

SERGIO DASSO

Brief CV, October, 2020

Personal information

Family and First name: **Dasso, Sergio**

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E-mail: dasso@df.uba.ar

Head of LAMP group: www.iafe.uba.ar/u/lamp/

Nationality: Argentine. Birth date: 30/11/68

Maximum academic degree

-PhD in Physics [1997-2000], University of Buenos Aires, Argentina

Current position

[2005-] Researcher ('Investigador Principal' from 2015, permanent staff), Council of Science & Technology of Argentina (CONICET), working in the astronomy and space physics institute (IAFE), Buenos Aires, Argentina.

[2012-] Full Professor at the Universidad de Buenos Aires (Departamento de Ciencias de la Atmósfera y los Océanos), Argentina.

[2019-] Director of the Atmospheric and Oceans department of UBA (Departamento de Ciencias de la Atmósfera y los Océanos, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Argentina).

Summary of more relevant experience in Space Physics

-Principal Investigator of the Antarctic Space Weather Laboratory, Marambio base, in Antarctic.

-Auditor in audits (as member of Space Weather panel of WMO) to the Space Weather Information providers conducted by WMO on behalf of the International Civil Aviation Organization (ICAO) during 2017 and 2018.

-Head of the Argentina Laboratory of Space Weather (Laboratorio Argentino de Meteorología del espacio, LAMP). LAMP develops R2O activities and Space Weather operative products: spaceweather.at.fcen.uba.ar

-Member of different panels and commissions of Space Weather and Space Physics (e.g., WMO-IPT-SWeISS, SCOSTEP-NSP, COSPAR-PSW, IAU-comm-Div-E). Evaluator of international granted programs of Space Weather (e.g., NSF-Solar-Terrestrial-Research-Program-USA, CONICYT-Chile, UNAM-Mexico, FAPESP-Brazil, etc).

-Member of Scientific Organizing Committee (SOC) and convener of several conferences on Space Weather (IAU, COSPAR, European Space Weather Week, AGU, ICRC, etc.).

-Guest Editor of 'Journal of Space Weather and Space Climate' & Guest Editor of the special issue 'Magnetosphere, ionosphere and their connection to Space Weather' of Advances in Space Research.

-Referee of international journals, as expert on Space Weather topics, in the journals: Science, JGR, GRL, Solar Physics, JASTP, JASR, etc). Advisor of 4 finished PhD Thesis on Space Weather. Jury to evaluate background and grant researcher/teaching positions in 5 opportunities (Universidad de Buenos Aires & CONICET).

-More than 10 invited talks on Space Weather, given in different meetings: AGU, COSPAR, CWSES(SCOSTEP), IAU, AAGG, AAA, etc.

-More than 120 publications in refereed journals, on topics related with Space Weather.

Scientific production and its impact (h-index=43 & i-index=117) – updated to Sep 2020

-More than 250 publications (refereed articles in journals and conference proc., book chapters, 1 book, in ADS)

-178 refereed articles recorded in ISI Web of Science

-130 publications in international refereed indexed journals: Science, PRL, JGR, A&A, ApJ, Solar Physics, etc.

-Impact:

- *43 publications cited at least 43 times each one (h-index = 43)
- *117 publications cited at least 10 times each one (i-index = 117)
- *6573 citations to published papers.

-Five most important publications:

1. Masías-Meza J.J., Dasso S., Démoulin P., Rodriguez L., and Janvier M., Superposed epoch study of ICME sub-structures near Earth and their effects on galactic cosmic rays, *Astronomy & Astrophysics*, 592, A118, 2016.
2. Dasso S., C.H. Mandrini, P. Demoulin, and M.L. Luoni, A new model-independent method to compute magnetic helicity in magnetic clouds, *Astronomy & Astrophysics*, 455(1), 349-359, 2006.
3. Dasso S., L.J. Milano, W.H. Matthaeus, and C.W. Smith, Anisotropy in fast and slow solar wind fluctuations, *Astrophys. Journal L.* (ISSN: 0004-637X), 635, L181-L184, 2005.
4. Matthaeus, W.H., S. Dasso, Weygand J.M., Milano L.J., Smith C.W., and Kivelson M.G., Spatial correlation of the solar wind turbulence from two point measurements, *Phys. Rev. Letter* (ISSN 0031-9007), 95, 231101, 2005.
5. Dasso S., C.H. Mandrini, P. Démoulin, M.L. Luoni, and A. Gulisano, Large Scale MHD Properties of Interplanetary Magnetic Clouds, *Adv. in Space Res.*, 35(5), 711-724, 2005.

