

## CURRICULUM VITAE

LEONIDAS P. KARAKATSANIS  
ELECTRICAL ENGINEER, PhD



### 1. PERSONAL INFORMATION

Surname : Karakatsanis  
Name : Leonidas  
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Xanthi 67100  
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Telephones : Office: +30 - 25410 79114  
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Skype name : Ikaraka  
Place & date of Birth : Athens,13-4-1966  
Nationality : Greek  
Gender : Male

### 2. EDUCATION

2013 **PhD**  
Department of Electrical and Computer Engineering  
Democritus University of Thrace, Xanthi  
Thesis: "Applications of Chaos and Complexity in the Study of Geophysical and Space Phenomena."  
1991 **Msc. , Electrical Engineer,**  
Department of Electrical and Computer Engineering  
Democritus University of Thrace, Xanthi

### 3. EMPLOYMENT

2018 - **Laboratory Teaching Staff Member (EDIP), Democritus University of Thrace, Department of Environmental Engineering, Complexity Research Team (CRT) (<https://complex.env.duth.gr>)**  
Main activities: Non-linear analysis of Timeseries, Complexity, Tsallis non-extensive statistics, Turbulence, Machine learning applications.  
2013/11 **Researcher, Perelman School of Medicine at the University of Pennsylvania,**  
2014/03-04 **Immunogenetics Laboratory**  
2018/6 University of Pennsylvania, Philadelphia, USA  
Main activities: Research in DNA Sequences  
1992 - 2017 **Researcher, Democritus University of Thrace, Department of Electrical and Computer Engineering, Laboratory of Electromagnetic Theory, Research Team of Complexity and Chaos**  
Main activities: Non-linear analysis of Timeseries, Complexity, Tsallis non-extensive statistics, Turbulence.  
2012 – 2016 **Head of Secretariat, Department of Environmental Engineering**  
Democritus University of Thrace, Xanthi  
Main activities: Administration of the Secretariat of the Department of Environmental Engineering of Polytechnic School of Democritus University of Thrace.  
1992 – 2011 **Head of Technology Transfer Office**  
Democritus University of Thrace, Xanthi  
Main activities: Exploitation of Research, Sources of Financing, Intellectual and Industrial property, Innovation management, Spin-Off, Technology Audits, Benchmarking, Integration of Information Systems in Innovation Management, Advisory Services, Design, Monitoring and Management of R&D Projects, Instructor in Educational Seminars in lessons with topics in the area of Exploitation of Research and Innovation Management.  
2006 - 2012 **Consultancy Services to NGOs**  
Consultancy Services to NGOs (Organization, Strategic Planning, and Monitoring) in the field of the Greek Culture and the Greek Language with innovative methods.

### 4. TEACHING EXPERIENCE

2018 - Laboratory Teaching Staff Member in graduate students of the department of Environmental Engineering in the following laboratory classes:  

- AutoCAD, Technical Drawing
- Computer Language R
- Energy Savings in Buildings – Energy Audit
- Computational Fluid Mechanics

