

# GIUSEPPE CONSOLINI

## BREVE CURRICULUM VITAE

ISTITUTO NAZIONALE DI ASTROFISICA - ISTITUTO DI ASTROFISICA E PLANETOLOGIA SPAZIALI

VIA DEL FOSSO DEL CAVALIERE 100 ROMA, ITALY

TEL: +39 06 49934564 · FAX +39 06 49934383 · E-MAIL: GIUSEPPE.CONSOLINI@.INAF.IT

## PERSONALE

---

Luogo e data di Nascita: Roma 16 Agosto 1963

## FORMAZIONE

---

- 1982 Diploma di Maturità Scientifica (60/60) presso il Liceo Scientifico "A. Avogadro" di Roma
- 1991 Laurea in Fisica (108/110), Università degli Studi di Roma "La Sapienza", Titolo della tesi: Studio dielettrico di polveri idratate di proteine in funzione della temperatura, Relatore Prof. G. Careri.
- 1993 "International School of Space Science", Course on Space Plasma Physics, L'Aquila,
- 1996 "International School of Physics Enrico Fermi" - Course CXXXIV "The Physics of Complex Systems" - Varenna, Villa Monastero, 9-19 Luglio 1996
- 1997 "International School of Space Science", Course on The Sun as seen from space, L'Aquila,

## PREMI ACCADEMICI

---

- 2000 Premio della *Fondazione "Dr. Giuseppe Borgia"* destinato a scoperte o invenzioni scientifiche verificatesi in un quinquennio ed assegnato dall'*Accademia Nazionale dei Lincei* per il suo contributo agli studi sulla dinamica critica della risposta magnetosferica.

## IMPIEGHI

---

- 2001–a tutt'oggi INAF-Istituto di Astrofisica e Fisica Spaziali (già IFSI-CNR) Roma, Italia  
*Ricercatore a Tempo Indeterminato*
- 1999-2001 Ist. Fisica Spazio Interplanetario (IFSI)-CNR, Roma, Italia  
*Ricercatore con Contratto a tempo determinato*
- 1996-1998 *Borsista c/o* Ist. Fisica Spazio Interplanetario (IFSI)-CNR Roma, Italia dal  
01/02/1996 al 31/01/1998
- 1993-1994 *Borsista c/o* Ist. Fisica Spazio Interplanetario (IFSI)-CNR Roma, Italia dal  
01/05/1993 al 30/04/1994

1991-1993 *Docente di Scuola Secondaria Superiore* in qualità di supplente incaricato nelle materie: Elettronica, Fisica e Matematica, Matematica

## ATTIVITÀ EDITORIALI

---

Opera correntemente come Referee per molte riviste internazionali / / nazionali.

*Guest Editor* del numero speciale "New Perspectives in Magnetospheric Dynamics: Chaos, Fractals, Multiscale Turbulence and Criticality", *Nonlinear Proc. Geophys.*, 9, 5/6 (2002).

*Guest Editor* del numero speciale "Complexity in the Earth's Magnetospheric Dynamics", *Ann. Geophysicae*, 21, 9 (2003)

*Co-Editor* della monografia "Multi-scale Coupling of Sun Earth Processes", Elsevier, 2005

## ESPERIENZE DIDATTICHE

---

Relatore dall'A.A. 2002/2003 di un ciclo di lezioni su "Complessità nei sistemi astrofisici" per il Dottorato di Astronomia presso il Dip. Di Fisica dell'Università degli Studi di Roma "Tor Vergata"

Dall'A.A. 2004/2005 è Docente incaricato del corso di *Termodinamica dei Processi irreversibili* presso la Facoltà di Scienze M.F.N. dell'Università degli Studi di Roma "Tor Vergata".

Dall'A.A. 2009/2010 è Docente incaricato del corso di *Fisica dei Plasmi* presso la Facoltà di Scienze M.F.N. dell'Università degli Studi di Roma "Tor Vergata".

Relatore dall'A.A. 2010/2011 di un modulo di lezioni per il Master in Scienza e Tecnologia Spaziale dell'Università di Roma "Tor Vergata".

Coordinatore Scientifico di 2 Co.Co.Co ed una borsa di studio per Research Fellowship nell'ambito dei progetti Agenzia 2000 CNR: *Telescopio THEMIS: studio delle strutture convettive nell'atmosfera solare* e EC-RTN: *Turbulent Boundary Layers in Geospace Plasmas*, Gennaio 2003 - Marzo 2005

E' stato correlatore di una Tesi di Dottorato in Geofisica dell'Università di Bologna (2002-2005) e 1° Relatore di una Tesi di Laurea Specialistica in Fisica dell'Università di Roma Tor Vergata (2011-2012).

Ha ricoperto inoltre il ruolo di Membro della Commissione Giudicatrice per il conseguimento del titolo di dottore di ricerca in Fisica dei Sistemi Complessi (XXV ciclo) presso la Scuola di Scienza e Tecnica "B. Telesio" con sede all'Università della Calabria.

