RITA DOLESI

Brief CV

April 2019

PERSONAL INFORMATION

Family name- First name: DOLESI RITA
Nationality: Italian
Date of Birth: January 19th 1966
Two children (born in 2005 and 2008)
Residence: Salita dei Giardini 2/4,38123 Trento, Italy

CURRENT POSITIONS

-Associate Professor, Department of Physics, University of Trento
-Associated Member- Istituto Nazionale di Fisica Nucleare (INFN), Incarico di Ricerca
-Member of the INFN National Scientific Committee 2 (CSN2, Astroparticle Physics)
-National Coordinator of the INFN LISA Research Project
-Member del LISA Consortium e del LISA Instrumental Group.
-Deputy-PI ASI contract “Phase A activities for the LISA mission"
-Coordinator of the WP “Optimizing the GRS hardware for LISA” of the funded “Premiale” INFN-ASI-INAF FIGARO (Fostering the Italian Leadership in the Field of Gravitational Waves Astrophysics)
-Associated Investigator of the funded PRIN project (Bando MIUR 2017) “LISA - PHASE A: Gravitational Waves from Massive Black Holes in "The Gravitational Universe"

EDUCATION

1985 Maturità Liceo Scientifico, QUS Galileo Galilei, Cavalese (TN- Italy), 60/60;
1991 Laurea in Fisica, Summa cum Laude, University of Trento, Italy;
1996 Ph.D.(Physics), University of Padova, Italy; Superfluid helium dissipation induced by rotation and research of the gyroscopic effect ".

RELEVANT RESEARCH EXPERIENCES AND ACADEMIC CAREER

Apr 1991- Feb 1992: INFN Research Fellowship "Superfluids and Experimental Gravitation".
1992-1996: as PhD student she investigated the gyroscopic effects with superfluid helium in collaboration also with the Group of Low Temperature Physics Department of the University of California at Berkeley (visiting in September 1994). Untill 1997, in parallel with other activities she followed the development of gyroscopes to superfluid helium at the European Ultralow Temperatures Facility of the University of Bayreuth (Germany).
Mar 1996-Aug 1996: consultant for the division "Superconducting materials and devices" of the Centro di Fisica degli Stati Aggregati (ITC-CNR, Trento), supporting the development of a high Q superconducting oscillator to be employed in the amplification chain of the resonant mechanical transducers of the gravitational wave antenna AURIGA.

1996-1998: Post Doctoral Fellowship, Department of Physics, University of Trento for performing research on "Experimental physics of superfluids and its space applications", with the aim of resolving the problem of superfluid helium tides in the cryostat for space mission (such as STEP, Satellite Test of Equivalence Principle, and GOCE Gravity Field and Ocean Circulation Explorer).

1999-2000: Research fellowship, Department of Physics, University of Trento developing Gravitational Reference Sensors for LISA and their testing on the ground by means of torsion pendulums test benches.

As Assistant Professor (2000-2014), and since 2014 as Associate Professor at the Department of Physics of Trento, she has been a senior member of the Experimental Gravitation and Low Temperature Group that is an internationally recognized leader in the development of a space-based gravitational wave detector, in the experimental limits of realizing systems of free-falling geodesic reference test masses, and in the measurement of small forces. The group leader, prof. Stefano Vitale, was the PI of the successful ESA LISA Pathfinder Space mission (LPF), and prof. Rita Dolesi played leadership roles in the hardware design and prototyping, laboratory torsion pendulum testing, "shadow engineering" of the industrial aerospace contractors, and in the mission design and operation.

In 2013, she was one of the authors of the proposal "The Gravitational Universe" (available at https://www.elisascience.org/) in response to the ESA call for a space-based gravitational waves observatory, that has been chosen in June 2017 by the ESA Science Program Committee (SPC) as the L3 Mission of its "Cosmic Vision 2015-2025" program, with a scheduled mission adoption for 2020-2022 and launch in 2030-2034.

2015-2017: Member of the core team that operated the LISA Pathfinder space mission.

2016-present Coordinator of the WP "Optimizing the GRS hardware for LISA" of the funded "Premiale" INFN-ASI-INAF FIGARO (Fostering the Italian Leadership in the Field of Gravitational Waves Astrophysics)

2017-present: Member of the LISA Consortium and of the LISA Instrumental Group.

2017-present: Deputy-PI of the ASI contract to carry out "Phase A activities for the LISA mission" which are intended to support ESA for the System Engineering and for the definition of the overall architecture of LISA, and in particular of the Gravitational Reference Sensor.

Prof. Rita Dolesi works with many research group worldwide, including at the Max Planck Institute for Gravitational Physics (Albert Einstein Institute/ University of Hannover), University of Glasgow, ETH Zurich, Institut de Ciencies de l'Espai (IEEC Institut d'Estudis Espacials de Catalunya, Barcellona) , APC (CNRS, Paris) and PSSL (Mechanical and Aerospace Engineering, University of Florida).

MAIN SCIENTIFIC RESPONSIBILITIES

2003-2016 Member of the Doctorate Council of the PhD Course in Physics, University of Trento
2005-2017: Local Responsible of the LISA PF INFN Group in Trento
Oct 2011- Dec 2013: Responsible of the "Gruppo INFN di Trento collegato alla Sezione di Padova" (with about 70 members).
2014-present Member of the INFN National Scientific Committee 2 (CSN2, Astroparticle Physics)
2018-present National Coordinator of the INFN LISA Research Project
2017-present Member del LISA Consortium e del LISA Instrumental Group.
2017-present Deputy-PI ASI contract "Phase A activities for the LISA mission"
2016-present Coordinator of the WP "Optimizing the GRS hardware for LISA" of the funded "Premiale" INFN-ASI-INAF FIGARO (Fostering the Italian Leadership in the Field of Gravitational Waves Astrophysics)

GRANTS (Assigned by peer reviewed competitive tender)

"Drag-Free Satellite Control", ESTEC/Contract No. 13691/99/NL/FM(SC)
18 mos, WP Scientist Manager

