



Curriculum Vitae

Filippos Vallianatos

*Professor of Geophysics & Seismology
TECHNOLOGICAL EDUCATIONAL INSTITUTE of CRETE
Visiting Professor, Institute for Risk & Disaster Reduction, UCL, UK
Director of the UNESCO Chair on
Solid Earth Physics and Geohazards Risk Reduction
Technological Educational Institute of Crete, Greece*

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Curriculum Vitae of Prof. Dr. Filippos Vallianatos



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Holder of the UNESCO Chair "Solid Earth Physics and Geohazards Risk Reduction", (since 11/2015)

1. PERSONAL DATA and SUMMARY

Name : Filippos Vallianatos
Date of Birth : 27 November 1963
Place of Birth : Athens - Greece
Nationality : Greek

Mailing address :

TECHNOLOGICAL EDUCATIONAL INSTITUTE of CRETE
3 Romanou Str., Chalepa , Chania 73133 CRETE GREECE
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PRESENT POSITION

Professor of Geophysics & Seismology
TECHNOLOGICAL EDUCATIONAL INSTITUTE of CRETE
School of Environment & Natural Resources Engineering
Head of the Laboratory of Geophysics & Seismology
3 Romanou Str., Chalepa , Chania 73133 CRETE GREECE

Summary

My recent research aim has been to investigate Solid Earth physics, approaching it using the principles of Geophysics and Seismology involved in the dynamics of the Earth's crust and by studying the fundamental mechanics of earth processes & geohazards from rock physics to geodynamic scale. Working in inter-disciplinary teams, the scientific methodology and approach I have employed is a holistic theoretical and experimental Earth Physics study, integrating methodologies from fracture to earthquake physics and seismicity. This is a novel approach, which integrates the disciplines of rock physics and Solid Earth Physics using modern techniques of modeling and complexity theory to identify and recognize instabilities in complex seismogenic environments using applied geophysics and seismology observational methodologies. Laboratory experiments are important in the Solid Earth physics since it is only in the laboratory that environmental and engineering conditions can be independently, systematically varied and monitored, in order to understand the nature of the involved effects and their laws and in such a way to compare with observations in crustal scale.

Over the years I have built in the Laboratory of Geophysics & Seismology of the Technological Educational Institute, the South Aegean Seismological Network {HSNC}, the Applied Geophysics unit and the Rock Physics unit underpinned by substantial infrastructure grants, from national and mainly EU funds. I have worked collaboratively with colleagues modeling rock and earth processes in the University of Basilicata, in CNR and INGV [Italy], in Greek and UK Universities.

I received my PhD in Solid Earth Physics- University of Athens, Physics Department [1990], BSc in Physics, with Honors, University of Athens, Physics Department [1985]. I was Postdoctoral researcher, Department of Solid Earth Physics, University of Uppsala, with a scholarship offered from the "Swedish Institute, (1989-1990). My recent activity includes a **Visiting Professorship [2012-2017] and a Senior Research Fellowship, (2009-2011) University College London, a Teaching lecturership in Brunel University (2009-2010), an Invited Distinguished Research Fellowship, Istituto Nazionale di Geofisica e Vulcanologia [INGV], Italy, (2007-2008).** I served as **Visiting Professor of Geophysics-Physics of the Earth Interior, University of Crete, Department of Physics.** I was Research Fellow, Geodynamic Institute, National Observatory of Athens, and Visiting Ass./Asc. Professor, Technical University of Crete [1992-1998].

I am an UNESCO Chair holder in "Solid Earth Physics and Geohazards Risk Reduction" (2014). Recently I was appointed as Associate Editor of Acta Geophysica (2015).

2. ACADEMIC QUALIFICATIONS & ACTIVITY

EDUCATION

Postdoctoral researcher, Department of Solid Earth Physics, University of Uppsala (1989-1990)

PhD in Solid Earth Physics. University of Athens, Physics Department [1990].

BSc in Physics. With Honours, [9.24/10], University of Athens, Physics Department [1985]

EMPLOYMENT

Professor of Geophysics & Seismology, Technological Educational Institute of Crete, 2005 to present
University of Basilicata, Department of Science, Lecturing the Seismotectonic class in Laurea Magistrale in Geosciences and Georesources (2016)

UCL Visiting Professor, Institute for Risk and Disaster Reduction , 2012-2017

Marie Curie (IEF) Senior Research Fellow, University College London, 2009-2011.

Visiting Lecturer, Brunel University, Dept. of Civil Engineering, London, 2009-2010.

Director of Research, Institute of Natural Resources and Natural Disasters, Center of Technological Research- Crete, 2005 to present

Invited Senior Research Fellow, Istituto Nazionale di Geofisica e Vulcanologia [INGV], Italy, 2007-2008

Visiting Professor in Geophysics, Dept of Geography & Earth Science, Brunel University, 2006-2007.

Visiting Professor of Geophysics-Physics of the Earth Interior, University of Crete, Dept. of Physics, 2002 –09.

Asc./Ass Professor Technological Educational Institute of Crete, Asc. Professor, 1998-2005

Research Fellow, : Geodynamic Institute, National Observatory of Athens, 1995-1997

Visiting Ass./Asc. Professor, Technical University of Crete, 1992-1998

Postdoctoral researcher, Department of Solid Earth Physics, University of Uppsala, with a scholarship offered from the "Swedish Institute, 1989-1990.

Researcher in Solid Earth Physics-Geophysics. University of Athens, Physics Department., 1985-1989.

AWARDS & SCHOLARSHIPS

a) National Award in mathematics (Greek Mathematical Society).

b) Grant from the "National Council ".

c) Scholarship offered from the University of Athens, as a research assistant.

d) Scholarship offered from the "Swedish Institute" for postdoctoral research in the Department of Solid Earth Physics, University of Uppsala (1989 -1990).

e) Marie Curie (IEF) Senior Research Fellow, University College London, 2009-2011

f) UNESCO Chair holder in "Solid Earth Physics and Geohazards Risk Reduction" (2014).