## COORDINAMENTO E PARTECIPAZIONE - PROGETTI DI RICERCA

---

2001/2003 Coordinatore Nazionale e Responsabile UDR/IFSI Proposta di Ricerca Coordinata Telescopio THEMIS: studio delle strutture convettive nell'atmosfera solare, Agenzia 2000 - CNR

2002/2005 Responsabile Nazionale dell'Unità di Ricerca IFSI/CNR, EC- Research Training Network: *Turbulent boundary layers in Geospace Plasmas*. Responsabile Internazionale: K. Stasiewicz - IRFU - Svezia.

2003/2005 Responsabile del Work Package 100 per lo sviluppo delle reti neurali di previsione, European Space Agency, Service Development Activity Pilot Project for Space Weather Applications: GIFINT (Geomagnetic Indices Forecasting and Ionospheric Nowcasting Tool): Responsabile: E. Amata - IFSI/CNR - Italia.

2002/2006 Responsabile Unità IFSI, nonché Responsabile Nazionale dal 01/10/2003 Progetto coordinato ENEA/CNR (INAF): "Osservazioni Aurorali" Programma Nazionale di Ricerche in Antartide, Biennio 2002/2003 e Triennio 2004-2006

2004/2007 Responsabile Unità IFSI, International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union (INTAS), Project "Ion and electron scales in mass and energy transfer: magnetospheric mapping, modeling and future mission", Ref. Nr. 03-50-4872 (Belarus-INTAS Call 2003).

2013/2015 Responsabile dell'Unità di Ricerca INAF, Progetto Europeo ERC-Space FP7 Solar system plasma Turbulence: Observations, intermittency and Multifractals (STORM).

E' stato inoltre Co-Investigatore in numerose proposte di ricerca finanziate da enti nazionali ed internazionali (ESA, EC, ASI, PNRA, CNR, ISSI-Bern).

## ALTRI INCARICHI E COLLABORAZIONI

1992 - Collaboratore del Gruppo Nazionale di Struttura della Materia (c/o Università di Roma "La Sapienza").

01/01 -31/03/1993 - Collaboratore del Consorzio INFM presso l'Università di Roma "La Sapienza".

01/03/ - 30/04/1996 - Collaboratore dell'Istituto Nazionale di Fisica della Materia presso l'Università di Roma "La Sapienza".

2007/oggi - Coordinatore Nazionale per la Divisione III "Magnetospheric Phenomena" della IAGA Italia

Partecipa in numerose Commissioni di Concorso per l'assegnazione di *Assegni di Ricerca, Borse di Studio, Contratti di Collaborazione Coordinata e Continuativa, Contratti a per Assunzioni a Tempo Determinato Art. 23, Art. 15, ed Art. 25.*

2008/2011 - Membro eletto in qualità di *rappresentante del personale* nel Consiglio di Struttura dell'Istituto di Fisica dello Spazio Interplanetario di Roma dell'INAF (INAF-IFSI) dal 11/2008 al 12/2011.

## CAMPI DI RICERCA ED INTERESSE

- Complessità, fenomeni non lineari e criticità nei plasmi spaziali
- Meccanica statistica e termodinamica dei processi irreversibili e di non equilibrio
- Osservazioni e studio dei fenomeni aurorali e della dinamica magnetosferica
- Convezione solare e trasporto di energia verso gli stati esterni dell'atmosfera solare
- Dinamica del campo geomagnetico su grande scala temporale
- Studio delle proprietà dell'acqua confinata sulla superficie degli enzimi.

## RELAZIONI SU INVITO (ULTIMI 12 MESI) - ORGANIZZAZIONE CONGRESSI

Ha tenuto più di 45 Relazioni su invito in Conferenze, Congressi, Simposi, Scuole nazionali/internazionali e presso Università ed Enti di Ricerca nazionali ed internazionali dal 1996 a tutt'oggi, di cui nell'ultimo anno:

03/05/2012 - "On the multiscale nature of magnetospheric dynamics and processes", 5th Isradynamics Conference - Dynamical Processes in Space and Astrophysical Plasmas, 29 Aprile - 07 Maggio 2012, Gerusalemme, Israele.

21/09/2012 - "The solar wind", Invited Lecture, International School of Astrophysics "F. Lucchin", 17-22 Settembre 2012, Vulcano, Italia

17/01/2013 - "Dynamical complexity in Sun-Earth Connections", V Conference on Earth-Sun System Exploration, 13-19, Gennaio 2013, Kona, Hawaii (USA)

Ha partecipato in qualità di membro del Comitato Organizzatore Locale (LOC), del Comitato Scientifico (SOC) e di "Main Convenor" in numerosi Convegni/Congressi internazionali.