"Inertial Sensor Definition for LISA"ESTEC/contract No.15617/01/NL/PB
18 mos, Work Package Scientist Manager
"The LISA Technology Package Architect" ESTEC/contract No. 15580/01/NL/HB
12 mos, Work Package Scientist Manager
"Inertial Sensor Ground Testing and noise model for LISA", ESTEC/contract No.18223/04/NL/AG
11 mos, Work Package Scientist Manager
"LISA PF - Supporto scientifico allo sviluppo, fase E2 ed analisi dati", Contratto di Ricerca ASI-UniTN I/044/07/0
36 mos,Work Package Scientist Manager
Amount of funding of the activities listed above about 3M€

INFN (Istituto Nazionale di Fisica Nucleare) Gruppo II, Project "LISA PF"
(2005-2017)
Local Responsible of the LISA PF Group in Trento
Amount of funding of about 1.3M€.

ASI contract "Phase A activities for the LISA mission", Deputy-PI
Amount of funding of about 750 k€.

Coordinator of the Work Package "Optimizing the GRS hardware for LISA" of the funded "Premiale" INFN-ASI-INAF FIGARO (Fostering the Italian Leadership in the Field of Gravitational Waves Astrophysics) , as part of the Operating Unit 3 funded with about 400 k€.

-Associated Investigator of the PRIN project (Bando MIUR 2017) "LISA - PHASE A: Gravitational Waves from Massive Black Holes in "The Gravitational Universe" funded with about 820 k€, for the WP "Instrumental" of the Trento Unit.

TEACHING ACTIVITY

2000-2006 teaching assistant for Fisica I IC/IM/IA M-Z , Facoltà di Ingegneria Università di Trento.
2007-2010: Fisica I IC/IM/IA M-Z , Facoltà di Ingegneria Università di Trento
2010-2013: teaching assistant Laboratorio di Fisica I, Facoltà di Scienze Matematiche, Fisiche e Naturali, Corso di Laura in Fisica (Triennale) (in media circa 70 studenti)
2014-2017: FISICA I, Dipartimento di Matematica di Trento, Corso di Laurea in Fisica (Triennale).
2014-2017: "Elementi di astrofisica e cosmologia gravitazionale", Dipartimento di Fisica di Trento, Corso di Laurea in Fisica (Triennale).
TRAINING AND SUPERVISION
Tutor of several PhD students and supervisor of several postdoc.

CONFERENCES (SINCE 2010)

- Invited talk: "LISA and LISA Pathfinder ", SIF XCVI Congresso Nazionale, Bologna, September, 2010
- Invited talk :Force Isolation at 1 mHz: from torsion pendulum ground testing to LISA Pathfinder GWDAW May 2011, Isola d'Elba,Italia
- Invited talk: "Free falling TM for space-based gravitational wave detectors: on ground experimental verification of the parasitic force model for LISA PF" 9th Amaldi Conference on Gravitational Waves 10/07 - 15/072011, Cardiff UK
- Invited talk: "Ground testing and the noise model for LPF" 9th LISA Symposium 2012 May 21-25, 2012 in Paris
- "Gravitational Reference Sensor: LISA Pathfinder and ground testing", LISA Symp X, Gainesville, Florida USA,2014

- Invited Talk “LISA pathfinder Mission”, 50 Rencontres de Moriond, La Thuile, Italy, March 18 - 25, 2015.
- Invited talk “LISA Pathfinder highlights”, Cosmic Ray International Seminar 2016 (CRIS2016), Ischia, Italy, July 4 - 8, 2016.
- “The contribution of Brownian noise from viscous gas damping to the differential acceleration noise measured in LISA Pathfinder between two nominally free falling test masses”, XII nternational LISA Symposium, University of Zurich, Switzerland, September 5 - 9, 2016.
- Invited talk, “Gravitational Waves Space Detectors: status and science” GWPAW 2017 30 May – 2 June , Annecy, France
- “Brownian noise and other stray forces introduced by residual gas surrounding geodesic reference masses: the experience of LISA Pathfinder” , 12th Edoardo Amaldi Conference on Gravitational, July 2017, Pasadena, CA, USA
- Invited talk: “LISA Pathfinder and LISA: toward a space-based gravitational waves observatory”, VULCANO Workshop 2018 “Frontier Objects in Astrophysics and Particle Physics”, 20th- 26th, May 2018 Vulcano Island, Italy
- “Achieving the Low End of the LISA Frequency Band", XIII LISA Symposium, July 2018, Chicago, USA

PUBLICATIONS IN INTERNATIONAL REFEREED JOURNALS

More than 50 papers in international refereed journals (mainly PRL, PRD and CQG), and more than 20 international conferences proceedings papers. Three papers were selected as Editorial’s Highlights in PRL, two of them were also selected for “View Point” in Physics and recognized “Featured in Physics ”, and one was also a “Highly cited paper in Field” for PRL (as of November/December 2017).
According to the Web of Science database, her papers attracted more than 1000 citations and her Hirsch index is h = 21.

Concorso n. **21443/2019** per il conferimento di due assegni di ricerca nell'ambito della ricerca tecnologica, da usufruirsi presso il CNAF, dal titolo "Sistemista per la gestione di infrastrutture di calcolo e di servizio in alta affidabilità"

