CURRICULUM VITAE
Angelo VULPIANI

Born Borgorose (Rieti) Italy, 8 Aug. 1954

Married, one son (Daniele 1989)

Nov 1977   **Degree in Fisica** *cum Laudem*
Sept 1978 - June 1981 C.N.R. Fellowship (Rome)
July 1981- Febr 1988 Assistant Professor (Rome La Sapienza)
March 1988 - Oct 1991 Associate Professor of Theoretical Physics (L'Aquila)
Nov 1991 - Oct 2000 Associate Professor of Mathematical Methods for Physics (Rome La Sapienza)
Nov 2000 - Full Professor of Theoretical Physics (Rome La Sapienza)

Aug 2004, Elected Fellow of The Institute of Physics.
Outstanding Referee of the American Physical Society, 2008
Member of the Editorial Board of:
+ Journal of Statistical Mechanics: Theory and Experiment
+ Journal of Physics A: Mathematical and Theoretical

Teaching Activity

- 1978- 1987 Assistant Professor to different courses:
Fisica Generale I e II, Istituzioni di Fisica Teorica, Fisica Teorica, Fisica Molecolare
- 1988- 1991 Course *Fisica Teorica*
- 1991- 1995 Course *Metodi Matematici della Fisica*
- 2001- 2007 Course *Probabilità e Statistica*
- 1995- Course *Fisica dei Sistemi Dinamici*
- 2007- Course *Meccanica Statistica*
- Courses for PhD students in Copenhagen, Kobe, Rome, L'Aquila, Naple, Turin and Parma.
- Supervisor of 8 PhD Thesis and about 50 Master Thesis

Main Scientific Interests

- Chaos and Complexity in Dynamical Systems
- Disordered Systems
- Non-equilibrium Statistical Mechanics.
- Fully Developed Turbulence
- Transport and Diffusion.

About 130 **invited talks** at International Conferences, Workshops or Schools and about 130 seminars in Australia, Austria, Belgium, Denmark, France, Germany, Greece, Finland, France, Italy, Japan, Norway, Poland, Portugal, Russia, Spain, Sweden, Switzerland, United Kingdom and USA.

AV has been visiting scientist in several Institutes and Universities: CECAM Paris, University of di Bruxelles, University of Marseille, University of Stockholm, University of California San Diego, NORDITA and Niels Bohr Institute Copenhagen.

Organizer of 16 International Conferences or Workshops and 5 International Schools.

Main Grants

AV had been Principal Insvestigator of the PRA (Advanced Research Project) of INFM on Fully Developed Turbulence (1997-2000).

AV had been National Coordinator for the European Network "Intermittency in Fully Developed Turbulence" (1998-2001).

AV has been Principal Insvestigator of the National MIUR (Italian Ministry for University) project "Complex systems and many-body problems" (2003-2004).

AV has been National Coordinator for the European Network "Stirring and Mixing" (2002-2006).

AV has been Local Coordinator for the National MIUR (Italian Ministry for University) project "Dynamics and Statistics of Dynamica Systems" (2005-2006).

Referee of:

- Chaos, Europhysics Letters, Eur. Phys. Journal **B**, Journal of Physics **A**, Journal of Statistical Mechanics: Theory and Experiment, Physics of Fluids, Physica **A**, Physica **D**, Physics Letters **B**, Physical Review Letters and Physical Review **E**.

- Author of 5 Books, more than 200 papers on International Journals (including 4 long review articles); about 40 contributions to conference proceedings and about 20 articles of scientific popularization; Editor of 8 Proceedings.

The AV's h-index is 40, more than 6500 citations.