RESEARCH SEMINARS & CONFERENCES

- a) I attended, having obtained a grant from the International Centre for Theoretical Physics (I.C.T.P), the following schools, organised by the I.C.T.P in Trieste,Italy:
- 1) "Spring College on Geomagnetism and Aeronomy", (1987)
 - 2) "2nd School on Advances Techniques in computational Physics",(1988)
 - 3) "Workshop on Global Geophysical Informatics "(1988)
 - 4) Earthquake prediction, (2007)
- b) I participated in the following congresses:
- 1) "First European School on Earthquake Physics" (Athens-Greece,1988)
 - 2) "4th Congress of the Geological Society of Greece"(Athens, 1988)
 - 3) "First symposium on the recent trends in Seismology and Geophysics in Greece " (Thessaloniki - Greece, 1988).
 - 4) "1st Congress of Hellenic Geophysical Union", (Athens-Greece, 1989).
 - 5) "6th Congress of the Geological Society of Greece with emphasis on the Geology of the Aegean" (Athens-Greece, 1992).
 - 6) "International Workshop on Global Positioning Systems in Geosciences", (Chania, Crete- Greece,1992)
 - 7) "VIII Greek Congress in Solid State Physics", (Ioannina-Greece,1992)
 - 8) "International Geophysical Workshop on rock Physical properties. From Laboratory results to Field Applications", (Florence-Italy,1992)
 - 9) "2nd Congress of Hellenic Geophysical Union", (Florina-Greece,1993)
 - 10) "1st Hellenic Congress in non-linear systems", (Patra-Greece, 1993)
 - 11) "2nd Hellenic Congress in non-linear systems", (Xanthi-Greece, 1994)
 - 12) "XXIV General Assembly of European Seismological Commission", (Athens,1994)
 - 13) "International workshop: Magnetic, Electric and Electromagnetic methods in seismology and volcanology", (Positano, Italy, 1995).
 - 14) " A Discussion meeting on: Assesment of schemes for earthquake prediction" (RAS - London, UK, 1996)
 - 15) XXII General Assembly of the EGS, (Vienna, 1997)
 - 16) Marine Electromagnetism, MARELEC97, (Dept. of Electrical & Electronic Engineering, Imperial College of Science, Technology & Medicine, 1997)
 - 17) 29th General Assembly of IASPEI, (Thessaloniki 1997)
 - 18) 7th International Conference on Natural and Man-made Hazards , HAZARDS98, (Chania 1998)
 - 19) 22nd International Conference on Mathematical Geophysics, (Cambridge, 1998)
 - 20) 8th International Congress of the Geological Society of Greece, (Patras, 1998)
 - 21) XXIV General Assembly of the EGS, Hague, 1999
 - 22) 2nd International Workshop: Magnetic, electric and electromagnetic methods in Seismology and Geophysics (Chania, 1999)
 - 23) VIII Workshop on Geoelectromagnetism (Maratea, Italy, 2000)
 - 24) 3rd International Conference on Seismoelectromagnetism, (Tokyo, Japan, 2000)
 - 25) General Assembly of the EGS, Nice, 2001,
 - 26) Asian-Pacific Radio Science Conference, (Tokyo, Japan, 2001).
 - 27) General Assembly of the EGS, 2002
 - 28) 3rd International Workshop: Magnetic, electric and electromagnetic methods in Seismology and Geophysics (Moscow 2002)
 - 29) General Assembly of the EGS, 2003
 - 30) General Assembly of the EGS, 2004
 - 31) Advances in Mineral Resources Management & Environmental Geotechnology (2004)
 - 32) 2nd Inter. Conference of WSEAS on Engineering Education, 2005.
 - 33) International Workshop in Geoenvironment and Geotechnics, 2005.
 - 34) 23rd UNESCO Workshop for the *Seismicity and Earthquake Engineering in the Extended Mediterranean Region, 2005*
 - 35) General Assembly of the EGU, 2006
 - 36) European Conference on Earthquake Engineering & Seismology, Geneva, 2006
 - 37) International Workshop "Magnetic, electric and electromagnetic methods in Seismology and Geophysics", Catania 2006

- 38) Ground Shaking Propabilities, Erice, Italy 2006
 - 39) 2nd WSEAS Conference on Environment, Venice , 2006.
 - 40) Statistical Seismology, Erice, Italy 2007
 - 41) General Assembly of the EGU, 2007
 - 42) Non linear dynamics and earthquake prediction, ICTP, Trieste, 2007
 - 43) 2nd WSEAS Conference on Seismology, Cambridge , UK, 2008
 - 44) General Assembly of the EGU, 2008
 - 45) 3rd WSEAS Conference on Seismology, Cambridge , UK, 2009
 - 46) General Assembly of the EGU, 2010
 - 47) General Assembly of the EGU, 2011
 - 48) General Assembly of the EGU, 2012
 - 49) International Congress on Statistical Mechanics & its Application, 2013
 - 50) International Conference on Remote Sensing and Geoinformation of Environment, Cyprus, 2013
 - 51) UNESCO Conference on Hazard in Mediterranean, 2013
 - 52) Workshop on Earthquake Early Warning System, Spain, 2014
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3. TEACHING EXPERIENCE

GENERAL AREAS OF TEACHING EXPERTISE

During the last 25 years I have involved within a number of teaching activities offering : Undergraduate classes in : *Physics, Applied Geophysics, Seismology, Earth Physics, Geohazards & Disaster Management*
 Postgraduate classes in : *Applied Geophysics, Environmental Physics, Georisks,*

UNDERGRADUATE TEACHING EXPERIENCE

TECHNOLOGICAL EDUCATIONAL INSTITUTE of CRETE

As a professor I have lectured the modules "**Physics**", "**Geophysics**", "**GeoHazards**", "**Seismology**", "**Physics of the Earth and Environment**" and supervised more than twenty UG thesis in the fields of Seismology, geoelectromagnetism, Geohazards and applied Geophysics.