- 2009 – 2013** Instructor in training lessons and support for Diploma dissertations in graduate students of the laboratory of Complexity and Chaos of the Department of Electrical and Computer Engineering with the specific scientific areas:
- Non-linear dynamics and Time series analysis
  - Computation complexity
  - Methods of Measurements of dynamical and statistical characteristics of time-series
- 2013 – 2017** Instructor in training lessons and support for postgraduate Thesis in post-graduate students of the laboratory of Complexity and Chaos of the Department of Electrical and Computer Engineering with the specific scientific areas:
- Non-linear dynamics and Time series analysis
  - Computation complexity
  - Matlab tools for time-series analysis
  - q-triplet Tsallis Statistical analysis
  - Methods of discrimination of signals from noisy data.
  - Methods of Measurements of dynamical and statistical characteristics of time-series
  - Turbulence Analysis of time-series
  - Singular Value Decomposition Analysis of Time - series
- 2009 – 2011** Scientific responsible in the education of adult immigrants in topic of Greek language and Greek civilization under the European Program “Greece, International School of Cultural and Communication” 2009 - 2011 by the e-learning platform Moodle with the below topics:
- Development of Electronic Lessons in Greek Language and Greek civilization
  - Monitoring of On-line classes of Immigrants
  - Organization of Educational E-lessons
  - Statistical Analysis of Education
  - On-line Support of Students
- 2006 – 2008** Scientific responsible at Centers for Continuing Vocational Training in the area of Information Science by the e-learning platform Moodle with the below topics:
- Development of Electronic Lessons in Information Science
  - Monitoring of On-line classes of Students
  - Organization of Educational E-lessons
  - Statistical Analysis of Education
  - On-line Support of Students
- 1992 –** Instructor at Centers of Continuing Vocational Training in the area of Information and Computer Science and Electrical Engineering. Next Following some indicative topics:
- Computer Integrate Manufacture
  - Robotics
  - Office Automation
  - Advanced ICT skills (Microsoft Office (Word, Excel, Access, PowerPoint), Operating Systems, Internet, Search Engines etc)
  - Information Retrieval from National and Internationals Hosts
  - Electronic Information Systems and languages (CCL, Quest)
- 1996 - 2012** Instructor in numerous seminars and workshops with main topics:
- Innovation Management
  - Research Exploitation of R&D Results
  - Services of Technology Transfer Office of Democritus University of Thrace
  - Spin-off and Start-up companies
  - Patents and Technology Transfer

## 5. FURTHER TRAINING - CERTIFICATIONS

- 2006 – 2007** Participation in Training Program with topic “Training of Trainers in Continuing Vocational Training”, duration of 300 hours. Training at Educational Techniques:
- Cooperating learning
  - Working Groups
  - The role playing
  - Case studies
  - Brain storming
  - Questions and Answers
  - Discussion
  - Demonstration

- 1998** Certification from the National Accreditation Centre of the Hellenic Ministry of Labour on issues to Electrical Engineer, Information and Computer Sciences as an instructor at Certification Centres of Continuing Vocational Training.
- 1993** Participation in Training program with topic “Electronic Information Retrieval”, National Documentation Center, Athens, duration 400 hours.  
Topics of Training:
- National and International Hosts
  - Information retrieval
  - Languages of retrieval (CCL, Quest, etc.)
  - Techniques for a succeed retrieval

## 6. TECHNICAL SKILLS

- ✓ Computational Complexity
- ✓ Non-Linear Analysis of Timeseries
- ✓ Applications of Tsallis Theory and Intermittent turbulence at complex systems
- ✓ Machine Learning Applications
- ✓ Evaluation and Marketing of Research Results
- ✓ Planning and Management of Information Systems in the area of Innovation Management
- ✓ Technological assessment of SME, Technology Audits, Benchmarking
- ✓ Online information systems
- ✓ Monitoring and Management of R&D Projects
- ✓ Advisory services for Research and Developmental Projects

## 7. COMPUTER SKILLS

- Microsoft Office, Open Office, Latex
- Operation Systems: Windows, UNIX, Linux
- Internet Tools: (Html editors, tools, Search Engine)
- Server Management: Plesk, cPanel
- Installation and operation of CMS, etc. Elxis, myjoomla, phpnuke, Wordpress etc.
- Scientific Software : Matlab, RapidMiner, Statgraphics, SPSS
- Technical Software : TEE KENAK
- Programming Languages: Fortran, Matlab, R, Python
- E-learning software: Moodle

## 8. ORGANISATIONAL SKILLS AND COMPETENCES

Following skills were acquired during my work experience of 20 years, through training and through numerous participations in projects of research and technology

