

# Francesco Barile

29th January 2024

**Current position:** Assistant Professor at the University of Bari Aldo Moro (Rtd B), Physics Department M. Merlin  
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**ORCID:** <https://orcid.org/0000-0003-2088-1290>  
**WoS:** <https://www.webofscience.com/wos/author/record/JNT-0567-2023>  
**Research interests:**

- Experimental Research in **Heavy Ion Physics** (ALICE experiment at CERN): study of quark gluon plasma in heavy ion collisions; production of light nuclei (deuteron, tritium) at the LHC energies (pp, p-Pb and Pb-Pb); research of di-baryon states ( $H^0$  and  $\Lambda n$ ) in Pb-Pb collisions; particle identification (PID) with Cherenkov technique; algorithms on pattern recognition; trigger algorithms for event selection. Characterization of the pixel chips for the ALICE detector;
- Experimental Research on **Underground Measurements of Nuclear Reaction Cross Section** (Luna experiment at Gran Sasso National Laboratories (LNGS)): experimental measurements of cross sections of the most important fusion reactions for stellar hydrogen burning and nucleosynthesis as well as Big Bang nucleosynthesis at astrophysical temperatures; research activity on data analysis, preparation of experimental setups and development of simulation tool based on Geant4 software;
- Experimental Research on applied nuclear physics to environmental monitoring and cultural heritage (**radiocarbon dating**);

## Work experience

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- 05/2021 - present     **Assistant Professor, Tenure-track (Rtd B) -**  
*Dipartimento Interateneo di Fisica "M. Merlin" of Bari University, Via Giovanni Amendola, 173, Bari, Italy*  
<https://www.uniba.it/ricerca/dipartimenti/fisica>
- 04/2017 - 04/2028     **National Scientific Qualification - Abilitazione Scientifica Nazionale, associate professor (II fascia)**  
*Competition Sector (Settore Concorsuale) 02/A1 Experimental Physics of the Fundamental Interaction (Fisica Sperimentale delle Interazioni Fondamentali), II Fascia*  
<https://asn16.cineca.it/pubblico/miur/esito-abilitato/02%252FA1/2/1>
- 05/2020 - 05/2021     **Permanent employment at ARPA Puglia**  
*A.R.P.A.*  
Environmental control and monitoring activities: electromagnetic fields and ionizing radiations at ARPA (Regional Agency for Environmental Protection and Prevention), Taranto, Italy

- 11/2013 - 05/2020 **Post doc research fellows**  
*Research in LUNA experiment – Turin University (02/2019 – 05/2020)*  
*Research in LUNA experiment and applied nuclear physics to environmental monitoring and cultural heritage – Istituto Nazionale di Fisica Nucleare, Sezione di Bari (2016 – 2019)*  
*Research in High Energy Physics in the ALICE experiment – Istituto Nazionale di Fisica Nucleare, Sezione di Bari (2013 – 2015)*
- 02/2012 - 11/2012 **Post Doc grant, Fondazione Angelo Della Riccia** *https:*  
*//www.fondazioneangelodellariccia.it/*  
*Research activity at CERN, on light hadrons production in proton-proton, lead-lead collisions at the LHC energies (ALICE experiment)*
- 01/2011 - 12/2012 **Associate position at CERN**  
*Associate member of the personal, INFN fellow.*  
*Research activity on data analysis. Expert of the ALICE Cherenkov detector (HMPID) during the data taking operations in ALICE*

## Education

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- Master on computing** *Bari, Italy*  
*University of Bari and INFN Bari*  
 Master (II level) for expert researchers on development and management of data centers for high performance scientific computing. Università degli Studi di Bari Aldo Moro
- PhD in Experimental Physics** *Bari, Italy*  
*University of Bari and INFN Bari*  
**Thesis:** Inclusive charged hadrons production in pp collisions with the ALICE-HMPID detector at the LHC (CERN)  
<http://cds.cern.ch/record/1517441>
- Master in Physics** *Bari, Italy*  
*University of Bari*  
 Thesis on the study of an algorithm development for a small acceptance Cherenkov detector at the ALICE experiment (CERN)

## IT skills

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- Programming** C++, Bash, LabView, Python,  
 MonteCarlo simulation: Geant4

## Teaching Experience (2013 – Today)

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- Courses for undergraduate and master students: classical physics (I and II), Special relativity and modern physics, applied physics for cultural heritage
- Supervisor of master and PhD students in Physics (High Energy Physics, Nuclear Physics, Cultural Heritage);

## Recent responsibilities

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- Member of the Department of Physics board (July 2022 - present)
- Editorial Board Member of American Journal of Physics and Applications(AJPA);
- Associate Editor in High-Energy and Astroparticle Physics, section of Frontiers in Physics and Frontiers in Astronomy and Space Sciences;
- Expert evaluator for scientific projects at Swiss National Science Foundation;
- Co-investigator of project funded by Università degli Studi di Bari, "PREdictive JUSTice for WOMEN", based on Machine Learning technique applied to Justice;
- Co-management of project awarded by Regione Puglia (REFIN) on innovative physical methodologies based on measurement of Carbon-14 applied to food safety e sustainable agriculture;

## Publications

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Author of ~ 400 publications on HEP and Nuclear Physics:

<https://www.scopus.com/authid/detail.uri?authorId=35725276600>

Evaluation metrics

<https://www.scopus.com/authid/detail.uri?authorId=35725276600>

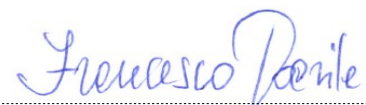
- H-index (Scopus): 88
- Citations (Scopus): 23,368
- Document (Scopus): 284

**ALICE Collab.:** <https://alice-publications.web.cern.ch/publications>

**LUNA Collab.:** <https://luna.lngs.infn.it/index.php/scientific-output/publications>

Bari, 29th January 2024

Firma



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