UNIVERSITY OF BASILICATA

University of Basilicata, Department of Science. Lecturing the Seismotectonic class in Laurea Magistrale in Geosciences and Georesources (2016)

BRUNEL UNIVERSITY, DEPARTMENT OF GEOGRAPHY & EARTH SCIENCES

2006–2008, Visiting Professor in the Department of Geography and Earth Sciences acting as Supervisor to MPhil/PhD Thesis in the field of Geophysics –Seismology.

2009-2010, Visiting Lecturer, Department of Civil Engineering, teaching the course in ‘Mechanics’

UNIVERSITY OF CRETE, DEPARTMENT OF PHYSICS

January 2002–2013, Visiting Asc. Professor in the Department of Physics, University of Crete teaching the courses "**a) Applied Geophysics (PG/UG level) and b) Physics of the Earth’s Interior.**"

TECHNICAL UNIVERSITY OF CRETE

Visiting Ass. Professor in the Technical University of Crete, (1992-1998) in the Departments of 1) Electronic Eng., and 2) Mining Engineering, teaching the following subjects : General Physics, GeoElectromagnetic waves, Electricity in Mining Engineering

UNIVERSITY OF PORTSMOUTH

During the Academic years 1994-95 and 1995-96 I lectured the module “Computer Aided Quantitative methods “ franchised (in Athens) by the School of Mathematical Studies.

UNIVERSITY OF BASILICATA & ISTITUTO DI METODOLOGIE AVANZATE DI ANALISI AMBIENTALE-CNR

Since the academic year 1998-99, I am collaborated with the Dept. of Environmental Engineering Physics, University of Vasilicata (Potenza Italy), and the Istituto di Metodologie di Analisi Ambientale (INAA)-CNR (Potenza) In the frame of this activity I was co-supervisor in three MSc thesis (collaborated with Dr. V. Lapenna and Prof. M. Mucciarelli,) in the fields of Geoelectromagnetism, Applied Geophysics and Engineering Seismology, respectively.

UNIVERSITY OF ATHENS

Laboratory exercises to undergraduate courses of the Physics Dept (1985-1989)

POSTGRADUATE TEACHING EXPERIENCE

UNIVERSITY COLLEGE LONDON

2010-2011, Part of the MSc course Earthquake Seismology

TECHNOLOGICAL EDUCATIONAL INSTITUTE of CRETE

"Global Geophysics", "GeoRisks", "Environmental Physics", "Seismic Hazard", in the MSc course "Geoenvironmental Resources & Risks".

I am the Director of the "Geoenvironmental Resources & Risks", MSc course

UNIVERSITY OF BASILICATA

During the academic year 2015-2016, I teach in the Department of Science, University of Basilicata (Italy) the MSC Course "Seismology & Seismotectonics", along with the PhD Seminar "Complexity methods in Solid Earth Physics"

TECHNICAL UNIVERSITY OF CRETE

During the Academic years 1993-4 and 1994-5 I was lectured the postgraduate courses :

- a) Electromagnetic wave propagation, radiation and scattering and
- b) Applied Electromagnetism, offered by the Technical University of Crete

UNIVERSITY OF CRETE

During the Academic years 2003-2004 I was lectured the postgraduate course "**Applied Geophysics**" offered by the Department of Physics, University of Crete.

MPhil/PhD RESEARCH SUPERVISION

- 1 MSc Supervisor on two thesis on a)Seismology and b) Complexity and Thermal anomalies related to seismicity (Technological Educational Institute of Crete and University of Basilicata)
- 2 Co Supervisor to a PhD Thesis with Brunel University (UK), in the field of Seismology
- 3 Main /Co-Supervisor of three presented PhD Thesis on Non Extensive statistical physics in Earth Sciences, with the UCL-Institute for Risk & Disaster Reduction,
- 4 Co-supervisor to a PhD Thesis on Non Extensive statistical physics in seismology (University of Athens, Greece) (on going)
- 5 External Supervisor to a PhD Thesis with Brunel University (UK), in the field of Wavelets in Geophysics.[presented 2009] and Seismology (two thesis presented on 2010 and 2011 and one more is on going)
- 6 Supervisor in a PhD Thesis with the Department of Geology-Laboratory of Geophysics, University of Thessaloniki (Greece), in the fields of Seismology and Applied Geophysics (presented 2013)
- 7 Co-supervisor to a PhD Thesis on the application of GIS to seismic hazard (University of Aegean, Greece)
- 8 External Supervisor to two MPhil/PhD Thesis with the Department of Geography and Earth Sciences , Brunel University (UK), in the fields of a) TEM, and b) Seismology (presented 2010)
- 9 External Collaborator to a PhD Thesis with the Department of Engineering, University of Central Lancashire (Preston, UK). (2000-2004)
- 10 Co-supervisor in three MSc thesis in the fields of a) Geoelectromagnetism – Applied Geophysics and b) Engineering Seismology, with the Departments of Environmental Engineering Physics , Faculty of Engineering and Geological sciences, respectively, University of Vasilicata (Italy).(2001 and 2002).
- 11 Supervision to a MSc Thesis with the Department of Electronic Engineering, Brunel University (UK). (2002), for the development of a Probabilistic Self Potential Tomography innovative system

POSTDOCTORAL SUPERVISING

I was a postdoctoral supervisor of three researchers. The first one supported by Greek funds to work in the application of Neural network methodology in Geophysics. The second one, focused to combine new seismological and geophysical methodologies to study the subduction in the Hellenic arc focused on Volcanic arc, while the third one which is on going is on the application of non-extensive statistical physics in aftershock sequences.