## PUBBLICAZIONI CON REFEREE

---

- G.Careri, G. Consolini and F.Bruni."Proton tunneling in hydrated biological tissues near 200K." *Biophys.Chem.* 37, 165-170 (1990)
- G. Careri and G. Consolini. "Proton quantum tunneling in hydrated protein surface" *Ber. Bun. Ges.*, 95, 376 (1991)
- G. Consolini, F.Bruni and G.Careri. "Dissipative quantum tunneling of orientational defects in polycrystalline ice." *Europhys. Lett.*, 19, 547 -551 (1992)
- F.Bruni, G. Consolini and G.Careri."Temperature Dependence of Dielectric Relaxation in H<sub>2</sub>O and D<sub>2</sub>O Ice. A Dissipative Quantum Tunneling Approach." *J.Chem.Phys.* 99 (1), 538-547 (1993)
- G. Consolini, F.Bruni and G.Careri. "Dissipative Quantum Tunneling of Rotational Defects in Ice. The Pauling Potential." *J.Chem.Phys.* 99 (5), 4227-4228 (1993)
- G.Careri, F.Bruni and G. Consolini. "Hopping and Dissipative Tunneling of Orientational Defects in Ice". *International Journal of Modern Physics B* 8 (7), 839-846 (1994)
- G. Consolini, M.F. Marcucci and M. Candidi "Multifractal structure of Auroral Electrojet Index Data" *Phys. Rev. Lett.* 76 (21), 4082 (1996)
- P. De Michelis, I.A. Daglis and G. Consolini "Average Terrestrial Ring Current derived from AMPTE-CCE/CHEM" *J. Geophys. Res.* 102 (A7), 14.103 (1997)
- G. Consolini and M.F.Marcucci "Multifractal Structure and Intermittence in the AE-Index Time Series" *Il Nuovo Cimento sez. C*, 20, 394 (1997)
- P. De Michelis, G. Consolini, and A. Meloni, "Sign-singularity in the Earth's magnetic field". *Phys. Rev. Lett.*, 81, 5023 (1998)
- G. Consolini, and P. De Michelis, "Non-Gaussian Distribution Function of AE-Index Fluctuations. Evidence for Time Intermittency". *Geophys. Res. Lett.*, 25, 4087 (1998)
- P. De Michelis, I.A. Daglis, and G. Consolini, "Quiet time magnetospheric proton plasma parameters in the equatorial plane" *Phys. Chem. Earth (C)*, 24, 163, (1999)
- P. De Michelis, I.A. Daglis, and G. Consolini, "An Average image of Current Systems in the Equatorial Plane Derived from AMPTE/CCE-CHEM Measurements", *J. Geophys. Res.*, 104, 14103 (1999)
- G. Careri, G. Consolini, and F. Brun, "Dielectric Relaxation of a Proton Glass in Hydrated

Protein Powders". *Solid State Ionics*, 125, 257 (1999)

- L. Sorriso-Valvo, et al., "Characterization of intermittency in the solar wind turbulence through probability distribution functions of fluctuations." *Geophys. Res. Lett.*, 26,1801 (1999)
- G. Consolini et al., "Scaling Behavior of the Vertical Velocity Field on the Solar Photosphere." *Astron. & Astrophys.*, 344, L33 (1999)
- F. Berrilli et al., "Dependence of the photospheric vertical flow characteristics on the granule dimension" *Astron. & Astrophys.*, 344, L29 (1999)
- G. Consolini & A.T.Y. Lui "Sign-Singularity Analysis of Current Disruption" *Geophys. Res. Lett.*, 26,1673 (1999)
- A.Levstik, C. Filipic, Z. Kutniak, G. Careri, G. Consolini, and F. Bruni, "Proton freezing in hydrated lysozyme powders", *Phys. Rev. E*, 60, 7604 (1999)
- A.Levstik, C. Filipic, Z. Kutniak, G. Careri, G. Consolini, and F. Bruni, "Glassy freezing in hydrated protein powder", *Ferroelectrics*, 240, 289 (2000)
- G. Consolini, P. De Michelis, and A. Meloni, "Multifractality and Punctuated Equilibrium in the Earth's Magnetic Field Polarity Reversals", *Geophys. Res. Lett.*, 27, 293 (2000)
- F. Lepreti et al., "Multifractal structure of the dissipation field of intensity fluctuations in the solar photosphere", *Physica A*, 280, 88 (2000)
- G. Careri and G. Consolini, "Dielectric  $1/f$  noise of protons migrating on hydrated protein surface", *Phys. Rev. E*, 62 (3), 4454 (2000)
- G. Consolini and A.T.Y. Lui "Symmetry breaking, and nonlinear wave-wave interaction in current disruption: possible evidence for a phase transition." in "Magnetospheric Current Systems", S.-I. Ohtani et al. (eds.), AGU Geophys. Monograph 118, 395 (2000)
- G. Consolini, and T.S. Chang, "Magnetic Field Topology and Criticality in the Magnetotail Dynamics: Relevance to Substorm Dynamics", *Space Sci. Rev.*, 95, 309 (2001)
- G. Consolini & P. De Michelis, "A Revised Forest-Fire Cellular Automaton for the Nonlinear Dynamics of the Earth's Magnetotail", *J. Atmos. Sol. Terr. Phys.*, 63, 1371 (2001)
- Careri, G. Consolini, Z. Kutnjak, C. Filipic, and A. Levstik, " $1/f$  noise and dynamical heterogeneity in glasses", *Phys. Rev. E*, 64, 052901 (2001)
- F. Berrilli, G. Consolini, et al., "2-D multiline spectroscopy of the solar photosphere", *Astron. & Astrophys.*, 381, 253 (2002)
- V. Carbone et al. (including G. Consolini), "An analysis of the vertical photospheric velocity field as observed by THEMIS", *Astron. & Astrophys.*, 381, 265 (2002)
- G. Consolini, P. De Michelis, and A. Meloni, "Fluid motions in the Earth's core inferred from time spectral features of the geomagnetic field", *Phys. Rev. E*, 65, 037303 (2002)
- G. Consolini and T.S. Chang, "Complexity, Magnetic Field Topology, Criticality, and