CRITERI DI VALUTAZIONE TITOLI – Massimo 30 punti
a) voto di laurea: per voto 110/110 e lode – punti 9 per voto compreso fra 110 e 110 – punti 8 per voto compreso fra 106 e 109 – punti 7 per voto compreso fra 102 e 105 – punti 6 per voto compreso fra 99 e 101 – punti 5 per voto compreso fra 95 e 98 – punti 4 per voto compreso fra 90 e 94 – punti 3 per voto compreso fra 80 e 89 – punti 2 per voto compreso fra 66 e 79 – punti 1
b) conseguimento del titolo di dottore di ricerca – punti 2
c) 1 punto per ogni anno di frequenza al corso di dottorato – massimo punti 3
d) diplomi di specializzazione e attestati di frequenza a corsi di perfezionamento post-laurea, corsi di formazione o scuole sia in Italia sia all'estero – massimo punti 4
e) svolgimento di attività di ricerca presso soggetti pubblici e privati, con contratti, borse di studio o incarichi, sia in Italia sia all'estero – massimo punti 6
f) attività tecnologica e pubblicazioni – massimo punti 6
CRITERI DI VALUTAZIONE ESAME-COLLOQUIO – Massimo 70 punti
a) correttezza e chiarezza nell'esposizione - punti 25
b) completezza dell'esposizione – punti 20
c) grado di conoscenza delle tematiche previste dal bando di concorso – punti 20
d) conoscenza della lingua inglese – punti 5

Prof. ssa Alessandra Fanfani _____

Dott. Daniele Cesini _____

Dott. Francesco Noferini _____

Dott. Stefano Longo _____

Curriculum vitae of Lucio Pancheri

Personal information

Family name, First name: Pancheri Lucio

Researcher unique identifier(s): orcid.org/0000-0002-3954-7308

Date of birth: December 5, 1977

Nationality: Italian

Education

2006 PhD in Information and Communication Technologies, University of Trento/Department of Information and Communication technologies, Italy, advisor: prof. Gian-Franco Dalla Betta

2002 Master in Materials Engineering (final evaluation of 110/110 cum laude) University of Trento/Faculty of Engineering, Italy

Current position

2018 – present Associate professor
University of Trento/Department of Industrial Engineering, Italy

Previous positions

2012 – 2018 Assistant professor
University of Trento/Department of Industrial Engineering, Italy

2010 – 2012 Researcher, Fondazione Bruno Kessler, Trento, Italy

2007 – 2010 Postdoctoral fellow, Fondazione Bruno Kessler, Trento, Italy

Supervision of graduate students and postdoctoral fellows

2015 – 2018 Advisor of 2 PhD students, advisor or co-advisor of 4 master and 15 bachelor students, University of Trento/ Department of Industrial Engineering, Italy

2007 – 2015 Co-advisor of 3 PhD students, co-advisor of 3 master students, advisor or co-advisor of 11 bachelor students, University of Trento/ Department of Information and Communication Technologies, Italy

2014 - 2017 Co-advisor of 3 master students and 1 bachelor student
University of Trento/ Department Physics, Italy

Teaching activities

2003 – 2009 Teaching assistant – MS course “Electronic materials”, University of Trento, Italy

2004 – 2006 and 2012 Teaching assistant – MS course “Microelectronics”, University of Trento, Italy

2007 – 2009 Teaching assistant – course “Optical sensors and solar cells”, in “Nano Micro Master” program, University of Trento, Italy

2012 – 2014 Teaching assistant – “Electric circuits”, University of Trento, Italy

2012 – 2014 Teaching assistant – “Electronics for telecommunications”, University of Trento, Italy

2013 PhD course, “Silicon photosensors and radiation detectors”, University of Trento, Department of Information and Communication Technologies, Italy

2014 – 2019 Teaching assistant – “Electric and electronic systems”, University of Trento, Italy

2014 – 2018 PhD course, “Image sensors”, University of Trento, Department of Industrial Engineering, Italy

2016 – 2018 Master course, “Electronic materials and technologies”, University of Trento, Italy

Organisation of scientific meetings and schools

Technical Program Chair at the 7th PhD Research Conference in Electronics and Microelectronics

(PRIME 2011), Madonna di Campiglio, TN, Italy (70 participants).
Co-chair of PhD school "Advanced School on Quantum Detectors", SQUAD 2017, Trento, 26 – 28 Oct. 2017 (55 participants).

Responsibility in funded projects

Principal Investigator in the following project:

- Postdoctoral project call "post-doc 2006", financed by Provincia Autonoma of Trento, title "Fluorescence Lifetime-based biosensors (LIFE-SENS), years 2007-2010.

Leader of Work Package 6: "System integration, testing and demonstration" in the following project:
"Call grandi progetti 2006", financed by Provincia Autonoma of Trento, title: "A NAno on MIcro approach to a multispectral analytical system for protein assays (NAoMI)", scientific coordinator: Dr. Cecilia Pederzolli, FBK, years 2008-2012.

Local responsible for the section of Trento in 5 INFN projects, CSN5:

- "Enabling technologies, building blocks and architectures for advanced X-ray pixel cameras at FELs (PixFEL)", years 2014 – 2016.
- "Development of an avalanche pixel sensor for tracking applications (APIX2)", years 2014 – 2016.
- "Sensors with Embedded Electronics Development (SEED)", year 2015 – 2018.
- "Array of Silicon Avalanche Pixels (ASAP)", years 2018 – 2020.
- "Hybrid and monolithic pixel detectors for X-ray imaging at FELs and synchrotron light sources (XDET)", year 2018.
- "Advanced Readout CMOS Architectures with Depleted Integrated sensor Arrays (ARCADIA)", years 2018 – 2020. Leader of WP1: "CMOS sensors".

Leader of Work Package 3: "Architecture and packaging of MoS_2 photodetectors" in the following project:

- "Innovative Materials for UV-NIR Light Detection in Automotive, Environment and Agro-Food applications", financed by CARITRO foundation, Italy, years 2018-2019.

Commission of trust

Associate editor of IEEE Tran. Electron Devices, 2018.
Lead guest editor of MDPI Sensors for the special issue "Image sensors", 2018.
Editorial board member for Journal of Sensors (Hindawi).
Reviewer for the following journals: IEEE Tran. Electron Devices, IEEE J. Solid-State Circuits, IEEE J. Selected Topics in Quantum Electron., IEEE Tran. on Circuits and Systems I and II, IEEE Photonics J., IEEE Photonics Technology Lett., IEEE Tran. Nuclear Sci., Optics Lett., Solid-State Electron., J. of Circuits, Systems, and Computers, Nuclear Instr. Meth. A
Reviewer for the French National Research Agency (ANR) for the call of proposal of the 2014 Work Programme
Reviewer for the Canadian national program call of proposal "MITACS elevate application", 2016.
External reviewer of 4 PhD Thesis, 2013 – 2018.

