



GIANCARLO CELLA

POSITIONS

January 1, 2020-today	Senior researcher (Primo Ricercatore) Istituto Nazionale di Fisica Nucleare · Pisa Department
2008-December 31, 2019	Permanent researcher Istituto Nazionale di Fisica Nucleare · Pisa Department
2004-2008	Temporary researcher Istituto Nazionale di Fisica Nucleare · Pisa Department
2003	Postdoc Dipartimento di Fisica · Università di Pisa
2002	Postdoc Istituto Nazionale di Fisica Nucleare · Pisa Department
2001	Postdoc Dipartimento di Fisica · Università di Pisa
1997-1998	Collaboration contract California Institute of Technology · Pasadena CA – USA
1995	Postdoc: application of parallel and distributed computing to scientific problems Consorzio Pisa Ricerche · Pisa
1992-1994	Postdoc Dipartimento di Fisica · Università di Pisa
1991	Civil service .

EDUCATION

1995	PH. D. THESIS Effetti di regolarizzazione in teorie di campo su reticolo. Correzioni QCD a processi di decadimento FCNC. (Regularization effects in lattice field theories, and QCD corrections to FCNC decay processes). · Dip. di Fisica dell'Università di Pisa, Supervisor: Prof. Giuseppe Curci
July 19 1990	MASTER THESIS Effetti di interazione forte nel decadimento debole del mesone B. (Strong interaction effects in weak B-meson decay). · Dipartimento di Fisica dell'Università di Pisa. Supervisor: Prof. Giuseppe Curci. 110/110 cum laude.

RESPONSIBILITIES

- 2025-today **Virgo national responsible**
INFN national responsible for the Virgo experiment .
- 2024-today **Principal contact for INFN**
European project ACME (the Astrophysics Centre for Multi-messenger studies in Europe)
HORIZON-INFRA-2023-SERV-01-02 - Research infrastructure services advancing frontier knowledge · Project Id: 101131928
- 2024-today **Virgo ombudsperson**
The Virgo ombudspersons provide independent, impartial, confidential and informal assistance to all members of the Virgo Collaboration. ·
- 2019-2022 **Virgo data analysis coordinator.**
Main responsibilities: coordination of Virgo data analysis activities, of scientific subgroups, joint coordination with LIGO and KAGRA chairs of data analysis activities of LIGO/Virgo/KAGRA collaboration. ·
- 2016-2019 **Coordinator contact and team member**
European project NEWS H2020-MSCA-RISE-2016, New WindowS on the universe and technological advancements from trilateral EU-US-Japan collaboration · Project Id: 734303
- 2015-2024 **Virgo Steering Committee member**
- 2015-2024 **Virgo Pisa group coordinator**
The group has key responsibilities in the Virgo collaboration: construction, commissioning (superattenuators, controls, electronics) and data analysis (stochastic backgrounds, continuous sources, compact binary coalescences, multimessenger). ·
- 2019-2021 **Pisa coordinator OLAGS project.**
INFN project “Commissione Scientifica Nazionale 5”: Optical Links for Atomic Gravity Sensors. Demonstrator for the possibility of gravitational gradient measurement with displaced sensors. ·
- 2009-today **INFN Pisa representative inside VESF Council**
The VESF is the Virgo-EGO Scientific Forum. ·
- 2019-today **Director of physics school of the cultural association “Scholé”**
- 2016-2018 **INFN Pisa coordinator European Union project GraWIToN.**
Initial Training Network, funded by European Commission under FP7-Marie Curie Actions ·
<http://www.grawiton-gw.eu/>
- 2015-2017 **Referee CALC_TIER1, “Commissione Scientifica Nazionale 2” INFN.**
- 2004-2012 **Responsible hardware e software injections stochastic background in Virgo**
- 2002-2012 **LIGO/Virgo stochastic background search group chair**
- 2011 **Writing team member “Einstein Telescope Conceptual Design Document”**
- 2007 **Virgo Editorial Board member**
- 2000 **Member Joint LIGO/Virgo data analysis preparation committee**