- ✓ Very good experience in project and team management, coordination of teams as well in the administration of budgets
- ✓ Very good ability in the development of innovative ideas and their implementation into projects
- ✓ Ability to work efficiently under tight schedules and demanding conditions
- ✓ Good sense of organisation of projects and flexibility in troubleshooting

## 9. SOCIAL SKILLS AND COMPETENCES

Teamwork was always essential during my work as a project manager but also in various teaching positions that I held. Due to my experience in positions where communication was very important, I always tried to develop a good working environment for my teams. The interaction with different groups of people and working sometimes in multicultural environments has strengthened my adaptability in various work conditions. Through my work I had often the chance to commute and interact successfully with project partners and researchers from abroad. I strongly consider the ability of self evaluation and self improvement essential in my work.

## 10. PARTICIPATION IN PROJECTS

1	Development of Focal Documentation Point in Democritus University of Thrace	Stride	1993 – 1994
2	Exploitation of RTD Results by the Industry.	Value	1995 - 1996
3	Promotion and Exploitation of RTD Results. Technology Transfer and Innovation.	Innovation	1997 – 2004
4	Development of Liaison Office of DUTH	Epet II	1996 – 1999
5	Scientific Support and Management of the Project: Regional Innovation and Technology Transfer Strategy of Eastern Macedonia and Thrace – Crossroads.	Ritts (Innovation)	1999 – 2001
6	Establishment, Development and Operation of Career Office of DUTH	Epeak I	1999 – 2002
7	Career Office of DUTH	Epeak II	2003 – 2006
8	Pytheas – Development and Operation of the Greek Network of Mobility of Researchers.	Mobility Centres	2003 – 2006
9	Promotion of the Broadband in Region of EMTH with focus on integrating innovation from SMEs	O.P. “Information Society”	2003 - 2005
10	Liaison Office of DUTH	Op. Programm. Competitiveness–GGET	2005 – 2008
11	Consulting Services of Supporting Ideas from Students.	Program Technogenesis	– 2006

		Region EMTh.	
12	Greece International School of Culture and Language	EEA (European Economic Area)	2009 – 2012
13	Mare - Nostrum	ENPI-CBCMED	2013-2016
14	Environmental Geoinformatics	ESPA 2007-2013	2015
15	Creating a Cultural Dipole in the Cross-Border Area	INTERREG 2016-2020	2017-2020

## 11. CONFERENCES AND SUMMER SCHOOLS

- 2020:** ONLINE CONFERENCE DYNAMICS DAYS CENTRAL ASIA VI NAZARBAYEV UNIVERSITY NUR – SULTAN, KAZAKHSTAN, 2 – 5 JUNE 2020
- 2017:** International Conference on Statistical Physics Workshop: Kappa Distributions and Statistical Mechanics, Corfu, 13 July 2017
- 2016:** International Conference “30 Years of Nonlinear Dynamics in Geosciences”, Rhodes, Thursday 7-06-2016
- 2012:** 5th Chaotic Modeling and Simulation International Conference, Athens
- 2010:** International Conference of Nonlinear Dynamics and Complexity: Theory, Methods and Applications in honour of Tassos Bountis on the occasion of his 60<sup>th</sup> birthday, 12-16 July, Thessaloniki, 2010
- 2009:** Challenges in Nonlinear Plasma Physics - A conference honouring the career of Dennis Papadopoulos, Halkidiki, 15-19 June 2009
- 2007:** 8<sup>th</sup> Hellenic Astronomical Conference”, Thassos 13 – 15 September, 2007
- 2007:** 20th Summer School - Conference on "Nonlinear Science and Complexity", Patras 19 - 29 July, 2007
- 1992:** 5th Summer School - Conference on "Nonlinear Science and Complexity", Crete July, 1992
- 1991:** Chaotic Dynamics – Theory and Practise, Patra, 1991