Research activity

My on-going research projects in the past years have been related to the development of **radiation and particle detectors in CMOS technologies**. From 2014, I have been local responsible for the research unit of Trento in 5 different projects funded by the Italian National Institute of Nuclear Physics (INFN). In particular, I have taken part in the development of monolithic CMOS sensors in the framework of CSNV project SEED, two-layer particle sensors based on Geiger-mode avalanche detectors in projects APIX2 and ASAP and X-ray pixel sensors for FELs in projects PixFEL and XDET. In addition, I have contributed to the development of Low-Gain Avalanche Detectors fabricated by FBK.
In the period 2006-2012, I have been working in Fondazione Bruno Kessler (FBK) in the development of CMOS-integrated detectors, focusing both on device and IC design. I have conducted some pioneering work on image sensors based on **Single-Photon Avalanche Diodes** with time-gated readout circuits, proposing the

use of analog counters inside the pixels to reduce the pixel pitch and improve the fill factor. Currently, I am still collaborating with FBK on SPAD-related topics.
I have also participated to the early stages of FP7 project SPADnet, contributing to the definition of the pixel architecture signal compression techniques (EP patent submission EP2541219).
In the field of **3D imaging**, my work has been focused on sensor design using TCAD software tools. I have developed several CMOS demodulating pixels based on different physical principles and contributed to Time-of-Flight 3D cameras design and characterization.
During this term, I have also collaborated with the Technical University of Munich, in the development of CMOS-compatible organic photodiode arrays.
During and immediately after my master thesis, I worked on **gas sensors** made of porous silicon, being in charge of the processing of the material, the setup of the test bench and the characterization of the devices.

Overview of scientific publications

I have authored or co-authored 4 Italian patents, 2 European patents and 139 scientific publications, which can be divided in:

- 62 papers on international peer-reviewed journals
- 72 papers on international conference proceedings
- 5 book chapters

H-index:
Scopus: 22
Web of science: 18
Google scholar: 26

I have given **18 oral presentations** in international scientific conferences. Among others: International Solid-State Circuit Conference, ISSCC (2012), European Solid-State Circuit Conference, ESSCIRC (2009, 2013), European Solid-State Device Conference, ESSDERC (2007, 2011, 2014), International Image Sensor Workshop, IISW (2013, 2015), Vienna Conference on Instrumentation (2016), Nuclear Science Symposium (2016).

European patents:

1. **L. Pancheri**, D. Stoppa, N. Massari, "Electro-optical demodulator based on buried photodiode", EP 2348537 B1, 23 Jan. 2013. **Granted**
2. L. H. Campos Braga, D. Stoppa, **L. Pancheri**, L. Gasparini, "Photodetector", EP2541219 A1, 2 Jan. 2013. **Submitted**

Invited talks:

- L. Pancheri, "APiX: a Geiger-mode avalanche digital sensor for charged particle detection", 11th International Meeting on Front-End Electronics (FEE 2018), Jouvence, QC, CA, 20-25 May 2018.
- L. Pancheri, "Ultra-Fast Silicon Detectors", Frascati Detector School, Frascati (RM), 21-23 March 2018.
- L. Pancheri, "CMOS MAPS: design challenges and state of the art", XXVII giornate di studio sui rivelatori, Cogne (AO), 12-16 February 2018.
- L. Pancheri, "State of the art and perspectives of CMOS silicon avalanche detectors", CERN seminar, Geneva, CH, 20 January 2017.
- L. Pancheri, "Vertically-integrated CMOS Geiger-mode avalanche pixel sensors", 14th Topical Seminar on Innovative Particle and Radiation Detectors (IPRD16), Siena, 3-6 Oct. 2016.
- L. Pancheri, "CMOS SiPM design and signal compression", Training school on quantum detection, single-photon imaging, SiPMs, SPADs, University of Delft, NL, 22-24 May 2013.
- D. Stoppa, L. Pancheri, M. Perenzoni, "Sensors Architectures for 3D Time-of-Flight Imaging", Tutorial at Image Sensors 2012, London, UK, 20-22 March 2012.

Roberto Sennen Brusa (m, 27.07.1957, Italian): Degree in Nuclear Engineering at the *Politecnico di Milano* in 1983. Now Full Professor of Physics at the *University of Trento, Italy*, more than 35 years of experience in: Condensed and soft matter physics and slow positron (e+) beams; Positronium (Ps) formation and cooling. Ps beams. Design of accelerators, traps and bunching systems for e+ at low (keV) and very low (eV) energies. Collaborator in the design of the first positron microscope at the NEPOMUC facility in Munich, Germany.

He as more than 200 publications in peer-reviewed international journals, more than 2700 citations, h-index 30 (Scopus), 5 chapters on books.
In the last seven years was supervisor of 5 Ph.D. students and 5 Postdocs. Member of the PhD board of the Department of Physics since 2008.
Membership in advisory and Steering committees: ICPA- International Conference on Positron Annihilation; SLOPOS- International Workshop on Slow Positron Beam Techniques and Applications, POSMOL- International Workshop on positron and positronium physics.
1) Head of the Positron and Antimatter Laboratory at the Physic Department at the University of Trento. **2)** Head of the Trento TIFPA-INFN positron group for the AEgIS experiment at CERN.**3)** Responsible for the Positron Bunching system for Positronium production from porous targets and spectroscopy studies, set up at CERN in 2013.