EVALUATOR

- 2023-2024 **Evaluator** Proposals for young researcher program “Rita Levi Montalcini MUR
- 2015-2019 **Evaluator** ANVUR VQR

OTHER RESPONSIBILITIES

- 2018-today **Referee** Journal of Astronomical Instrumentation
- 2018-today **Referee** Astronomy and Computing

2011-today **Referee** Physical Review D
 2010-today **Referee** Classical and Quantum Gravity
 2009-today **Referee** Astronomy & Astrophysics
 2009-today **Referee** Nuovo Cimento
 2011-today **Referee** European Physical Journal Plus
 2009-today **Referee** Review Scientific Instruments
 2016-today **Referee** General Relativity and Gravitation
 2017-today **Referee** Physics Letters A

PRIZES

2017 **Albert Einstein Medal**
 As a member of the LIGO/Virgo collaboration ·
 2016 **Gruber Cosmology Prize**
 As a member of the LIGO/Virgo collaboration · <http://gruber.yale.edu/prize/2016-gruber-cosmology-prize>
 2016 **Breakthrough prize**
 As a member of the LIGO/Virgo collaboration · <https://breakthroughprize.org/News/322016>

ABILITATIONS

2014 **“Abilitazione scientifica nazionale” settore 02/A1**
 Habilitation to the role of associate professor · Experimental physics of fundamental interactions.
 2014 **“Abilitazione scientifica nazionale” settore 02/C1**
 Habilitation to the role of associate professor · Astronomy, astrophysics, Earth and planets physics.
 2005 **I.N.F.N. Habilitation**
 Habilitation to the role of INFN researcher · Theoretical Physics.
 2005 **I.N.F.N. Habilitation**
 Habilitation to the role of INFN researcher · Astroparticle Physics.

COLLABORATIONS

6/4/2015-8/5/2015 **Research program participant**
 The Next Detectors for Gravitational Wave Astronomy · Kavli Institute for Theoretical Physics China, Pechino
 2014-2016 **FIRB project participant**
 New perspectives on the violent Universe: unveiling the physics of compact objects with joint observations of gravitational waves and electromagnetic radiation. ·
 2012-2015 **Member**
 GINGER (Gyroscope IN GEneral Relativity) experiment ·
 2012-2015 **PRIN project participant**
 “Sviluppo di interferometri ottici ultra low-loss in regime ponderomotivo per la riduzione del rumore quantistico in rivelatori di onde gravitazionali e rivelazione ultrasensibile di piccole forze in sistemi micromeccanici” (Developement of ultra-low-loss interferometers in ponderomotive regime for the reduction of quantum noise in gravitational wave detecors · High sensitivity detection of small forces in micromechanical devices.

- 2010-2011 **European Council project n. 211743 participant**
Einstein Telescope. 1. Study of Gravity Gradient noise and of techniques for its mitigation. 2. Simulation activities for seismic attenuation systems. ·
- 2002-2005 **PRIN project participant**
"Sospensioni per specchi di rivelatori interferometrici di onde gravitazionali a basso rumore termico" (Mirror suspensions for interferometric detectors of gravitational waves with low thermal noise). ·
- 2002-today **Associate**
European Gravitational Observatory ·
- 1996-today **Member**
Virgo collaboration ·
- 2000 **Cofinanced university project participant**
"Rumore Newtoniano nei Rivelatori per Onde Gravitazionali" (Newtonian noise in gravitational waves' detectors) ·
- 1997-2000 **MURST project participant**
"Angiografia Digitale ad alto Rapporto Prestazioni/Costo" (Digital Angiography with high cost/performance ratio). In the framework of the National Program of Research about Technologies in Cardiology) · Coordinator: S.I.A.S., Modena, in collaboration with the "Istituto di Fisiologia Clinica del C.N.R". Description: Implementation of algorithms for angiography image analysis on a APE/Quadrics parallel computing architecture.
- 1995 **European project participant**
Georadar Embedded on Site Parallel Processing Feasibility Study-GEOSIPP/FEST (European Community program Esprit, Parallel Computing Initiative CAPRI, project n.9452/94/197/70). · Coordinator: "Ingegneria dei Sistemi" (IDS), Pisa. Description: Feasibility study for the use of a parallel computing embedded architecture in real time elaboration of IDS georadar data.
- 1995-1996 **European project participant**
Numerical Modelling for Electromagnetic Design and Hardening of Telecommunication Centres-ARTEMIS (European Community program Esprit, Parallel Computing Initiative CAPRI, project n.9452/94/190/70) · Coordinator: "Centro Studi e Laboratori Telecomunicazioni" (CSELT), Torino. Description: Parallelization of numerical codes for electromagnetic compatibility on APE100 and Cray T3D computing architectures.

