

Curriculum Vitae of Arturo Moleti

Born in Rome (Italy) 14/11/1961, Arturo Moleti, PhD, is currently Researcher at the Physics Dept. of the University of Roma "Tor Vergata". His research activity is dedicated to the experimental and theoretical physics of the auditory system.

1985: Graduated from Roma "La Sapienza" University.

1987: Specialization degree in Optics at the University of Florence.

1989-1994: Researcher at Frascati ENEA Laboratories, Physics of magnetically confined thermonuclear plasmas.

1991: PhD in General Physics from Roma "La Sapienza" University.

1994-: Researcher at University of Roma "Tor Vergata", initially in the Gravitational Wave Search (ROG) group.

1999-: Starts autonomous research activity in experimental and theoretical physiological acoustics (Otoacoustic Emissions (OAEs) and Cochlear Mechanics), which has eventually become his main scientific interest.

Abilitazione Scientifica Nazionale di Prima e Seconda Fascia SSD FIS/07, Macrosettore 02/D1

Abilitazione Scientifica Nazionale di Seconda Fascia SSD MED/32, Macrosettore 06/F3

Main Collaborations:

National: R. Sisto, INAIL Research, Monte Porzio Catone (Italy), A. Magrini, Occupational Medicine Dept., University of Roma Tor Vergata (Italy), G. Tognola, CNR, Milano (Italy);

International: C.A. Shera, USC, Los Angeles, CA (USA), S. Dhar, NWU, Evanston IL (USA), T. Trnovec, Slovak University Bratislava (Slovakia), V. Vencovsky, Prague University (Czech Rep.)

Main research results:

- Cochlear Mechanics: (localization of the OAE sources along the BM, study of the nonlinearity of the cochlear amplifier, analysis of the theoretical and experimental relation between OAE latency and frequency, and implications for objective estimates of cochlear tuning);
- Development of time-frequency analysis techniques: (for the estimate of OAE latency and for filtering different-latency OAE components associated with different generation mechanisms);
- Analysis of the OAE levels and latency in normal and hearing-impaired subjects, in adults and newborns;

- Comparison between ABR and OAE latencies and implications for the backward propagation mechanism of OAEs
- Evaluation of the sensitivity and specificity of OAE-based audiometric tests. Application of OAE tests to subjects exposed to noise at the workplace.
- Development of advanced data acquisition and analysis systems for DPOAEs, TEOEs and SFOAEs.
- Otoacoustic tests of the astronauts' hearing function performed on board the International Space Station.

Publications:

Author of over 140 papers, published **on peer-reviewed international journals** (approx. **110**, among them 32 J. Acoust Soc Am, 3 JARO, 2 Hear. Res., 3 Rev. Sci. Instr., 3 Phys. Rev. Lett, 8 Phys. Rev. D, 3 Phys. Lett. B, 19 Class. Quantum Gravity), as book chapters (2), and on the proceedings of international conferences.

Reviewer of JASA, JARO, Hearing Research, IJA, ORL and FPL.

Coordination of National Projects:

- 1) PI of Collaboration Italy-Slovakia 2009-2012 funded by Ministry of Foreign Affairs on effects on hearing of exposure to PCBs.
- 2) PI of Collaboration Italy-Japan 2013-2015 funded by Ministry of Foreign Affairs on hearing diagnostics using DPOAEs.
- 3) PI of the research project "Uncovering excellence 2014" of the University of Roma "Tor Vergata", on the use of advanced OAE tests in occupational medicine.
- 4) PI of BRiC 2016 research project funded by INAIL, dedicated to studying the effect of neurodegenerative pathologies and ototoxic drugs on human and animal hearing, using advanced otoacoustic techniques.
- 5) PI of AUDIO experiment funded by ASI, dedicated to the monitor of the astronauts' hearing function on board the ISS, using advanced otoacoustic techniques.

Coordination of local research units:

- 1) Head of the Research Unit of the Phys Dept. of the University of Roma "Tor Vergata", within a project on the early detection of hearing loss using OAEs, Progetto Finalizzato Ministero della Salute 2000.
- 2) Head of the Research Unit of the Phys Dept. of the University of Roma "Tor Vergata", within a PRIN 2000 project on the data analysis of resonant gravitational detectors.

3) Head of the Research Unit of the Phys Dept. of the University of Roma "Tor Vergata", within a project on the development of an objective diagnostic technique of hearing based on OAEs, Progetto Finalizzato Ministero della Salute 2009.

Roma. 22/9/2020

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