PERSONAL INFORMATION

Maurizio Boscardin

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boscardi@fbk.eu

http://mtlab.fbk.eu/people/profile/boscardi

Sex Male | Date of birth 23/06/1960 | Nationality Italian

WORK EXPERIENCE

From February 1988 to May 1989

fellow at the Microsystems Division of ITC-IRST Trento

ITC-IRST Trento

- Micro fabrication process

From May 1989 to present

Researcher at Microsystems Division of ITC-IRST Trento

ITC-IRST Trento

- Development of double sided microstrip detectors on high resitivity silicon for applications in HEP experiments as ALICE Cern, Babar Slac, AMS

From 2001 to 2008

Manager of the "SRD Silicon Radiation Detector" project

ITC-IRST Trento

- Developments of radiations detectors with monolithic integration of pre amplifier based on Jfet technology for applications on ambient radiation monitoring
- Development of Silicon Photo Multiplier (SiPM);
- Development of PAD detectors used for i) clinic dosimeter in partnership with INFN Firenze and Ospedale Carrugi, ii) applications in Nuclear Physics experiment in partnership with INFN Legnaro

From 2008 to 2010

Manager of Micro technology lab of MTLab FBK

CNM FBK Trento

- Coordination of the activity of the lab
- Developments of technology platform

detectors for HEP and MEMS

From to 2010 to 2014

Manager of R&D activity of MTLab

CNM FBK Trento

- Development of radiation detector based on a columnar structures (Si -3D) for the Insertable B layer of ATLAS Cern experiment-.
- Development of Silicon Drift Detectors
- Micro-oscillator - based on MEMS devices - for quantum optical measurements
- C-Mut for ecografics applications
-

Business or sector developments of micro fabrications process for silicon radiations detectors and detectors for HEP and MEMS

From to 2014 to present

Senior Researcher at MNF

- Development of radiation detector based on a schottky diode on SiC.
- Development of Edgless Radiation Detectors for CERN (Atlas and CMS experiments)
- Development of a chip cooling based on DRIE technique
- Production of Silicon Microstrip for CSES satellite
- Development of Ultra Fast Silicon Detectors for timing application
- Development of bio inspired silicon surface (control of wettability)
- Development of silicon tools for the “chip cooling”
-

Business or sector developments of micro fabrications process for silicon radiations detectors and detectors for HEP and MEMS

EDUCATION AND TRAINING

July 1986 degree in Physics, University of Trento, Italy

Replace with EQF (or other) level if relevant

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B1	B1	B1	B1	B2
Replace with name of language certificate. Enter level if known.					

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

PERSONAL SKILLS

Organisational / managerial skills

Job-related skills
- mentoring skills

Computer skills
- good command of Microsoft Office™ tools

Publications
Presentations
Projects
Conferences
Seminars
Honours and awards
Memberships
References

Authors of over 280 articles published in scientific journals or presented at international conferences, as well as two European patents

ADDITIONAL INFORMATION

ANNEXES

MARIA PAOLA LOMBARDO

Istituto Nazionale di Fisica Nucleare
Sezione di Firenze

Curriculum

25 Marzo 2019

Formazione

15/7/1985 Laurea in Fisica, 110/110 e lode, Università di Pisa.
1986-1988 INFN Training Fellowship, INFN, Pisa

Esperienza professionale

Posizione attuale Primo Ricercatore dell'Istituto Nazionale di Fisica Nucleare
Sede di lavoro Sezione di Firenze

1986	Progettista junior, GTE telecomunicazioni. Dimissionaria in favore della borsa di studio INFN.
1987	Nominata in ruolo per vincita di concorso ordinario nelle Scuole Superiori, classe di Matematica. Dimissionaria nel 1988 in favore dell'assunzione INFN
1988 - 1992	Ricercatore INFN (ex art. 36)
1991 - 1994	Research Associate, University of Illinois at Urbana-Champaign
1994 - 1996	Wissenschaftliche Mitarbeiterin BAT IB, DESY, KFA-HLRZ , Juelich
1996 - 1998	Wissenschaftliche Mitarbeiterin, BAT IB, ZiF, Universität Bielefeld Coordinatore del Programma di Ricerca MultiScale Phenomena
1998 - 2002	Primo ricercatore INFN (ex art 23)
2002 - 2004	Consulente senior INFN (ex art. 2222)
2003	Vincitrice del concorso nazionale INFN per primo ricercatore
2004 -	Primo ricercatore INFN (ex art. 23 e successivamente in ruolo)
2011	Professore ospite, Humboldt Universität zu Berlin(semestre estivo)
2012	Professore ospite, Universität Bielefeld (bimestre aprile-giugno)
2015	Abilitazione Scientifica Nazionale prima fascia 02/A2

2012 - 2015 Componente del Board dell' European Center for Theoretical Studies in Nuclear Physics and related areas(ECT*)

Interessi di ricerca

Fisica teorica delle particelle elementari. Fisica teorica nucleare delle alte energie e

Cromodinamica Quantistica. Teoria e fenomenologia del Quark Gluon Plasma. Teorie di gauge su reticolo e simulazioni numeriche. Teorie di gauge fortemente interagenti, struttura di fase, transizioni di fase e fenomeni critici. Interazioni forti oltre il modello standard, modelli di Higgs composto, topologia e cosmologia degli assioni. Fisica Computazionale.

Secondo Google Scholar ho ricevuto in totale 6292 citazioni, h index 38, i10 index 76 e sono inclusa nell'elenco dei Top Italian Scientists della VIA-Academy

Pubblicazioni scelte

Chiral observables and topology in hot QCD with two families of quarks,
F. Burger, E. M. Ilgenfritz, M. P. Lombardo and A. Trunin
Phys.Rev. D98 (2018) no.9, 094501

Topology (and axion's properties) from lattice QCD with a dynamical charm,
F. Burger, E. M. Ilgenfritz, M. P. Lombardo, M. Muller-Preussker and A. Trunin
Nucl. Phys. A 967 (2017) 880

Axions exposed
M.P. Lombardo
Nature 539, News&Views, 40-41 (2016)

Bottomonium above deconfinement in lattice nonrelativistic QCD
G. Aarts, S. Kim, M. P. Lombardo, M. B. Oktay, S. M. Ryan, D. K. Sinclair and J. -I. Skullerud
Phys. Rev. Lett. 106, 061602 (2011)

