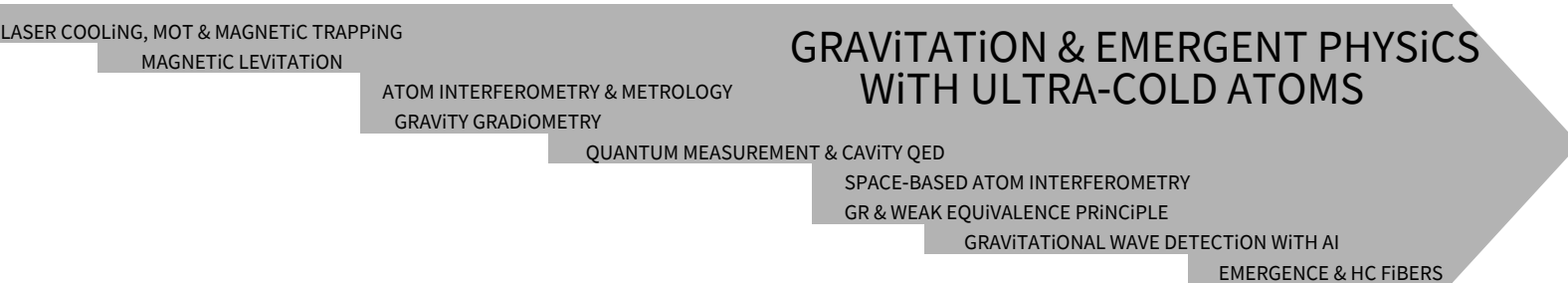


# Andrea Bertoldi - CV

PHYSICS PHD · IOGS RESEARCH ENGINEER

Institut d'Optique d'Aquitaine, LP2N – UMR5298 rue François Mitterrand F-33400 Talence (France)



## Experience

### Laboratoire Photonique, Numérique et Nanosciences (LP2N)

RESEARCH ENGINEER (ATOM INTERFEROMETRY AND GRAVITATIONAL WAVE DETECTION, COLD ATOMS IN SPACE, CAVITY QED, BEC AND EMERGENT PHYSICS, METROLOGY)

Talence, France  
Mar. 2013 - now

### Laboratoire Charles Fabry de l'Institut d'Optique (LCFIO) – group A. Aspect

POST-DOCTORAL AND MARIE-CURIE FELLOW (QUANTUM MEASUREMENTS AND FEEDBACK, QND MEASUREMENTS, CAVITY QED, ATOM INTERFEROMETRY AND BEC)

Palaiseau, France  
2009 - Feb. 2013

### Università Studi Firenze – group G. Tino

POST-DOCTORAL FELLOW AND RESEARCH ASSOCIATE (ATOM INTERFEROMETRY, GRAVITY GRADIOMETRY, MEASUREMENT OF G)

Firenze, Italy  
2005 - 2008

### Università Studi Trento – group D. Bassi

POST-DOCTORAL FELLOW (ATOM TRAPPING AND GUIDING, MAGNETOMETRY)

Trento, Italy  
2004

## Education

2019 **Habilitation à Diriger des Recherches (HDR)** thesis “Interferometry, Quantum Measurements and cavity QED with Atoms” **Univ. Bordeaux, ED SPI – France**

2001-04 **Ph.D. in Physics** thesis “Trapping of neutral atoms by static, combined potentials” **Univ. Trento – Italy**

## Honors, Appointments & Responsibilities

2022 **Member of the “GWspace2050” working group of LISA** **EU**  
2022 **Expert for “Quantum technologies for space gravimetry” EU call** **EU**

from 2021 **Associate Editor in “Frontiers in Physics - Atomic and Molecular Physics”** **France**  
from 2021 **GdR “Gaz Quantiques” – INP CNRS, France** **EU**  
Coordinator at LP2N

2019-21 **QuantERA call** Member of the Scientific Evaluation Panel

from 2020 **Member of the Editorial Board of “Atoms”**

2020 **Awarded “IOP trusted reviewer” status by IOP**  
2020 **Innovator Expert for Quantum Flagship Program** (project QOMBS)

**EU**

from 2020 **Coordinator of the scientific axis “Quantum systems and applications”** **LP2N, France**  
from 2019 **CNES** member of the Fundamental Physics Advisory Group **Paris, France**

2018-21 **COST Action AtomQTC A16221** Expert Member **EU**

2015-16 **Organization of the weekly meeting in the Cold Atom in Bordeaux group** **LP2N, France**

