

CURRICULUM VITAE

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P. Takis Mathiopoulos received the Diploma in Electrical Engineering from the University of Patras, Greece, in 1979, the Master of Engineering (M.Eng.) degree with a specialization in Microwaves and the Ph.D. degree from the University of Ottawa with a specialization in Digital Telecommunications, in 1989, both in Canada.

He is now Professor of Digital Communications in the Department of Informatics and Telecommunications of the University of Athens. He is a former Director/Director of Research of the Institute for Space Applications and Remote Sensing (ISARS) at the National

Observatory of Athens, in Penteli, Athens, Greece. NOA is a publicly funded R&D organization and is the oldest research institution of modern Greece established in 1854. From 2000-2005 he was the Director of the Institute. In this capacity, Prof. Mathiopoulos was responsible for the daily operation of the Institute as well as its scientific management. ISARS employs more than 15 permanent research, technical and support staff, and numerous graduate students and post-doctoral fellows. Its main objective is to carry out R&D projects in these fields, which include Remote Sensing, Telecommunications, the Magnetosphere and the Ionosphere. The Institute is well equipped with state-of-the-art satellite and ionospheric ground stations, as well as various RF and electronic test and measurement equipment and computing facilities.

As ISARS' Director, he has made notable contributions to the scientific advancement and significant expansion of the Institute, including the following:

1. Designed, organized and implemented a five-year strategic plan for improving ISARS' scientific, administrative and external funding track record. The success of such plan and his efforts towards this goal is validated by the following:
 - i) 3-fold increase in the number of personnel;
 - ii) 2-fold increase of the external research funding;
 - iii) 3-fold increase in the number of PhD students;
 - iv) 2-fold increase in the number of international archival journal publications.
2. Successfully hiring of:
 - i) 8 new Researchers (tenure-track positions) with complementary expertise in the areas such as signal processing, wireless networks, pattern recognition, optics for space applications and remote sensing;
 - ii) Supporting the promotion and tenure of 7 researchers.
3. The foundation in 2000 of, and since then, the supervision of a new group with R&D activities in the field of "Wireless Communications", with emphasis on research dealing with physical layer problems. Within five years this group has been recognized as a leading research group not only in Greece but also in the European and international telecommunication research community. The group has established contacts with and has been collaborating through national, European and international RD projects, with academic institutions, industrial and governmental organization, and some industry. Collaborations include institutions from Germany (e.g. DLR), UK, (e.g. University of Surrey), Italy (e.g. University of Bologna), France (e.g. TESA), Canada (e.g. UBC and University of Ottawa), China (e.g. Southwest Jiaotong University and BUPT), and Japan (Keio University). As it can be seen from his publication list the group has a very significant track record in terms of IEEE journal publication and participation in many national and European R&D projects. It is noted that 40 of these journal papers have been published or accepted for publication the last 5 years. Today, the group he is supervising consists of 5 Ph.D. students, 2 post-doctoral fellows and 1 research engineer.
4. Participation as Prime Investigator (PI) for ISARS in 14 funded R&D projects (4 funded by the European Commission, 3 by the European Space Agency (ESA), 2 private companies and 6 by the Greek National Research Council) with a total funding for the National Observatory of Athens close to 1.5 M€. It should be noted that for 6 of the above projects, ISARS was the prime contractor and he was directing these projects. Additionally, he has participated in 6 additional projects (2 Europeans and 4 Nationals) and for the one of the European projects (METAMORP) he was its Technical Manager.

5. Establishing formal collaboration links with the Remote Sensing and Space Physics group which has resulted in the successful common participations in R&D projects.

As a researcher, Prof. Mathiopoulos is an internationally recognized authority with a proven track record for original research contributions and in the field of digital wireless telecommunications for terrestrial and satellite systems specializing on the physical layer of such systems.

In the early 80's he has accumulated 4 years of industrial (hands-on and managerial) experience at Raytheon Canada Ltd., where he was working in the areas of air-navigational and satellite communications. In 1989 he joined the Department of Electrical and Computer Engineering (ECE), University of British Columbia (UBC)¹ as an Assistant Professor where he was a faculty member for 14 years and from 2000 - 2003 he was holding the rank of Full Professor. He continued his affiliation with UBC as an Adjunct Professor until 2008. Since 2003 he also teaches part-time at the Department of Informatics and Telecommunications, University of Athens, where he is now Professor of Digital Communications. He has supervised the thesis of 23 graduate students (12 Ph.D. and 15 M.A.Sc.) four of whom hold faculty positions in Canada, USA and Greece.

Over the years, Prof. Mathiopoulos has supervised university and industry based R&D groups and has successfully acted as technical manager for large R&D Canadian and European projects. His early work in the 80's in the field of digital telecommunications dealt with point-to-point and point-to-multi-point high capacity terrestrial and satellite digital communication systems. Since 1990, his research activities have shifted towards mobile and personal digital communications with current emphasis on multimedia applications. His scientific contributions in the general field of digital wireless communications cover a wide area of research topics dealing with mainly their physical and access layers. Specific research activities include digital communications over fading and interference environments, channel characterization and measurements, modulation and coding techniques, network coding techniques, SIMO/MIMO, UWB, OFDM, and software/cognitive radios. In these areas, he has authored or co-authored some 100 archival journal papers published (or accepted for publication) mainly in various *IEEE Transactions*, for which he has received more than 1000 citations (isi), and 122 papers published in international conference proceedings.