CONFERENCES AND SEMINARS

CONFERENCES ORGANIZATION

- 2024 **LOC member**
QFC2024- Quantum gases, fundamental interactions, and cosmology · <https://agenda.infn.it/event/38093/>
- 2024 **SC member**
V Gravi-Gamma-Nu workshop · <https://agenda.infn.it/event/38056/>
- 2022 **LOC member**
QFC2022- Quantum gases, fundamental interactions, and cosmology · <https://agenda.infn.it/event/28726/>
- 2021 **LOC and SC member**
Gravi-Gamma workshop, Volterra, Italia. · <https://agenda.infn.it/event/20758/>
- 2019 **LOC member**
GWEOS 2019, Pisa, Italia · <https://agenda.infn.it/event/17643/>
- 2019 **LOC member**
QFC2019- Quantum gases, fundamental interactions, and cosmology · <https://agenda.infn.it/event/17056/>

- 2019 **LOC member**
GWDW 2019, La Biodola, Isola d'Elba, Italia. Gravitational-Wave Advanced Detector Workshop "From Advanced Interferometers to Third Generation Observatories" · <https://agenda.infn.it/event/15928/>
- 2016 **LOC member**
SciNEGHE 2016, Pisa, Italia. (Workshop on Science with the New Generation of High Energy Gamma-ray Experiments) · <https://agenda.infn.it/event/11102/>
- 2014 **Co-chair**
XXI SIGRAV Conference, Alessandria, Italia · Workshop experimental gravitation.
- 2003 **LOC member**
5th Edoardo Amaldi Conference, Pisa, Italy ·

INVITED TALKS AND SEMINARS

- February 9, 2022 **ICTP Colloquium**
EGO and VIRGO: The Past, Present, and Future of the Physics of Gravity Waves. ·
- September 20-23, 2021 **The 7th Conference of the Polish Society on Relativity**
Recent observations of GWs by LIGO and Virgo detectors. ·
- July 5-10, 2021 **MG16 - Sixteen Marcel Grossmann meeting**
The recent observations of Gravitational Waves from the two Neutron Stars-Black Holes coalescences ·
- March 9-11, 2021 **La Thuile 2021 - Les Rencontres de Physique de la Vallée d'Aoste, Virtual workshop**
Five years of gravitational wave observations: where we stand? ·
- July 1-7, 2018 **Fifteenth Marcel Grossmann Meeting - MG15**
Data Analysis Techniques To Search For The Stochastic Gravitational-Wave Background · Università di Roma "La Sapienza"
- March 10-17, 2018 **53rd Rencontres de Moriond - EW**
Results of LIGO-Virgo · La Thuile
- September 20, 2016 **Workshop "String Theory and Inflation"**
Stochastic Background of Gravitational Waves · Dipartimento di Fisica University of Roma Tor Vergata
- September 12-16, 2016 **Eighth International Workshop DICE2016. Spacetime - Matter - Quantum Mechanics**
The discovery of gravitational waves: a gentle fight against noise · Castello Pasquini/Castiglione (LI), Italia
- May 17-20, 2016 **New Frontiers in Theoretical Physics - XXXV Convegno Nazionale di Fisica Teorica and GGI 10th anniversary**
Advanced detectors of gravitational waves: status and perspectives · Galileo Galilei Institute, Firenze
- June 7-12, 2015 **"General Relativity & Gravitation: A Centennial Perspective"**
Panelist Perspectives Session: Future Technologies in Gravitational Wave Science · State College, USA.
- June 7-12, 2015 **"General Relativity & Gravitation: A Centennial Perspective"**
Status of Advanced Virgo. · State College, USA.
- May 17-22, 2015 **GWADW 2015**
Seismic Newtonian Noise · Girdwood, Alaska, USA.
- 2015 **3rd Beijing Gravitational Waves Workshop**
A Bayesian approach to the problem of the locking acquisition of a suspended optical cavity. · Tsinghua University, Pechino, Cina.
- May 29-30, 2014 **IEEE International Workshop on Metrology for Aerospace**
Optical Quantum Noise in High Sensitivity Measurements · Benevento, Italia.