-Publications of last 5 years:

1. Regnault F., Janvier M., Démoulin P., Auchère F., Strugarek A., Dasso S. and Noûs C., 20 Years of ACE Data: How Superposed Epoch Analyses Reveal Generic Features in Interplanetary CME Profiles, *Journal of Geophysical Research* (ISSN 0148-0227), in press, 2020.
2. Molina M.G., Dasso S, Mansilla G., Namour J.H., Cabrera M.A., Zuccheretti E., Consequences of a solar wind stream interaction region on the low latitude ionosphere: Event of 7 October 2015, *Solar Physics* (ISSN: 0038-0938), in press, 2020.
1. Demoulin P., Dasso S., Lanabere V., Janvier M., Contribution of the aging effect to the observed asymmetry of interplanetary magnetic clouds, *Astronomy & Astrophysics* (ISSN 0004-6361), Vol. 639, id A6, 12 pp., 2020. DOI: 10.1051/0004-6361/202038077
2. Dasso S. & Shea M.A., Preface: Magnetosphere, ionosphere and their connection to Space Weather, *Advances in Space Research* (JASR, ISSN 0273-1177), 65, pp. 2081–2082, 2020. DOI: 10.1016/j.asr.2020.03.018
3. Lanabere V., Dasso S., Gulisano A.M., López V.E. and Niemela-Celeda A.E., Space weather service activities and initiatives at LAMP (Argentinean Space Weather Laboratory group), *Journal Advances in Space Research* (JASR, ISSN 0273-1177), 65, pp. 2223–2234, 2020. DOI: 10.1016/j.asr.2019.08.016
4. Freiherr von Forstner J.L., Guo J., Wimmer-Schweingruber, Dumbovic M., Janvier M., Demoulin P., Veronig A., Temmer M., Papaioannou A., Dasso S., Hassler D.M., and Zeitlin C.J., Comparing the Properties of ICME-Induced Forbush decreases at Earth and Mars, *Journal of Geophysical Research* (ISSN 0148-0227), 125, e2019JA027662, 21 pp., 2020. DOI: 10.1029/2019JA027662
5. Lanabere V., Dasso S., Demoulin P., Janvier M., Rodriguez L. and Masías-Meza J.J., Magnetic twist profile inside magnetic clouds derived with a superposed epoch analysis, *Astronomy & Astrophysics* (ISSN 0004-6361), Vol. 635, id A85, 13 pp., 2020. DOI: 10.1051/0004-6361/201937404
6. Demoulin P., Dasso S., Janvier M. and Lanabere V., Re-analysis of Lepping's Fitting Method for Magnetic Clouds: Lundquist Fit Reloaded, *Solar Physics* (ISSN: 0038-0938), 294:172, 2019. DOI: 10.1007/s11207-019-1564-x
7. Janvier M., Winslow R., Good S., Bonhomme E., Demoulin P., Dasso S., Mostl C., Lugaz N., Amerstorfer T., Soubrie E., Boakes P.D., Generic magnetic field intensity profiles of interplanetary coronal mass ejections at Mercury, Venus and Earth from superposed epoch analyses, *Journal of Geophysical Research* (ISSN 0148-0227), 124, 812–836, 2019. DOI: 10.1029/2018JA025949
8. Demoulin P., Dasso S., Janvier M., Exploring the biases of a new method based on minimum variance for interplanetary magnetic clouds, *Astronomy & Astrophysics* (ISSN 0004-6361), Vol. 619, id A139, 15 pp., 2018. DOI: 10.1051/0004-6361/201833831
9. Demoulin P., Janvier M., Masías-Meza J.J., Dasso S., Quantitative model for the generic 3D shape of ICMEs at 1 AU, *Astronomy & Astrophysics* (ISSN 0004-6361), Vol. 595, id.A19, 14 pp., 2016. DOI: 10.1051/0004-6361/201628164.
10. Denardini C.M., Dasso S., Americo Gonzalez-Esparza J., Review on Space Weather in Latin America. 1. The beginning from Space Science Research, *Advances in Space Research* (ISSN 0273-1177), 58, 1916-1939, 2016. DOI: <http://dx.doi.org/10.1016/j.asr.2016.03.012>.
11. Denardini C.M., Dasso S., Americo Gonzalez-Esparza J., Review on Space Weather in Latin America. 2. The Research Networks Ready for Space Weather, *Advances in Space Research* (ISSN 0273-1177), 58, 1940-1959, 2016. DOI: <http://dx.doi.org/10.1016/j.asr.2016.03.013>.
12. Denardini C.M., Dasso S., and Gonzalez-Esparza J.A., Review on space weather in Latin America. 3. Development of space weather forecasting centers. *Advances in Space Research* (ISSN 0273-1177), 58, 1960-1967, 2016. DOI: <http://dx.doi.org/10.1016/j.asr.2016.03.011>.
13. Masías-Meza J.J., Dasso S., Démoulin P., Rodriguez L., and Janvier M., Superposed epoch study of ICME sub-structures near Earth and their effects on galactic cosmic rays, *Astronomy & Astrophysics* (ISSN 0004-6361), 592, A118, 2016. DOI: 10.1051/0004-6361/201628571.
14. Rodriguez L., Masías-Meza J.J., Dasso S., Démoulin P., Zhukov A.N., Gulisano A., Mierla M., Kilpua E., West M., Lacatus D., Paraschiv A., Janvier M., Typical Profiles and Distributions of Plasma and Magnetic Field Parameters in Magnetic Clouds at 1 AU, *Solar Physics* (ISSN: 0038-0938), 291, 2145–2163, 2016. DOI 10.1007/s11207-016-0955-5.
15. Matthaeus W.H., Weygand J.M., Dasso S., Ensemble Space-Time Correlation of Plasma Turbulence in the Solar Wind, *Phys. Rev. Letter*, (ISSN 0031-9007), 116, 245101, 2016. DOI: 10.1103/PhysRevLett.116.245101