BOOKS as AUTHOR

1. *Products of Random Matrices in Statistical Physics*
   A. Crisanti, G. Paladin and A. Vulpiani
   (Springer-Verlag, Berlin 1993)

2. *Determinismo e Caos*
   A.Vulpiani
   (Nuova Italia Scientifica, Roma 1994; *Seconda Edizione*, Carocci, Roma 2004)

3. *Dynamical Systems Approach to Turbulence*
   T. Bohr, M.H. Jensen, G. Paladin and A. Vulpiani
   (Cambridge University Press, 1998; Paperback Ed. 2005)

4. *Chaos and Coarse Graining in Statistical Mechanics*
   P. Castiglione, M. Falcioni, A. Lesne and A. Vulpiani
   (Cambridge University Press, Cambridge UK 2008)

[French version *Physique statistique: chaos et approches multiechelles* (Belin Edition, Paris 2008)]

5. *Chaos: From Simple Models to Complex Systems*
   M. Cencini, F. Cecconi and A. Vulpiani
   (World Scientific, Singapore 2009)

BOOKS as EDITOR

1. *Advances in Nonlinear Dynamics and Stochastic Processes II*
   edited by G. Paladin and A. Vulpiani
   (World Scientific Publishing, Singapore 1987)

2. *Measures of Complexities*
   edited by L.Peliti and A.Vulpiani
   (Lect. Notes in Phys. **314**, Springer-Verlag, Berlin 1988)

3. *Chaotic Advection, Tracer Dynamics and Turbulent Diffusion*
   edited by A. Babiano, A.Provenzale and A.Vulpiani
   (Special Issue of Physica **D**, North- Holland, Amsterdam 1994)

4. *Forecasting and Modelling for Chaotic and Stochastic Systems*
   edited by A.Bellacicco, G.Koch and A.Vulpiani
   (Franco Angeli, Roma 1995)

5. *Disorder and Chaos*
   edited by A.Vulpiani, M.Serva, G.Parisi, L.Peliti and L.Pietronero
   (Special Issue of Journal de Physique IV, Paris 1998)

6. *Statistical Mechanics and Strongly Correlated Systems*
   edited by G.B. Bachelet, G.Parisi and A. Vulpiani
   (Special Issue of Physica **A**, North- Holland, Amsterdam 2000)

7. *Chaos in Geophysical Flows*
   edited by G.Lacorata, G. Boffetta, G. Visconti and A. Vulpiani
   (Otto Editore, Torino 2003)

8. *The Kolomogorov Legacy in Physics*
   edited by R. Livi and A.Vulpiani
   (Lect. Notes in Phys. **636**, Springer-Verlag, Berlin 2003)
   [French version: *L'héritage de Kolmogorov en physique* (Belin, Paris 2003)]

Review articles

1. *Anomalous scaling laws in multifractal objects*
   G. Paladin and A. Vulpiani,
   Physics Report **156**, 147 (1987)

2. *Lagrangian Chaos: Transport, Mixing and Diffusion in Fluids*
   A. Crisanti, M. Falcioni, G. Paladin and A. Vulpiani,
   La Rivista del Nuovo Cimento, **14**, n. 12, 1 (1991)

3. *Predictability: a way to characterize complexity*
   G. Boffetta, M. Cencini, M. Falcioni and A. Vulpiani
   Physics Reports **356**, 367 (2002)

4. *Fluctuation-Dissipation: Response Theory in Statistical Physics*
   U. Marini Bettolo Marconi, A. Puglisi, L. Rondoni and A. Vulpiani,
   Physics Reports **461**, 111 (2008).

Selected papers (beyond the reviews)

* Statistical Physics (general aspects and granular)

5. *Correlation functions and relaxation properties in chaotic dynamics and statistical mechanics*
   M.Falcioni, S.Isola and A. Vulpiani,
   Physics Letters **A144** 341 (1990)

6. *Clustering and Non-Gaussian Behavior in Granular Matter*
   A. Puglisi, V. Loreto, U. Marini Bettolo Marconi, A. Petri and A. Vulpiani,
   Phys. Rev. Lett. **81**, 3848 (1998)

7. *Kinetic Approach to Granular Gases*
   A. Puglisi, V. Loreto, U. Marini Bettolo Marconi, and A. Vulpiani,
   Phys. Rev. E **59**, 5582 (1999)

8. *Vibrational thermodynamic instability of recursive networks*
   R. Burioni, D. Cassi, M.P. Fontana and A. Vulpiani
   Europhys. Lett. **58**, 806 (2002)

9. *Relaxation of finite perturbations: Beyond the Fluctuation-Response relation*
   G. Boffetta, G. Lacorata, S. Musacchio and A. Vulpiani
   Chaos **13**, 806 (2003).