- October 14-16, 2009 **2nd Einstein Telescope Annual Workshop**
Gravity Gradient Noise: Estimates and Reduction Strategies · Erice, Italia.
- 2009 **Seminar APC**
Gravitational Waves Stochastic Background: Sources & Detectors. · Paris
- May 27-28, 2009 **58th Fujihara Seminar**
Low frequency limits (Gravity Gradient Noise) · Shonan Village Center, Hayama, Japan.
- May 23, 2008 **Virtual Institute of Astroparticle Physics**
Gravitational Waves Stochastic Background in Interferometric Detectors · Virtual seminar.
- April 27, 2004 **Background stocastico di onde gravitazionali: sorgenti e detector**
Dipartimento di Fisica dell'Università di Napoli ·

SELECTED PRESENTATIONS AND SEMINARS

- July 5-12 2017 **EPS Conference on High Energy Physics**
Stochastic GW searches and Cosmology with GWs. · Venezia, Italy
- October 18-21 2016 **The search for a stochastic background of gravitational waves**
SciNeGHE 2016, High-energy gamma-ray experiments at the dawn of gravitational wave astronomy · Pisa, Italy
- September 12-16 2016 **The search for a stochastic background of gravitational waves.**
TeV Particle Astrophysics 2016 · CERN
- May 17-22 2015 **System ID for modern control.**
GWADW 2015 · Girdwood, Alaska, USA
- May 17-22 2015 **Output “Anti-squeezing”**
GWADW 2015 · Girdwood, Alaska, USA
- September 22-26 2014 **New Perspectives on the Violent Universe: toward an italian network for joint astronomical observations of gravitational waves and electromagnetic radiation.**
100° SIF congress · Pisa, Italy
- March 4-5 2014 **Gravitational Wave Stochastic Background.**
What Next in Gravitational Wave Research? · EGO Cascina, Italy
- November 23 2010 **Some considerations about Gravity Gradient Noise.**
3rd annual ET meeting · Budapest, Hungary
- 2010 **Migliorare la sensibilità a basse frequenze in rivelatori interferometrici di onde gravitazionali (Improving low frequency sensitivity in interferometric detectors of gravitational waves)**
SIF congress 2010 · Bologna, Italy
- October 29 2009 **La Gravitazione (Gravitation)**
1609-2009: l'Universo di Galileo, l'Universo oggi · Pisa, Italy
- July 12-18 2009 **Gravity Gradient Noise**
12th Marcel Grossman Meeting · Paris, France
- May 12-17 2008 **Gravity Gradient Noise: Subtraction and the Underground Option.**
GWADW 2008, La Biodola (Elba) ·
- May 12-17 2008 **Detection Noise and Quantum Fluctuation Amplification.**
GWADW 2008, La Biodola (Elba) ·
- March 26-28 2008 **Esperimenti per la rivelazione delle onde gravitazionali (Experiments for gravitational wave detection)**
Incontri di Fisica delle Alte Energie, Bologna ·
- October 10 2007 **Stochastic Background Search (from a data analysis perspective).**
2nd ENTApP-GWA joint meeting on gravitational waves sources and observation, Tuebingen ·
- October 8-9 2007 **Stochastic Background Search with VIRGO and GEO.**
4th ILIAS-GW annual general meeting, Tuebingen ·

