



PERSONAL INFORMATION

Vittorio Lubicz

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Date of birth 3 May 1965 | Nationality Italian

ACADEMIC CAREER

May 2015 – Today

Full Professor of Theoretical Physics

Department of Mathematics and Physics, University Roma Tre, Rome, Italy

December 2002 - April 2015

Associate Professor of Theoretical Physics

Department of Physics and, since 2013, Department of Mathematics and Physics, University Roma Tre, Rome, Italy

November 1996 - December 2002

Assistant Professor (Ricercatore universitario)

Permanent research position on Theoretical Physics

Department of Physics, University Roma Tre, Rome, Italy

EDUCATION AND POST-DOCTORAL FELLOWSHIPS

May 1994 - August 1996

Post-doctoral fellowship

Physics Department, Boston University, Boston, Massachusetts, USA

Post-doctoral fellowship of the Istituto Nazionale di Fisica Nucleare (INFN)

November 1990 - November 1993

Ph.D. Degree in Physics

Physics Department, Sapienza University of Rome, Rome, Italy

Title of the thesis: *Production and decay of neutral pseudo-Goldstone bosons of Technicolor and Extended Technicolor theories in high energy e^+e^- collisions*

Supervisor: Prof. Luciano Maiani

July 1990

University Degree in Physics – Final mark: 110/110 cum Laude

Physics Department, Sapienza University of Rome, Rome, Italy

Title of the thesis: *Weak semi-leptonic decays of D-mesons and decay constant of B-meson in Lattice QCD*

Supervisor: Prof. Guido Martinelli

BRIEF DESCRIPTION OF SCIENTIFIC ACTIVITY

My research activity is in the field of [theoretical elementary particles physics](#) and concerns the [phenomenology of fundamental interactions, in the Standard Model and beyond](#). My main research interests are non-perturbative QCD, flavour physics, electroweak interactions and CP violation. During my career, I have been very active in developing and implementing non-perturbative numerical methods based on Lattice QCD and QED (a formulation of quantum field theory). I also performed precision perturbative calculations and phenomenological analysis.

I am co-founder member of the international *UTfit* Collaboration (phenomenological analysis of flavor physics and fits of the unitarity triangle) and of *ETMC - Extended Twisted Mass Collaboration* (numerical simulations of lattice QCD).

I am author or co-author of [more than 120 published papers](#) on international refereed journals, and of a similar number of conference proceedings. According to the INSPIRES database, 5 of these papers have collected more than 500 citations, 9 more than 250 citations and 34 more than 100 citations, with an average number of 68 citations per paper, 120 citations per publication on refereed journals, and a total number of [about 18.000 citations](#), with *h-index* = 65.

I am included in the list of Top Italian Scientists published by the VIA-Academy, in 50-th position in Physics for *h-index* = 70 on the Google Scholar database.

I have given [more than 30 invited talks](#) at international conferences.

I also enjoy the [activity of science communication](#). I have given many public lectures on topics of modern physics, in particular on *Time and Theory of Relativity* and on *Quantum Mechanics*. On these and other topics I have produced several video lectures, available online on YouTube, and I have participated to educational programs on RAI, the national Italian TV.

I regularly give seminars and series of lectures addressed to high-school teachers or students. I'm coauthor of a textbook on *Thermodynamics and microscopic theory*, addressed to students of the high school.

SCIENTIFIC CONFERENCES

I have given [more than 30 invited talks](#) at international conferences among which:

- CHIRAL DYNAMICS 2015 - Pisa, Italy
- KAON 2013 - Ann Arbor, Michigan, USA
- LEPTON-PHOTON 2011 - Mumbai, India
- LATTICE 2009 - Beijing, China
- LATTICE 2004 - Fermilab, Illinois, USA
- LATTICE 2000 - Bangalore, India
- HEAVY QUARKS AND LEPTONS 2010 - INFN National Laboratories in Frascati, Italy
- HEAVY QUARKS AND LEPTONS 2006 - Munich, Germany
- GALILEO GALILEI INSTITUTE INAUGURAL CONFERENCE - Arcetri (FI), Italy, 2005
- CKM03 - Durham, UK, 2003
- PIC20 - Lisbon, Portugal, 2000
- QCD 98 EUROCONFERENCE - Montpellier, France, 1998
- APS CONFERENCE PHYSICS COMPUTING '95, Pittsburgh, Pennsylvania, USA, 1995

as well as many seminars at national and international conferences, workshops and research centers.