Metastability in Magnetotail Dynamics", *J. Atmos. Sol. Terr. Phys.*, 64, 541 (2002)

- G. Consolini, "Self-organized criticality: a new paradigm for the magnetotail dynamics", *Fractals*, 10, 275 (2002)
- G. Consolini and P. De Michelis, "Fractal time statistics of AE-index burst waiting times: Evidente of metastability", *Nonlinear Proc. Geophys.*, 9, 419 (2002)
- S. Savin, Buechner, J., G. Consolini, et al., "On the properties of turbulent boundary layer over polar cusps", *Nonlinear Proc. Geophys.*, 9, 443 (2002)
- S. Savin et al., "Multi-spacecraft Tracing of Turbulent Boundary Layer", *Adv. Space Res.*, 30, 2821 (2002)
- F. Berrilli, G. Consolini, and E. Pietropaolo, "Dynamics of the solar photosphere: THEMIS observations", *Il Nuovo Cimento C*, 25, 535 (2002)
- G. Consolini and P. De Michelis, "Stochastic resonance in geomagnetic polarity reversals", *Phys. Rev. Lett.*, 90, 058501 (2003)
- G. Consolini, F. Berrilli, A. Florio, E. Pietropaolo, and L.A. Smaldone, "Information entropy in solar atmospheric fields. I. Intensity photospheric structures. ", *Astron. & Astrophys.*, 402, 1115 (2003)
- F. Berrilli, G. Consolini, A. Florio, D. Del Moro, and E. Pietropaolo, "Granulation structure and information entropy", *Astron. Nachr.*, 324, 405 (2003)
- T. Chang, S. W. Y. Tam, C.-C. Wu, and G. Consolini, "Complexity, Forced and/or Self-Organized Criticality, and Topological Phase Transitions in Geospace Plasmas", *Space Sci. Rev.*, 107, 425 (2003)
- P. De Michelis and G. Consolini "Some new approaches to the study of the Earth's magnetic field reversals", *Annals of Geophysics*, 46, 661 (2003)
- S. Savin et al., "Magnetosheath – Cusp Interface", *Annales Geophysicae*, 22, 183 (2004)
- F. Berrilli, D. Del Moro, G. Consolini, et al., "Structure properties of supergranulation and granulation", *Solar Physics*, 221, 33 (2004)
- G. Careri and G. Consolini, "Comment to "Dielectric investigation of the temperature dependence of the dynamics of a hydrated protein" by F. Bruni and S.E. Pagnotta", *Phys. Chem. Chem. Phys.*, 6, DOI: 10.1039/b408916b (2004)
- P. De Michelis, G. Consolini and A. Meloni, "Time intermittency and spectral features of the geomagnetic field", *Annals of Geophysics*, 47, 1713 (2004)
- S. Lorito, D. Schmitt, G. Consolini, and P. De Michelis, "Stochastic resonance in a bistable geodynamo model", *Astron. Nachr.*, 236, 227 (2005)
- G. Consolini and P. De Michelis, "Local Intermittency Measure Analysis of the Auroral Electrojet Index", *Geophys. Res. Lett.* 32, L05101, DOI: 10.1029/2004GL022063 (2005)
- S. Savin et al., "Magnetosheath interaction with high-latitude magnetopause", *Surveys in Geophysics*, 26, 95 (2005)