16. Demoulin P., Janvier M., Dasso S., Magnetic Flux and Helicity of Magnetic Clouds, Solar Physics (ISSN: 0038-0938), 291(2), 531-557, 2016, DOI: 10.1007/s11207-015-0836-3.
17. Janvier M., Dasso S., Demoulin P., Masías-Meza J.J., Lugaz N., Comparing generic models for interplanetary shocks and magnetic clouds axis configurations at 1 AU, Journal of Geophysical Research (ISSN 0148-0227), 120(5), 3328-3349, 2015, DOI: 10.1002/2014JA020836.
18. Ruffenach A., Lavraud B., Farrugia C.J., Démoulin P., Dasso S., Owens M.J., Sauvaud J.-A., Rouillard A. P., Lynnyk A., Foullon C., Savani N.P., Luhmann J. G., and Galvin A. B., Statistical study of magnetic cloud erosion by magnetic reconnection, Journal of Geophysical Research (ISSN 0148-0227), 120, 2015, doi:10.1002/2014JA020628.

Formation of human resources

Advisor of 4 finished PhD thesis (Departamento de Física, FCEN, UBA)

- Jimmy J. Masías-Meza. Topic: Transport of cosmic rays in the heliosphere
- Maria Emilia Ruiz. Topic: Turbulence in the solar wind.
- Adriana Gulisano. Topic: Dynamical evolution of interplanetary flux ropes.
- María Soledad Nakwacki. Topic: Linking Magnetic Clouds with their solar source.

