



GIULIANO F. PANZA

***OLIM* Professor of Seismology - University of Trieste, Italy**
**Head of SAND group at the Abdus Salam International Centre for
Theoretical Physics**
Emeritus Honorary Professor CEA Beijing
**Honorary professor Beijing University of Civil Engineering and
Architecture (BUCEA)**

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Scopus Author ID 7005935881

EDUCATION AND ACADEMIC EXPERIENCE

Born: Faenza (Ravenna-Italy) 27/4/1945

Maturita' Classica Liceo M.Minghetti Bologna (Italy) 1963

Laurea in Fisica University of Bologna (Italy) 1967

Post Doc University of Bologna (Italy) 1968-1970

Visiting post Doc University of Uppsala (Sweden) 1969

Assistant Professor University of Bari (Italy) 1970-1980

Post Doc Fellow University of California Los Angeles (USA) 1971/1974

Associate Professor University of Bari (Italy) 1973-1980

Associate Professor University della Calabria Cosenza (Italy) 1975-1977

Visiting Professor Polytechnic of Zurich (Switzerland) 1977

Prof. Geophysical Prospecting University of Trieste (Italy) 1980-1988

Professor of Seismology University of Trieste (Italy) 1988-2015

Lecturer Diploma Course in Earth System Physics at ICTP, 2006-2015

Organizer and lecturer Lezioni Lincee di Fisica at UNITS, 2007-2015

Other appointments:

Chairman School of Geology University Trieste 1983-1986

Professor of the PhD courses Trieste University 1984-2015

Director Istituto di Geodesia e Geofisica University Trieste 1985-1991

Adjunct Prof. Centro Int. de Ciencias de la Tierra Colima (Mexico) 1991-1993

Consultant Abdus Salam Int. Center for Theoretical Physics (ICTP) Trieste 1989-2015

Co-Founder and Head of Group Structure and non-linear dynamics of the Earth (ICTP) Trieste 1991-2015

Chairman of Beno Gutenberg medal committee dell'EGU/EGS, 2001-2008
Scientific Council of the PhD school in Scienze della Terra, Padova university 2005-2011
Italian Geological Committee 2005-2008
Italian co-ordinator for the Project Metodologie avanzate in campo geofisico e geodinamico (Dottorato) in partnership with China Earthquake Administration and Chinese Academy of Sciences for the Internazionalizzazione del sistema universitario italiano 2005-2009
Member commission Prize SGI 2007.
Delegate of Accademia nazionale dei Lincei in the Comitato Tecnico-Scientifico dell'Anno Internazionale del Pianeta Terra (2007-2009)
Lecturer: Lezioni Lincee in Fisica at University of Trieste (2007-2015)
Board of Directors INOGS – Trieste 2009-2011
Lectio Magistralis at the opening ceremony of the Academic year 2009-2010 of Trieste university, at the presence of the President of the Chamber of Deputies.

TEACHING

22 research students awarded Ph.D.'s; 26 postdoctoral scholars from 15 countries; 3 PhD awarded at Institut of Geophysics – China Earthquake Administration e Institute of Geology and Geophysics - China Academy of Sciences, 1 PhD awarded at IIEES – Teheran, 1 PhD awarded at Mansoura University Faculty of Science Geology Department, Egypt. Supervisor of 29 post-docs from 15 different Countries with numerous publications in peer reviewed journals.

HONORS

Prize *Ettore Cardani*, Università di Torino 1968; *Fulbright* Fellow 1970; *Premio Linceo* Accademia Nazionale dei Lincei Roma 1990; *Beno Gutenberg medal* from the European Geophysical Society, for outstanding contributions to Seismology, 2000; *Doctor Honoris Causa* in Physics from University of Bucharest – Romania, 2002; *Onorary* Fellow Fondazione Internazionale Trieste per il progresso e la liberta' delle scienze, 2004; *CEI Medal of Honour* for eminent services to the organization and the demonstrated highly qualified scientific work performed by the Earth Sciences Committee of the Central European Initiative (CEI), 2004; *Honorary Professor* Institute of Geophysics, China Earthquake Administration, 2005; Commemorative Medal from the Vietnam Academy of Science and Technology, 2009; NRIAG Medal of Honor, 2014; 5th Class/Knight (Cavaliere Ordine al Merito della Repubblica Italiana) 2015; *Honorary Professor* Beijing University of Civil Engineering and Architecture (BUCEA) 2018; 2018 AGU International Award winner.