LONG TERM VISITS

- CNRS, Université Paris-Sud XI, Laboratoire de Physique Théorique, Orsay, France:
 - May 2017 (1 month)
 - June 2013 (1 month)
 - April - May 2011 (2 months)

**REFEREE AND EVALUATION
ACTIVITY**

- International journals** I perform regular **referee** activity for several international journals among which:
- *Physical Review*
 - *Physical Review Letters*
 - *Physics Letters*
 - *Journal of High Energy Physics*
 - *Nuclear Physics*
- Occasionally for *The Review of Particle Physics* of the PDG
- National projects** I have acted as **referee of scientific proposals** for several national institutions and research agencies, among which:
- MUR, *Ministero dell'Università e della Ricerca*, for various kinds of research projects as PRIN, Futuro in Ricerca and Programma per Giovani Ricercatori *Rita Levi Montalcini*
 - ANVUR, *Agenzia Nazionale di Valutazione del sistema Universitario e della ricerca*, for the national Research Quality Evaluation VQR 2015-19
 - INFN, *Istituto Nazionale di Fisica Nucleare*
- Extra-national projects** I have acted as **referee of scientific proposals** for several extra-national institutions, foundations and research agencies, among which:
- *European Research Council (ERC)*, European Union
 - *National Science Foundation (NSF)*, USA
 - *Royal Society*, UK
 - *Deutsche Forschungsgemeinschaft (DFG)*, Germany
 - *Austrian Science Fund (FWF)*, Austria

**PARTICIPATION TO FUNDED
RESEARCH PROJECTS**

- **PRIN 2022**, Scientific Research Program of Relevant National Interest, **Principal Investigator**, title: *Non-perturbative aspects of fundamental interactions, in the Standard Model and beyond*
- **PRIN 2015** Scientific Research Program of Relevant National Interest, **Scientific Coordinator of the Research Unit** of Roma Tre, title: *Search for the Fundamental Laws and Constituents*
- **PRIN 2010-2011** Scientific Research Program of Relevant National Interest, **Scientific Coordinator of the Research Unit** of Roma Tre, title: *Symmetries, Masses and Mysteries: Electroweak symmetry breaking, flavor mixing, CP violation and Dark Matter in the LHC era*
- **PRIN 2008**, Scientific Research Program of Relevant National Interest, **Scientific Coordinator of the Research Unit** of Roma Tre (in substitution of prof. G. Altarelli), title: *Particle physics in the LHC time: theoretical models, precision calculations and simulation methods*
- **PRIN 2004**, Scientific Research Program of Relevant National Interest, **Scientific Coordinator of the Research Unit** of Roma Tre, title: *New physics and precision physics at accelerators: frontier problems in the theory of the fundamental interactions*
- Participant to the Scientific Research Programs of Relevant National Interest **PRIN 1997**, **PRIN 1999**, **PRIN 2001**, **PRIN 2006**

**OTHER POSITIONS OF
RESPONSIBILITY**

- Positions at the national level**
- Member of the **ANVUR Expert Group for the Evaluation – GEV**, Area 2 - Physical Sciences, for the national Research Quality Evaluation VQR 2020-2024, June 2024 - June 2026
 - Member of the Working Group for the Evaluation (GLV) of the INFN, February 2011 - November 2015
 - Member of the national judging committee for the confirmation in role of the University Researchers, January 2008 - December 2009