- September 24 2007 **Una applicazione dello squeezing al miglioramento della sensibilità dei rivelatori interferometrici di onde gravitazionali (An application of squeezing to the improvement of the sensitivity in interferometric detectors of gravitational waves).**
XCIII Congresso Nazionale SIF, Pisa · Special mention for best talk.
- May 11-13 2007 **Studio delle onde gravitazionali**
Incontri di Fisica delle Alte Energie, Napoli ·
- 2006 **Underground reduction of gravity gradient noise.**
GWADW, La Biodola (Elba) ·
- April 27 2006 **Interferometers without optical coatings.**
ILIAS meeting, Firenze ·
- 28 March 2006 **Newtonian noise under the ground.**
3rd ILIAS annual meeting, Laboratorio nazionale Gran Sasso ·
- 23-24 January 2006 **Stochastic Background: data analysis.**
First ENTApP - GWA joint meeting, Paris ·
- March 18, 2005 **Il principio di indeterminazione di Heisenberg e la rivelazione delle onde gravitazionali (Heisenberg indetermination principle and gravitational waves detection)**
Workshop "Le onde gravitazionali, una nuova finestra sull'Universo", Domus Galilaeana Pisa. ·
- December 15 2004 **Simulation of gravitational wave stochastic background**
GWDAW-9 workshop, Annecy ·
- December 15 2004 **A couple of techniques to improve sensibility preserving robustness in gravitational waves burst detection**
GWDAW-9 workshop, Annecy ·
- November 26 2004 **Virgo: il detector e le sorgenti (Virgo: sources and detector)**
Meeting "Astrofisica in Toscana 2", Pisa ·
- October 21 2004 **Beyond the standard quantum limit.**
2004 IEEE Nuclear Science Symposium, Roma ·
- September 16 2004 **Beyond the standard quantum limit.**
16th SIGRAV conference on General Relativity and Gravitational Physics, Vietri sul Mare (SA) ·
- December 20 2003 **Optimal vetoes and best matching for coalescing binaries events.**
GWDAW-8 workshop, Milwaukee ·
- February 7 2003 **Dealing with Newtonian noise above and below the ground: a review.**
Aspen 2003 GWADW winter conference ·
- May 22 2002 **A case study in binary coalescing detection: optimal matching with amplitude corrections.**
Elba 2002 GWADW ·
- December 15, 2001 **GWIC working group report.**
GWDAW 2001, Trento ·
- 2001 **Status of Virgo.**
Aspen Winter conference ·
- February 16, 2000 **End to end simulation**
Stanford University seminar ·
- October 13 2000 **Tools for freezing optics**
GREX Workshop 2000 ·
- November 23, 1999 **MSE. A mechanical simulation engine for the LIGO E2E model**
California Institute of Technology Seminar ·
- 23-30 January 1999 **Off line subtraction of Seismic Newtonian noise.**
XXXIVth Rencontres de Moriond, Gravitational Waves and Experimental Gravity, Les Arcs, Savoie, France ·
- 1998 **Off-line Subtraction of Seismic Newtonian Noise.**
13th Italian Conference on General Relativity and Gravitational Physics, Monopoli ·

May 20-24 1996 **Triggering and Data Analysis for the VIRGO experiment on the APEmille parallel computer.**
6th topical seminar Experimental apparatus for particle physics and astrophysics, S. Miniato (PI) ·

TEACHING EXPERIENCE

UNIVERSITY

2016-today **Astroparticle**
Physics department · Pisa University

2013-2020 **Physics 1**
Physics department · Pisa University

2015-2016 **Gravitational waves**
Physics department · Pisa University

2009 **General relativity**
Mathematics department · Pisa University

2003-2012 **Physics 1**
Physics department · Pisa University

2004-2007 **Physics 2**
Physics department · Pisa University

2004 **Complements of physics**
Mathematics department · Pisa University

2001 **Thermodynamics**
Mathematics department · Pisa University

TEACHING IN GRADUATE SCHOOLS

4-8 July 2022 **1st MaNiTou Summer School on Gravitational Waves**
Latest News from LIGO/Virgo ·

15-24 June 2022 **International School of Subnuclear Physics Erice: 58th Course: Gravity and Matter in the Subnuclear world.**
Observing the universe through gravitational waves: what we are learning? ·