MEMBERSHIP OF ACADEMIES

Accademia Nazionale Lincei, Italy 1987-; Academia Europaea, 1990-; The Academy of Sciences for the Developing World 1997-; Russian Academy of Sciences, 2003-; Accademia Nazionale delle Scienze detta dei XL, 2004.

SERVICES

Council member: European Geophysical Society 1982-1986; European Union of Geosciences 1983-1994;
Vice President European Union of Geosciences 1991-1994
Chairman UNESCO-IUGS-IGCP project “Realistic modeling of seismic input for Megacities and large urban areas” 1997-2001.

Project leader NATO SfP project “Impact of Vrancea earthquakes on the security of Bucharest and other adjacent urban areas” 2000-2004.
External expert for IAEA under Technical Cooperation Program (2003)
2001-2008 Chairman of EGU Beno Gutenberg medal Committee
Since 1991 President of the EARTH SCIENCE COMMITTEE of the CEI WORKING GROUP SCIENCE AND TECHNOLOGY
Member of Italian Comitato Geologico since 2005.
Member of Scientific Council Centro di studi e ricerche di sismologia applicata dinamica strutturale – Univ Brescia since 2006
Member Board of Directors Istituto Nazionale di Oceanografia e Geofisica Sperimentale 2009-2011.
President Commission for the Evaluation of Research (CVR) University of Trieste, 2010-2012
President of the Italian National Committee to IUGG since 2011
Member Italian Commission for the participation of CNR to ICSU since 2011
President Commission Abilitazione Scientifica Nazionale – MIUR - Competition Sector: 04/A4 – Geophysics 2012-2014.
Member Comitato di Selezione PRIN (Sector ERC PE) 2013.
Referee for PRIN and other MIUR projects since many years
Referee for proposals submitted to Czech Science Foundation since 2007
Referee for proposals submitted to Research Council of Norway since 2002
Referee for proposals submitted to Romanian National University Research Council since 2008
Referee for proposals submitted to Ministry of Education, Youth and Science of Bulgaria since 2010

MEMBERSHIP OF ASSOCIATIONS

Royal Astronomical Society, London 1983-; American Geophysical Union (life time); Seismological Society of America 1986; European Geophysical Society (life time); Lions Club, Trieste Miramar 1992-; **Funding memembr** of the *International ASSociation for Seismic Isolation and energy disSIpation (ASSISi)*, 2001; honorary member (*ASSISi*) 2008; *honorary member of GLIS*

ADVISORY BOARDS

Board of Governors Universita' di Trieste 1987-1989;
Scientific Board: Gruppo Nazionale per la Difesa dai Terremoti 1993-1997; Istituto Nazionale di Oceanografia e Geofisica Sperimentale 1993-; Environment and large disasters commission of Accademia nazionale dei Lincei 1993-; Large risks commission, Ministry of Emergency Relief 1994-1995; European Advisory Evaluation Committee for Earthquake Prediction Council of Europe 1993-1999
Editorial Boards: TERRA Nova 1990-1996; Revista de Geofisica 1990-; Acta Geod. Geophys. Hungarica 1994-; Engineering Geology 2007-; The African Physical Review 2007-2018; *Associate Editor* Rendiconti Lincei 2008-; *Editor-in-Chief* Earth Sciences Review 1997-2018; *Editor* Pure and Applied Geophysics 1997-2004; *Editor* Bollettino di Geofisica Teorica ed Applicata 1998-; *Associate Editor* Journal of Seismology and Earthquake Engineering 2001-; *Advisory Editorial Board* of Journal of theoretical and applied Mechanics 2015-; *Board member* of Vietnam Journal of Earth Sciences 2016-

TECNOLOGICAL TRANSFER

- 2005- Responsible for ICTP of the agreement with Protezione Civile Regionale FVG for the “*Sviluppo e l’aggiornamento di carte di pericolosità sismica dipendenti dal tempo*”
- 2011 *Audizione* in the framework of risoluzioni n. 7-00409 Alessandri e n. 7-00414 Benamati in materia di isolamento sismico delle costruzioni civili e industriali presso Commissione Ambiente, territorio e lavori pubblici della Camera dei Deputati
- 2012 *Audizione* in the framework of the Indagine conoscitiva sullo stato della sicurezza sismica in Italia presso Commissione Ambiente, territorio e lavori pubblici della Camera dei Deputati