Advisor of 5 Master Thesis in Physics (Departamento de Física, FCEN, UBA)

PI/member of Scientific Projects

- PI of the Project ‘Interplanetary magnetic field and plasma’, Cooperation Argentina-Belgium [2014-2017].
- PI of 8 scientific projects on space weather funded by institutions in Argentina [four of them are currently active, in 2017].
- Member of 3 projects on Space Weather of the International Space Science Institute (ISSI), Bern, Switzerland [2005-2010].

Details of most relevant experience in Space Weather

- [2018] Auditor to PECASUS (European consortium) and to SWPC-NOAA-USA, in the frame of audits conducted by WMO on behalf of the International Civil Aviation Organization (ICAO) to the Space Weather Information providers.
- [2018] Visiting Scientist at Observatoire de Paris.
- [2017-present] Member of Inter-Programme Team on Space Weather Information, Systems and Services (IPT-SWeISS), task teams: Aviation and Science, World Meteorological Organization (WMO).
- [2017-present] Member of the committee for SCOSTEP-NSP (definition of the next SCOSTEP program, to begin in 2019).
- [2017-] Visiting Scientist at Institut d’Astrophysique Spatiale, France.
- [2016-2018] Invited editor of ‘Journal of Space Weather and Space Climate’.
- [2015-2016] Member of Interprogramme Coordination Team on Space Weather (ICTSW), WMO.
- [2015-2017] Member of committee for evaluation of new researchers positions at the Science Council of Argentina (CONICET).
- [2013-2015] Visiting Scientist at Observatoire de Paris.
- [2012-present] Universidad de Buenos Aires, Buenos Aires, Argentina, Full Professor.
- [2012-2015] Member of the Organizer committee of Division E (Commission 12) ‘Solar Radiation & Structure’, IAU.
- [2011-present] Science discipline representative of SCOSTEP (Scientific Committee Solar-Terrestrial Phys).
- [2011-present] Member of the National (Argentina) committee of COSPAR (Committee on Space Research).
- [2007-2014] Regular Associate Member of the International Centre for Theoretical Physics, Trieste, Italy.
- [2004-present] Council of Science (CONICET), Argentina, Permanent Staff of Researchers.
- [2002-2004] Council of Science (CONICET), Argentina, post-doc Fellow.
- [2001] NASA Goddard Space Flight Center (GSFC), MD, USA, Faculty Research Associate.

Additional information:

- Astronome Invite, Observatory of Paris, France.
- [2007-2014] Associate member in International Centre of Theoretical Physics, Trieste, Italy.
- From 2010 Member of Pierre Auger Observatory, Argentina. Collab on Space Weather program of Auger.
- From 2010 Member of the Collaboration Latin American Giant Observatory (LAGO).
- 2 invited oral presentations at the AGU Fall meeting, San Francisco, USA (Dec 2010)
- 2 invited oral presentation at COSPAR Assembly (Moscow, Russia-July 2014 & Pasadena, USA-July 2018)
- More than 15 invited seminars and oral communications given in international conferences (USA, France, UK, Mexico, Italy, China, Brazil, Chile, USA)
- Member of The Pierre Auger Observatory, where our task group of Space Weather developed a platform to get on-line data of particle radiation, relevant for Space Weather [2012-present].

- Member of Project ‘Study of Induced Magnetospheres’ Int. Space Science Institute (ISSI), Switzerland [2009-2011].
- Member of the Project ‘Stages of Sun-Earth Connection’ Int. Space Science Institute (ISSI), Switzerland [2005-2007].
- Participation in international teams (ICTP, IAU, SCOSTEP, COSPAR)
- Invited professor in advanced international schools on topics of Space Weather in Italy (ICTP), Puerto Rico (COFI), Brazil (INPE), Chile (Universidad de Concepción), Ecuador (Universidad de San Francisco de Quito), and Argentina (Universidad de Tucumán).