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Prof. Wolfgang Plastino  
*Professor of Applied Physics*

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To Whom It May Concern

### **Curriculum Vitae**

#### **Wolfgang Plastino**

**- Roma Tre University**

*Professor of Applied Physics*

*Member of the Scientific Committee of the Research Executive Agency*

**- International Atomic Energy Agency, Vienna-United Nations**

*Member of the Standing Advisory Group on Technical Assistance and Cooperation*

**- European Academy of Sciences and Arts, Salzburg-Austria**

*Member of the Class VI - Technical and Environmental Sciences*

**- Accademia Nazionale dei Lincei, Rome-Italy**

*Scientific Secretary of the Working Group on International Security and Arms Control*

*Scientific Secretary of the Edoardo Amaldi Conferences and Edoardo Amaldi Lectures*

**- École Polytechnique Fédérale de Lausanne, Lausanne-Switzerland**

*Associate Editor of the Journal of Frontiers in Physics - Interdisciplinary Physics*

**- Permanent Mission of the Holy See, Vienna-United Nations**

*Scientific Adviser to the International Atomic Energy Agency and to the*

*Comprehensive Nuclear-Test-Ban Treaty Organization*

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Wolfgang Plastino is Professor of Applied Physics at the Department of Mathematics and Physics of the Roma Tre University (MATHPHYS-RM3) and Senior Researcher at the National Institute for Nuclear Physics (INFN). In 1991, he has graduated from the La Sapienza University

of Rome 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 2001 he was Research Scientist at the Department of Physics of the Roma Tre University (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 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 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 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 to 2015 INFN he was 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.

From 2006 to 2012 he was Associate Professor of Applied Physics at PHYS-RM3. From 2013 to 2018 he was Associate Professor of Applied Physics at MATHPHYS-RM3. In that period he published as his most important scientific result the first worldwide evidence of uranium anomalies in deep underground water related to geodynamical processes in a subduction area.

From 2006 to 2012 he was Member of the Scientific Board of the PhD in Physics – PHYS-RM3. From 2013 to 2018 he was Member of the Scientific Board of the PhD in Physics – MATHPHYSRM3.

From 2011 to 2015 he was Member of the INFN Scientific Committee – Technology Research.

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.

From 2018 he is Professor of Applied Physics at MATHPHYS-RM3.

From 2019 he is Member of the Scientific Board of the PhD in Mechanical and Industrial Engineering - Department of Engineering of the Roma Tre University (ENG-RM3).

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).

He was MATHPHYS-RM3 Scientific Coordinator 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 INFN-RM3 Scientific Coordinator of research activities with European Gravitational Observatory-Virgo (EGO-Virgo) and Laser Interferometer Gravitational-Wave Observatory (LIGO) on new methodologies for characterizing the environmental noise and newtonian gravitational noise, and for developing new algorithms and tools for time series analysis.

He is MATHPHYS-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 (International Atomic Energy Agency - United Nations Vienna) 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 Scientific Secretary of the XIX Edoardo Amaldi Conference (Accademia Nazionale dei Lincei and European Commission Joint Research Centre) on International Cooperation for Enhancing Nuclear Safety, Security, Safeguards and Non-proliferation (30-31 March 2015, Accademia Nazionale dei Lincei, Rome-Italy). He was Editor of the Proceedings of the XIX Edoardo Amaldi Conference published by Springer.

He was Scientific Secretary of the I Edoardo Amaldi Lecture (Accademia Nazionale dei Lincei and European Commission Joint Research Centre) on International Cooperation for Enhancing Nuclear Safety, Security, Safeguards and Non-proliferation (26 October 2016, European Commission Berlaymont, Bruxelles-Belgium).

He was Scientific Secretary of the XX Edoardo Amaldi Conference (Accademia Nazionale dei Lincei and European Commission Joint Research Centre) on International Cooperation for Enhancing Nuclear Safety, Security, Safeguards and Non-proliferation - 60 Years of IAEA Atoms for Peace and Development, and the EURATOM Treaty (9-10 October 2017, Accademia Nazionale dei Lincei, Rome-Italy). He was Editor of the Proceedings of the XX Edoardo Amaldi Conference published by Springer.

He was Scientific Secretary of the II Edoardo Amaldi Lecture (Accademia Nazionale dei Lincei and Comprehensive Nuclear-Test-Ban Treaty Organization) on International Cooperation for Enhancing Nuclear Safety, Security, Safeguards and Non-proliferation (15 October 2018, United Nations, Vienna-Austria).

He was Invited Speaker (about 40) and Chairman in several international and national scientific Conferences, and Universities.

He was Member of the Editorial Board of Environmental Earth Sciences – Springer (Berlin, Germany). He is Associate Editor of Journal of Frontiers in Physics – Interdisciplinary Physics (École Polytechnique Fédérale de Lausanne, Switzerland). He is referee for international scientific journals on Environmental Radioactivity and Earth and Environmental Physics with higher impact factors.

He is coauthor of more than 100 publications on international and national peer-reviewed scientific journals.

He is Professor at MATHPHYS-RM3 for Courses in Physics and Fundamentals of Earth and Environmental Physics, and at ENG-RM3 for Course in Applied Statistics.

He is Member of the International Atomic Energy Agency - Standing Advisory Group on Technical Assistance and Cooperation, Vienna-United Nations.

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

He is Scientific Secretary of the Working Group on International Security and Arms Control of the Accademia Nazionale dei Lincei, Rome-Italy.

He is Scientific Secretary of the Edoardo Amaldi Conferences and Edoardo Amaldi Lectures of the Accademia Nazionale dei Lincei, Rome-Italy.

He is Scientific Adviser of the Permanent Mission of the Holy See to the International Atomic Energy Agency and to the Comprehensive Nuclear-Test-Ban Treaty Organization, Vienna-United Nations.