- G. Consolini, M. Kretzschmar, A.T.Y. Lui, G. Zimbardo, and W. Macek, "On the magnetic field fluctuations during magnetospheric tail current disruption: A statistical approach", *J. Geophys. Res.*, 110, A07202, doi: 10.1029/2004JA010947 (2005)
- M. Gedalin, M. Balikhin, D. Coca, G. Consolini, and R. Treumann, "Kinetic description for avalanching systems", *Physical Review E*, 72, 037103 (2005)
- M. Gedalin, M. Bregman, M. Balikhin, D. Coca, G. Consolini and R. Treumann, "Dynamics of burning model", *Nonlinear Processes in Geophysics*, 12, 717 (2005)
- M. Gedalin, M. Bregman, M. Balikhin, D. Coca, G. Consolini and R. Treumann, "Avalanches in bi-directional sandpile and burning models: A comparative study", *Nonlinear Processes in Geophysics*, 12, 733 (2005)
- E. Yordanova, J. Bergman, G. Consolini, et al., "Anisotropic scaling features and complexity in the magnetospheric-cusp: a case study", *Nonlinear Processes in Geophysics*, 12, 817 (2005)
- W. Macek, R. Bruno, and G. Consolini, "Generalized dimensions for fluctuations in the solar wind", *Physical Review E*, 72, 017202 (2005)
- F. Berrilli, D. Del Moro, S. Russo, G. Consolini, and T. Strauss, "Spatial clustering of photospheric structures", *Astrophys. J.*, 632, 677 (2005)
- G. Consolini, T. Chang and A.T.Y. Lui "Complexity and Topological Disorder in the Earth's Magnetotail Dynamics", in "Nonlinear transitions in plasmas", A.S. Sharma & P. Kam (eds.), Kluwer, (2005)
- G. Consolini and M. Kretzschmar, "Magnetic field fluctuations in the plasma sheet region: a statistical approach", in *Multiscale Coupling of Sun Earth Processes*, Lui et al. Eds., Elsevier (2005)
- A.T.Y. Lui and G. Consolini, "Substorm disturbance propagation from a two-dimensional cellular automaton model", in *Multiscale Coupling of Sun Earth Processes*, Lui et al. Eds., Elsevier (2005)
- M. Kretzschmar and G. Consolini, "Complexity in the Earth's Magnetotail Plasma Sheet", *Adv. Space Res.*, 37, 552 (2006)
- W. Macek, R. Bruno, and G. Consolini, "Testing for multifractality of the slow solar wind", *Adv. Space Res.*, 37, 461 (2006)
- G. Pallochia, E. Amata, G. Consolini, et al., "Geomagnetic Dst index forecast based on IMF data only", *Annales Geophysicae*, 24, 989 (2006)
- G. Consolini, P. De Michelis, and M. Kretzschmar, "A thermodynamic approach to the magnetospheric complexity: the role of fluctuations", *Space Sci. Rev.*, 122, 293 (2006)
- A. Caserta, G. Consolini, and P. De Michelis, "Statistical features of the seismic noise-field", *Studia Geophys. Geod.*, 51, 255 (2007)
- G. Consolini, and M. Kretzschmar, "Thermodynamics of rare events and impulsive relaxation events in the magnetospheric dynamics", *Planet. Space Sci.*, 55, 2244, (2007)

- M. Materassi and G. Consolini, "Magnetic reconnection rate in space plasmas: a fractal approach", *Phys. Rev. Lett.*, 99, 175002 (2007)
- G. Consolini, "On the complexity of the Earth's Magnetotail", in *Turbulence and Nonlinear Processes in Astrophysical Plasmas – 6th Annual International Astrophysical Conference*, D. Shaikh and G.P. Zank (eds.), CP932 AIP 978-0-7354-0443-4/07, pag. 319 (2007)
- G. Pallochia, E. Amata, G. Consolini et al., "AE index forecast at different time scales through an ANN algorithm based on L1 IMF and plasma measurements", *J. Atmos. Sol. Terr. Phys.* 70, 663 (2008)
- E. Amata, G. Pallochia, G. Consolini et al., "Comparison between three algorithms for Dst predictions over the 2003-2005 period", *J. Atmos. Sol. Terr. Phys.* 70, 496 (2008)
- L. Trenchi, M.F. Marcucci, G. Pallochia, G. Consolini, et al., "Occurrence of reconnection jets at the dayside magnetopause: Double Star observations", *J. Geophys. Res.*, 113, doi: 10.1029/2007/JA012774 (2008)
- S. Savin et al. (including G. Consolini), "High kinetic energy jets in the Earth's magnetosheath: implications for plasma dynamics and anomalous transport", *Pis'ma v ZhETF (JETP)*, 87, 691 (2008)
- G. Consolini, P. De Michelis and R. Tozzi, "On the Earth's magnetospheric dynamics: Nonequilibrium evolution and the fluctuation theorem", *J. Geophys. Res.*, 113, A08222 doi: 10.1029/2008JA013074 (2008)
- M. Materassi and G. Consolini, "Turning the resistive MHD into a stochastic field theory", *Nonlin. Proc. Geophys.*, 15, 701 (2008)
- E. Amata, G. Pallochia, G. Consolini and M.F. Marcucci, "ANN forecast of hourly averaged AE index based on L1 IMF and plasma measurements", *Acta Geophys.*, 57, 185 (2009)
- G. Consolini, B. Bavassano and P. De Michelis, "A probabilistic approach to heterogeneity in space plasmas: the case of magnetic field intensity in solar wind", *Nonlin. Proc. Geophys.* 16, 265 (2009)
- G. Consolini, R. Tozzi and P. De Michelis, "Complexity in the Sunspot Cycle", *Astron. & Astrophys.* 506, 1381 (2009)
- Y. Saito et al., (including G. Consolini in MPPE-TEAM) "Scientific objectives and instrumentation of Mercury Plasma Particle Experiment (MPPE) onboard MMO", *Planet. Space Sci.*, 58, 182, (2010)
- G. Consolini, "Relative degree of order in radial evolution of solar wind fluctuations", 12th International Solar Wind Conference, M. Maksimovic et al. Eds., AIP Conference Proc, 1216, 120 (2010)
- P. De Michelis, R. Tozzi and G. Consolini, Principal components' features of mid-latitude geomagnetic daily variation, *Ann. Geophys.*, 28, 2213 (2010)
- F. Berrilli et al. (including G. Consolini in ADAHELI Team), The ADAHELI solar mission:



Investigating the structure of Sun's lower atmosphere, *Adv. Space Res.*, 45, 1191 (2010)

- M. Materassi, L. Ciralo, G. Consolini, N. Smith, "Predictive Space Weather through information theory, *Adv. Space Res.*, 47, 877 (2011)
- G. Consolini and P. De Michelis, Rank-Ordering Multifractal Analysis of the Auroral Electrojet Index, *Nonlin. Processes Geophys.*, 18, 277 (2011)
- P. De Michelis, G. Consolini, M. Materassi, and R. Tozzi, An Information Theory Approach to Storm-Substorm Relationship, *J. Geophys. Res.*, 116, A08225, doi: 10.1029/2011JA016535 (2011)
- G. Consolini and P. De Michelis, Relative ordering in the radial evolution of solar wind turbulence: the S-Theorem approach, *Ann. Geophys.*, 29, 2317 (2011)
- I. Coco, G. Consolini, E. Amata, M.F. Marcucci and D. Ambrosino, Dynamical changes of the polar cap potential structure: an information theory approach, *Nonlin. Processes Geophys.*, 18, 697 (2011)
- M. Laurenza, G. Consolini, M. Storini and A. Damiani, A Shannon entropy approach to the temporal evolution of SEP Energy spectrum, *Astrophys. Space Sci. Trans.*, 8, 19 (2012)
- G. Consolini, On the passive nature of proton temperature in solar wind turbulence, *Astrophys. Space Sci. Proc.*, 33, 187 (2012)
- M. Materassi, G. Consolini and E. Tassi, Sub-fluid models in dissipative Magneto-Hydrodynamics, in *Topics in Magnetohydrodynamics*, Linjin Zheng ed., ISBN 978-953-51-0211-3, INTECH (2012)
- R. D'Amicis, G. Consolini, B. Bavassano and R. Bruno, Conditioned analysis of high-latitude solar wind intermittency, *Astrophys. J.*, 755, 63, doi: 10.1088/0004-637X/755/1/63 (2012)
- P. De Michelis, G. Consolini and R. Tozzi, On the Multi-scale Nature of Large Geomagnetic Storms: An Empirical Mode Decomposition Analysis, *Nonlin. Processes Geophys.*, 19, 667 (2012)
- M. Laurenza, G. Consolini, M. Storini and A. Damiani, On the spectral shape of SEP events: an extreme value statistics approach, in press in 13rd International Solar Wind Conference, G. Zank et al. Eds., AIP Conference Proc (2012)

## PUBBLICAZIONI SENZA REFEREE: ATTI DI CONGRESSO, RIVISTE, RAPPORTI

---

- G. Careri, G. Consolini and F. Bruni. "Proton conductivity in hydrated proteins. Evidence for percolation." In *Water and Ions in Biomolecular Systems*, D. Vasilescu ed., Birkhauser Verlag, Basel. p. 165-170 (1990)
- G. Careri, G. Consolini and F. Bruni. "Dissipative quantum tunneling in polycrystalline ice and hydrated biosystems." In *Water-Biomolecule Interactions*. Conference

Proceedings vol.43. p.173, M.U.Palma, M.B. Palma-Vittorelli and F.Parak (Eds.) Società Italiana di Fisica, 43, (1993),

- G. Careri, F. Bruni and G. Consolini "Protons in Hydrated Protein Powders" Nonlinear Excitations in Biomolecules, M.Peyrard, ed., Les Houches, Springer, New York (1994)
- R. Falcone and G. Consolini. "The microporosity of low fired Iron Age ceramics: the role of the calcareous skeleton." "Science and Technology for Cultural Heritage " - Journal of the "Comitato Nazionale per la Scienza e la Tecnologia dei Beni Culturali" - C.N.R. - 3, 57-62 (1994)
- G. Consolini et al.. "Filter-Box Controller for Italian All-Sky Camera" I.F.S.I. -94-10 (1994)
- G. Consolini and M.F.Marcucci "Multifractal Structure and Intermittence in the AE-Index Time Series" - I.F.S.I. - 94-18 (1994)
- P. De Michelis, I.Daglis and G. Consolini "Reconstruction of the Terrestrial Ring Current derived from AMPTE-CCE/CHEM" - I.F.S.I. - 96-09 (1996)
- G. Consolini "Self-Organised Criticality: a new paradigm for the magnetospheric dynamics" - I.F.S.I. - 96-19 (1996)
- G. Consolini, "Sandpile Cellular Automata and Magnetospheric Dynamics" Proc. of "VIII Conv. GIFCO-97", S. Aiello et al. eds., SIF, Bo, 127, (1997)
- G. Consolini, L. Cafarella, P. De Michelis, M. Candidi, and A. Meloni, "Non-Gaussian Probability Distribution of short time scale magnetic field fluctuations at Terra Nova Bay (Antactica)" Proc. of "VIII Conv. GIFCO-97", S. Aiello et al. eds., SIF, Bo, 23, (1997)
- E.P. Balsamo, M. Candidi, G. Consolini, and L. Morici, "The New Italian All-Sky Camera for Auroral Observations at Terra Nova Bay" Proc. of "VIII Conv. GIFCO-97", S. Aiello et al. eds., SIF, Bo, 101, (1997)
- G. Consolini, "Glassy dielectric relaxation of protons in hydrated protein powders" The Physics of Complex Systems, F. Mallamace & H.E. Stanley eds., IOS Press, Amsterdam, 671 (1997)
- G. Consolini, "Turbulence and Intermittence in Magnetospheric Dynamics" The Physics of Complex Systems, F. Mallamace & H.E. Stanley eds., IOS Press, Amsterdam, 657 (1997)
- M. Candidi, and G. Consolini, "Space weather", *Astronomia*, #4, Luglio-Agosto, 9 (1998), - ISSN 0392 - 2308
- G. Consolini, M.F. Marcucci, M. Candidi, and G. Bellucci, "Preliminary results of the Italian auroral All-Sky Camera at General Belgrano II Base (Antarctica)." in *Italian Research on Antarctic Atmosphere*, M. Colacino, G. Giovannelli, and L. Stefanutti, eds., Conf. Proc. 62, 381, SIF, Bo, (1998)
- G. Consolini, M. Candidi, L. Cafarella, P. De Michelis, and M. Meloni, "Lévy stable probability distribution of short time scale magnetic field fluctuations at Terra Nova Bay (Antarctica)." in *Italian Research on Antarctic Atmosphere*, Colacino et al. eds., Conf.