10. *Noise activated granular dynamics*
    F. Cecconi, A. Puglisi, U. Marconi Bettolo Marconi and A. Vulpiani,
    Phys Rev Lett **90**, 064301 (2003)

11. *Relevance of initial and final conditions for the fluctuation relation in Markov processes*
    A. Puglisi, L. Rondoni and A.Vulpiani,
    Journ. of Stat. Mech-Theory and Experiment , P08010 (2006)

12. *Macroscopic equations for the adiabatic piston*
    M. Cencini. L. Palatella, S. Pigolotti nd A. Vulpiani,
    Phys. Rev. E **76**, 051103 (2007)

13. *Violation of the Einstein relation in granular fluids: the role of correlations*
    A. Baldassarri, A. Puglisi and A.Vulpiani,
    Journ. of Stat. Mech-Theory and Experiment, P08016 (2007)

14. *Coarse graining of master equations with fast and slow states*
    S. Pigolotti and A. Vulpiani,
    J. Chem. Phys. **128**, 154114 (2008)

15. *The fluctuation-dissipation relation: how does one compare correlation functions and responses?*
    D. Villamaina, A. Baldassarri, A. Puglisi and A.Vulpiani,
    Journ. of Stat. Mech-Theory and Experiment, P07024 (2009)

* Chaos and Complexity

16. *Characterisation of strange attractors as inhomogeneous fractals*
    G. Paladin and A. Vulpiani,
    Lettere al Nuovo Cimento **41**, 82 (1984)

17. *Characterisation of intermittency in chaotic systems*
    R. Benzi, G. Paladin, G. Parisi and A. Vulpiani,
    Journal of Physics **A18**, 2517 (1985)

18. *Intermittency and multifractality in history space*
    G. Paladin, L. Peliti and A. Vulpiani,
    Journal of Physics **A19**, L991 (1986)

19. *Multiscaling in multifractals*
    M.H. Jensen, G. Paladin and A. Vulpiani
    Physical Review Letters **67**, 208 (1991)

20. *Intermittency and predictability in turbulence*
    A. Crisanti, A. Vulpiani, M.H. Jensen and G. Paladin
    Physical Review Letters **70**, 166 (1993)

21. *Transition from regular to complex behaviour in a discrete deterministic asymmetric neural network model*
    A.Crisanti, M. Falcioni and A. Vulpiani,
    Journal of Physics, **A26**, 3441 (1993)

22. *Complexity in dynamical systems with noise*
    G. Paladin, M. Serva and A. Vulpiani
    Physical Review Letters **74**, 66 (1995)

23. *Broken ergodicity and glassy behavior in a deterministic chaotic map*
    A. Crisanti, M. Falcioni and A. Vulpiani,
    Physical Review Letters **76**, 612 (1996)

24. *On the concept of complexity in random dynamical systems*
    V. Loreto, G. Paladin and A. Vulpiani
    Physical Review **E53**, 2087 (1996)

25. *Growth of non-infinitesimal perturbations in turbulence*
    E. Aurell, G. Boffetta, A. Crisanti, G. Paladin and A. Vulpiani
    Physical Review Letters **77**, 1262 (1996)

26. *Predictability in the large: an extension of the concept of Lyapunov exponent*
    E. Aurell, G. Boffetta, A. Crisanti, G. Paladin and A. Vulpiani
    Journal of Physics **A30**, 1 (1997)

27. *Spatial complex behavior in nonchaotic flow systems*
    D. Vergni, M. Falcioni and A. Vulpiani,
    Phys. Rev. E, **56**, 6170 (1997)

28. *Predictability in Two Dimensional Decaying Turbulence*
    G. Boffetta, A. Celani, A. Crisanti and A. Vulpiani,
    Physics of Fluids, **A 9**, 724 (1997)

29. *Slow and fast dynamics in coupled systems: a time series analysis view*
    G. Boffetta, A. Crisanti, F. Paparella, A. Provenzale and A. Vulpiani,
    Physica, **D 116**, 301 (1998)

30. *Characterization of the spatial complex behavior and transition to chaos in flow systems*
    M. Falcioni, D. Vergni and A. Vulpiani
    Physica, **D 125**, 65 (1999)

31. *Macroscopic chaos in globally coupled maps*
    M. Cencini, M. Falcioni, D. Vergni and A. Vulpiani
    Physica, **D 130**, 58 (1999)

32. *An exit time approach to (ϵ, τ)-entropy*
    M. Abel, L. Biferale, M. Cencini, M. Falcioni, D. Vergni and A. Vulpiani
    Physical Review Letters **84**, 6002 (2000).