Evidence for a conformal phase in SU(N) gauge theories ,
A. Deuzeman, M. P. Lombardo and E. Pallante,
Phys. Rev. D 82, 074503 (2010)

Finite density QCD via an imaginary chemical potential
M. D'Elia and M. P. Lombardo
Phys. Rev. D 67, 014505 (2003)

Servizio e attività organizzative in ambito INFN

Componente effettivo della **Commissione per la concessione dei sussidi a** favore dei dipendenti dell'INFN, disposizione del Presidente INFN n. 20048/2018

Partecipante al "**Progetto di Mentoring per Ricercatrici/Tecnologhe**" dell'INFN, progetto formativo nazionale, 2018/2019

Supervisore per l'utilizzo delle giornate/uomo ECT*/INFN , stabilite dall'addendum al MoU INFN/FBK, su invito del Direttore ECT*, dal 2012.

Responsabile delle attività regolate dalla convenzione tra il Centro di Matematica e Fisica Teorica e l'INFN (delibera INFN n.12101 del 25-11-2011), su designazione Direttore LNF, dal 2012 - 2016

Referente ECT* per la Commissione Scientifica Nazionale Teorica INFN, su invito del Presidente Prof. A. Lerda, 2012-2015

Referente ECT* per la Commissione Scientifica Nazionale Nucleare INFN, su invito del Presidente Prof. M. Taiuti, 2012-2015

Promotore del gruppo di lavoro sul deconfinamento adronico GISELDA (1999), e successivamente del Progetto Speciale GI31 (2003) e della Iniziativa Specifica Roma RM31 (2006).

Promotore dell' **International School on Quark-Gluon Plasma and Heavy Ion Collisions** : past, present, future, e organizzatore delle prime due edizioni, Torino, Villa Gualino, 1-5 Dicembre 2003 e 11-17 Maggio 2005.

Organizzatore di **Quark Matter Italia, 22-24 Aprile 2006**

Coordinatore locale di Iniziative Specifiche INFN dal 2000

Incarichi in strutture ed iniziative scientifiche

Componente dell'**Access Commettee di PRACE, European Supercomputing Initiative,** dal 2018

Componente del **Management Commettee, dello Short Term Scientific Missions Commettee, del Core Group per la European COST** (COoperation in Science and Technology) Action CA-15213 THOR - Theory of Hot Matter and Relativistic Heavy Ions Collisions, dal 2016 (core group dal 2018)

Componente dello **Scientific Council del Centro di Matematica e Fisica Teorica**, Roma, dal 2016

Componente del **Board dell' European Center for Theoretical Studies in Nuclear Physics and related areas, ECT***, Villazzano, Trento, 2012-2015

Coordinatore del Doctoral Training Program dell'ECT*, Computational Nuclear Physics, 2015

Coordinatore del Research Group Multi Scale Phenomena: The simulation of complex systems on massively parallel computers, ZiF (Center for interdisciplinary Research), Bielefeld, 1996-1998

Grants e awards

Progetto PRIN 2009: Teorie di Campo su Reticolo all'Epoca di LHC, co-Principal Investigator (Responsabile di Unita' LNF-Bari-Napoli-Lecce)

I**3HadronPhysics2** - WP22 (Funded postdoctoral postdoctoral position)

I**NFN CSN4** Iniziative Specifiche finanziate dal 2000 (coordinatore locale)

PRACE High Performance Computing Time Allocation : Frontiers of Strong Interactions (Pra05_1110) Principal Investigator

PRACE High Performance Computing Time Allocation: Extreme QCD, quantifying the QCD Phase Diagram, team member

DIRAC - UK High Performance Computing Time Allocation: Pushing the Strong Interaction past its Breaking Point, team member

I**SCRA High Performance Computing Allocation**: Strongly Coupled Gauge Theories (IscrB_SCGTII) Principal Investigator

NATO Collaborative Research Grant Lattice QCD at non-zero temperature and chemical potential (CRG950896) Project Coordinator

Comitati scientifici e organizzativi e gruppi di lavoro

Extreme QCD 2019, I**nternational Workshop on QCD in Extreme Conditions**, Tokyo, 24-26 Giugno 2019, IAC member

Quark Matter 2019, the XXVIII International Conference on Ultrarelativistic Nucleus-Nucleus Collisions, Wuhan, China, 4 - 9 Novembre 2019, IAC member

XVIII International Conference on Strangeness in Quark Matter (SQM 2019), Bari (Italy), 10 - 15 June 2019, IAC member

Quark Matter 2018, the XXVII International Conference on Ultrarelativistic Nucleus-Nucleus Collisions, Venezia, 13 - 19 Maggio 2018, Steering Commettee member

Extreme QCD 2018, International Workshop on QCD in Extreme Conditions, Frankfurt, 21-23 Maggio 2018, IAC member

Scientific Advisory Committee per il **Transregional Collaborative Research Center (CRC-TR) del DFG**
(Deutsche Forschungsgemeinschaft) Strong-interaction matter under extreme conditions, dal 2018

Quark Matter 2017, the XXVI International Conference on Ultrarelativistic Nucleus-Nucleus Collisions, Chicago, 5-11 Febbaraio 2017, IAC member

Axions at the crossroads: QCD, dark matter, astrophysics, ECT*, 20 24 Novembre 2017, Co-organiser

Extreme QCD 2017, International Workshop on QCD in Extreme Conditions, Pisa, 26-28 Giugno 2017, IAC member

Tomography of the Quark-Gluon Plasma with Heavy Quarks, Lorentz Center Workshop, Leiden, 10-14 Ottobre 2016, co-organizer

Long Range Plan for Nuclear Physics in Europe, working group 1 member, appointed by the Nuclear Physics European Collaboration Committee, 2016-2017

Extreme QCD 2016, International Workshop on QCD in Extreme Conditions, Plymouth, 1-3 Agosto 2016, 2016, IAC member

