

Curriculum vitae

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Born in Naples (Italy) on November 10th 1942, doctorate in Physics (*Laurea summa cum laude*) on November 20th 1964, at the University of Naples.

a.y. 1964-66 Fellowship of the (Italian) National Council of Research (CNR), at the Institute of Physics of the University of Naples.

a.y. 1966-68 Researcher of the (Italian) National Institute for Nuclear Physics (INFN).

a.y. 1968-70 “Professore Incaricato” of General Physics at the University of Naples.

a.y. 1970-72 “Research Associate” at the Department of Physics of Princeton University (U.S.A.).

“Libero Docente” in Theoretical Physics from June 1971.

a.y. 1972-73 “Professore Incaricato” of General Physics at the University of Salerno (Italy).

a.y. 1973-76 “Professore Incaricato Stabilizzato” of Theoretical Physics.

a.y. 1974-75 “Associate Professor” of Mathematical Physics at the University of Aix-Marseille at Luminy, France.

a.y. 1975-76 Member of the Institute for Advanced Study, Princeton.

a.y. 1976-79 Full Professor of Theoretical Physics at the University of Salerno, member of the Administration Council of the University, Director of the Institute of Physics.

a.y. 1978-79 Deputy Rector of the University of Salerno.

a.y. 1979- Full Professor of Theoretical Physics (Course of Statistical Mechanics) at the University of Rome “La Sapienza”.

a.y. 1979-85 Member of the Department of Mathematics.

a.y. 1983-84 Director of the Department of Mathematics.

a.y. 1985- Member of the Department of Physics.

a.y. 1984-90 Member of the Committee for new developments of the University (Commissione di Ateneo per la Sperimentazione Didattica e Scientifica).
a.y. 1995-2001 Director of the Department of Physics.
a.y. 1998-2005 Member of the Evaluation Committee of the University (Nucleo di Valutazione dell'Ateneo).
a.y. 1998-2001 Member of the Representative Committee of Department Directors.
a.y. 2000- Member of the Evaluation Committee of the National Institute for Higher Mathematics (INDAM).

Seminars and courses held in many Universities, Research Centers and Congresses, in particular at Marseille, Kiev, Moscow, Princeton, New York, Harvard, Karpacz, Paris, Varenna, Erice, Aix-en-Provence, Bures-sur-Yvette, Munich, Frankfurt, Mainz, Lausanne, Warsaw, Berlin, Barcellona, Madrid, Bielefeld, Rennes, Bochum, Schladmig, Kaiserslautern, Poiana-Brasov, Les Houches, Tokyo, Kyoto, Nagoya, Toulon, Amsterdam, Groeningen, Cergy-Pontoise, New Delhi, Calcutta, Rio de Janeiro, Vienna, Leipzig, Lisbon, Nantes, Zurich, Stockholm, Roma, Milano, Camerino, Como, Bologna, Cortona, Pisa, Torino, Frascati, Rimini, Genova, Bari, Padova, Modena, Trieste, Parma, Lecce, Napoli, Pavia, Perugia, Salerno.

Recent invitations include a plenary lecture at the 4ECM, Fourth European Congress of Mathematics, Stockholm, June27-July 3, 2004, and a plenary lecture at the ICMP2006, International Congress on Mathematical Physics, Rio de Janeiro August 6-13, 2006.

Referee for Physical Review, Physical Review Letters, Reviews of Modern Physics, Journal of Mathematical Physics, Communications in Mathematical Physics, Il Nuovo Cimento, Lettere al Nuovo Cimento, Comptes Rendues, Acta Applicanda Mathematicae, Nuclear Physics, Europhysics Letters, Annals of Probability, Journal of Statistical Physics, Annals of Mathematics.

Coordinator of research funds coming from the National Council of Research, the University of Rome "La Sapienza", the Ministry of Instruction, University and Research.

Scientific research experience includes

- renormalization in quantum field theory (see for example [1], [2], [3], [5], [6], [7], [8], [9]),
- constructive quantum field theory ([10], [11], [12], [13], [14], [17], [19], [20], [21], [22], [23], [24], [25], [26], [27], [28], [41], [48], [49], [107]),
- gauge fields on the lattice ([29], [30], [31], [32], [33], [36], [37], [38], [42]),

- applications of stochastic methods in quantum field theory and quantum mechanics ([15], [16], [18], [39], [40], [43], [45], [46], [47], [50], [52], [53], [57], [58], [59], [61], [63], [64], [66], [68], [74], [75], [81], [83], [84], [90]),
 - stochastic processes on curved manifolds ([34], [35], [67], [69], [73], [76]),
 - stochastic variational principles ([55], [60], [70], [72], [78]),
 - statistical mechanics of spin glasses and complex systems ([79], [80], [82], [86], [89], [92], [93], [94], [96], [97], [98], [100], [99], [105], [106]).
- For other research topics see [4], [44], [51], [54], [56], [62], [65], [71], [77], [85], [87], [88], [91], [95], [103], [104],[108].

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- [3] Eduardo R. Caianiello, Francesco Guerra and Maria Marinaro, “Renormalization Theory”, *Progress of Theoretical Physics, Suppl.* **37-38**, 183 (1966).
- [4] Giovanni De Franceschi, Francesco Guerra, Francesco Vanoli and Vittorio Silvestrini, “Width $\Gamma_{X_0 \rightarrow 2\gamma}$ as a Test of the Mass Formula of Boson Nonets”, *Physical Review* **166**, 1587 (1968).
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- [8] Francesco Guerra, “Equivalence Problems in Models with Infinite Renormalization”, *Nuovo Cimento* **68A**, 258 (1970).

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- [10] Francesco Guerra, “Uniqueness of the Vacuum Energy Density and van Hove Phenomenon in the Infinite-Volume Limit for Two-Dimensional Self-Coupled Bose Fields,” *Physical Review Letters* **28**, 1213 (1972).
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