## 12. PAPERS (JOURNALS)

- Leonidas P. Karakatsanis**, Evgenios G. Pavlos, George Tsoulouhas, George Stamokostas, Timothy Mosbrugger, Jamie L. Duke, George P. Pavlos and Dimitri S. Monos<sup>3</sup> (2020). Spatial Constrains and Information Content of Sub-Genomic regions of the Human Genome. Under Review.
- Pavlos, E. G., Malandraki, O. E., Khabarova, O. V., **Karakatsanis, L. P.**, Pavlos, G. P., & Livadiotis, G. (2019). Non-Extensive Statistical Analysis of Energetic Particle Flux Enhancements Caused by the Interplanetary Coronal Mass Ejection-Heliospheric Current Sheet Interaction. *Entropy*, 21(7), 648.
- Antoniades, I. P., Marinos, G., **Karakatsanis, L. P.**, Pavlos, E. G., Stavrinides, S. G., Tassis, D., & Pavlos, G. P. (2019). Tsallis non-extensive statistics and multifractal analysis of the dynamics of a fully-depleted MOSFET nano-device. *Physica A: Statistical Mechanics and its Applications*, 121820.
- Karakatsanis, L. P.**, Iliopoulos, A. C., Pavlos, E. G., & Pavlos, G. P. (2018). Statistical analysis of Geopotential Height (GH) timeseries based on Tsallis non-extensive statistical mechanics. *Physica A: Statistical Mechanics and its Applications*, 492, 715-723.
- Karakatsanis, L. P.**, Pavlos, G. P., Iliopoulos, A. C., Pavlos, E. G., Clark, P. M., Duke, J. L., & Monos, D. S. (2018). Assessing information content and interactive relationships of subgenomic DNA sequences of the MHC using complexity theory approaches based on the non-extensive statistical mechanics. *Physica A: Statistical Mechanics and its Applications*, 505, 77-93.
- G.P. Pavlos, O.E. Malandraki, E.G. Pavlos, A.C. Iliopoulos, **L.P. Karakatsanis**, “Non-Extensive Statistical Analysis of Magnetic Field During ICME event on March 2012 using a multi-spacecraft approach”, *Physica A*, Volume 464, 149–181, (2016).
- S.Patsourakos, M.K.Georgoulis, A. Vourlidis, A. Nindos, T. Sarris, G. Anagnostopoulos, A. Anastasiadis, G. Chintzoglou, I. A. Daglis, C. Gontikakis, N. Hatzigeorgiou, A. C. Iliopoulos, C. Katsavrias, A. Kouloumvakos, K. Moraitis, T. Nieves-Chinchilla, G. Pavlos, D. Sarafopoulos, P. Syntelis, C. Tsironis, K. Tziotziou, I. Voyatzis, G. Balasis<sup>5</sup>, M. Georgiou, **L.P. Karakatsanis**, O.E. Malandraki, C. Papadimitriou, D. Odstrcil, E. G. Pavlos, O. Podlachikova, I. Sandberg, D. L. Turner, M. Xenakis, E. Sarris, K. Tsinganos, and L. Vlahos, “The Major Geoeffective Solar Eruptions of 7 March 2012: Comprehensive Sun-to-Earth Analysis”, *The Astrophysical Journal* 817 (1), 14, 2016.