Lattice Gauge Theory simulations beyond the Standard Model of Particle Physics, CECAM Workshop, Tel Aviv University, 22-25 Giugno 2015, co-organizer

Quark Matter 2015, the XXV International Conference on Ultrarelativistic Nucleus-Nucleus Collisions, Kobe, 28 Settembre - 3 Ottobre 2015, IAC member

Quark Matter 2014, the XXIV International Conference on Ultrarelativistic Nucleus-Nucleus Collisions, Darmstadt 19–24 Maggio 2014, IAC member

Extreme QCD 2014, International Workshop on QCD in Extreme Conditions, Stonybrook, 19-21 Luglio 2014, IAC member

Extreme QCD 2012, International Workshop on QCD in Extreme Conditions, Washington D.C., July 2012, IAC member

Extreme QCD 2011, International Workshop on QCD in Extreme Conditions, Hermosillo, Sonora, Mexico, July 2011, IAC member

Lattice2010, The XXVIII International Symposium on Lattice Field Theory; Villasimius, July 26 - 31, 2010, co- organizer

Extreme QCD 2010, International Workshop on QCD in Extreme Conditions, Stonybrook, July , IAC member

Quark Matter 2009, The 21st International Conference on Ultra-Relativistic Nucleus-Nucleus Collisions; Knoxville, Tennessee, USA on March 30 April 4, 2009, IAC member

Extreme QCD 2009, International Workshop on QCD in Extreme Conditions, Stonybrook, July , IAC member

Lattice 2009, The XXVII International Symposium on Lattice Field Theory, Beijing, China, 26 – 31 July 2009, IAC member

Extreme QCD 2008, International Workshop on QCD in Extreme Conditions, Stonybrook, July, IAC member

Strings & Strong Interactions Workshop; LNF 18-19 September 2008, Main organizer

Extreme QCD 2007, the V workshop on QCD in Extreme Conditions; 6- 8 August 2007, LNF, Main organizer

Midterm Meeting EU Network of Hadron Physics Heavy Ions Reactions at Ultrarelativitic Energies; ECT*, 26 June-
1 July 2006, Coordinator

Lattice 2006, the XXIV International Symposium on Lattice Field Theory; Tucson, Arizona, 23-28 July 2006, IAC member

Attività di valutazione

Collaborative Research Centre CRC del DFG "ENRICH: Extreme NumeRics for Insights into Cells and Hadrons", member of the consultation panel

NT-3 (fisica, astronomia) dello Swedish Research Council (2019) , panel member

Excellence Strategy del DFG (German Research Foundation) **area Fisica (2018)** , panel member

NT-3 (fisica, astronomia) dello Swedish Research Council (2018) , panel member

Ken Wilson Lattice Award for Excellence in Lattice Field Theory (2017-2018), evaluation panel to assess the first five years, member.

NuclearPhysicsA award for the best talk at Quark Matter 2018, co-chair del comitato di selezione

Ken Wilson Lattice Award for Excellence in Lattice Field Theory, (2013–2014), panel member

TRR (Transregional Research Centers) 55/2 e TRR 55/4 per il DFG (German Research Foundation) (2012, 2014), panel member

Partecipazione a commissioni di dottorato in Olanda, Germania, Danimarca, Italia

Referee esterno per grant e/o promozioni e/o assunzioni e/o dottorato per MIUR, DFG , Humboldt Foundation, Humboldt Professorship, Austrian Physical Society, Swedish Research Foundation, Helmoltz foundation, ETH Zurich, Yale, TIFR Mumbai, Rita Levi Montalcini , Trinity College Dublin, PRACE, Frankfurt University

Referee per Physical Review Letters, Physical Review B, Physical Review D, Physical Review E, Nature, Physics Letters B, Nuclear Physics A, e altre

Attività editoriale e contributi a volumi

Quark Matter 2018 (Guest Editor for Nuclear Physics A), editor con F. Antinori, A. Dainese, P. Giubellino e V. Greco,Nucl. Phys. A 982, 2019

An advanced course in Computational Nuclear Physics *— bridging the scales from quarks to neutron stars*, Springer Lecture Notes in Physics, editor with Morten Hjorth-Jensen and Ubirajara van Kolck, ISBN 978-3-319-53336-0, 2017

QCD at Finite Baryon Density*,* Nucl.Phys. A642 ,editor con F. Karsch, 1999

Quantum Monte Carlo:recent advances and common problems in condensed matter and particle physics, Proceedings of the Collaboration Meeting held at ECT*, Trento, July3d to July 6th, 2001 (ETS, Pisa, 2001), editor con M. Campostrini and F. Pederiva

Quark Gluon Plasma and Heavy Ion Collisions (World Scientific, 2002) editor con W. Alberico and M. Nardi

Heavy quarkonium physics with N. Brambilla et al. [Quarkonium Working Group], CERN Yellow Report,CERN-2005-005, editor of the Chapter Quarkonium in Media with D. Kharzeev, C. Lourenco, M. Rosati, H. Satz

XII International Conference on Hadron Spectroscopy, Proceedings of the Conference held at the Laboratori Nazionali di Frascati, 7-13 October 2007, (Frascati Physics Series, 2008) editor with L. Benussi, M. Bertani, S. Bianco, C. Bloise, R. de Sangro, P. de Simone, P. di Nezza, P. Gianotti, S. Giovanella, S. Pacetti

The XXVIII International Symposium on Lattice Field Theory , Proceedings of the Conference held in Villasimius, June 14-20 2010, editor con G.C Rossi et al., PoS 2011

Principali talks su invito

TBA, RMT in Subatomic Physics and Beyond, Trento Agosto 2019

Chiral symmetry and topology in QCD with Nf = 2+1+1 , Gauge Topology 3: from Lattice to Colliders , Trento May 2018

QFT_HEP on the lattice, Talk at special session on computing at SM&FT 2017, Bari, Dicembre 2017

QCD topology and axion cosmology from lattice simulations , HIC for FAIR Colloquium , Giessen, Novembre 2017

