María, Valparaíso, Chile.

- Aceleración y calentamiento de Iones en el Viento Solar, **P. S. Moya**, V. Muñoz y J. A. Valdivia.
- Sobre la relación entre Termodinámica y Relatividad Especial, C. A. Farías, **P. S. Moya** y V. A. Pinto.
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- Bistable transmission of plane waves across two nonlinear delta-functions, **P. S. Moya**, M. Ramirez and M. I. Molina.

2006 Cuarto Simposio Nacional de Estudiantes de Física, Universidad de Santiago de Chile, Chile.

- Determinación de espesores de láminas delgadas usando el método RBS,
  P. S. Moya, M. Ramirez and M. Ramos.

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