- Evaluation Committees
- Chairman of the Evaluation Committees for the recruitment of:
 - Full Professors: University of L'Aquila, 2019; University Roma Tre, 2018
 - Assistant Professors (Ricercatori tipo b): University Roma Tre, 2016
 - Assistant Professors non tenured (Ricercatore tipo a): Sapienza University of Rome, 2018; University Roma Tre, 2018; University Roma Tre, 2017
 - Member of the Evaluation Committees for the call of:
 - Associate Professors: University of Rome Tor Vergata, 2022; SISSA - Scuola Internazionale Superiore di Studi Avanzati, 2019; University of Pisa, 2018. University of Padova, 2017; University of Parma, 2016
 - Member of the Evaluation Committees for the recruitment of:
 - Assistant Professor (Ricercatore tipo b): University of Rome Tor Vergata, 2018

Positions in the Department

Current positions:

- Delegate of the Department Director for Science Communication and Career Orientation
- Chairman of the Physics Graduation Committee
- Member of the Physics Teaching Committee
- Member of the Teaching Committee of the Ph.D. in Physics

ACTIVITY OF SCIENCE COMMUNICATION

Seminars and lectures

- I frequently held [seminars and lectures on topics of modern physics](#), addressed to the general public, high school students or teachers (training and refresher courses). The topics include *Time and the theory of relativity*, *Quantum Mechanics*, the *Origin of mass* and the *Searches for New Physics (Physics beyond the Standard Model)*

Video lectures and courses online

- I have produced several [video lectures](#), available online on [YouTube](#), on topics of modern physics. Among these, a series of lectures on *Time and the theory of relativity* (more than 15 thousands views) and a series on *Quantum Mechanics* (more than 200 thousands views)
- I have held the lectures on *Quantum Physics* in the *Online course in Modern Physics*, organized within the LS-OSA project promoted by the Italian Ministry of Education. The course is addressed to teachers of the High School and it has been followed by more than 1000 teachers (beginning May 2016)

Participations to TV programs

- I participated to the educational program [#maestri](#) on the national Italian TV [Rai Tre](#), discussing various subjects of *Quantum Mechanics* (April and November 2020), *Time and the theory of relativity* (April 2020) and the *Origin of mass* (November 2020). The recordings are available online on [Rai Play](#)

Articles of Science communication

- I have written articles of science communication (in Italian) on *Quantum Chromodynamics (QCD)* published on the journals *Asimmetrie* (Istituto Nazionale di Fisica Nucleare – INFN) and *Giornale di Fisica* (Società Italiana di Fisica – SIF)

Educational activity for the high school

- I am coauthor of a [textbook](#) entitled [Thermodynamics and microscopic theory](#) (145 pages, Edizioni Efestò, October 2022), addressed to students of the high school. The educational proposal has been presented in series of lectures and meetings with high school teachers and tested by several teachers at school

BRIEF DESCRIPTION OF THE EDUCATIONAL ACTIVITY

Teaching in undergraduate courses

- I currently teach in the following courses:
- [Quantum Mechanics](#) (120 hours), degrees in Physics, in Mathematics and in Computational Science
 - [Elements of Contemporary Theoretical Physics](#) (30 hours), degrees in Physics and in Mathematics

Teaching in Ph.D. courses I currently teach in the following courses:
– [Advanced course on the Standard Model - Part II: Flavor Physics and Lattice QCD](#), Ph.D. in Physics

Degree thesis I have been supervisor of:
– 27 Bachelor degree thesis in Physics
– 9 Master degree thesis in Physics
– 1 Master degree thesis in Mathematics

Ph.D. thesis I have been supervisor of:
– 12 Ph.D. thesis in Physics

Participation to Ph.D. final exam Committees abroad
– *Université Paris XI Orsay*. September 2014, June 2006, April 2004
– *Universidad de Valencia*. September 2013, September 2001
– *University of Cyprus*. February 2009
– *Université de Provence (Aix-Marseille I)*. December 2004

Rome, June 25, 2024

Vittorio Lubicz