- G.P. Pavlos, **L.P. Karakatsanis**, A.C. Iliopoulos, E.G. Pavlos, M.N. Xenakis, Peter Clark, Jamie Duke and D.S. Monos, “Measuring Complexity, Nonextensivity and Chaos in the DNA Sequence of the Major Histocompatibility Complex”, *Physica A*, Volume 438, 188–209, (2015).
- G.P. Pavlos, A.C. Iliopoulos, **L.P. Karakatsanis**, M.N. Xenakis, E.G. Pavlos, “Complexity of economical systems, *Journal of Engineering Science and Technology Review* 8 (1), 41-55, (2015).
- A.C. Iliopoulos, G.P. Pavlos, L. Magafas, **L.P. Karakatsanis**, M. Xenakis, E. Pavlos, “Tsallis q-triplet and Stock Market Indices. The cases of S & P 500 and TVIX.”, *Journal of Engineering Science and Technology Review* 8 (1), (2015)
- G.P. Pavlos, A.C. Iliopoulos, G.N. Zastenker, L.M. Zelenyi, **L.P. Karakatsanis**, M. Riazantseva, M.N. Xenakis, E.G. Pavlos, “Tsallis Non-extensive Statistics and Solar Wind Plasma Complexity”, *Physica A*, Volume 422, 113–135, (2015)
- Pavlos GP, **Karakatsanis LP**, Xenakis MN, Pavlos EG, Iliopoulos AC, Sarafopoulos DV, “Universality of Tsallis non-extensive statistics and timeseries analysis: Theory and Applications”, *Physica A*, Volume 395, 58-95 (2014).
- Karakatsanis LP**, Pavlos GP, Xenakis MN, “Tsallis non-extensive statistics, intermittent turbulence, SOC and chaos in solar system: Part two: Flares dynamics”, *Physica A*, Volume 392 (18),3920–3944 (2013)
- Pavlos GP, **Karakatsanis LP**, Xenakis MN, “Tsallis non-extensive statistics, intermittent turbulence, SOC and chaos in solar system: Part one: Sunspot dynamics”, *Physica A* 391, 6287–6319 (2012)
- Karakatsanis LP**, Pavlos GP, Sfiris DS, “Universality of first and second order phase transition in solar activity. Evidence for non-extensive Tsallis Statistics”, *International Journal of Bifurcation and Chaos*, Vol. 22, No. 9, 1250209 (15 pages) (2012)
- G.P. Pavlos, M.N. Xenakis, **L.P. Karakatsanis**, A.C. Iliopoulos, A.E.G. Pavlos, D.V. Sarafopoulos, Universality of Tsallis Non-Extensive Statistics and Fractal Dynamics for Complex Systems, *Chaotic Modeling and Simulation (CMSIM) 2*: 395-447, (2012).
- Pavlos GP, **Karakatsanis LP**, Xenakis MN, Sarafopoulos D, Pavlos EG, “Tsallis Statistics and Magnetospheric Self-organization”, *Physica A*, Volume 391, Issue 11, 1 June 2012, Pages 3069–3080 (2011)
- GP Pavlos, AC Iliopoulos, VG Tsoutsouras, DV Sarafopoulos, DS Sfiris, **LP Karakatsanis**, EG Pavlos, “First and Second Order Non-equilibrium Phase Transition and Evidence for Non-extensive Tsallis Statistics in Earth’s Magnetosphere”, *Physica A*, 390 (15), 2819-2839 (2011)

