PERSONAL INFORMATION

Maria Antonella Incicchitti

PRESENT POSITION

Science Counselor, Consolato Generale d'Italia a Houston
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ResearcherID: H-1885-2012 (http://www.researcherid.com/rid/H-1885-2012)
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h-index: 70 (and 18021 citations from Google Scholar) on March 21, 2022

WORK EXPERIENCE

- Since 1/1/2007 INFN research director at INFN Roma division.
- From 1/3/2002 to 31/12/2006 INFN senior researcher at INFN Roma division.
- From 1/4/1988 to 28/02/2002 INFN researcher at INFN Roma division.
- From 1/7/1986 to 31/3/1988 INFN fellow of INFN Roma division.
- On December 1985 eligible for an INFN researcher position for Nuclear Physics, at Sanità division, Roma.
- From 25/9/1985 to 15/11/1985 collaborator of the Department of Physics at Università di Roma "La Sapienza".

EDUCATION AND TRAINING

- In 2020, "The Blockchain Journey" course by SDA Bocconi School of Management (four weeks - final test certified).
- In 2019, "IT management" course by SDA Bocconi School of Management (nine weeks - final test certified).
- In 1989, course at Leybold, Milano, about vacuum techniques.
- In 1987, INFN specialization course at Advanced School in Nuclear and Subnuclear Physics.
- In the A.Y. 1985 – 1986, specialization course in Particle Physics.
- In 1985, laurea in Physics (rank 110/110 cum laude).
- Education at Università di Roma "La Sapienza", Nuclear and Subnuclear Physics.

Language

Mother tongue	Italian
English	C1

COORDINATION ACTIVITIES AND RESPONSIBILITIES

- From 1/1/2009 to 31/12/2021, local responsible of DAMA experiment at INFN Roma division.
- In 2020-21, mentor in the INFN training course 2020/2021 *Progetto di Mentoring per ricercatrici/ricercatori e tecnologhe/tecnologi dell'INFN,* second edition.
- In 2020, member in a committee for two PhD thesis defenses in Astroparticle Physics at GSSI, Italy.
- In 2019 member of the evaluation committee for the assignment of a permanent technological researcher position at INFN-Lecce.
- In 2018, chair in a committee for a PhD thesis defense in Astroparticle Physics at GSSI, Italy.

- From 2015 to 2017, tutor of a Post-Doctoral fellow at INFN – Roma.
- In 2015 member of the CSN2 working group that drew up the formal guidelines for the commitments of research personnel in CSN2 experiments, and the formal guidelines for the formulations of the annual fund requests in CSN2.
- In 2014/15, tutor of an INFN Research Grant at INFN – Roma.
- From 2012 to 2014, tutor of a Post-Doctoral fellow at INFN – Roma.
- In 2014, member of the selection committee for *Premio Bruno Rossi* of INFN.
- From 2/12/2009 to 2/12/2011 chair of the evaluation committee for the assignment of Post-Doctoral Fellows at INFN Roma division.
- From 1/7/2011 to 30/6/2019 coordinator in INFN CSN2 (INFN National Scientific Committee for astroparticle physics) for INFN Roma division.
- In 2003 member of the evaluation committee for the assignment of a permanent technological researcher position at INFN-LNGS.
- From 1998 to 27/6/2010 GLIMOS (Group Leader In Matter Of Safety) of DAMA experiment at LNGS.

EDITORIAL ACTIVITIES AND BOOKS

- Since 2020, Editorial Board member of Symmetry (Physics and Symmetry Section) by MDPI, ISSN 2073-8994.
- In 2019, one of the authors of the book "*Catching Dark Matter Particles in Galactic Halo with DAMA\LIBRA*", Aracne ed., 2019, 200 pages, ISBN:978-88-255-2940-1.
- In 2016/2018, one of the writers and then member of the editorial board in CSN2 for the INFN-CSN2 Strategy document 2018: *Astroparticle Physics and Multi-Messenger Astrophysics*, March 2019, 80 pages.
- In March 2018, Guest Editor of the Special Issue on *Results and Developments in the Investigation of Rare Nuclear Decays and Processes*, Int. J. of Mod. Phys. A, vol. 33, 341 pages.
- In November 1995, editor with Prof. Bernabei, of the international workshop *The Dark Side of the Universe: experimental efforts and theoretical framework II* at INFN Roma Tor Vergata, World Scientific, 265 pages.