TEXT BOOKS

- **F. Vallianatos** “Notes in Applied Geophysics” [in Greek] , Printed by the Technological Educational Institute of Crete (TEICR), 2003 (distributed to the students of TEICR for the classes of Geophysics and to the students of University of Crete for the Undergraduate class in “Applied Geophysics). The new 2013 version is on the way.
 - **F. Vallianatos** “An introduction to Seismology” [in English], Notes printed by TEICR and used in the frame of ERASMUS courses
 - **F. Vallianatos** “Educational material for Geophysics –Physics of the Earth”, Electronic educational material created in the frame of the Research programmes a) “Curriculum development of the Department of Natural Resources and Environment, (Greek Ministry of Education, 2003-2005), (coordinator Prof. F. Vallianatos,) and b) Department of Natural Resources and Environment _ New Horizons in Higher Education (Greek Ministry of Education, 2001-2004), (coordinator, . Prof. F. Vallianatos)
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4. RESEARCH EXPERIENCE

RESEARCH BACKGROUND

1985-1989 “Geoelectromagnetism & Magnetotelluric investigation in the areas of Thiva and Ioannina-Continental Greece” University of Athens, Dept. of Physics . Researcher

1989-1990 “ Analysis of Magnetotelluric data” Department of Solid Earth Physics, University of Uppsala. Postdoctoral researcher

1990-1992 “ A material science approach to the rheological state of the Lower Mantle” University of Athens, Dept. of Physics. Researcher

1992-1998 “ Telluric & electromagnetic earthquake precursors. Generation, propagation and identification of earthquake forerunners as well as their statistical evaluation.” Technological Educational Institute of Crete.

1997- 2006 Electromagnetic wave propagation in geostructures with stochastic or fractal properties” Technological Educational Institute of Crete,

1999-today Seismicity in the Frontal Part of the Hellenic Arc, Technological Educational Institute of Crete

2000-today Geophysics & Natural Hazards, Technological Educational Institute of Crete & UCL

2000-today. Rock physics experiments to study seismic precursory effects. Technological Educational Institute of Crete & UCL

2007- today Non linear dynamics and complex systems from rocks to Earth’s scale. Statistical Mechanics in Natural Hazards, Earth Physics and Seismology, Technological Educational Institute of Crete & UCL

PRESENT RESEARCH COLLABORATIONS

Within the last 15 years of research activity a number of strong collaboration developed. Among all the most dynamic are :

- **Department of Earth Sciences, UCL** (Prof. P. Sammonds): Subject: Rock Physics and Seismicity with in non extensive statistical mechanics view.
- **University of Athens, Laboratory of Geophysics** (Dr. A. Tzanis), Subject “SOC in Geophysics and Earthquake precursors”
- **University of Thessaloniki, Laboratory of Seismology** (Prof. E. Papadimitriou and Prof. C. Papazachos), Geophysics-Seismology
- **Technological Educational Institute of Athens** (Prof. D. Triantis, Subject “Geomaterials –Physics of rock fracture”
- **Istituto Nazionale di Geofisica e Vulcanologia** (Dr. M. Ciappini), Subject “Applied Geophysics
- **Istituto di Metodologie Avanzate di Analisi Ambientale/CNR** (Dr. V. Lapenna). Subject: Environmental Geoelectromagnetism”.

- **University of Basilicata (Italy), Dept. of Environmental Engineering and Physics** (Prof. V. Tramutoli), *Subject «Using satellite images in Geohazards assessment»*

MANAGEMENT SKILLS

- Director of the “Geoenvironmental Resources & Risks”, MSc course
- *Director of the Faculty of Applied Sciences, Technological Educational Institute of Crete (2003-2009)*
- *Director of the Centre of Technological Research –Crete (2008 –2009).*
- *Head of the Laboratory of Geophysics and Seismology, Technological Educational Institute of Crete, (2000 to present)*
- *Member of the Board of Directors, Technological Educational Institute of Crete(2003-2008)*
- *Head of the “Institute of Natural Resources & Natural Disasters”, Centre of Technological Research –Crete (2002 –2008).*
- Subject Leader for Geoenvironmental studies, School of Natural Resources and Environment (1999-2003)
- Academic advisor for undergraduate students
- Coordinator of Schools’ ERASMUS/SOCRATES link with a) University of Basilicata (Italy), b) University of Bari (Italy) and c) University of Central Lancashire (UK), d) University of Bonn (Germany), e) University of Portsmouth and UCL (UK)

RESEARCH ACTIVITY

Summary

- **Research grants: about M€ 4.0** of research funding competitively won from Greek National research Council, EU and SMEs.
- **Review - Editorial Activities.** Associate Editor of *Acta Geophysica* (2015). I have served as *reviewer* in a number of scientific journals and as **Guest Editor** in **"Physics and Chemistry of the Earth"**, **"Annals of Geophysics"** and **"Acta Geophysica"**. Member of the Editorial Board of the **"International Journal of Geophysics"**. Co-Editor of the special issue in **"Engineering Education: (WSEAS, 2005)** and Co-Editor of the special volume **"Advance topics in geology and Seismology"** (WSEAS, 2008).
- I am member of the Greek Physical Society, Greek Geophysical Society, Greek Geological Society, European Geophysical Society and IEEE. During 2004-2006 I serve as NATO consultancy in Seismic Hazard evaluation in Skopje, in the frame of "Science for Peace"
- **Publications:** author or co-author of more than 140 publication in International journals and 60 in refereed conference proceedings and chapters in books including *Geophysical Research Letters, Geophysical Journal International, Tectonophysics, Natural Hazards, Physics of the Earth and Planetary Interior, Natural Hazards and Earth Systems Sciences*. Furthermore, more than a 150 presentation in International Conferences and Workshops.. I have HF, h=21 and more than 1400 citations, 750 of them the last years (2011-2015).
- **PhD Research student supervision:**, principally funded by National or EU. Students have been engaged in a range of experimental, modelling and field-based research.