Proc. 62, 367, SIF, Bo, (1998)

- G. Consolini et al., "Preliminary Results on Solar Photospheric MHD Turbulence Studied via Signed Measures and their Cancellation Exponent" JOSO Ann. Rep. '97, A. Antalova, and A. Kucera eds., 115, Astronomical Institute, Slovakia, (1998)
- F. Berrilli et al., "Solar Granulation Properties by means of Skeletonizing and Wavelet Algorithms" JOSO Ann. Rep. '97, A. Antalova, and A. Kucera eds., 122, Astronomical Institute, Slovakia, (1998)
- G. Consolini et al., "THEMIS-IPM: characterization of the photospheric velocity field" in Recent Results of the Italian Solar Research, I. Ermolli, F. Berrilli, and B. Caccin (eds) Mem. SAIT, 68, 651 (1998)
- G. Cauzzi, G. Consolini, et al., "Properties of solar granulation cells in quiet regions as derived from a time series of white light images" in Recent Results of the Italian Solar Research, I. Ermolli, F. Berrilli, and B. Caccin (eds) Mem. SAIT, 68, 647 (1998)
- V. Carbone, G. Consolini, V.I. Abramenko, and V.B. Yurchishin, "On the relation between the photospheric current and the flaring process." ESA Publications Division, SP-417, R.A.Harris, F. Moreno-Insertis, and E.R. Priest eds. (1998)
- G. Careri, G. Consolini, and F. Bruni, "Collective proton freezing in hydrated protein powders" in Nonlinear Cooperative Phenomena in Biological Systems, L. Matsson (Ed.), pag. 165, World Scientific Pub., Singapore (1998)
- G. Consolini "Non-Gaussian Probability Distribution Function of Auroral Electrojet Index Fluctuations. Evidence for Time Intermittency in Magnetospheric Dynamics" - I.F.S.I. - 96-20 (1999)
- G. Consolini et al., "Characterization of the solar photospheric velocity field: a new approach", in Magnetic Fields and Solar Processes, A. Wilson ed., ESA Pub. Div., SP-448, 209 (1999)
- F. Berrilli et al., "Dynamics of the photospheric vertical flow", in Magnetic Fields and Solar Processes, A. Wilson ed., ESA Pub. Div., SP-448, 229 (1999)
- F. Lepreti et al., "Power spectra and multifractal structure of intensity fluctuations in the solar photosphere", in Magnetic Fields and Solar Processes, A. Wilson ed., ESA Pub. Div., SP-448, 327 (1999)
- E. Pietropaolo et al., "Wavelet analysis of spatial coherent structures in the photosphere", in Magnetic Fields and Solar Processes, A. Wilson ed., ESA Pub. Div., SP-448, 343, (1999).
- F. Lepreti, et al., "Scaling behavior of the vertical velocity field and of the intensity field in the solar photosphere", submitted to Proc. of European Turbulence Conference 8, (2000).
- G. Consolini, and P. De Michelis, "A cellular automaton for the Earth's magnetotail dynamics" Proc. of "IX Conv. GIFCO-2000", S. Aiello et al. eds., Conf. Proc. 68, 307, SIF, Bologna, (2000)
- G. Consolini, "Complexity, Magnetic Field Topology, and Functional Order in

Magnetotail Dynamics" Proc. of "IX Conv. GIFCO-2000", S. Aiello et al. eds., Conf. Proc. 68, 295, SIF, Bologna, (2000)