33. *Exit-Times and ϵ-Entropy for Dynamical Systems, Stochastic Processes, and Turbulence*
    M. Abel, L. Biferale, M. Cencini, M. Falcioni, D. Vergni and A. Vulpiani
    Physica D **147** 12 (2000).

34. *Chaos or Noise – Difficulties of a distinction*
    M. Cencini, M. Falcioni, E. Olbrich, H. Kantz and A. Vulpiani
    Physical Review E **62** 427 (2000).

35. *Coarse-grained probabilistic automata mimicking chaotic systems*
    M. Falcioni, A. Vulpiani, G. Mantica and S.Pigolotti
    Phys Rev Lett **91**, 044101 (2003)

36. *The origin of diffusion: the case of non-chaotic systems*
    F. Cecconi, D. del-Castillo-Negrete, M. Falcioni and A.Vulpiani
    Physica D **180**, 129 (2003)

37. *Data compression and learning in time sequences analysis*
    A. Puglisi, D. Benedetto, E. Caglioti, V. Loreto and A. Vulpiani
    Physica D **180**, 92 (2003)

38. *Brownian motion and diffusion: From stochastic processes to chaos and beyond*
    F. Cecconi, M. Cencini, M. Falcioni, and A. Vulpiani
    Chaos **15**, 026102 (2005)

39. *Production rate of the coarse-grained Gibbs entropy and the Kolmogorov-Sinai entropy: A real connection?*
    M. Falcioni, L. Palatella, and A. Vulpiani
    Phys. Rev. E **71**, 016118 (2005)

40. *Properties making a chaotic system a good pseudo random number generator*
    M. Falcioni, L. Palatella, S. Pigolotti, and A. Vulpiani
    Phys. Rev. E **72**, 016220 (2005)

    * **Turbulence**

41. *On the multifractal nature of fully developed turbulence and chaotic systems*
    R. Benzi, G. Paladin, G. Parisi and A. Vulpiani,
    Journal of Physics **A17**, 3521 (1984)

42. *Intermittency and coherent structures in two dimensional turbulence*
    R. Benzi, G. Paladin, S. Patarnello, P. Santangelo and A. Vulpiani,
    Journal of Physics **A19**, 3771 (1986)

43. *The degrees of freedom of turbulence*
    G. Paladin and A. Vulpiani,
    Physical Review **A35** (Rap. Comm.), 1971 (1987)

44. *Intermittency in a cascade model for three dimensional turbulence*
    M.H. Jensen, G. Paladin and A. Vulpiani
    Physical Review **A43**, 798 (1991)

45. *Multifractality in the statistics of velocity gradients in turbulence*
    R. Benzi, L. Biferale, G. Paladin, A. Vulpiani and M. Vergassola
    Physical Review Letters **67**, 2299 (1991)

46. *A shell model for turbulent advection in fluids*
    M.H. Jensen, G. Paladin and A. Vulpiani
    Physical Review **A45**, 7214 (1992)

47. *A Random process for the construction of multiaffine fields*
    R. Benzi, L. Biferale, A. Crisanti, G. Paladin, M. Vergassola and A. Vulpiani,
    Physica **D65**, 352 (1993)

48. *Statistical Mechanics of Shell Models for 2D turbulence*
    E. Aurell, G. Boffetta, A. Crisanti, P. Frick, G. Paladin and A. Vulpiani
    Physical Review **E50**, 4705 (1994)

49. *Mimicking a turbulent signal: sequential multiaffine processes*
    L. Biferale, G. Boffetta, A. Celani, A. Crisanti and A. Vulpiani,
    Phys. Rev. E, **57**, R6261 (1998)