PARTICIPATION and COORDINATION IN EU & NATIONAL RESEARCH PROJECTS

- 1) **"Electromagnetic anomalies in the vicinity of Crete island associated with preseismic effects"** (1992-1994) (District of Crete). In the frame of this project a digital telemetric network was developed in order to record the telluric and electromagnetic anomalies along Crete island.
- 2) **"Seismic hazard along the Hellenic Arc. Earthquake prediction research using telluric & electromagnetic precursors"** (General Secretariat of Research & Technology, 1996-98) In a co operation frame between the Laboratory of Geophysics-University of Athens and the Technological Educational Institute of Crete
- 3) **"A new telemetric network appropriate for the collection of seismic and electromagnetic data"** (General Secretariat of Research & Technology, 1996-98) Geodynamic Institute National Observatory of Athens.
- 4) **GAIA: Geotectonic Activity-Instrumentation and Analysis. A European test site for Earthquake precursors and Crustal activity: The Gulf of Corinth, Greece** (EC-Environment & Climate, 1996-98) (subcontractor, 20 KEuro)
- 5) **Broad band Magnetotellurics in earthquake prediction research** (EU- Environment)
- 6) **Study of the ULF electromagnetic phenomena related to earthquakes (INTAS99)** (*coordinator Prof. F. Vallianatos, 120 KEuro*)
- 7) **Geoelectric survey in the area of Ancient Epidavrous-Greece (2001)** (*coordinator Prof. F. Vallianatos, 5 kEuro*)
- 8) **Geophysical survey in salinity springs of Kalimnos island (2001)**
- 9) **Geophysical survey in Marathon (2001)**
- 10) **Geophysical survey in Egaleo (2002)**
- 11) **GEOWATERS: Integrated geophysical study of contaminants in European river sediments (1999-2002)**
- 12) **Contribution to seismic hazards using seismic and electromagnetic observations** (General Secretariat of Research & Technology 2002-2005), (*coordinator Prof. F. Vallianatos, 14 KEuro*)
- 13) **Installation of the geophysical observatory at Gavdos island,** (General Secretariat of Research & Technology, 2002-2005), (*coordinator Prof. F. Vallianatos, 13 KEuro*)
- 14) **An expert system for the environmental monitoring and management in Crete** (Region of Crete, 2003-2006). (Main Partner, 60 KEuro/300 KEuro)
- 15) **Department of Natural Resources and Environment, Infrastructure of new laboratories** (Greek Ministry of Education, 2001-2004), (*coordinator Prof. F. Vallianatos, 300 KEuro*)
- 16) **Curriculum development of the Department of Natural Resources and Environment,** (Greek Ministry of Education, 2003-2005), (*coordinator Prof. F. Vallianatos, 296 KEuro*)
- 17) **Department of Natural Resources & Environment-New research facilities,** (Greek Ministry of Education, 2002-2003), (*coordinator Prof. F. Vallianatos, 300 KEuro*)
- 18) **Department of Natural Resources and Environment _ New Horizons in Higher Education** (Greek Ministry of Education, 2001-2004), (*coordinator, Prof. F. Vallianatos, 1.600 KEuro*)

19) **MARMARA Earthquake Rehabilitation Project** (MEDA-EU, 2003-2005), (Main Partner, 212 KEuro/3000 MEuro)

20) **Seismic Hazard in the frontal part of the Hellenic Arc. A contribution to Seismic protection of the old Venecian city in Chania-Crete** (ARCHEMIDES Project- Greek Ministry of Education, 2004-2006), (**coordinator, Prof. F. Vallianatos**, 57 KEuro)

21) **Non-linear mathematical problems in Geophysics and wave propagation**, (ARCHEMIDES Project- Greek Ministry of Education, 2004-2006), (Senior researcher, 49 KEuro)

22) **Innovative Geophysical methods for the monitoring and management of waste disposal sites** (ARCHEMIDES Project- Greek Ministry of Education, 2004-2006), (Senior researcher, 47 KEuro)

23) **Context Aware Web Service Provision-applications in Geophysical computation** (PYTHAGORAS Project- Greek Ministry of Education, 2004-2006), (Senior researcher)

24) **Study of the active tectonics in the Hellenic Arc using geophysical methods** (PYTHAGORAS Project- Greek Ministry of Education, 2004-2006), (Senior researcher)

25) **Seismotectonics and Geodynamics of the South part of the Hellenic arc** (PYTHAGORAS Project- Greek Ministry of Education, 2004-2006), (Senior researcher)

26) **NATO consultancy in Seismic Hazard evaluation in Skopje, in the frame of "Science for Peace"** (2004-2005)

27) **Magnetotellurics in the frontal part of the Hellenic Arc.** (ARCHEMIDES Project-II, Greek Ministry of Education, 2005-2006), (Senior researcher, 50 KEuro)

28) **CYber-Infrastructure for CIVIL protection Operative Procedure, (CYCLOPS)**, SSA-EU, 2006-2008 (Main Partner, 100KEuro/800 KEuro)

29) **Monitoring Seismic Activity in the frontal Part of the Hellenic Arc**, (Greek General Secretariat of Research and Technology, 2006-2008, **Coordinator Prof. F. Vallianatos**, 835 KEuro)

30) **Advanced techniques for SEismic RISK reduction in Mediterranean Archipelago Regions**, EU COMMUNITY INITIATIVE PROGRAMME INTERREG III B ARCHIMED 2006-2007, (**Coordinator Prof. F. Vallianatos**, 1.352 KEuro)

31) **Methodology integration of EO techniques as operative tool for land management and planning in Mediterranean areas**, EU COMMUNITY INITIATIVE PROGRAMME INTERREG III B ARCHIMED 2006-2007, **Main partner**, 250 KEuro/1.650 Keuro