REFEREE ACTIVITIES

- Referee for international scientific journals (over time e.g. for Astroparticle Physics, Nuclear Inst. and Methods in Physics Research A, Advances in High Energy Physics, Symmetry, Universe, Physics, Crystals).
- Since 2020 in the panel of experts for the National Research Foundation of Ukraine (NRFU).
- Since 2015 in the panel of peer reviewers for Qatar National Research Fund (QNRF).
- In 2020, referee for a PhD thesis of GSSI (Italy).
- In 2019, referee of a scientific proposal submitted to the ERC Consolidator Grant Call.
- In 2016, referee for a PhD Thesis of IIT Kharagpur (India).
- 2015-2017 MIUR referee for the research evaluation: VQR-2011-2014.
- Since 2015 in the REPRISE panel (Register Expert Peer Reviewers for Italian Scientific Evaluation).
- In 2015, referee for Università degli Studi dell'Insubria - Italy (post-doctoral grant).
- 2011-2014 MIUR (Italian Ministry of Education, University and Research) referee for the research evaluation: VQR-2004-2010.
- In 2012, referee for Agence nationale de la recherche (ANR France - Young Researchers programme).
- From 2011 to 2019, referee in INFN CSN2 of the experiments (over time): GERDA, JUNO, MICRA, SUPREMO, MARE-RD, HOLMES, TRISTAN.

TEACHING ACTIVITIES

Teaching activities at Faculty of S.M.F.N., Università di Roma "La Sapienza":
In **A.Y. 1992/93, 1994/95, 1996/97, 1998/99, 2000/2001, 2002/2003** adjunct professor (course of Physics and Dosimetry of Radiation I) for the Specializing School of Health Physics.
In **A.Y. 1987/88, 1988/89, 1989/90, 1990/91, 1991/92, 1993/94, 1995/96, 1997/98, 1999/2000, 2001/2002, 2003/2004** a cycle of seminars in the course of Physics and Dosimetry of Radiation I, for the Specializing School of Health Physics.
In **A.Y. from 1986/87 to 1997/98** assistant for the course of Foundations of Nuclear Physics, Laurea degree course in Physics, Department of Physics.
In **A.Y. 1989/90, 1990/91** assistant for the course of General Physics, Laurea degree course in Physics, Department of Physics.
In **A.Y. 1992/93** assistant for the course of General Physics, Department of Informatics;
In **A.Y. 1994/95, 1996/97, 1999/2000** assistant for the course of Foundations of Nuclear and Subnuclear Physics, Department of Physics.
In **A.Y.** from **2004/2005** to **2007/2008** assistant for the course of Modern Physics, Department of Physics.
In **A.Y. 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2014/2015** collaboration and lectures in the course of Nuclear Physics, Department of Physics.
In **A.Y. 2014/2015, 2015/2016, 2016/2017 and 2017/2018** reviews on dark matter and astroparticle physics in the Astroparticle Physics course or in the Nuclear and Subnuclear Physics course.

Over time I have been invited to present seminars for students and PhD students in some Italian and foreigner Universities.

In **A.Y. 2007/2008** and **2013/2014**, cycle of lectures in the framework of *Progetto Alta Formazione* for fellowships PO FSE Abruzzo (Italy) 2000-2006 and 2007-2013.

INVITED SEMINARS AND WORKSHOP CONTRIBUTIONS

Over time I have presented many contributions and invited talks to international conferences and I have been invited to present seminars at Italian and foreigner Institution (more than 46 talks).

MAIN EXPERIMENTAL ACTIVITIES

My experimental research activity has been performed mainly in the field of Nuclear and Subnuclear Physics, being involved in developments of detectors, in the project and the construction of the apparata, in the data taking and in some aspects of their analysis.

- **From 1984 to 1989**: research activities in Nuclear physics at the Ladon photon beam at INFN Laboratori Nazionali di Frascati (photonuclear reactions on light nuclei: ^{2}H, ^{3}He, ^{4}He). The results of these measurements are still largely cited in literature, both in Nuclear and Astrophysics field.

- In **1989-1990** research activity at CERN for some initial tests on a silicon detector calorimeter later developed as part of the WIZARD project (antimatter search in the space).

- **From 1989 to 1992** research activity **in the experiment CTNAS (heavy ions physics), at the CEA/DAPNIA-DPhN beam of Saclay.** I worked in the part of the apparatus dedicated to photon detection, participating to the assembly, the commissioning and data taking and to some phases of the analysis to study the reaction ^{35}Cl + ^{64}Ni at 7.7 A MeV.

