

CURRICULUM VITAE

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Laurea in Physics at the University of Rome 'La Sapienza' in 1976. Senior Research Scientist of the Italian National Institute of Astrophysics at the Istituto di Fisica dello Spazio Interplanetario of the (INAF-IFSI), Roma, Italy (from 1982). Has experience in solar-terrestrial and solar-planetary relationship studies, mostly related with magnetosphere/upper ionosphere, magnetic field, plasma and Energetic Neutral Atoms (ENA). Presently, (following MARS EXPRESS and VENUS EXPRESS, and in view of BepiColombo, and Cosmic Vision/JUICE) he is investigating the interaction of the solar wind with planetary surfaces and particle environments as a clue for understanding the planets evolution and surface composition. Has published more than 120 papers on refereed journals, 20 papers on Conference Proceedings and has given about 350-contributed and 30-invited presentations in international conferences.

Main activities:

- 1977-1981: Co-investigator (scientific data analysis) of the ISEE-2 / EGD experiment;
- 1984-1988: Co-investigator (GSE-S/W) of the INTERBALL / OPERA experiment;
- 1988-1999: Co-investigator (Software Manager and Scientific Data Analysis) of TEMAG experiment on board TSS-1 and TSS-1R (Tethered Satellite System), launched in 1992 and 1996;
- 1991-1997: Principal Investigator of the ISENA experiment, launched on board the ill-fated argentinian satellite SAC-B in late 1996;
- 1998-Today: Co-I as Italian Leading Investigator of the ESA Mars Express / ASPERA-3 experiment;
- 1999-2002: Scientific Responsible of the Italian Auroral Observatory 'ITACA' (NyÅlesund, Svalbard, Norway), network 'MIRACLE' (FMI, Finland);
- 2000-2003: Member of the ESA BepiColombo Science Advisory Group as contact scientist for a Neutral Particle Analyzer on board the Mercury Planetary Orbiter.;
- 2001-2003: Deputy Coordinator of the ESA Topical Team 'Electromagnetic and other geophysical techniques for in-situ and orbital planetary exploration';
- 2002-2003: Member of the ESA Solar Orbiter Payload Working Group;
- 2002-2006: Member of the ESA Physical Sciences Working Group; 2002-2004: Science Advisor of the ESA AURORA Program;
- 2002-Today: Co-I as Italian Leading Investigator of the ESA Venus Express / ASPERA-4 experiment.
- 2005-2007: Member of the ESA Solar System Working Group.
- 2005-2007: Coordinator of the Comitato di Macroarea MA3 INAF.
- 2004-Today: Principal Investigator of the particle package SERENA, to be on-board the ESA-JAXA BepiColombo mission to planet Mercury. The package is funded by ASI as key-agency with other international partners, and scientifically led by an international consortium for the delivery of four units: ELENA (Italy), STROFIO (USA), PICAM (Austria) and MIPA (Sweden). An industrial consortium and two CNR institutes participate to the development of H/W under Italian responsibility (scientific unit and on-board DPU).

Recent Publications

- P1. Milillo, A., S. Orsini, Empirical modeling of the ring current, *Acta Geophysica*, 57, 171-184, 2009.
- P2. Mura, Alessandro, Peter Wurz, Herbert I.M. Lichtenegger, Helmut Schleicher, Helmut Lammer, Dominique Delcourt, Anna Milillo, Stefano Orsini, Stefano Massetti, Maxim L. Khodachenko, The sodium exosphere of Mercury: Comparison between observations during Mercury's transit and model results, *Icarus* 200, 1-11, 2009.
- P3. Plainaki, C., A. Milillo, S. Orsini, A. Mura, E. De Angelis, A. M. Di Lellis, E. Dotto, S. Livi, V. Mangano, S. Massetti, M. E. Palumbo, Space Weathering on Near Earth Objects based on neutral particle detection, *Planetary and Space Science*, 57, doi: 10.1016/j.pss.2008.12.002, 384-392, 2009 (arXiv: 0811.4727).
- P4. Bruno, R.; Carbone, V.; Vörös, Z.; D'Amicis, R.; Bavassano, B.; Cattaneo, M. B.; Mura, A.; Milillo, A.; Orsini, S.; Veltri, P.; Sorriso-Valvo, L.; Zhang, T.; Biernat, H.; Rucker, H.; Baumjohann, W.; Jankovicová, D.; Kovács, P., Coordinated Study on Solar Wind Turbulence During the Venus-Express, ACE and Ulysses Alignment of August 2007. *Earth, Moon, and Planets*, 104, 1-4, 101-104, 2009.
- P5. Orsini, S., S. Livi, K. Torkar, S. Barabash, A. Milillo, P. Wurz, A. M. Di Lellis, E. Kallio and the SERENA team, SERENA: Novel Instrument Package on board BepiColombo Mercury Planetary Orbiter to study Neutral and Ionized Particle Populations in the Hermean Environment, proceeding of the meeting "Future perspective of space plasma and instrumentation and international collaboration", AIP, Volume 1144, pp. 76-90, 2009