32) **NEXT EARTH: Non extensive thermodynamics and statistical physics in rock fracture and earthquake physics**, PEOPLE EU, 2009-2011. UCL Holder Prof. F. Vallianatos

33) **Interdisciplinary Multi-Scale Research of Earthquake Physics And Seismotectonics at the front of the Hellenic ARC (IMPACT-ARC) Coordinator, Ministry of Research, 100 K€**

34) **Integrated understanding of SEismicity, using innovative MethOdologies of Fracture mechanics along with EARthquake and non extensive statistical physics - Application to the geodynamic system of the HELLenic ARC (SEISMO FEAR HELLARC), Coordinator, Ministry of Research, 600 K€**

REVIEW AND EDITORIAL RESPONSIBILITIES

I am member of 1) Greek Physical Society, 2) Greek Geophysical Society, 3) Greek Geological Society 4) European Geophysical Society 5) IEEE. During **2004-2006 I serve as NATO consultancy in Seismic Hazard evaluation in Skopje, in the frame of "Science for Peace"**

- I have served as **reviewer** in 1) *Annals of Geophysics* 2) *Physics and Chemistry of the Earth* 3) *Earth Space & Planets* 4) *Pure and Applied Geophysics (PAGEO)* 5) *Geophysical Research Letters (GRL)* 6) *Natural Hazards and Earth Systems Sciences*, 8) *Israel Journal of Earth Sciences*, 9) *Journal of Balkan Geophysical Society* 10) *Natural Hazard* 11) *Physica A*, 12) *Journal of Geophysics & Engineering*
- I have served as research project evaluator of the Greek National Secretariat of Research and Technology, and the Greek Ministry of Education
- **Guest Editor** in *'Physics and Chemistry of the Earth'* in the special issue 25/3, May 2000, entitled *"Earthquake Precursors"*
- **Guest editor** in *"Annals of Geophysics"* in the special issue 44/2, April 2001, entitled *'Magnetic, electric and electromagnetic methods in Seismology and Geophysics'*
- **Guest Editor** in *"Physics and Chemistry of the Earth"* in an in the special issue Vol 29 [3/4], (2004) entitled *"Seismoelectromagnetics and Related Phenomena"*.
- **Co-Editor of the special issue in "Engineering Education: WSEAS, 2005"**
- **Co-Editor of the special volume "Advance topics in geology and Seismology", WSEAS, 2008**

- Guest editor in “**Acta Geophysica**” in a special issue on the application of **Statistical Physics in Earth Sciences and Natural Hazards** (Spring 2012)
- **Associate Editor of Acta Geophysica (2015-)**.

INTERNATIONAL CONFERENCE ORGANIZATION

- Member of the Local Organizing Committee of the “7th International Conference on Natural and Man-made Hazards” , HAZARDS98, (Chania 1998)
- Co convener in the symposium “Earthquake precursors” of the 1999 General Assembly of the European Geophysical Society (EGS99)
- Chairman of the Organising Committee of the “2nd International workshop: Magnetic, Electric and Electromagnetic methods in seismology and volcanology” Chania 1999.
- Convener of the “International Workshop: Gavdos the southernmost research observatory in Europe” Chania, Crete, Greece, 2001,
- Co convener in the symposium “Seismoelectromagnetic phenomena” of the 2003 General Assembly of the European Geophysical Society (EGS03)
- Organizer of the 2nd Inter. Conference of WSEAS on Engineering Education, 2005.
- Organizer of the 23rd UNESCO Workshop for the *Seismicity and Earthquake Engineering in the Extended Mediterranean Region, 2005*
- Co convener in the symposium “Seismoelectromagnetic phenomena” of the 2007 General Assembly of the EGU
- Co convener in the symposium “Seismoelectromagnetic phenomena” of the 2008 General Assembly of the EGU
- Organizer of the ESC school on Seismology, 2008
- Convener of the session “**Fracture and Earthquake Physics: Modelling precursory phenomena**” (Conveners: F. Vallianatos, P. Sammonds, V. Lapenna) of the 2012 General Assembly of the EGU

INVITED TALKS

F. Vallianatos, «Electric & electromagnetic earthquake precursors: Latest aspects of laboratory and field observation in Greece» in Istituto di Metodologie Avanzate di Analisi Ambientale/CNR & University of Basilicata, Dept. of Environmental Engineering and Physics, Potenza- Italy, 1998

F. Vallianatos “*Electric current generation associated with the deformation rate of a solid: Preseismic and coseismic signals*”, Dept. of Physics, University Federico II Naples, Italy, 1998

P. F. Biagi, S. Kingsley and **F. Vallianatos** “Concluding remarks on earthquake precursors”. XXIV General Assembly, E.G.S, Hague 1999

A Tzanis and **F. Vallianatos** «A critical review of ULF electric earthquake precursors» 2nd International Workshop: Magnetic, electric and electromagnetic methods in Seismology and Geophysics, Chania, 1999

F. Vallianatos and A Tzanis «A review of ULF electric earthquake precursors», International Conference on Problems of Geocosmos., May 2000

F. Vallianatos and A Tzanis «A review of ULF electric earthquake precursors», International Workshop on Seismoelectromagnetism Tokyo, Japan, 2000.

F. Vallianatos, V. Lapenna, V. Troyian, N. Smirnova, Y. Kopytenko, V. Korepanov and T. Matiashvili, «The SUPRE project in relation to study of the ULF electromagnetic phenomena related to earthquakes» VIII International Workshop on Geoelectromagnetism, Italy, 2000

F. Vallianatos, V. Lapenna, «" Latest aspects on electric & electromagnetic earthquake precursors recorded on Mediterranean basin: field observations, methods of analysis, generation mechanisms», International conference. AP-RASC'01 (2001), Asian-Pacific Radio Science Conference, session on G9/G10/GE "Electromagnetic Phenomena Related with Earthquake and Volcanic Activities", Tokyo, Japan, 2001.

