

WOLFANGO PLASTINO – Curriculum Vitae

Wolfgang Plastino, born in Catanzaro (Italy) on 1967, is Associate Professor of Physics at the Department of Mathematics and Physics of the University of Roma Tre and Research Scientist Associated of the Italian National Institute of Nuclear Physics (INFN). On 1991, he has graduated from the University of Rome "La Sapienza" with Laurea Degree in Physics. He spent most of his professional life working on Environmental Radioactivity for Earth and Environmental Physics at INFN-Gran Sasso National Laboratory (INFN-LNGS).

From 1992 to 1993 he served in the Italian Navy General Staff, and from 1994 to 1995 he joined Italian High School as Professor of Mathematics and Physics.

From 1996 to 2000 he was Research Scientist at the Department of Physics of the University of Roma Tre (PHYS-RM3). In that period he was Scientific Coordinator for Environmental Radioactivity and Radiodating research project of PHYS-RM3 at INFN-LNGS.

From 2001 to 2006 he was Assistant Professor of Experimental Physics at PHYS-RM3.

In that period he published as his most important scientific result the extension of the maximum dating limit for Radiocarbon from 58,000 BP to 62,000 BP by ultra-low level background liquid scintillation spectrometry at INFN-LNGS. Actually, it is the worldwide best result.

From 2001 to 2002 he was INFN Scientific Coordinator of the experiment HIRESPER (High RESolution SPectrometry for Environmental Radioactivity) developing a new portable alpha and gamma-ray spectrometer with YAP:Ce scintillator for environmental radioactivity monitoring in extreme conditions, those found in geothermal, volcanic and oceanic areas.

From 2002 to 2008 he was Italian scientific delegate at the Preparatory Commission of the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO) – United Nations Vienna, as expert of radiometric surveys and environmental sampling for On-Site Inspection (OSI). He was CTBTO Lecturer for OSI Courses and Sub-Team Leader CTBTO on radiometric surveys and environmental sampling at the Direct Exercise 2005 at the Semipalatinsk Nuclear Test Site (Kazakhstan).

From 2003 he is INFN Scientific Coordinator of the experiment ERMES (Environmental Radioactivity Monitoring for Earth Sciences) focusing his research activity on neutron flux background at INFN-LNGS, uranium groundwater monitoring and extensional tectonic settings, atmospheric transport modelling, hydrological and hydrogeological modelling. On 2009, for the first time worldwide he detected at INFN-LNGS uranium groundwater anomalies in deep underground cold water related to geodynamical processes in a subduction area.

From 2006 he is Associate Professor of Applied Physics, Member of the Scientific Board of the PhD in Physics – PHYS-RM3.

From 2011 he is Member of the INFN Scientific Committee – Technology Research.

He was spokesperson of several research projects on Environmental Radioactivity for Earth and Environmental Physics in The Seventh Framework Programme (FP7) project ILIAS (Integrated Large Infrastructures for Astroparticle Science): [BACLIS (Background Characterisation for LIquid Scintillation Spectrometry at underground laboratory of Gran Sasso) – 2006; TRIGLISS (Ultra low level detection of TRitium Groundwater samples for LIquid Scintillation Spectrometry at underground laboratory of Gran Sasso) – 2007; RARBACLIS (RADon Removal and BACKground Characterisation for LIquid Scintillation Spectrometry at Gran Sasso National Laboratory) – 2007; GRAMOF (Groundwater Radon Monitoring through Overthrust Fault) - 2008; ULLT (Ultra Low Level Tritium detection by liquid scintillation spectrometry at Gran Sasso National Laboratory) – 2008], in collaboration with several international research institutes, universities and companies [Geological Survey of Israel, Weizmann Institute of Science (Israel); PerkinElmer Life and Analytical Sciences-Wallac Oy (Finland); University of Duisburg – Essen (Germany); National Institute of Research-Development for Isotopic and Molecular

Technologies (Romania); Hellenic Center for Marine Research – Institute of Oceanography (Greece); AMETEK-ORTEC (USA); Comenius University (Slovakia); AGH University (Poland); University of Sheffield (United Kingdom); University of Hamburg (Germany), etc.].

From 2011 he is Scientific Coordinator of a project with CTBTO for testing and evaluation of algorithms and datasets in support of the verification mission of CTBTO on event screening categorization for International Monitoring System (IMS) radionuclides and International Noble Gas Experiment (INGE) data, and for characterization of subsoil and groundwater fluid dynamics by radionuclides tracers for OSI scenarios.

Actually he is involved in scientific collaboration with International Centre for Theoretical Physics - Structure and Non-Linear Dynamics of the Earth (ICTP-SAND) for geodynamic modelling of subduction areas by Actinides measurements in groundwater, and environmental radioactivity monitoring complementary to geophysical, petrological interpretation of the structure of the crust and upper mantle for a multiscale modelling of the dynamics of earthquake's faulting behaviour and constrain of crustal and upper mantle viscosity profiles.

He is INFN Scientific Coordinator of research activities with International Atomic Energy Agency-Environment Laboratories (IAEA-EL) and European Commission Joint Research Centre-Institute for Transuranium Elements (EC JRC-ITU) on environmental behaviour of radioactive particles; low-level counting of environmental samples and characterization of reference materials, including methodological and technological developments; nuclear metrological techniques in the field of neutron measurements; analytical techniques in the field of radiochemistry.

He is PHYS-RM3 Scientific Coordinator of research activities with Australian Radiation Protection and Nuclear Safety Agency-Environmental and Public Health on radionuclides atmospheric transport modelling by using atmospheric fields supplied by the European Centre for Medium-Range Weather Forecasts to the calculation of the source-receptor sensitivity fields.

He was Chairman of the International Conference INFN-IAEA on Environmental Radioactivity-New Frontiers and Developments (25-27 October 2010, Accademia Nazionale dei Lincei, Rome-Italy). He was Editor of a Special Issue and Special Book on Environmental Radioactivity-New Frontiers and Developments published by Journal of Environmental Radioactivity and Italian Physical Society & European Physical Society, respectively.

He was Invited Speaker (about 40) and Chairman of Session (more than 5) in several international and national scientific Conferences, and Universities.

He is Member of the Editorial Board of Environmental Earth Sciences - Springer and referee for international scientific journals on Environmental Radioactivity and Earth and Environmental Physics with higher impact factors.

He is coauthor of more than 70 publications on international and national peer-reviewed scientific journals.

He is Professor at PHYS-RM3 for Courses in Physics, Environmental Radioactivity, and Environmental Physics.

He is Member of the European Academy of Sciences and Arts (Class VI - Technical and Environmental Sciences).

He is Principal Investigator at the INFN-LNGS of the research project ERMES-WORLD (Environmental Radioactivity Monitoring for Earth Sciences-World Reference Laboratory and new Developments), funded 3.5 MEuro by Italian Ministry of Education, University and Research, in collaboration with IAEA-UN (International Atomic Energy Agency-United Nations) and several worldwide scientific institutions (Comprehensive Nuclear Test Ban Treaty Organization, United Nations; Lawrence Berkeley National Laboratory, USA; University of Oxford, United Kingdom; Australian Radiation Protection and Nuclear Safety Agency, Australia; Japan Meteorological Agency, Japan; etc.).