- E.P. Balsamo et al., "Preliminary results of the new all-sky camera for auroral observations at Terra Nova bay (Antarctica)" Proc. of "IX Conv. GIFCO-2000", S. Aiello et al. eds., Conf. Proc. 68, 291, SIF, Bologna, (2000)
- F. Berrilli, G. Consolini, and E. Pietropaolo, "Evolution of velocity granulation fields based on THEMIS-IPM observations" Proc. of "IX Conv. GIFCO-2000", S. Aiello et al. eds., Conf. Proc. 68, 287, SIF, Bologna, (2000)
- F. Berrilli, et al., "MgIb2 bright features in the solar photosphere" in The Solar Cycle and Terrestrial Climate, , A. Wilson ed., ESA Pub. Div., SP-463, 285 (2000)
- F. Berrilli et al., " Analysis of high resolution and full disk solar images", in Solar encounter. Proceedings of the First Solar Orbiter Workshop, B. Battrock & H. Sawaya-Lacoste eds., ESA Pub. Div., SP-493, 173 (2001)
- G. Consolini, "Complexity and criticality of the magnetospheric dynamics", Mem. SAIT 72, 605 (2001)
- F. Berrilli, G. Consolini, A. Florio, and E. Pietropaolo, "Dynamics of solar granulation", Mem. SAIT 72, 540 (2001)
- F. Berrilli, G. Consolini, A. Florio, and E. Pietropaolo, "Solar granulation: properties of velocity fields from THEMIS-IPM observations", Mem. SAIT 72, 669 (2001)
- G. Consolini, "New perspectives in magnetospheric dynamics: complexity and criticality in magnetotail", in Sun-Earth Connection and Space Weather, Candidi M., Storini M., and Villante U. eds., Conf. Proc. 75, 127, SIF, Bologna (2001)
- E. P. Balsamo et al. (including G. Consolini), "Characterization of All Sky Camera Systems installed at Baia Terra Nova, Antarctica" – I.F.S.I.-2001-20 (2001)
- E. P. Balsamo et al. (including G. Consolini), "Photometric sensitivity and optical correction in All Sky Camera Lens Systems" – I.F.S.I.-2001-21 (2001)
- E. P. Balsamo et al. (including G. Consolini), "Analysis of an auroral images archive: event recognition and estimation of characterizing parameters" – I.F.S.I.-2001-22 (2001)
- F. Liberati et al. (including G. Consolini), "A Multi Spectral Optical Channel for Simultaneous Acquisition of Filtered Auroral Images" – I.F.S.I.-2001-23 (2001)
- P. De Michelis and G. Consolini, "A revised Forest Fire Model non-quasistatically driven for the sporadic activity of the Earth's magnetotail", in Solar Cycle and Space Weather Conference SOLSPA 2001, H. Sawaya-Lacoste ed., ESA Pub. Div., SP-477, 427 (2002)
- G. Consolini and P. De Michelis, " Geomagnetic Polarity Reversals and Stochastic Resonance", Mem. SAIt, 74, 786 (2003)
- D. Del Moro, F. Berrilli, J.A. Bonet G. Consolini, A. Kosovichev and E. Pietropaolo, "Granule and Supergranule properties derived from solar timeseries", Mem. SAIt, 74, 584 (2003)

- F. Berrilli, D. Del Moro, S. Giordano, G. Consolini, and A. Kosovicev, "Characterization of supergranular features via topological measures", Proc. ISCS 2003 Symposium, "Solar Variability a san Input to the Earth's Environment", Ed.: A. Wilson. ESA SP-535, 47 (2003)
- E. Amata, et al., "SINERGIES, the Italian network for ground-based observations of Sun-Earth phenomena", Mem. SAIt, 9 (Suppl), 79 (2006)
- E. Amata, et al., "SINERGIES (Sun INterplanetary, EaRth Ground-based InstrumEntS) or the potential of the Italian network for ground-based observations of Sun-Earth phenomena", Mem. SAIt, 9 (Suppl), 82 (2006)
- G. Pallocchia, E. Amata, G. Consolini, M.F. Marcucci, and I. Bertello "ANN prediction of the Dst index", Mem. SAIt, 9 (Suppl), 120 (2006)
- E. Amata, G. Pallocchia and G. Consolini, "Can the AE index be forecast ?" in Developing the scientific basis for monitoring, modelling and predicting Space Weather, COST Action 724 Scientific Final Report, Lilensten et al. Eds., 255 (2008)
- F. Berrilli et al., "The ADAHELI Solar Mission", Proc. 12th European Solar Physics Meeting, Ed. P. Hardi, <http://espm.kis.uni-freiburg.de> (2008)
- G. Consolini et al., "Auroral observations at the Mario Zucchelli Base (Antarctica). Morphological features", Mem. SAIt, 80, 268 (2009)
- E. Amata et al., "High kinetic energy density jets in the Earth's magnetosheat: preliminar results", Mem. SAIt, 80, 259 (2009)
- L. Trenchi et al., "Magnetic reconnection at the dayside magnetopause with Double Star Tc1 data", Mem. SAIt, 80, 287 (2009)
- R. Bruno et al., "Laboratory activity at INAF-IFSI in the framework of its participation to SWA onboard ESA-Solar Orbiter", Mem. SAIt, 80, 239 (2009)

Questo documento consta di 13 pagine e viene rilasciato per gli usi consenti dalla legge.

Roma li, 08, 05, 2013

Firma

Giuseppe Consolini