F. Vallianatos, " Seismoelectromagnetic research in the frontal part of the Hellenic arc: results and Expectations , URSI GA Maastricht, NL 2002.

Vallianatos, F.; Triantis, D.; Tzanis, A.; Anastasiadis, C.; Stavrakas, I. " Electric earthquake precursors: from laboratory results to field observations" . in NH11. Seismo-electromagnetics and related phenomena, AGU-EGS-EUG, Nice, 2003 (**solicited**)

F. Vallianatos, "Pressure Stimulated Currents. From Fracture to Earthquake Physics", *Seminars of Earth and Environmental Physics, Department of Physics "Edoardo Amaldi, University of Rome 3, 2008*

[<http://www.fis.uniroma3.it/~plastino/seminars/index.html>]

F. Vallianatos, "From fracture to earthquake physics", 2008 European Seismological Society, school on seismology, Crete, 2008.

F. Vallianatos, Geohazards Physics, **University of Portsmouth, School of Earth & Environment, UK, 2009**

F. Vallianatos, From fracture to plate tectonics. Evidence of non extensivity in earth physics, 3rd international Conference on statistical physics and dynamical systems, Turkey, 2012 [invited]

PUBLICATIONS-RESEARCH ARTICLES

F. Vallianatos

"Magnetotelluric investigation of the electrical conductivity in the areas of Thiva and Ioannina (Greece)", (Ph.D Thesis, Univ. of Athens, Dept. of Physics, 1989/90).

CHAPTERS IN BOOKS

- **F. Vallianatos**, G. Michas, G. Papadakis, «A description of seismicity based on non-extensive statistical physics: A review" chapter in the book «Earthquakes and Their Impact on Society», Series Title: Springer Natural Hazard, Springer, Oct., 2015
- **F. Vallianatos** and G. Hloupis, "HVSr technique improvement using Redundant Wavelet Transform" chapter in the book "Increasing Seismic Safety by Combining Engineering Technologies and Seismological Data" (Ed. Marco Mucciarelli and Marijan Herak) in NATO Science Series: IV: Earth and Environmental Sciences, Springer, ISSN: 1568-1238 [Pub. Date, end 2008).
- P. Soupios, S. Piscitelli, **F. Vallianatos**, V. Lapenna "Contamination delineation and characterization of waste disposal sites performing integrated and innovative geophysical methods, chapter in book, Waste Management Research Trends (ed. Toma V. Golush), Pub. Date: 2008, 2nd Quarter, ISBN: 978-1-60456-234-7, Nova Publishers-USA
- A. Tzanis and **F. Vallianatos**, "A physical model of electrical earthquake precursors due to crack propagation and the motion of charged edge dislocations." (monograph) "Seismo Electromagnetics (Lithosphere-Atmosphere-Ionosphere Coupling)" by TERRAPUB, 2002
- **F. Vallianatos** and A. Tzanis, " A model for the generation of precursory electric and magnetic fields associated with the deformation rate of the earthquake focus" in M. Hayakawa (ed.), *Seismic Atmospheric & Ionospheric electromagnetic Phenomena, Terra Scientific Publishing Co., Tokyo, Feb., 1999.*

A. Publications in International Journals

- 1)** K. Eftaxias, C. Londos and **F. Vallianatos**, "An alternative treatment of the problem of image formation of an object through plane or spherical interfaces", *Am. J. Phys.* 58, 771-773, 1990.
- 2)** **F. Vallianatos**, "Comment on the elastic constant of olivines in the Mg₂SiO₄- Fe₂SiO₄ system". *Physica Status Solidi (b)*, 166/2, 85-86, 1991 .
- 3)** **F. Vallianatos** and K. Eftaxias "A comment on the Pressure dependence of viscosity in the liquid state ". *Acta Geophys. Pol.* 39/2, 233-238, 1991 .
- 4)** **F. Vallianatos** and K. Eftaxias "The application of cBQ model for the calculation of the activation for creep with depth in the Earth's lower mantle". *Phys. Earth Planet. Inter.* 71, 141-146, 1992
- 5)** D.Hadjioannou, **F.Vallianatos**, K.Eftaxias, V.Hadjicontis and K. Nomikos, "Subtraction of the telluric inductive component from the V.A.N measurements", *Tectonophysics*, 224(1/2), 113-124, 1993.
- 6)** **F. Vallianatos** and K. Eftaxias "A model for the influence of the local inhomogeneities on the magnetotelluric measurements at V.A.N stations in Greece". *Tectonophysics*, 224(1/2), 125-130, 1993
- 7)** **F. Vallianatos**"A simple model applied to the elastic properties of olivines in the Mg₂SiO₄-Fe₂SiO₄ system". *Physica Status Solidi (b)*, 175/2, 43-45, 1993

