

# Professore emerito Università Statale

## LUCIANO REATTO

AREA DISCIPLINARE  
FISICA DELLA MATERIA

DIPARTIMENTO  
FISICA

ANNO DI NOMINA  
2016



### NOTA BIOGRAFICA

Born 23rd June 1939, Italian, Graduated in Physics (3/1963) at Università degli Studi di Milano, libera docenza in Theoretical Physics (1971).

#### Academic and research positions

Full professor ("professore ordinario") of physics at Italian Universities since 1976, position held at the University of Milano (1986-2010, retired from Nov.2010), Parma (1979-86), Ferrara (1978-79) and Catania (1976-78).

From 1967 to 1976 he was "Professore incaricato" at the University of Parma and at the Polytechnic School of Milano. Research associate (1965-67) at the Laboratory of Atomic and Solid State Physics, Cornell University (N.Y., USA) and at Dipartimento di Fisica, Università degli Studi di Milano (1963-65).

#### Visiting professor

For long periods (semester or above) at University of Helsinki and at New York University; for short periods: Cornell University, University of Toronto, University of Oulu, Université de Paris P. et M. Curie, Universitat de Barcelona, Université de Paris XI at Orsay, ICTP and SISSA, Trieste, and Scuola Normale Superiore-Pisa.

#### Research activity

Topics in theoretical physics and condensed matter physics: adsorption phenomena on graphene and derivatives, superfluids and quantum solids, supersolidity, BEC of atomic gases, classical liquids, phase transitions and critical phenomena in fluids and in magnetic systems, properties of lowdimensional magnetic systems, methods of many-body theory. Author of more than 260 papers on peer reviewed international journals and more than 5000 citations.

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## PUBBLICAZIONI PRINCIPALI

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### CONTATTI

Prof. Luciano Reatto  
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#### *Publications with more than 100 citations*

- L. Reatto and G.V. Chester: “Phonons and the properties of a Bose system”, Phys. Rev. 155, 88 (1967)
- E. Rastelli, A. Tassi and L. Reatto: “Non simple magnetic order for simple Hamiltonians”, Physica **97 B**, 1 (1979)
- A. Parola and L. Reatto: “Hierarchical reference theory of fluids and the critical point”, Phys. Rev. A **31**, 3309 (1985)
- L. Reatto, D. Levesque and J.J. Weis: “Iterative predictor-corrector method for extraction of the pair interaction from structural data for dense classical liquids”, Phys. Rev. A **33**, 3451 (1986)
- A. Parola and L. Reatto: “Liquid state theories and critical phenomena”, Adv. in Physics **44**, 211 (1995)
- L. Salasnich, A. Parola and L. Reatto: “Effective wave-equations for the dynamics of cigar-shaped and disc-shaped Bose condensates”, Phys. Rev. A **65**, 043614 (2002)
- L. Salasnich, A. Parola and L. Reatto: “Modulation instability and complex dynamics of confined matter-wave solitons”, Phys. Rev. Lett. **91**, 080405 (2003).

#### *Some Publications of the last ten years*

- D. Pini, F. Lo Verso, M. Tau, A. Parola and L. Reatto: “Nonuniversal routes to universality: Critical phenomena in colloidal dispersions”, Phys. Rev. Lett. **100**, 055703 (2008)
- Parola, D. Pini and L. Reatto: “Liquid-vapor transition from a microscopic theory: Beyond the Maxwell construction”, Phys. Rev. Lett. **100**, 165704 (2008)
- A.J. Archer, C. Ionescu, D. Pini, and L. Reatto: “Theory of the phase behaviour of a colloidal fluid with competing interactions”, J. Phys. CM **20**, 415106 (2008)



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- E. Vitali, M. Rossi, L. Reatto, and D.E. Galli: "Ab initio low-energy dynamics of superfluid and solid  $4\text{He}$ ", *Phys. Rev. B* **82**, 174510 (2010)
- D.E. Galli, D.M. Ceperley, and L. Reatto: "Path Integral Monte Carlo study of  $4\text{He}$  clusters doped with alkali and alkali-earth ions", *J. Phys. Chem. A* **115**, 7300 (2011)
- A. Parola and L. Reatto: "Recent developments of the Hierarchical Reference Theory of Fluids and its relation to the Renormalization Group", *Mol. Phys.* **110**, 2859 (2012)
- M. Nava, D.E. Galli, M.W. Cole and L. Reatto: "Adsorption of He isotopes on fluorographene and graphane: Fluid and superfluid phases from Quantum Monte Carlo calculations", *Phys. Rev. B* **86**, 174509 (2012)
- L. Reatto, D.E. Galli, M. Nava and M.W. Cole: "Novel behavior of monolayer quantum gases on graphene, Graphane and Fluorographene", *J. Phys. CM* **25**, 443001 (2013)
- M.H.W. Chan, R.B. Hallock and L. Reatto: "Overview on solid  $4\text{He}$  and the issue of supersolidity", *J. Low Temp. Phys.* **172**, 317 (2013)
- D.E. Galli, L. Reatto and M. Rossi: "Quantum Monte Carlo study of a vortex in superfluid  $4\text{He}$  and search for a vortex state in the solid", *Phys. Rev. B* **89**, 224516 (2014)
- S. Molinelli, D.E. Galli, L. Reatto and M. Motta: "Roton excitations and the fluid-solid transition in superfluid 2D Yukawa Bosons", *J. Low Temp. Phys.* **185**, 39 (2016).