19. **LP Karakatsanis**, GP Pavlos, "Nonlinear Analysis of the Solar Cycle Sunspot Index", *Non Linear Phenomena in Complex Systems*, 11 (2), 280-284, 2008
20. G.P. Pavlos, **L. Karakatsanis**, J.B. Latoussakis, D. Dialetis, G. Papaioannou, «Chaotic Analysis of a time series composed of seismic events recorded in Japan», *Inter. Jou. of Bifurcation and Chaos*, 4,1,87-98,1994
21. T.Bountis, **L.Karakatsanis**, G.Papaioannou and G.Pavlos, "Determinism and noise in surface temperature time series», *Ann. Geophysicae* 11,947-959,1993.

### 13. CONFERENCES - BOOKS

22. Pavlos, G. P., **Karakatsanis, L. P.**, Iliopoulos, A. C., Pavlos, E. G., & Tsonis, A. A. (2018). Non-Extensive Statistical Mechanics: Overview of Theory and Applications in Seismogenesis, Climate, and Space Plasma. In *Advances in Nonlinear Geosciences* (pp. 465-495). Springer, Cham.
23. VA Chatzipanagioti, S Rokka, P Malliou, G Mavridis, **LP Karakatsanis**, "Evaluation of Participation Motives in Tai Chi Programs", Short Paper of the 21<sup>st</sup> International Congress of Physical Education & Sport, Komotini, 17-19 of May, 2013, pp 38-42.
24. **Karakatsanis LP**, Pavlos GP, Iliopoulos AC, Tsoutsouras VG, Pavlos EG, "Evidence for Coexistence of SOC, Intermittent Turbulence and Low-Dimensional Chaos Processes in Solar Flare Dynamics", *MODERN CHALLENGES IN NONLINEAR PLASMA PHYSICS: A Festschrift Honoring the Career of Dennis Papadopoulos*. AIP Conference Proceedings, Volume 1320, pp. 55-64 (2011)
25. Pavlos GP, Iliopoulos AC, Athanasiou MA, **Karakatsanis LP**, Tsoutsouras VG, Sarris ET, Kyriakou GA, Rigas AG, Sarafopoulos DV, Anagnostopoulos, G C, Diamandidis D, Dialetis D, Latousakis I, Liatsis PI, Andreadis I., "Complexity in Space Plasmas: Universality of Non-Equilibrium Physical Processes", *MODERN CHALLENGES IN NONLINEAR PLASMA PHYSICS: A Festschrift Honoring the Career of Dennis Papadopoulos*. AIP Conference Proceedings, Volume 1320, pp. 77-81 (2011)
26. Pavlos GP, Iliopoulos AC, **Karakatsanis LP**, Tsoutsouras VG, Pavlos EG, "Complexity Theory: from Microscopic to Macroscopic level, Concepts and Applications", *Chaos Theory: Modelling, Simulation and Applications: Selected Papers from the CHAOS2010 International Conference*, C. H. Skiadas et al. Eds, World Scientific, (CHAOS2010)
27. George P. Pavlos, A. C. Iliopoulos, V. G. Tsoutsouras, **L.P. Karakatsanis** and E. G. Pavlos, "Spatiotemporal Chaos in Distributed Systems: Theory and Practice", *CHAOTIC SYSTEMS, Theory and Applications, Selected Papers from the 2nd Chaotic Modeling and Simulation International Conference* Eds, World Scientific , p.268, (CHAOS2009)
28. G.P.Pavlos, A.G.Rigas, D.Dialetis, E.T.Sarris, **L.P.Karakatsanis** and A.A.Tsonis, "Evidence for chaotic dynamics in the outer solar plasma and the earth magnetosphere", *Chaotic Dynamics: Theory and Practice, NATO ASI Series B:Physics Vol.298*, Plenum Press, New York, 1992.

