
Francesco Delfino

Date of birth:

Nationality:

Current position

Postdoctoral Fellow / NEST (CNR)

SEPTEMBER 2021 - PRESENT, PISA (IT)

Project: Light to Store chemical Energy in reduced Graphene Oxide for electricity generation.

Education

PhD in Physics / University of Pisa

NOVEMBER 2014 - OCTOBER 2017, PISA (IT)

Title: “Scaling properties of three-dimensional Bose-Einstein condensed gases”

Supervisor: Ettore Vicari

[Link to the thesis](#)

Graduation: 5th of March 2018, graded with maximum score (“Ottimo”)

Postgraduate schools

- Les Houches Summer School: Current Trends in Atomic Physics
4-29 JULY 2016, LES HOUCHES (FR)
- GGI school: Lectures on Statistical Field Theories
8-19 FEBRUARY 2016, GGI, FIRENZE (IT)
2-13 FEBRUARY 2015, GGI, FIRENZE (IT)

Master degree in Physics / University of Pisa

SEPTEMBER 2012 - SEPTEMBER 2014, PISA (IT)

Title: “Critical behaviour in the $CP^{(N-1)}$ model”

Supervisor: Ettore Vicari

[Link to the thesis](#)

Graduation: September 2014, with 110/110 cum laude. I obtained the maximum evaluation 30/30 at each exam.

Bachelor degree in Physics / University of Pisa

SEPTEMBER 2009 - SEPTEMBER 2012, PISA (IT)

Graduation: September 2012, with 110/110 cum laude

Secondary school diploma / Liceo scientifico *Leonardo da Vinci*

2004 - 2009 REGGIO CALABRIA (IT)

Diploma with a final grade of 100/100 cum laude

Academic employment

Postdoctoral Fellow / Centre de Biologie Structurale (CBS)

OCTOBER 2019 - AUGUST 2021, MONTPELLIER (FR)

Project: Modeling liquid-liquid phase separation in cellular environment: investigation of the phase diagram and non-equilibrium states of biomolecular condensates by means of simulations of coarse-grained models combining chemical reactions with molecular dynamics.

Postdoctoral Fellow / NEST (CNR) and I.M Sechenov First Moscow State Medical University

MAY 2018 - SEPTEMBER 2019, PISA (IT)

Project: Conformation dynamics of proteins, a comparative study with different resolution models and different sampling methods.

Postdoctoral Fellow / University of Pisa

NOVEMBER 2017 - APRIL 2018, PISA (IT)

Project: Condensation phenomena in many-body systems.

Publications

In silico design, building and gas adsorption of nano-porous graphene scaffolds

L. Bellucci, **F. Delfino** and V. Tozzini, 2020

[Nanotechnology 32, 045704](#)

Evolutionary Switches structural transitions via coarse-grained models

F. Delfino, Y. Porozov, E. Stepanov, G. Tamazian and V. Tozzini, 2019

[J. Comput. Biol. 27, 2](#)

Structural transition states explored with minimalist coarse grained models: applications to Calmodulin

F. Delfino, Y. Porozov, E. Stepanov, G. Tamazian and V. Tozzini, 2019

[Front. Mol. Biosci. 6, 104](#)

Dimensional crossover of Bose-Einstein condensation phenomena in quantum gases confined within slab geometries

F. Delfino and E. Vicari, 2017

[Phys. Rev. A 96, 043623](#)

Critical behavior at the spatial boundary of a trapped inhomogeneous Bose-Einstein condensate

F. Delfino and E. Vicari, 2017

[Phys. Rev. A 95, 053606](#)

Shape dependence and anisotropic finite-size scaling of the phase coherence of three-dimensional Bose-Einstein-condensed gases

G. Ceccarelli, **F. Delfino**, M. Mesiti and E. Vicari, 2016

[Phys. Rev. A 94, 053609](#)

Three-dimensional antiferromagnetic $CP^{(N-1)}$ models

F. Delfino, A. Pelissetto, and E. Vicari, 2015

[Phys. Rev. E 91, 052109](#)

Invited talks and conferences

“Scaling properties of Bose-Einstein condensed gases ” - invited talk at Centre de Biologie Structurale de Montpellier
18 JULY 2019, MONTPELLIER (FR)

“Evolutionary switches structural transition states explored with minimalist coarse grained models” - talk at International Symposium on Bioinformatics Research and Applications, Technical University of Catalonia
3-6 JUNE 2019, BARCELONA (ES)

“Exploring the transition path between proteins states via a multiscale approach” - poster at Young Researcher’s Workshop on Machine Learning for Materials Science
6-10 MAY 2019, AALTO UNIVERSITY, HELSINKI (FI)

“A combined molecular dynamics-variational multi-scale method to explore the transition paths between proteins states” - poster at Multiscale Modeling from Macromolecules to Cell: Opportunities and Challenges of Biomolecular Simulations, EPFL
4-6 FEBRUARY 2019, LAUSANNE (CH)

“Phase coherence properties of three-dimensional ultracold bosonic gases” - poster at From Static to Dynamical Gauge Fields with Ultracold Atoms, GGI
22 MAY - 23 JUNE 2017, FIRENZE (IT)

“Scaling properties of three-dimensional Bose-Einstein condensed gases” - invited talk at department of mathematical physics, University of Roma Tre
12 APRIL 2017, ROMA (IT)

“Shape dependence of the phase coherence of three-dimensional Bose-Einstein condensed gases” - poster at Current Trends in Atomic Physics, Les Houches Physics School
4-29 JULY 2016, LES HOUCHES (FR)

Teaching experience

Teaching assistant in “ Theoretical Physics 1”, master’s degree in physics / University of Pisa
OCTOBER 2016 - FEBRUARY 2017, PISA (IT)
OCTOBER 2015 - FEBRUARY 2016, PISA (IT)

Teaching assistant in “Physics and Mathematics”, bachelor’s degree in herbal medicine / University of Pisa
OCTOBER 2014 - FEBRUARY 2015, PISA (IT)

**Languages and
computing skills**

Mother tongue

Italian

Other languages

English, C1 level (Certificate in Advanced English in 2019)

French, B1 level

Computing skill

- Programming in Bash, C, Python, Tcl/Tk
- Molecular Dynamics simulations
- Monte Carlo simulations
- Proficient user of Mathematica, MATLAB, QuantumATK