Phases of QCD, Topology and Axions, ciclo di lezioni per la Dubna International Advanced School of Theoretical Physics and Helmoltz International Summer School Hadron Structure, Hadronic Matter and Lattice QCD, JINR, Dubna, Agosto 2017

QCD Thermodynamics at maximal twist, Phase diagram of strongly interacting matter: From Lattice QCD to Heavy Ions Collisions experiments, ECT*, Novembre 2017

Time correlators and spectral functions , Functional methods in hadron and nuclear physics, ECT* Trento, Agosto 2017

Lattice QCD for Beyond the Standard Model Physics, Lattice and Functional Techniques for Exploration of Phase Structure and Transport Properties in QCD, JINR Dubna, July 2017

Topology in Hot QCD with a dynamical charm (and axion physics), Lattice and Functional Techniques for Exploration of Phase Structure and Transport Properties in QCD, JINR Dubna, July 2017

Topology and QCD axion's properties from lattice hot QCD with a dynamical charm , Understanding the LHC, Bad Honnef Physikzentrum, Febbraio 2017

Varying Nf in QCD: scale separation, topology (and hot axions), Lattice for Beyond the Standard Model Physics, Argonne National Laboratory, Aprile 2016

Adding flavours to Strong Interactions, 'Festkolloquium for Edwin Laermann 60th birthday', Bielefeld, November 2015

Adding flavours to Strong Interactions, Trinity College Dublin Colloquium, Dublin, October 2015

Scale separation, walking dynamics and approach to criticality in QCD with varying number of flavors, review a Gauge Fields Topology, Simons Center, Stonybrook, July 2015

Dense Matter from lattice QCD, GGI, Firenze, ciclo di lezioni introduttive per il GGI program The structure and signals of neutron stars, from birth to death, Marzo 2014

How many scales in many-flavour QCD? Strong Coupling Gauge Theories Beyond the Standard Model, Kobayashi-Maskawa Institute, Nagoya, Marzo 2014

Quarkonia in the quark gluon plasma, Opening plenary talk at 'Strong and Electroweak Matter', Swansea, July 2012

High Temperature QCD, Plenary talk at Lattice 2012, Cairns, July 2012

Hadronic Matter Under Extreme Conditions, Institutskollokium, Humboldt Berlin, May 2011

Strong interactions and finite baryon density, Opening plenary talk 'Strong Interactions in the 21st century' , Baha Memorial Workshop , Mumbai, February 2010

Phases of QCD and critical point from the lattice, Ciclo di lezioni per la Dubna International Advanced School of Theoretical Physics DM2010, August 2010

QCD at finite temperature and density on the lattice, Ciclo di lezioni per la Helmoltz International Summer School Dense Matter in Heavy Ions Collisions and Astrophysics, JINR DUBNA, July 2008

QCD at finite density, Plenary talk at Quark Matter 2008, Jaipur, February 2008

Lattice QCD at Finite Temperature and Density, Ciclo di lezioni per la Guangzhou School on LGT, China, 2005

Lattice QCD at non-zero temperature and density, Ciclo di lezioni a INFN Catania e Laboratori Nazionali del Sud, February 2002

Fisica Computazionale, Ciclo di lezioni per la Scuola di Dottorato, Universita' dell'Aquila, April-May 2001

Gauge Theories at Finite Temperature and Density, Ciclo di lezioni per la Scuola di Dottorato, Universita' della Calabria, 2001

Field Theory and Phase Transitions, Ciclo di lezioni per la ICTP School on Astroparticle Physics and Cosmology, 2001, published in ICTP Lecture Note Series, vol IV Astroparticle Physics and Cosmology, G. Senjanovic, A. Yu. Smirnov and G. Thompson eds, p. 119

Corsi Universitari

***Lattice Field Theory and QCD under extreme conditions*,** Università Humboldt di Berlino, SommerSemester 2011

***QCD at high temperature and density*,** Università di Bielefeld, SommerSemester 2012.Il corso e' stato ufficialmente valutato dagli studenti per iniziativa del Decanato dell'Universita' ed ha riportato il punteggio di 9.5/10 in media, il punteggio piu' alto assegnato su 22 corsi tenuti nel semestre.

Outreach

Outreach Coordinator for the European COST (COoperation in Science and Technology) Action CA-15213 THOR - Theory of Hot Matter and Relativistic Heavy Ions Collisions, dal 2018

Co-organizzatore di ***Il libro della Natura e' scritto in lingua Matematica*** *,* ciclo di conferenze a cure del CMTP per Eureka! Roma 2018, progetto del Comune di Roma per la divulgazione scientifica http://www.eurekaroma.it/item/il-libro-della-natura-e-scritto-in-lingua-matematica/, Foyer del Teatro Valle, Roma, 2018

Ideazione e supervisione della produzione di una **graphic novel *Thor ed il plasma dei quark* genere Fantasy/Fantastico**, autore Simone Gabrielli e Margherita Tomasello della Scuola Romana dei Fumetti .

Le Oche - tra assioni e ghiaccio, Intervista a Radio Popolare per il programma le Oche, condotta da Sylvie Coyaud e Filippo Bettati, 11 Novembre 2016

Caldo, più caldo, più del Sole?…che cosa accade alla materia in condizioni estreme lezione a classi riunite presso il Liceo Scientifico "Dante Alighieri" - Firenze (FI) nell'ambito del progetto 'Pianeta Galileo' della Regione Toscana http://www.consiglio.regione.toscana.it/pianeta-galileo, 13 Novembre 2014

Quantum Field Theories at Finite Temperature, saggio sollecitato per Visions of Oneness (diretto ad un pubblico scientifico generico), Ignazio Licata editor, Aracne Editrice, Roma, Italy ,

2013

Supercalcolare, dall'inizio dell'Universo al tempo che farà' domani, articolo per la rubrica Gocce di Scienza di Vivavoce, Rivista d'area dei Castelli Romani n. 52 Maggio 2006

Firenze, 25 Marzo 2019 Maria Paola Lombardo