### 14. ANNOUNCEMENTS

29. Pavlos G.P., Malandraki O.E., Pavlos E.G., Iliopoulos A.C., **Karakatsanis L.P.**, Parisis K., "Tsallis non-extensive statistics as the theoretical presuppositions of time series analysis and applications at Space Plasmas", *International Conference on Statistical Physics Workshop: Kappa Distributions and Statistical Mechanics*, Corfu, 13 July 2017
30. DS Monos, GP Pavlos, **LP Karakatsanis**, AC Iliopoulos, EG Pavlos, "A Multi-Disciplinary Approach for the Understanding of DNA Sequences and Organization: Where Genetics Meets Physics and the High Throughput Sequencing Technologies Meet Complexity Theory", *EFI Kos* May 2016
31. **L.P. Karakatsanis**, G.P. Pavlos, A.C. Iliopoulos, E.G. Pavlos, A.A. Tsonis, "Earth's Climate Complexity Case Study: Geopotential Height (GH) Preliminary Results, 30 Years of Nonlinear Dynamics in Geosciences, Rhodes, 3-8 July,2016.
32. DS Monos, GP Pavlos, **LP Karakatsanis**, AC Iliopoulos, MN Xenakis, EG Pavlos, "A Multi-Disciplinary Approach for the Understanding of DNA Sequences and Organization: Where Genetics Meets Physics and the High Throughput Sequencing Technologies Meet Complexity Theory", *Neo Itilo & Limeni, Mani Lakonias Greece, 3rd Summer School in Medical & Biosciences Research & Management* 17-25 May 2014.
33. G.P. Pavlos, **L.P. Karakatsanis**, A.C. Iliopoulos, M.N. Xenakis, E.G. Pavlos, "Universality of Tsallis non-extensive statistics and time series analysis: Theory and applications", "Complex Systems Foundations and Applications" A celebration of the 70<sup>th</sup> birthday of Constantino Tsallis, 29 Oct.-1 Nov. 2013.
34. **L.P. Karakatsanis**, G.P. Pavlos, A.A. Tsonis, A.C. Iliopoulos, M.N. Xenakis, E.G. Pavlos, "Earth's Climate Complexity" A celebration of the 70<sup>th</sup> birthday of Constantino Tsallis, submitting for publication 29 Oct.-1 Nov. 2013.
35. V. Tsoutsouras, G.P. Pavlos, A. Iliopylos, **L. Karakatsanis**, D. Sarafopoulosm E.G. Pavlos, "Nonlinear spatiotemporal analysis of a five day orbit of the Geotail satellite during the period of 26-30 July 2004 including a superstorm, *Modern Challenges in Nonlinear Plasma Physics - A conference honouring the career of Dennis Papadopoulos*, Halkidiki, 15-19 June 2009.
36. A. Iliopoulos, G.P. Pavlos, **L. Karakatsanis**, D. Sarafopoulos, E.G. Pavlos, "Non Linear Analysis of in Situ Data Obtained by the Geotail Satellite Concerning the Magnetospheric Plasma Sheet", *Modern Challenges in Nonlinear Plasma Physics - A conference honouring the career of Dennis Papadopoulos*, Halkidiki, 15-19 June 2009.
37. GP Pavlos, AC Iliopoulos **L. Karakatsanis**, M. Athanasiou , "SOC/ or Chaos in Spatiotemporal Distrubuted Systems", 20th Summer School - Conference on "Nonlinear Science and Complexity", Patras 19 - 29 July, 2007
38. **L.P. Karakatsanis**, G.P. Pavlos, A.C. Iliopoulos, M.A. Athanasiou, "Nonlinear analysis of Solar Cycle Data. Evidence for Low Dimensional Chaos."8th Hellenic Astronomical Conference", Thassos 13 – 15 September, 2007
39. **L.P. Karakatsanis**, G.P. Pavlos, A.C. Iliopoulos, M.A. Athanasiou, "Non-Linear Analysis of Solar Cycle Data. Evidence for Low Dimensional Chaos." 20th Summer School - Conference on "Nonlinear Science and Complexity", Patras 19 - 29 July, 2007
40. **LP Karakatsanis**, GP Pavlos, B. Mertzios, "Applications of Neural Networks at Time Frame Recognition and non linear signal analysis" 6o National Conference of Greek Physical Scientists, Xanthi, March 1993.

### 15. OPEN ACCESS

41. **L.P. Karakatsanis**, E.G. Pavlos, G. Tsoulouhas, G.L. Stamokostas, T.L. Mosbrugger, J.L. Duke , G.P. Pavlos and D.S. Monos, "Information and Order of Genomic Sequences within Chromosomes as Identified by Complexity Theory. An integrated methodology", arXiv:2004.11287 [physics.bio-ph], (2020)
42. G.P. Pavlos, A.C. Iliopoulos, G.N. Zastenker, L.M. Zelenyi, **L.P. Karakatsanis**, M. Riazantseva, M.N. Xenakis, E.G. Pavlos, "Studying Complexity in Solar Wind Plasma During Shock Events. Part I: Nonextensive Tsallis Statistics", arXiv:1310.0525 [nlin.CD], (2013)
43. G.P. Pavlos, **L.P. Karakatsanis**, M.N. Xenakis, "Tsallis non-extensive statistics, intermittent turbulence, SOC and chaos in the solar plasma. Part one: Sunspot dynamics", arXiv:1201.6498v1 [nlin.CD], (2012)
44. **L.P. Karakatsanis**, G.P. Pavlos, M.N. Xenakis, "Tsallis non-extensive statistics, intermittent turbulence, SOC and