50. *Exit time of turbulent signals: A way to detect the intermediate dissipative range*
    L. Biferale, M. Cencini, D. Vergni and A. Vulpiani,
    Phys. Rev. E, **60**, R695 (1999)

51. *Inverse Statistics of Smooth Signals: The Case of Two Dimensional Turbulence*
    L.Biferale, M.Cencini, A. Lanotte, D. Vergni and A. Vulpiani
    Phys. Rev. Lett. **87**, 124501 (2001)

52. *Twenty-five years of multifractals in fully developed turbulence: a tribute to Giovanni Paladin.*
    G. Boffetta, A. Mazzino and A. Vulpiani,
    Journal of Physics A **41**, 363001 (2008)

    * **Transport and reaction-diffusion**

53. *Chaotic diffusion across a magnetic field in a model of electrostatic turbulent plasma*
    M.Pettini, A. Vulpiani, J.H.Misguich, M.De Leener, J.Orban and R.Balescu,
    Physical Review **A38**, 344 (1988).

54. *Regular and chaotic motion of particles in a two dimensional fluid*
    M. Falcioni, G. Paladin and A. Vulpiani,
    Journal of Physics **A21**, 3451 (1988)

55. *Passive advection of particles denser than the surrounding fluid*
    A. Crisanti, M. Falcioni, A. Provenzale and A. Vulpiani,
    Physics Letters, **A150**, 79 (1990)

56. *Dynamics of passively advected impurities in simple 2D flow models*
A. Crisanti, M. Falcioni, A. Provenzale, P. Tanga A. Vulpiani,
Physics of Fluids, **A4**, 1805 (1992)

57. *Chaotic advection in point vortex models and two-dimensional turbulence*
A. Babiano, G. Boffetta, A. Provenzale and A. Vulpiani,
Phys. Fluids, **A6**, 2465 (1994)

58. *Eddy diffusivities in scalar transport*
L. Biferale, A. Crisanti, M. Vergassola and A. Vulpiani,
Phys. Fluids **A7**, 2725 (1995)

59. *Dispersion of passive tracers in closed basin: Beyond the diffusion coeffecient*
V. Artale, G. Boffetta, A. Celani, M. Cencini and A. Vulpiani,
Physics of Fluids, **A 9**, 3162 (1997)

60. *Relative dispersion in fully developed turbulence: Lagrangian statistics in synthetic flows*
G. Boffetta, A. Celani, A. Crisanti and A. Vulpiani,
Europhys Letters, **46**, 177 (1999)

61. *Pair dispersion in synthetic fully developed turbulence*
G. Boffetta, A. Celani, A. Crisanti and A. Vulpiani,
Phys. Rev. E, **60**, 6734 (1999)

62. *On strong anomalous diffusion*
P. Castiglione, A. Mazzino, P. Muratore-Ginanneschi and A. Vulpiani,
Physica **D 134**, 75 (1999)

63. *Non asymptotic properties of transport and mixing*
G. Boffetta, A. Celani, M. Cencini, G. Lacorata and A. Vulpiani
Chaos **10**, 50 (2000)

64. *Simple stochastic models showing strong anomalous diffusion*
K.H. Andersen, P. Castiglione, A. Mazzino and A. Vulpiani
Eur. Phys. J. B **18**, 447 (2000)

65. *Front propagation in laminar flows*
M. Abel. A. Celani, D. Vergni and A. Vulpiani
Phys. Rev. E **64**, 046307 (2001)

66. *Dectecting barriers to transport: a review of different techniques*
G. Boffetta, G. Lacorata, G. Radaelli and A.Vulpiani
Physica D **159**, 58 (2001)

67. *Front speed enhancement in cellular flows*
M. Abel, M. Cencini, D. Vergni and A. Vulpiani
Chaos **12**, 481-488 (2002)

68. *Superfast front propagation in reactive systems with non-Gaussian diffusion*
R. Mancinelli, D. Vergni, and A. Vulpiani
Europhys. Lett. **60**, 532 (2002)

69. *Thin front propagation in steady and unsteady cellular flows*
M. Cencini, A. Torcini, D. Vergni and A. Vulpiani
Physics of Fluids **15**, 679 (2003)

70. *Front propagation in reactive systems with anomalous diffusion*
    R. Mancinelli, D. Vergni and A. Vulpiani,
    Physica D **185**, 175 (2003)

71. *Minimal Stochastic Model for Fermi's Acceleration*
    F. Bouchet, F. Cecconi, and A. Vulpiani,
    Phys. Rev. Lett. **92** 040601 (2004).