16-20 July 2018 **International Alpine School of Mathematics and Physics, Domodossola**
The physics of LIGO and Virgo ·

May 7-11 2018 **XIX Frascati Spring School Bruno Touschek in Nuclear, Subnuclear and Astroparticle Physics.**
Gravitational Waves: Detectors and Data Analysis. · Laboratori Nazionali di Frascati. <https://agenda.infn.it/event/14992/>

2015 **2015 International School on Numerical Relativity and Gravitational Waves**
Gravity Gradient Noise ·

2011 **Spring VESF data analysis school 2011**
Stochastic background data analysis ·

2010 **5th VESF school on gravitational waves**
Continuous Sources and Stochastic Background · Sesto di Pusteria 2010

2002-2008 **VIRGO-SIGRAV school on gravitational waves**
Techniques of quantum non demolition ·

1994 **International School of Advanced Studies (ISAS) di Trieste**
Scientific application of parallel calculations. ·

THESIS SUPERVISION

PH. D. THESIS SUPERVISION

Tutoring

July–September 2024 **INFN CSN2 Scholarship for bachelor students**

July–September 2024 **INFN CSN2 Scholarship for bachelor students**

MASTER THESIS SUPERVISION

June 6, 2024

December 14, 2023

February 27, 2023

December 14, 2022

October 27, 2022

July 22, 2022

December 13, 2021

2019

2019

2018

2018

2017

2017

2017

2016

2016

2016

2015

2014

2014

2007

2002

2001

OUTREACH

HIGH SCHOOL SEMINARS

- 2021 **La realtà e i modelli della fisica: termodinamica, meccanica statistica e strutture emergenti (Reality and physical models: thermodynamics, statistical mechanics and emergent structures)**
Liceo Scientifico "A. Volta" · Reggio Calabria
- 2020 **La descrizione geometrica dell'Universo. Einstein e oltre. (The geometrical description of the Universe: Einstein and beyond)**
Scuola estiva Filosofia Roccella Scholé · Roccella Jonica
- 2019 **La scoperta delle onde gravitazionali. (The discovery of gravitational waves)**
ITIS Marconi · Pontedera
- 2019 **Lo spaziotempo curvo. (Curved spacetime)**
Liceo Scientifico "P. Mazzone" · Roccella Jonica
- 2013-2016 **Einstein a flatlandia: dalla geometria alla cosmologia (Einstein in flatland: from geometry to cosmology)**
Pianeta Galileo ·

- 2012 **Fisica moderna e descrizione del mondo: Microcosmo (Modern physics and description of the World: microcosm)**
Several High Schools ·
- 2012 **Fisica moderna e descrizione del mondo: Macrocosmo (Modern physics and description of the World: macrocosm)**
Several High Schools ·

PUBLIC SEMINARS

- 2024 **Buchi neri: un viaggio tra la conoscenza e l'ignoto**
Fisica al Pub · Pisa January 15, 2024
- 2023 **Buchi neri: un viaggio tra la conoscenza e l'ignoto**
Lucca Comics · Lucca November 4, 2023 <https://www.ego-gw.it/blog/2023/10/24/ego-e-virgo-a-lucca-al-comicsscience-palace/>
- 2020 **Capire una epidemia con la matematica (Understand mathematically a pandemic)**
Filosofia Roccella Scholé, Roccella Jonica ·
- 2019 **Meccanica quantistica e senso comune (Quantum mechanics and common sense)**
Seminario pubblico, Filosofia Roccella Scholé, Roccella Jonica ·
- 2018 **Einstein a Flatlandia (Einstein in flatland)**
Incontro pubblico, Cittadella Galileiana, Pisa ·
- 2018 **Colloqui sull'Universo: Dall'infinitamente piccolo all'infinitamente grande. (Speaking about the Uni- verse: from the infinitely small to the infinitely large)**
Incontro pubblico, Domoschool - International Alpine School of Mathematics and Physics, Domodossola ·
- 2018 **Sulla cresta dell'onda gravitazionale (Diving gravitational waves)**
Seminario pubblico, Pint of Science Siena, Siena ·
- 2018 **La rivelazione delle onde gravitazionali: una nuova prospettiva sull'Universo (Gravitational wave detection: a new perspective on the Universe)**
Seminario pubblico, Filosofia Roccella Scholé, Roccella Jonica ·
- 2017 **Un cambio di paradigma in due mosse: Dalla meccanica di Newton alla relatività speciale (A two step change of paradigm: from Newton mechanics to special relativity)**
Fondazione Dino Guerra - La dove il pensiero incontra l'esperienza: invito alla lettura dei classici della scienza ·
- 2016 **Un cambio di paradigma in due mosse: Dalla relatività speciale alla relatività generale (A two step change of paradigm: from special relativity to general relativity)**
Fondazione Dino Guerra - La dove il pensiero incontra l'esperienza: invito alla lettura dei classici della scienza ·