- 8) **F. Vallianatos** and K. Eftaxias "Some aspects on estimation methods for activation volume", *Acta Geophys. Pol.*, XLII, 1, 13-22, 1994.
- 9) K. Eftaxias and **F. Vallianatos**, "A new approach of the optimum wire setting in a Wheatstone bridge", *Physics Education* 29, 320-321, 1994.
- 10) **F. Vallianatos** "Galvanic distortion of the MT impedance tensor: Application to Ioannina VAN station (Greece)". *Acta Geophys. Pol.*, 43, 115-128, 1995.
- 11) **F. Vallianatos**, K. Eftaxias and A. Vasilikou-Dova, "A material science approach for the evaluation of the rheological state into the Earth's Lower Mantle" *Radiation Effects and Defects in Solids*, 137, 217-221, 1995.
- 12) **F. Vallianatos** "Magnetotelluric response of a random layered Earth", *Geophysical Journal International*, 125, 557-583, 1996.
- 13) P. Varotsos, K. Eftaxias, **F. Vallianatos** and M. Lazaridou, "Basic principles for evaluating an earthquake prediction method", *Geophys. Res. Lett.* 23, 1295-1298, 1996.
- 14) K. Nomikos, **F. Vallianatos**, J. Kaliakatsos, S. Sideris, and M. Bakatsakis. "Latest aspects of telluric and electromagnetic variations associated with shallow and intermediate depth earthquakes in South Aegean", *Annali di Geofisica*, XL, 2, 361-374, 1997
- 15) K. Nomikos and **F. Vallianatos**, "Transient electric variations associated with large intermediate-depth earthquakes in South Aegean", *Tectonophysics*, 269, 171-177, 1997.
- 16) K. Nomikos, and **F. Vallianatos**, "Electromagnetic variations associated with the seismicity of the frontal Hellenic Arc", *Geologica Carpathica*, 49/1, 57-60, 1998.
- 17) **F. Vallianatos**, "Analysis of self and Heterodiffusion data in ferromagnetic and paramagnetic α -iron", *Geologica Carpathica*, 49/1, 51-55, 1998.
- 18) **F. Vallianatos** and K. Nomikos, "Seismogenic radioemissions as precursors to earthquakes in Greece", *Physics and Chemistry of the Earth*, 23/9-10, 953-959, 1998.
- 19) **F. Vallianatos** and A. Tzanis, "Electric current generation associated with the deformation rate of a solid: Preseismic and coseismic signals", *Physics and Chemistry of the Earth*, 23/9-10, 933-939, 1998.
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- 21) **F. Vallianatos** and A. Tzanis, "On possible scaling laws between electric earthquake precursors (EEP) and earthquake magnitude", *Geophysical Research Letters*, Vol.26, No. 13, 2013-2016, 1999.
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- 23) G. Colangelo, V. Lapenna, **F. Vallianatos** and C. Nomikos, "Investigating the time dynamics of geoelectrical signals measured in two seismotectonic environments of Mediterranean region: the Southern Apennine chain (S. Italy) and the Hellenic Arc (Crete island, Greece)", *Annali di Geofisica*, 43/2, 391-408, 2000.
- 24) G. Rovithakis and **F. Vallianatos**, «A neural network approach to the identification of electrical earthquake precursors», *Physics and Chemistry of the Earth*, 25/3, 315-319, 2000
- 25) **F. Vallianatos** and J. Makris, "On the tectonoelectric zonation in the Hellenic Arc", *Physics and Chemistry of the Earth*, 25/3, 307-313, 2000
- 26) A. Tzanis, **F. Vallianatos** and K. Makropoulos, "Seismic and electrical precursors to the 17.1.1983 M7 Kefallinia earthquake, Greece: signature of SOC system", *Physics and Chemistry of the Earth*, 25/3, 281-287, 2000
- 27) L. Telesca, V. Cuomo, V. Lapenna, and **F. Vallianatos**, "Self-similarity properties of seismicity in the Southern Aegean area", *Tectonophysics*, 321, 179-188, 2000.
- 28) A. Tzanis, **F. Vallianatos** and S. Gruszow, "Identification and discrimination of transient electric earthquake precursors: Fact, fiction and some possibilities" *Phys. Earth Planet. Int.*, 121, 223-248, 2000.
- 29) G. Colangelo, M. Lafredi, V. Lapenna, M. Macchiato and **F. Vallianatos**, «Time scaling laws in self-potential signals measured in two different seismically active Mediterranean areas (The S. Apennine chain and the Crete island). *Annali di Geofisica*, 44/2, 421-428, 2001).
- 30) A. Tzanis and **F. Vallianatos**, «A critical review of ULF electric earthquake precursors» *Annali di Geofisica*, 44/2, 429-460, 2001
- 31) C. Anastasiades, G. Triantis, **F. Vallianatos**, G. Nover and C. Nomikos. "The spectrum of thermally stimulated currents from KTP drilling rock samples", *Annali di Geofisica*, 44/2, 355-359, 2001

- 32) L. Telesca, V. Cuomo, V. Lapenna, **F. Vallianatos**, and Drakatos, G. "Analysis of the temporal properties of Greek aftershock sequences" *Tectonophysics* 341, 163-178, 2001
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- 42) P. Soupios, C. Papazachos, F. Vallianatos, T. Papakostas "Numerical Treatment and Evaluation of Inverse Problems" *Transactions on Circuits and Systems*, 3(4), 547-552, 2003
- 43) J.P. Makris, F. Vallianatos, I. Vardiambasis, "Tensor Decomposition Resolves Geoelectrical Structure Modeling Ambiguities in Mohr Circle Topology", *Transactions on Circuits and Systems*, 3(4), 547-552, 2003
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- 46) I. Stavrakas, D. Triantis, Z. Agioutantis, S. Maurigianakis, V. Saltas and F. Vallianatos and M. Clarke «Pressure stimulated currents in rocks and their correlation with mechanical properties» *Natural Hazards and Earth Systems Sciences*, 4, 563-567, 2004
- 47) **Vallianatos, F.**; Triantis, D.; Tzanis, A.; Anastasiadis, C.; Stavrakas, I. " Electric earthquake precursors: from laboratory results to field observations", *Physics & Chemistry of the Earth*, 29, 339-351, 2004.
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- 49) L. Telesca, V. Lapenna, **F. Vallianatos**, J. Makris and V. Saltas, "Multifractal features in short-term time dynamics of ULF geomagnetic field measured in Crete, Greece", *Chaos Solitons & Fractals*, **21**, 2004, 273 – 282.
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- 51) V. Uritsky, N. Smirnova, V. Troyan and **F. Vallianatos** "Critical dynamics of fractal fault systems and its role in the generation of pre-seismic electromagnetic emissions", *Physics & Chemistry of the Earth*, 29, 473-480, 2004.
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- 53) G. Hloupis, **F. Vallianatos** and J. Stonham, "A wavelet representation of HVSr technique", *Bulletin of the Greek Geological Society*, 36(3), 1269-1278, 2005

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