72. *Multiple-scale analysis and renormalization for preasymptotic scalar transport*
    A. Mazzino, S. Musacchio, and A. Vulpiani
    Phys. Rev. E **71**, 011113 (2005)

73. *Turbulence and Coarsening in Active and Passive Binary Mixtures*
    S. Berti, G. Boffetta, M. Cencini, and A. Vulpiani
    Phys. Rev. Lett. **95**, 224501 (2005)

    * **Chaos in Hamiltonian systems**

74. *Approach to equilibrium in a chain of nonlinear oscillators*
    F.Fucito, F.Marchesoni, E.Marinari, G.Parisi,L.Peliti,S.Ruffo and A. Vulpiani,
    Journal de Physique **43**, 707 (1982)

75. *Relaxation to different stationary steady states in the Fermi-Pasta-Ulam model*
    R.Livi, M.Pettini, S.Ruffo, M.Sparpaglione and A. Vulpiani,
    Physical Review **A28**, 3544 (1983)

76. *Possible failure of Arnold diffusion in nonlinear hamiltonian systems with more than two degrees of freedom* M.Pettini and A. Vulpiani,
    Physics Letters **A106**, 207 (1984)

77. *Equipartition threshold in nonlinear large hamiltonian systems: the Fermi-Pasta-Ulam model*
    R.Livi, M.Pettini, S.Ruffo, M.Sparpaglione and A. Vulpiani,
    Physical Review **A31**, 1039 (1985)

78. *Scaling laws and asymptotic distribution of Lyapunov exponents in conservative dynamical systems with many degrees of freedom*
    G. Paladin and A. Vulpiani,
    Journal of Physics **A19**, 1881 (1986)

79. *Liapunov exponents in high-dimensional symplectic dynamics*
    R.Livi, A.Politi, S.Ruffo and A. Vulpiani
    Journal of Statistical Physics **46** 147 (1987)

80. *Chaotic behavior in nonlinear hamiltonian systems and equilibrium statistical mechanics*
    R.Livi, M.Pettini, S.Ruffo and A. Vulpiani
    Journal of Statistical Physics **48** 539 (1987)

81. *Ergodic properties of high dimensional symplectic maps*
    M.Falcioni, U.Marini Bettolo and A.Vulpiani ,
    Physical Review, **A44**, 2263 (1991)

    * **Disordered Systems, and Products of Random Matrices**

82. *1/f noise, disorder and dimensionality*
    E. Marinari, G. Paladin, G. Parisi and A. Vulpiani,
    Journal de Physique **45**, 657 (1984)

83. *Scaling law for the maximum Lyapunov characteristic exponent of infinite product of random matrices*
G. Parisi and A. Vulpiani,
Journal of Physics **A19**, L425 (1986)

84. *Anomalous scaling and generalised Lyapunov exponents of the one dimensional Anderson model*
G. Paladin and A. Vulpiani,
Physical Review **B35**, 2015 (1987)

85. *Generalized Lyapunov exponents in high dimensional chaotic dynamics and products of large random matrices*
A. Crisanti, G. Paladin and A. Vulpiani,
Journal of Statistical Physics **53**, 583 (1988)

86. *Lyapunov exponents for products of Markovian random matrices*
A. Crisanti, G. Paladin and A. Vulpiani,
Physical Review **A39**, 6491 (1989)

87. *Finite size fluctuations of the Lyapunov exponent in disordered systems*
S. Nicolis, G. Paladin and A. Vulpiani,
Journal of Physics **A22**, L1121 (1989)

88. *Fluctuations of correlation functions in disordered spin sytems*
A. Crisanti, S. Nicolis, G. Paladin and A. Vulpiani,
Journal of Physics **A23**, 3083 (1990)

89. *Replica trick and fluctuations in disordered systems*
A. Crisanti, G. Paladin, H.-J. Sommers and A. Vulpiani,
Journal de Physique I **2**, 1325 (1992)