OTHER

- 2004-today **Introductory seminars for visitors at European Gravitational Observatory**
European Gravitational Observatory · Cascina, Italy

PROFESSIONAL ABILITIES

- Excellent knowledge of programming languages and techniques (C, C ++, python, fortran) in traditional and parallel environments (pvm, mpi, multithreading).
- Excellent knowledge of techniques and languages of symbolic manipulation (Mathematica, Maple)

COURSES

- 2011 **Le azioni PEOPLE del VII Programma Quadro dell'Unione Europea**
INFN training · Roma
- 2011 **Quantum mechanics meets gravity**
INFN training · Roma
- 2008 **GRID users' school**
INFN training · CNAF Bologna

CONSULTINGS

- | | |
|--|---|
| Tecnobiomedica S.p.A, Pomezia | Implementation of a ventricular position sensor |
| European Community | Neural Network applications |
| Ingegneria Dei Sistemi S.p.A., Pisa | Parallel computing applications |

LANGUAGES

- English:** Good knowledge
French: Scholastic knowledge

AFFILIATIONS

- 2004-today **SIF, Società Italiana di Fisica**
- 2016-today **EPS, European Physics Society**
- 1996-today **SIGRAV, Società Italiana di Relatività Generale e Fisica della Gravitazione**
- 2024-today **SISTEQ, Società Italiana di Scienze e Tecnologie Quantistiche**

Livia Conti

Livia Conti is a Senior Researcher at the Istituto Nazionale di Fisica Nucleare (INFN). After graduation in Physics from the University of Padova, she earned her PhD in Physics from the University of Trento (2000). Her research focuses on understanding and mitigating fundamental noise sources that limit detector sensitivity, particularly scattered light and non-equilibrium thermal noise. She has been a member of the Virgo Collaboration since 2014, where she initially investigated scattered light affecting the squeezing system, contributing to the identification and mitigation of major offenders. This work marked the beginning of her involvement in stray light studies within interferometric detectors. She has since taken on coordination and service roles within the collaboration, including the outreach coordinator, and co-chair of the Stray Light Control Working Group for Virgo-Next. Dr. Conti is also the research unit leader in Padova and from 2024 the co-chair of the Stray Light Control Working Group within the Einstein Telescope Collaboration, contributing to the design and noise mitigation strategy of next-generation gravitational wave observatories. She previously led a major research initiative as Principal Investigator of a Starting Grant from the European Research Council, which advanced the understanding of thermal noise under non-equilibrium conditions and its impact on gravitational wave detectors. She also advanced the hypothesis that non-equilibrium physics may provide a framework to explain unresolved features observed in the cosmic background of radiation.

Her current research focuses on mitigating stray light caused by limited cleanliness in gravitational wave detectors. She contributes to defining cleanliness requirements for Virgo and the Einstein Telescope, develops novel optical sensors to monitor particulate contamination in vacuum, and adapts dry laser cleaning techniques to the specific requirements of these instruments. She has established a dedicated light-scattering measurement facility in Padova to characterize the scattering properties of materials and surfaces, with particular emphasis on dust-induced stray light. This facility supports both contamination studies and research on coatings and materials for current and next-generation gravitational wave detectors.

She has authored >200 peer-reviewed publications and has extensive experience in scientific editing, peer review, mentoring, and science dissemination.