Technological research

- From **1988** to **1992**, I was promoter of a technological activity to develop liquid xenon detectors (XELIDON project, INFN CSN5 - Committee for Technological and inter-disciplinary research). I contributed to the project, to the construction and to the tests of the purification and cryogenic set-ups, of detectors and apparata, located at INFN Roma Tor Vergata and at LNGS. Later, the research has been focused on xenon used as pure scintillator and applied to dark matter and rare processes' investigation, and I contributed to all the set-ups and their upgrades (DAMA project).

- **In 1995** in the framework of the investigation on detectors able to detect rare events, I participated to some test measurements on GaAs detectors (MBE technique) at Università di Roma "Tor Vergata", EPIGAAS experiment (INFN CSN5).

- From **1989 up to now**. Development and test of crystal scintillators for direct dark matter and rare processes investigation, with studies on recrystallization processes, low temperature response and radio-purity. In particular, I have contributed to the selection of the materials necessary for the detectors and shieldings and to the development of all the prototypes, the R&D, the protocols, the measurement strategies that led to the highly radio-pure NaI(Tl) detectors used in the DAMA/NaI and DAMA/LIBRA apparata. As part of the study on possible dark matter signatures, I was among the proponents of the use of anisotropic crystal scintillators. Specifically, the development of $ZnWO_4$ detectors is currently underway to optimize their radio-purity and optical features (ADAMO project).

Dark Matter and rare process investigation

- **From 1989 up to now**. I was one of the proponents of the DAMA project, for which I have been working until now. DAMA (Roma Tor Vergata, Roma, LNGS, IHEP-Beijing) is an observatory to investigate the dark matter particle component in the galactic halo (exploiting the model independent annual modulation signature) and rare processes, such as solar axions, superdense nuclear states, tests on Pauli principle, charge conservation, double beta decay processes, rare nuclear decays etc. Moreover, many measurements on double beta decay and rare processes have been performed in the framework of INR(Kiev) – DAMA collaboration.
  The main experimental apparata developed are: DAMA/NaI, DAMA/LXe, DAMA/R&D, DAMA/LIBRA-phase1 and phase2, DAMA/Ge, DAMA/ARMONIA, DAMA/CRYS. In particular DAMA/NaI, DAMA/LIBRA-phase1 and phase2 model independent results, on the basis of the exploited signature, have given evidence at 13.7σ C.L. for an annual modulation that is consistent with the presence of dark matter particles in the galactic halo (more than 2 ton x yr exposure).
  Within these research activities I have contributed to develop and set on measurements at LNGS with very highly radio-pure scintillators. In particular, since the beginning of DAMA, I have been strongly involved in the development of all the ULB NaI(Tl) crystal scintillators used over time for dark matter investigation. I have contributed to all the R&D projects, to the choice of the best measurement and protocol strategies and to the development, design, assembling and tests of the detectors, to the data taking and to some aspects of the data analysis. In the framework of the investigation on dark matter signatures, I studied also the possibility to point out a "directionality" (expected only for candidates inducing nuclear recoils). I was promoter to consider anisotropic scintillators with such an aim and of ADAMO project.
  In the framework of rare process investigation, since the beginning, I have participated to campains of measurements with many highly radio-pure scintillators, also enriched with specific isotopes, and to measurements performed with HP-Ge detectors at the STELLA facility, at LNGS.
  Studies have been performed, some are planned and others are on going on ^{106}Cd, ^{116}Cd,^{113}Cd, ^{64}Zn, ^{40}Ca, ^{46}Ca, ^{48}Ca, W, Sr, ^{130}Ba and ^{132}Ba, ^{136}Xe, ^{134}Xe, ^{129}Xe, ^{136}Ce, ^{139}Ce, ^{142}Ce, Nd and other rare earths (Er,Yb, Sm, La, Dy), Hf, Os, ^{100}Mo, ^{190}Pt, etc.. In particular, many results and competitive limits have been obtained in the investigation of double beta decay, rare alpha and beta processes, development of experimental methods for

experiments on rare process, as documented in literature.

I have also contributed to the diffusion of all the scientific results presenting contributions to international conferences and seminars.

PAPERS

I am co-author of more than 300 publications on international reviews (the most with a few authors), of more than 100 papers on Proceedings volumes and of some didactic materials.