- chaos in the solar plasma. Part two: Solar Flares dynamics”, arXiv:1203.5555v2 [nlin.CD], (2012)
45. G.P. Pavlos, M.N. Xenakis, **L.P. Karakatsanis**, A.C. Iliopoulos, A.E.G. Pavlos, D.V. Sarafopoulos, “Universality of Tsallis Non-Extensive Statistics and Fractal Dynamics for Complex Systems”, arXiv:1203.5556v1 [nlin.CD], (2012)
46. G.P. Pavlos, **L.P. Karakatsanis**, M.N. Xenakis, A.E.G. Pavlos, A.C. Iliopoulos, D.V. Sarafopoulos, “Tsallis Non-Extensive Statistics. Theory and Applications”, arXiv:1203.5582v1 [nlin.CD], (2012)

## 16. PATENTS

- 2014** (WO2014195737)  
 Title: **INTERNET SERVICE REGARDING AN AUTOMATED SYSTEM OF INTERACTIVE - BIDIRECTIONAL TRADE, IN REAL TIME, FOR TOURISM PRODUCTS - SERVICES.**  
 Pub. No.: WO/2014/195737  
 Int. Appl. No.: PCT/GR2013/000032  
 Abstract:  
 “The present patent is referred to an innovative internet service regarding an interactive-bidirectional trade, in real time, for price negotiations of tourism products- services (accommodation, food, tickets, recreation activities or any other touristic product-service), correlating the offer of an amount of money from the user client- buyer, interested to buy the tourism product-service, with the offer of the user client- seller that provides the touristic product-service trying to meet the specifications set by the user client-buyer (regardless of what kind of software platform will be used). In this way the user client-buyer creates a business negotiating environment for tourism products-services that it starts from him, is customized at all levels by him and the final product of this procedure goes back to him.”
- 2016** (HIPO)  
 Title: **DYNAMIC ARMOR OF MAIN BATTLE TANKS WITH THE USE OF COMPRESSED FERROMAGNETIC POWDER ELECTROMAGNETICALLY REINFORCED**
- 2017** WIPO  
 Int. Appl. No.: PCT/GR2017/000066  
 Abstract:  
 “This invention regards an armor system for combat vehicles or other armored structures with the use of compressed powder (granules or particles) consist of magnetic or non-magnetic pulverized material (Fe, Ni, Co,) or other similar synthetic material (non-magnetic core in a magnetic casing) enhancing or increasing the requisite mechanical properties. This material is located between two plates of compact passive armor under the influence of an assisting electromagnetic field. The electromagnetic reinforcement is achieved by means of a device comprising electromagnets or coils in sufficient layers and numbers, at the internal passive armor plate or any other possible conformation. The electromagnets or coils are connected electrically with a battery or generator that provides the energy required and supplied from the electric power unit of the vehicle. These electromagnets or coils are activated instantly from a group of impact sensors, wired or wireless positioned at the passive armor plate”

## 17. LANGUAGES

- Mother Tongue** Greek  
**2007** English, Independent user  
 Test of English for International Communication (TOEIC)  
 Total score 670/1000, 06/12/2007

## 18. MEMBERSHIPS & OTHER SKILLS

- 1992 - Member of Technical Chamber of Greece
- 2009 - Member of COSA (Complex System and Application Group), Greece
- Hobbies: Travelling, Tai-Chi, hiking, eco architecture, free and scuba diving, sailing, mountain bikes, photography.