90. *Random transfer matrices for the overlap in disordered systems*
A. Crisanti, G. Paladin, M. Serva and A. Vulpiani
Physical Review Letters, **71**, 789 (1993)

91. *Product of Random Matrices for disordered Systems*
A. Crisanti, G. Paladin, M. Serva and A. Vulpiani
Physical Review **E49**, R953 (1994)

   * **Nonlinear Stability**

92. *Nonlinear stability analysis in multilayer quasigeostrophic systems*
S.Pierini, and A. Vulpiani,
Journal of Physics **A14**, L203 (1981)

93. *On nonlinear hydrodynamic stability of planetary vortices*
R.Benzi, S.Pierini, E.Salusti and A. Vulpiani,
Geophys. Astr. Fluid Dyn. **20**, 293 (1982)

   * **Stochastic Resonance**

94. *The mechanism of the stochastic resonance*
R.Benzi, A.Sutera and A. Vulpiani,
Journal of Physics **A14**, L453 (1981)

95. *Stochastic resonances in climatic change*
R.Benzi, G.Parisi, A.Sutera and A. Vulpiani,
Tellus **34**, 10 (1982)

96. *A theory of stochastic resonance in climatic change*
    R.Benzi, G.Parisi, A.Sutera and A. Vulpiani,
    S.I.A.M. Journ. Appl. Math. **43**, 565 (1983)

97. *Stochastic resonance in the Landau-Ginzburg equation*
    R.Benzi, A.Sutera and A. Vulpiani,
    Journal of Physics **A18**, 2239 (1985)

98. *Stochastic resonance in deterministic chaotic systems*
    A. Crisanti, M. Falcioni, G. Paladin and A. Vulpiani
    Journal of Physics **A27**, L597 (1994)

    * Geophysics, Biology and Finance

99. *Strongly Intermittent Chaos and Scaling in an earthquake model*
    A. Crisanti, A. Vulpiani, M.H. Jensen and G. Paladin
    Physical Review **A46**, R7363 (1992)

100. *An extension of the Lyapunov analysis for the predictability problem*
    G. Boffetta, P. Giuliani, G.Paladin and A.Vulpiani
    Journal of the Atmosferic Sciences , **55** 3409 (1998)

101. *Optimal strategies for prudent investors*
    R. Baviera, M. Pasquini M. Serva and A. Vulpiani,
    Int. Journ. Theor. Appl. Finance, **1** 473 (1998)

102. *Mixing in a Meandering Jet: a Markovian Approxiamation*
    M. Cencini, G. Lacorata, A. Vulpiani and E. Zambianchi
    J. Physical Oceanography **29**, 2578 (1999)

103. *Power Laws in Solar Flares: Self-Organized Criticality or Turbulence?*
    G. Boffetta, V. Carbone, P. Giuliani, P. Veltri and A.Vulpiani
    Phys. Rev. Lett , **83** 4662 (1999)

104. *A general methodology to price and hedge derivatives in incomplete markets*
    E. Aurell, R. Baviera, O. Hammarlid, M. Serva, and A. Vulpiani,
    Int. Journ. Theor. Appl. Finance **3**, 1 (2000)

105. *Drifter dispersion in the Adriatic Sea: Lagrangian data and chaotic model*
    G. Lacorata, E. Aurell and A.Vulpiani
    Ann. Geophysicae **19**, 121 (2001)

106. *Evidence for a $k^{-5/3}$ spectrum from the EOLE Lagrangian balloons in the low stratosphere*
    G. Lacorata, E. Aurell, B. Legras and A. Vulpiani
    Journal of the Atmospheric Sciences **61**, 2936 (2004)

107. *Topological thermal instability and length of proteins*
    R.Burioni, F. Cecconi, D.Cassi, and A. Vulpiani,
    Proteins **55**, 529 (2004)

108. *A Statistical Model for Translocation of Structured Polypeptide Chains through Nanopores*
    A. Ammenti, F. Cecconi, U. Marini Bettolo Marconi and A. Vulpiani
    J. Phys. Chem. B **113**, 10348 (2009)