PERSONAL INFORMATION **Cristiano Palomba**

EPR Senior Researcher

WORK EXPERIENCE

2005 – Present **Researcher and Senior Researcher**

Istituto Nazionale di Fisica Nucleare (INFN) in Roma; P.le A. Moro 2 , 00185 Roma (ITALY).
<http://www.infn.it>

- Experimental Research in Gravitational Wave physics with a focus on the design, implementation and application of data analysis algorithms for the search of gravitational waves. Expertise in detector noise artefacts identification and characterization. Expertise in neutron star phenomenology.
- Leader of the Virgo Rome group (2025 - now)
- Paper manager and/or analyst and in the paper writing team for several LVK papers (2007 - now)
- Chair of the review committee for the Virgo *Data Quality Report* infrastructure (2018 - now)
- In the Einstein Telescope Observational Science Board (2021 - now)
- Chair of Division 7 of the ET OSB: core collapse supernovae and rotating neutron stars (2024 - now)
- In the working group in charge to perform the cost-benefit analysis for different Einstein Telescope configurations ("CoBa analysis") (2021 - 2022)
- In the Virgo Post-O5 working group, chair of the Continuous Waves and Fundamental Physics sub-committees (2021 - 2022)
- In the working group in charge to define the Einstein Telescope science case (Technical Design Report) (2019 - 2020)
- In EU project GRAWITON (local responsible, 2014-2018)
- INFN researcher local (Roma) representative (2014 - 2018)
- Chair of the working group for the data quality validation of the first two events detected by Virgo, GW170814 and GW170817 (2017)
- In the Virgo Data Analysis and Software committee (2010 - 2014)
- In the LIGO-Virgo Software Change Control board (2010 - 2014)
- Chair of the LIGO-Virgo physics group on "Continuous Gravitational Waves" (2008 - 2010)
- In the LIGO-Virgo Data Analysis Council (2008 - 2010)
- Chair or SOC member of several schools, workshops and conferences on Gravitational Waves Data Analysis and Computing
- In the project evaluation panel of ERC StG
- In project evaluation panels for Sapienza University of Rome, Polish Academy of Science, Ariel University.
- Referee for several scientific journals, including *Astronomy & Astrophysics*, *The Astrophysical Journal*, *The Astrophysical Journal letters*, *Classical and Quantum Gravity*, *Monthly Notices of Royal Astronomical Society*, *Physical Review D*, *Physical Review Letters*, *Physical Review X*.
- Supervisor (or co-supervisor) of 20+ Master Thesis and PhD Thesis
- Referee for several Master and PhD Thesis, both in Italian and foreign universities
- Teaching in several courses at Università di Roma "Sapienza"

2002-2005 **Technologist at INFN Roma**

Development of data analysis algorithms for the search of gravitational waves and their implementation on distributed computing systems

- Pioneer of GRID computing in the Virgo experiment
- Virgo *liaison* toward CNAF computing center

1999-2002 Research grant at Università di Roma "Sapienza"

Development of data analysis algorithms for the search of gravitational waves

Periods spent at the Albert Einstein Institute of Potsdam (Max-Planck-Institut für Gravitationsphysik)

EDUCATION AND TRAINING

1995 – 1998 PhD in Theoretical Physics

Università di Roma "Sapienza", Roma (ITALY). Thesis on gravitational wave emission from black holes encounters. Prof. Valeria Ferrari

1988 – 1994 Master in Physics

Università di Roma "Sapienza", Roma (ITALY). 110/110 cum Laude. Thesis on the evaluation of the detectability of various categories of gravitational wave sources. Prof. Sergio Frasca

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

Digital skills

- Expert in programming techniques (Matlab, C, Python, Scripts)
- Expert in Distributed Computing Middleware (EGEE, OSG, EGI)
- Expert in integration of HTC systems with scientific use cases

Job-related skills

- Management of working groups of 50+ researchers
- Science communication in science festivals, schools, radio and television

Evaluation metrics

- H-index (Scopus): 100
- Citations (Scopus): 29966
- Total indexed products (Scopus): 401