Prof. Mathiopoulos has acted numerous times as a consultant for many industrial organizations and various governmental agencies all over the world. Since 1993, he has served on a regular basis as a scientific advisor and technical expert for the European Commission (EC) for the ACTS and IST programs. In this capacity, he has been appointed by the EC in numerous high level advisory, evaluation and auditing panels in the technical areas of telecommunications, information technology and electronic commerce and publishing. In 2000 he has been appointed as national representative of the Hellenic Republic on the Space Advisory Group (SAG) of the European Commission. He also serves as a national representative in the COST Actions 271 and 273. From 1993 - 2006, Prof. Mathiopoulos has been the Editor for Wireless Personal Communications of the *IEEE Transactions on Communications*. He also serves or had served in the past on the Editorial Board of several other scientific journals including the *IET – Communications* (formally *IEE Proceedings – Communications*) *IEEE Communication Magazine*, *IEEE Personal Communications* and the *International Journal of Wireless Personal Communications*, and the *Journal of Communications and Networking*, Microsoft's ENCARTA Encyclopedia, and the new electronic scientific Encyclopedia Scholarpedia (www.scholarpedia.org). While on faculty at

¹ UBC is one of the leading academic institutions in the world. In all recent yearly well respected academic evaluations of all Universities in the world, conducted by the Institute of Higher Education, Shanghai Jiao Tong University, UBC was always ranked among the first 40. It's also considered as the second best University in Canada and one of its Professors has been a Nobel Laureate.

UBC he was awarded the ASI and Killam Fellowships. He has been a member of the Technical Program Committees of numerous international telecommunication conferences and has delivered numerous invited presentations, including plenary lectures, and has taught many short courses all over the world. He has served as a member of the TPC of more than 50 international (mainly IEEE) conferences for some of which he has acted as Vice-Chair. He has delivered numerous plenary lectures and has taught regular and short-courses all over the world.

In September 2005, one of his publications² has been acknowledged from the Editors of the *IEEE Journal on Selected Areas in Communications (Special Issue on Differential and Noncoherent Wireless Communications)* as one of the four most influential papers (out of the 1000+) published on this subject of the last four decades. In their editorial comment his paper is referred to as “real breakthrough” and as a “seminal paper”. It should be noted that for the first time in 1989³, Profs. Makrakis and Mathiopoulos have proposed the term “Multiple Differential Detection” for the optimal receiver in fading channels. This term has now been recognized as the most generic term for maximum likelihood block-by-block detection in fading channels.

In addition he has also co-authored two conference papers which have been selected as best papers. The first one⁴ was published in the 3rd International Conference on Communications, Control and Signal Processing, which was held in Malta in March 2008. The second one⁵ was presented in the 3rd International Conference on Advances in Satellite and Space Communications (SPACOMM) which was held in Budapest, Hungary, in April 2011.

In June 2006, he was elected to the 16 member Steering Board of the Integral Satellite Initiative (ISI). The ISI is an industry-led action forum designed to bring together all aspects related to satellite communications. ISI addresses broadcasting, broadband, and mobile satellite communications, as well as their convergence, in integration within the global telecommunication network infrastructure. ISI supports all forms of space communication and space exploitation. ISI is one of the five Technology Platforms included in the seventh Framework Programme (FP7) of the European Commission. ISI has a worldwide membership of 174 organizations from 27 different countries.

In December 2008, the President of Southwest Jiaotong University, Chengdu, China, has appointed him for a period of five years a Guest Professor at the Key Laboratory of Information, Coding and Transmission of the Institute of Mobile Communications.

In December 2010 and for a period of 5 years he was appointed by the General Secretariat for Research and Technology of Greece as National Greek Delegate to the European Space Agency (ESA) Joint Communication Board (JBC) which is responsible and approves ESA’s Workplan for the Telecommunications and Navigation with a yearly budget of 2 Billion Euros. He is also appointed for the same time period as the National Greek Representative to the European Commission’s COST ICT program.

² D. Makrakis, P. T. Mathiopoulos and D. P. Bouras, “Optimal decoding of coded PSK and QAM signals in correlated fast fading channels: A combined envelope, multiple differential and coherent detection approach,” *IEEE Transactions on Communications*, vol. COM-42, pp. 63-75, Jan. 1994

³ D. Makrakis and P. T. Mathiopoulos, “Optimal decoding in fading channels: A combined envelope, multiple differential and coherent detection approach,” in the Proceedings of *IEEE GLOBECOM 89*, pp. 1551-1557, 1989.

⁴ Z. Papadimitriou, P. T. Mathiopoulos, N. C. Sagias and L. Merakos, “On the Weibull distribution with arbitrary correlation,” in the Proceedings of the 3rd *International Conference on Communications, Control and Signal Processing*, March 2008.

⁵ P. Thompson, B. Evans, L. Castenet, M. Bousquet, P. T. Mathiopoulos, “Concepts and technologies for a Terrabit/s Satellite”, in the *Proceedings of the 3rd International Conference on Advances in Satellite and Space*, April 2011.