- P6. Orsini, S., A.M. Di Lellis, A. Milillo, E. De Angelis, A. Mura, S. Selci, I. Dandouras, P. Cerulli-Irelli, R. Leoni, V. Mangano, S. Massetti, F. Mattioli, R. Orfei, C. Austin, J.-L. Medale, N. Vertolli, D. Di Giulio, Low energy high angular resolution neutral atom detection by means of micro-shuttering techniques: the BepiColombo SERENA/ELENA sensor, proceedings of the meeting "Future perspective of space plasma and instrumentation and international collaboration", AIP, Volume 1144, pp. 91 – 110, 2009.
- P7. Milillo, A., A. Mura, S. Orsini, S. Massetti, P. C. son Brandt, T. Sotirelis, R. D'Amicis, S. Barabash, R. A. Frahm, E. Kallio, A. Galli, M. Holmstrom, E. Roelof, J. D Winningam, P. Cerulli-Irelli, S. Livi, R. Lundin, M. Maggi, A. Morbidini, MEX/ASPERA-3 NPI data statistical analysis, EMSEC '07 Special Issue on Planetary and Space Science, doi: 10.1016/j.pss.2008.09.016, 57, 1000-1007, 2009
- P8. Orsini, S. A. Milillo, A. Mura, E. De Angelis, S. Massetti, A.M. Di Lellis, Prospects of Solar System Environment Observations by means of ENA Detection, Advances in Geosciences, Vol. 15, 263, 2009.
- P9. Orsini, S., Livi, S., Torkar, K., Barabash, S., Milillo, A., Wurz, P., Di Lellis, A.M., Kallio, and the SERENA team, SERENA: A suite of four instruments (ELENA, STROFIO, PICAM and MIPA) on board BepiColombo-MPO for particle detection in the Hermean environment, Planetary and Space Science, 58, 1-2, 166-181, 2010.
- P10. Berrilli, F., A. Bigazzi, L. Roselli, P. Sabatini, M. Velli, F. Alimenti, F. Cavallini, V. Greco, P.F. Moretti, S. Orsini, M. Romoli, S.M. White, ADAHELI Team, The ADAHELI solar mission: Investigating the structure of Sun's lower atmosphere, Advances in Space Research 45, 1191–1202, 2010.
- P11. Milillo, A., V. Mangano, A. Mura, S. Orsini, E. De Angelis, A. M. Di Lellis, S. Massetti, C. Plainaki, R. Rispoli, S. Selci, N. Vertolli, Exosphere generation of the Moon investigated through a high-energy neutral detector, Exp Astron, doi: 10.1007/s10686-010-9196-z, 2010.
- P12. Whittaker, I.; Guymer, G.; Grande, M.; Pintér, B.; Barabash, S.; Federov, A.; Mazelle, C.; Sauvaud, J. A.; Lundin, R.; Russell, C. T.; Futaana, Y.; Fränz, M.; Zhang, T. L.; Andersson, H.; Grigoriev, A.; Holmström, M.; Yamauchi, M.; Asamura, K.; Baumjohann, W.; Lammer, H.; Coates, A. J.; Kataria, D. O.; Linder, D. R.; Curtis, C. C.; Hsieh, K. C.; Koskinen, H. E. J.; Kallio, E.; Riihelä, P.; Schmidt, W.; Kozyra, J.; McKenna-Lawlor, S.; Thocaven, J. J.; Orsini, S.; Cerulli-Irelli, R.; Mura, A.; Milillo, M.; Maggi, M.; Roelof, E.; Brandt, P.; Frahm, R. A.; Sharber, J. R.; Wurz, P.; Bochsler, P., Venusian Bow Shock as Seen by the ASPERA-4 Ion Instrument on Venus Express, Journal of Geophysical Research, Volume 115, Issue A9, CiteID A09224, 2010.
- P13. Plainaki, C., A. Milillo, A. Mura, S. Orsini and T. Cassidy, Neutral particle release from Europa's surface, Icarus, 210, 385–395, 2010.
- P14. Mattioli F., S. Cibella, R. Leoni, S. Orsini, A. M. Di Lellis, S. Selci, E. De Angelis, R. Rispoli, A. Mura and A. Milillo, A nanotechnology application for low energy neutral atom detection with high angular resolution for the BepiColombo mission to Mercury, proceedings of 36th Int. Conf. Micro-Nano Engineering, 19-22 Sept. 2010, Genova (Italy). Microelectronic Engineering 88, 2330–2333, doi:10.1016/j.mee.2011.02.092, 2011
- P15. Milillo, A., V. Mangano, A. Mura, S. Orsini, E. De Angelis, A. M. Di Lellis, S. Massetti, C. Plainaki, R. Rispoli, S. Selci, N. Vertolli, Exosphere generation of the Moon investigated through a high-energy neutral detector, Exp Astron, 32(1), 37-49, doi: 10.1007/s10686-010-9196-z, 2011
- P16. Milillo, A., S. Orsini, K. C. Hsieh, R. Baragiola, M. Fama, R. Johnson, A. Mura, C. Plainaki, M. Sarantos, T. A. Cassidy, E. De Angelis, M. Desai, R. Goldstein, W.-H. Ip, R. Killen, S. Livi, Observing Planets and Small Bodies in Sputtered High Energy Atom (SHEA) Fluxes, J. of Geoph. Res, 116, A07229, doi:10.1029/2011JA016530, 2011.