PUBLICATIONS

Author and coauthor of more than 880 scientific papers (<https://scholar.google.com/citations?user=4xYfwbIAAAAJ&hl=en>); Co-Author, Editor and Co-editor of 12 books. h-index (Scopus 2019) 43; above 90th percentile of area 04 among italian full professors; 9th as h-index; 4th as citations; first as total number of publications (source Scopus). According to Science Watch Special Topics analysis on earthquake research over the past decade, the work of Dr. Giuliano F. Panza ranks at #4 by papers, based on 74 papers cited a total of 434 times. In the [Web of Science](#)[®] from [Thomson Reuters](#), Dr. Panza's record includes 109 original articles, reviews, and proceedings papers, cited 715 times between January 1, 2000 and May 6, 2010. H-factor (2016 Scopus)=37. ResearchGate score higher than 97.5% of ResearchGate members (January 2017)

FIELDS OF EXPERTISE

elastic wave propagation, interior structure of the earth, plate tectonics, earthquake prediction, active tectonics, seismic microzonation of urban settlements and seismic hazard, volcano seismology. In June 2010 SCIENCEWATCH.COM writes: GIULIANO PANZA ON EARTHQUAKE PREDICTION AND RISK According to our Special Topics analysis on earthquake research over the past decade, the work of Dr. Giuliano F. Panza ranks at #4 by papers, based on 74 papers cited a total of 434 times. In the *Web of Science*[®] from Thomson Reuters, Dr. Panza's record includes 109 original articles, reviews, and proceedings papers, cited 715 times between January 1, 2000 and May 6, 2010.

REFERENCE LISTINGS

Who's Who in the World; Who's Who in Italy; Who's Who in Science and Engineering; Dictionary of International Biography

ADDRESS

Olim: Dipartimento di Matematica e Geoscienze - Università' di Trieste, Via Weiss, 4 – 34127 Trieste (Italy);
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Basic information.

The scientific activity of Prof. Giuliano Francesco Panza is marked by the **broad multidisciplinary nature of the problems considered**: integrated analysis of structure and dynamics of the lithosphere-asthenosphere system; integrated approach to modelling of the seismic waves in the near-field and far-field; earthquake-prone lineaments and premonitory seismicity patterns. A wide range of **sofisticated theoretical methods and models was developed** in these studies: the advanced methodology for seismogram synthesis; inversion; pattern recognition.

The definite sign of excellence is the **extension of the results to applications without sacrifice of scientific level** of the study. The applications concern strong seismic motion, reduction of seismic and volcanic risk. Prof. Panza, who received, in 2000, **the Beno Gutenberg medal by the European Union of Geosciences** for outstanding contributions to Seismology, is presently no doubt the strongest Italian seismologist. He is dedicated and successful leader of several international projects, most spectacular one (completed in 2003) - **Realistic Modelling of Seismic Input for Megacities and Large Urban Areas supported by UNESCO-IUGS-IGCP** - involved more than 100 scientists, distributed in more than 25 centers, several of them located in CEI countries.

He has been coordinating, for the CEI University network, Seminars and stages on *“Earth and Environmental Physics: Geodynamical Model of Central Europe for Safe Development of Ground Transportation Systems”*, at the Department of Earth Sciences of the University of Trieste and at The Abdus Salam International Center for Theoretical Physics. This activity represented a natural extension of the project “Lithospheric studies of the Periadriatic domain and the geodynamics of the Circum-Pannonian belt”, launched in 2001 by the CEI’s Committee on Earth Sciences. CEI activity continues now in the frame work of CERES-ICTP fellowship.

To improve, as much as possible, from a statistical point of view, the assessment of seismic hazard, in co-operation with scientists from IIEPT of the Moscow Russian Academy of sciences proposed the **use at variable scale of the fractal Gutenberg-Richter relation**. This result has deep implications in the development of the intermediate-term middle-range earthquake prediction methods, done, again, in co-operation with scientists of IIEPT, Moscow. With the Seismology Group of Dipartimento di Scienze della Terra dell'Universita' di Trieste and with the SAND group of the Abdus Salam International Centre for Theoretical Physics (ICTP), he supervises, has developed a very powerful theoretical-numerical tool for the **computation of complete synthetic seismograms** that is at the base of his methodology for the **neodeterministic assessment of seismic hazard (NDSHA)**, currently applied in several large urban centres and megacities. Recently, in cooperation with ASI, the Italian space agency, the simultaneous use of the neodeterministic approach for the ground motion estimation, of the monitoring of the space-time variation of hazard, and of the Earth observation data, lead to the construction of **time-dependent hazard models** based on strong geophysical ground, that have generated particular interest at **Civil Defence** level. Recent studies have evidenced the relevant role of CO₂ Earth mantle degassing in the exosphere.