2011-13 **Organization of the weekly meeting in the Atom Optics group** **IOGS, France**

2009-11 **Marie-Curie Individual Fellowship** Laureate, project QND INTERF Grant No. PIEF-GA-2009-235375 **EU**

2009 **EOS Prize** article Journal of the European Optical Society – Rapid Comm. **4**, 09025 (2009) **EU**  
**Events Organization** Scientific seminars LP2N 2022; iDUST 2020; FOMO 2016; Seminar B. Allen in Bordeaux on GW detection 2018; Experimental Gravitation in Space School & Workshop 2006 **EU**

2006–20

## Grants and projects

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In the last 12 years I secured 2.5 M€ with research grants as PI (EU Marie Curie fellowship, French ANR, French IdEx LAPHIA, Aquitaine Region) and WP leader in European projects (FET-Open, QuantERA, ESA ITT study missions, EURAMET). I also participating to several collaborative project at national and EU level, for portable or enhanced atom interferometry (FINAQS, ISENSE, MAGIA, MIGA), and to study future space mission with cold atoms (ESA QWEP and STE-QUEST, AEDGE).

## Scientific production

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GoogleScholarprofile:

<https://scholar.google.com/citations?user=MEzqBsoAAAAJ&hl>  
**2452 citations on 31.03.2022**

**48 peer-reviewed articles, 3 patents, 1 soft./ hardware repository, 14 peer-reviewed conference proceedings, 1 book chapter**, and several technical notes commissioned by ESA. Personal presentation to 25 international conferences and workshops, of which 15 invited, and in about 20 seminars in several Institutes.

≈20reviews/year,fulllistonmyPublonsprofile:[https://](https://publons.com/researcher/1324730/andrea-bertoldi/metrics/)

## Peer reviewing activity

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Academic Referee for main physics journals,  
[publons.com/researcher/1324730/andrea-bertoldi/metrics/](https://publons.com/researcher/1324730/andrea-bertoldi/metrics/)

Project reviewer for EU (Quantum Flagship, QuantERA), EURAMET, national agencies (French ANR, Italian MIUR, Austrian FWF), French Space Agency CNES.

## Teaching and Supervision

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I taught different courses: at the Bachelor of Science in Mathematics (**2001 & 02 Computer science, algorithms and data structures**) and Physics (**2003 Advanced Electronics** and **2002 Laboratory of solid matter physics**) of the Univ. of Trento; at the Institut d'Optique in Bordeaux (LP2N) (**2015-16-17-18-19-20-21 Radiometry and photometry, 2016 Optical reflection and anamorphosis**, and **2017-18-19 Quantum Optics and Cold Atoms**; at the Master Degree of the Univ. of Bordeaux (**2019-20-21 Coherent manipulation of matter with light**); at Ph.D. schools in Trento (**2008 Neutral atom cooling and Matter Wave Interferometry**), at the Leibniz University of Hannover (**2012 Protecting ensemble atomic coherence with weak measurements and feedback**); at the "Gravitational Waves 2018" Physics School in Les Houches (**2018 Atom Interferometers and GW detection**).

Member of 10 PhD Committees, of which 4 as rapporteur.

Academic supervision of 14 PhD students (of which 6 as director), and 6 postdoctoral students.

## Consultancies and industrial involvement

In the last years I collaborated with several companies and associations for the technological transfer of scientific products and procedures: from 2020 with **GLOPhotonics** (Limoges, France - company leader in the realization of Hollow-Core Fibers) to develop fiber-based sensors of magnetic field for biological applications; from 2020 with Dr. E. Murphy at **ESA** to realize an ultra-cold atom experiment at LSBB, for the exploitation of the unique environmental properties of the underground site in the context of space studies; from 2020 with **Allosurf**, to realize a prediction service of the sea wave induced seismic noise offered to research laboratories; 2019–21 negotiation with **Winlight System** - CNIM Group for its installation at LSBB, for the realization of an ultra-low noise production and characterization site for top-notch defense/astronomy/space optics, and now to test the prediction algorithm of the background seismic noise; 2014–18 with **MuQuans and Kylia** for the development of the MIGA laser system, to cool and coherently manipulate rubidium atoms with telecom sources doubled in PPLN waveguides; 2011–13 with **Quantel** for the development of their EYLSA laser system for rubidium at 780 nm, based on frequency doubling a telecom laser.

## Languages

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**Italian** (native), **English**, **French** and **Spanish** (fluent), **German** (basic skills)

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## Personal: