

# CURRICULUM VITAE

## GEORGE KALLOS

### Professor Emeritus

National & Kapodistrian University of Athens  
Department of Physics, Division of Environmental Physics - Meteorology  
Atmospheric Modeling and Weather Forecasting Group  
Tel. +30-210-7276835, +30-6944-544325  
e-mail: [kallos@mg.uoa.gr](mailto:kallos@mg.uoa.gr) or [g-kallos@otenet.gr](mailto:g-kallos@otenet.gr)  
Web: <http://forecast.uoa.gr>

### Educational background

1975: B.S. University of Athens, Mathematics  
1977: M.Sc. University of Athens, Meteorology  
1983: M.Sc. Georgia Institute of Technology, Geophysical Sciences (Atmospheric Sciences)  
1985: Ph.D. Georgia Institute of Technology, Geophysical Sciences (Atmospheric Sciences)

### Employment history

- National & Kapodistrian University of Athens, Department of Physics, Division of Environmental Physics-Meteorology.
  - Emeritus Professor: 2018 - present
  - Professor: March 2009 – 2018.
  - Associate Professor: March 1999 – 2009.
  - Assistant Professor: October 1989 – March 1999.
  - Senior Lecturer: September 1985 - September 1989.
  - Instructor: February 1980 - September 1985.
- Colorado State University, Department of Atmospheric Science, Fort Collins, Colorado 80523, USA. Visiting Professor. Summer 1986, 1987, Winter and Summer 1988, Summer 1989, Summer 1990. Visiting Scientist.
- State University of New York at Albany (SUNY/Alabany), Atmospheric Science Research Center, Albany, NY. Senior Research Associate. 2001-2011. Senior Research Associate.
- Chapman University, Department of Physics, Computational Science and Engineering, Research Professor. 2009-2015. Visiting Professor.
- University of Connecticut, Department of Civil and Environmental Engineering, 2013-present. Adjunct Professor.
- University of Ioannina, School of Physics and Mathematics, Meteorology, Ioannina. – Instructor. October 1977 - February 1980.

### Distinctions

- **IUAPA (International Union of Air Pollution Prevention Association)** award of the Union's highest honor (August 2004) for the work related to long range transport of air pollutants in the Mediterranean Region.
- **Member of the Scientific Steering Committee of the World Meteorological Organization – WMO** for the Sand and Dust Storms Regional Center for Europe and Mediterranean.
- **Member of the Scientific Committee of SESAR Joint Undertaking,**
- **Member of the Scientific Steering Committee of the Mediterranean Operational Oceanographic Network – MOON.**

### Invited talks – Lectures – Seminars During the Last 20 Years

1. National Centers for Environmental Prediction (NOAA/NCEP), Maryland: Invitation for a seminar. 25 May 2000.  
**Lecture:** “Recent model development and applications of the SKIRON/Eta system”
2. European Union, DG-XII: Workshop on Natural and Technological Hazards Research in Europe. Contribution to MEDIN. 15-17 November 2000.  
**Presentation:** “Natural Hazards related to weather conditions in the Mediterranean”. (**Invited Speaker**).

3. New York State Energy Research and Development Authority (NYSERDA), Conference on Environmental Monitoring, Evaluation, and Protection in New York: Linking Science and Policy. Albany, NY, 24-25 September 2001.  
Presentation: Atmospheric Transport and Fate of Mercury in New York State – Model Development and First Results. **(Invited Speaker)**.
4. Bilateral Israeli-Turkish workshop on “Atmospheric Deposition of Aerosols and Gases in the Eastern Mediterranean”, 6-8 January 2002, Golden Tulip Hotel, Dead Sea, Israel  
Presentation: Recent developments towards the prediction of desert dust cycle in the atmosphere. **(Invited speaker)**.
5. Atmospheric Modelling From Microscale to Global, 5<sup>th</sup> RAMS Workshop and Related Applications, 30 September- 3 October 2002, Santorini, Greece.  
Presentation: NHREAS: A very High Resolution Weather, Wave and Ship Safety Forecasting.  
Presentation: A Multi-Scale Transport and Transformation of Air Pollutants in the Mediterranean Region and North Africa. **(Opening Talk)**.
6. 13<sup>th</sup> World Clean Air and Environmental Protection, August 2004, London, UK.  
Presentation: “Production and Transformation of Anthropogenic and Natural Aerosols in the Mediterranean Region” **(invited talk)**
7. International Association of Meteorology and Atmospheric Sciences (IAMAS) 2005 Scientific Assembly, Beijing, China, August 2-11.  
Presentation: “Saharan dust transport towards the Euro-Mediterranean Region and its implications to air quality, ecosystems and climate”. **(invited talk)**.
8. NOAA/EPA Golden Jubilee Symposium on Air Quality Modeling and Its Applications, 20—21 September 2005, Durham, North Carolina.  
Presentation: “Long-Range Transport of Anthropogenically and Naturally Produced PM in the Mediterranean and North Atlantic: Present Status of Knowledge”. **(invited speaker)**
9. 3<sup>rd</sup> International Symposium on Air Quality Management at Urban, Regional and Global Scales (AQM) and 14<sup>th</sup> IUAPPA Regional Conference. 26-30 September 2005, Istanbul, Turkey.  
Presentation: “Air Pollution Modeling in the Mediterranean Region: From Analysis of Episodes to Forecasting”. **(invited speaker)**.
10. SEASAR06, 2006, ESA-ESRIN Frascati, Italy. Advances in SAR Oceanography from ENVISAT and ERS Missions. 23-26 January 2006  
Presentation: Assimilation of ENVISAT altimeter and scatterometer data in real time wave predictions, **(invited speaker)**.
11. Kallos, G., 2005: Forecast of air pollution in the Mediterranean Sea. International Workshop “Towards clean air for Europe: a challenge”, Siracusa, Italy, 9-11 November 2005. **(invited speaker)**.
12. Kallos, G., 2006: Operational air quality forecasting in the Mediterranean: What we learned so far. International Workshop on air quality CIPA, Siracusa, Italy, 25 November 2006. **(invited speaker)**.
13. Kallos, G., M. Astitha, P. Katsafados and C. Spyrou, 2006: SOURCES, PATHS AND SCALES OF TRANSPORT AND TRANSFORMATION OF PM IN THE MEDITERRANEAN AND NORTH ATLANTIC. 2006 **American Geophysical Union Annual Meeting. 11-15 December 2006, San Francisco, USA. (invited talk)**.
14. Kallos, G., 2006: Critical Issues Concerning Model Applications in Marine Environment – RAMS Applications. 6<sup>th</sup> RAMS workshop, May 2006, Itamabuca, Brazil. **(invited speaker)**.
15. Kallos, G., G. Galanis, 2007: New techniques for wind speed forecasting and application to power production. Conference in Wind Energy in Poland, Warsaw 20-12 March 2007. **(invited speaker)**.
16. Kallos, G., Marina Astitha, Petros Katsafados, Chris Spyrou and Elias Mavromatidis, 2007: SAHARAN DUST TRANSPORT AND ITS IMPACT ON AIR QUALITY, ECOSYSTEMS AND REGIONAL CLIMATE. XXIV 2007 IUGG International Association of Meteorology and Atmospheric Sciences – IAMAS Conference. Session on “Mineral dust cycle and its impact on clouds and radiation”, 2-13 July 2007, Perugia, Italy. **(invited talk)**.
17. Kallos, G., 2007, Evaluation of Long-Range Transport contributions on air quality degradation. Workshop on the Evaluation of Regional-Scale Air Quality Modeling Systems in Research Triangle Park, NC, August 7-8, 2007. **(invited participant and panelist)**
18. Kallos G., C. Spyrou, M. Astitha, 2007: WMO/GEO Expert Meeting on an International Sand and Dust Storm Warning System, 7-9 November 2007, Barcelona, Spain. **(invited speaker)**.
19. SEASAR 2008, ESA-ESRIN Frascati, Italy. The second International Workshop on Advances in SAR Oceanography from ENVISAT and ERS Missions. 21-25 January 2008  
Presentation: The new WAM4 model and its data assimilation capabilities **(invited speaker)**.
20. From Desert to Monsoons. First conference 1-6 June 2008, Hotel Aldemar, Crete.  
Presentation: Saharan Dust and Anthropogenic Aerosols – Regional Characteristics **(invited talk)**

21. Symposium on Natural disaster prediction and creation of synergies for mitigation of the forest fires impacts. Organized by the Harvard School of Public Health. Megaron, Athens, 2 April 2008.  
Presentation: EARLY WARNING SYSTEMS FOR NATURAL DISASTERS RELATED TO WEATHER (**invited talk**).
22. 6th Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion. 2-5 November 2008, Macedonia Palace, Thessaloniki, Greece.  
Presentation: Numerical Weather Prediction in wind energy forecasting: New techniques. MEDPOWER2008 (**invited talk**).
23. Fall Colloquium on the Physics of Weather & Climate: Regional Weather Prediction and Modeling. September 29 – October 10, 2008. ICTP, Trieste, Italy.  
Presentation: The SKIRON/dust recent development and operations. (**invited talk**).
24. Fall Colloquium on the Physics of Weather & Climate: Regional Weather Prediction and Modeling. September 29 – October 10, 2008. ICTP, Trieste, Italy.  
Presentation: Aerosol cloud interactions in ICLAMS system. (**invited talk**).
25. ESF- MedCLIVAR Workshop. Climate Change Modeling for the Mediterranean region International Center for Theoretical Physics, Trieste, Italy, 13 - 15 Oct 2008.  
Presentation: Key Processes in Regional Atmospheric Modeling in the Mediterranean (**invited talk**).
26. WMO Scientific Steering Committee on dust storms, Euromediterranean Regional Center. 23-26 November 2008, Carthage, Tunis  
Presentation: Saharan dust modeling activities at NKUA. (**invited speaker**).
27. International workshop on: Atmospheric Composition Changes: Climate-Chemistry Interactions Lecce, Italy - November 2-4, 2009.  
Presentation: Modeling aerosol-radiation-cloud and precipitation processes in the Mediterranean region on an integrated approach. (**Invited talk**)
28. King Abdullah University of Science and Technology (KAUST), 15-16 April 2010,  
Presentation: Modeling aerosol-radiation-cloud and precipitation processes. (**Invited Seminar**).
29. THE 6TH SPECIALTY CONFERENCE AND EXHIBITION ON ENVIRONMENTAL PROGRESS IN THE PETROLEUM & PETROCHEMICAL INDUSTRIES, ENVIRO ARABIA 2010, 18-21 APRIL 2010  
Presentation: MODELING AEROSOL-RADIATION-CLOUD & PRECIPITATION PROCESSES. (**Invited talk**)
30. NASA Goddard Space Flight Center: 30 June 2011.  
Presentation: The role of natural and anthropogenic particles on radiation-cloud-precipitation cycle in mid latitudes (**invited talk**)
31. Kuwait Aviation Authority, 24 July 2011  
Presentation: Predicting deser dust and sandstorms (**invited talk**)
32. 6th International Workshop On Sand/Duststorms And Associated Dustfall, 7-9 September 2011, Athens:  
Presentation: The desert dust and its impacts: General considerations (**keynote speaker**)
33. World Health Organization, Tashkent, Uzbekistan, 21 September 2011.  
Presentation: Desert dust modeling for the Lake Aral and Karakalpakstan desert (**invited seminar**)
34. 48<sup>th</sup> OHOLO Conference on Emerging Remote Sensing Techniques and Associated Modeling for Air Pollution Applications Eilat, Israel – November 6-10, 2011 Eilat, Israel.  
Presentation: Natural and anthropogenic origin particles and their role on radiation-cloud-precipitation cycle in rural and semi-arid areas (**invited talk**)
35. WMO SDS-WAS, Regional Center for Northern Africa, Europe and Middle East Steering Group Meeting: 25-26 November 2011, Antalya, Turkey. (**invited talk**)  
Presentation: Desert dust modeling: New development
36. 32nd NATO/SPS International Technical Meeting on Air Pollution Modelling and its Application, 7 - 11 May, 2012, Utrecht, The Netherlands. (**invited speaker**)  
Presentation: The role of aerosol properties on cloud nucleation processes
37. University Wuppertal, "Reacting Atmosphere Academy", July 2012.  
Presentation: Aerosol physical and chemical properties and their impact on radiation and clouds
38. University of Connecticut, Department of Civil and Environmental Engineering, Storrs, Connecticut, 16 October 2012 (**invited seminar**)  
Presentation: Aerosol-radiation-cloud-precipitation interactions
39. University of Thessalie, Department of Mechanical Engineering, Volos, Greece, 16 November 2012. (**invited seminar**)  
Presentation: Atmospheric models and their use in engineering applications.
40. 33rd International Technical Meeting on Air Pollution Modelling and its Application, 26 – 30 August 2013, Miami, Florida, USA. (**invited talk**)  
Presentation: Issues related to on/offline meteorological and atmospheric chemistry model coupling,

41. PetroEnvironment, 2016. 8th symposium and Exhibition on Environmental Progress in the Petroleum & petrochemical, Dammam, Saudi Arabia 22-24 February, 2016. "The dust cycle in the Arabian Peninsula: from sand dunes to haboobs". **(invited talk)**
42. Brazilian Symposium on Water Waves, Federal University of Rio de Janeiro, Brazil, 14-16 March 2016. **(invited talk)**  
Presentation: The European offshore wind and wave energy resource analysis – Combined exploitation - Analysis of extremes"
43. Ocean Waves and Wave-Coupled Processes Workshop, December 7-9, 2016, Australia-China Centre for Maritime Engineering, University of Melbourne, Melbourne, Australia. **(invited talk)**  
Presentation: "Modeling of Atmospheric-Wave Processes With a Fully-Coupled System"
44. Invited presentation to the Minister of Environment, Water and Agriculture of Saudi Arabia, 5-7 November 2018.  
Presentation: The dust cycle in the Arabian Peninsula: From sand dunes to haboobs **(personal invitation)**
45. PetroEnvironment, 2019.98th symposium and Exhibition on Environmental Progress in the Petroleum & petrochemical, Dammam, Saudi Arabia 19-21 February, 2019.  
Presentation: "Climate Patterns and Characteristics of the Arabian Peninsula". **(Keynote Speaker)**

### **Funded Research and professional activities during the last 20 years**

1. Modeling the Atmospheric Mercury Cycles (MAMCS). Supported by the DG-XII of the EU. Principal Investigator for the NKUA part. 1997-2000.
2. Cloud Airborne Radar and Lidar Study (CARL). Supported by the DG-XII of the EU. Principal Investigator for the NKUA part. 1997-2000.
3. Supply, Installation and Operation of a System of Floating Oceanographic Measurement Stations for the Monitoring and Forecasting of the Greek Seas "POSEIDON". Funded by the European Bank. Principal Investigator for the NKUA part (Atmospheric Model Development and Operation). 1998-99.
4. Regional scale circulations in the Mediterranean- Effects on air pollutant dispersion. Bilateral Cooperation with Spain. Supported by GSRT. Principal Investigator. 1998-1999.
5. A high-resolution weather forecasting system for marine and other applications. "Project EPET-II, "NHREAS" Supported by EU and GSRT. Principal Investigator. 1999-2001.
6. Cooperation with the numerical weather prediction group (IBM, FSL, NCEP) for the high-resolution weather forecasts for Atlanta 96 Olympics.
7. Mediterranean Forecasting System Pilot Project (MFSP). Supported by the DG-XII of EU (Contract MAS3-CT98-0171). Participant. 1999-2001.
8. Subgrid-scale Investigation of Factors Determining the Occurrence of Ozone and Fine Particles (SUB-AERO). Supported by DG-XII of EU (Contract # EVK2-1999-00052). Principal Investigator for University of Athens. 2000-2002.
9. Atmospheric Deposition and Impact of Pollutants, Key Elements and Nutrients on the Mediterranean Sea (ADIOS). Supported by DG-XII of EU (Contract # EVK3-CT-2000-00035). Principal Investigator for University of Athens 2001-2003.
10. A study of the frost conditions in the valley of Himathia-Pella in Northern Greece. Supported by the Hellenic Agricultural Insurance (ELGA). 2000-2002. Principal Investigator.
11. Atmospheric Transport and Fate of Mercury in New York State. Supported by the New York State Energy Research and Development Authority (NYSERDA # 6488, RF PTAE0#1015266-20439-1). Co-Principal Investigator 2001-2002.
12. Automated fire and flood hazard protection system (AUTO-HAZARD PRO): Supported by DG-Research of EU (Contract # EVG1-CT-2001-00057). Principal Investigator for the Institute of Accelerating Systems and Applications.
13. Development and Application of Validated Geophysical Ocean Wave Products from ENVISAT ASAR and RA-2 Instruments (ENVIWAVE). Supported by DG-Research of EU (Contract # EVG2-2001-00017). Principal Investigator for the Institute of Accelerating Systems and Applications.
14. Mediterranean ocean Forecasting System: Toward Environmental Predictions (MFSTEP). Supported by DG-Environment (Contract #EVK3-2001-00174). Principal Investigator for the Institute of Accelerating Systems and Applications.
15. Development of a Next Generation Wind Resource Forecasting System for the Large-Scale Integration of Onshore and Offshore Wind Farms (ANEMOS). Supported by the European Commission (Contract # ENK5-CT-2002-00665). Principal Investigator for the Institute of Accelerating Systems and Applications.

16. An integrated approach to assess the mercury cycling in the Mediterranean basin (MERCYMS). Supported by DG-Research of EU (Contract #EVK3-CT2002-00070). Principal Investigator for the Institute of Accelerating Systems and Applications.
17. Support of Athens2004 Olympics by providing weather, wave and air quality forecasts for the Hellenic National Meteorological Service (HNMS). Trilateral Cooperation between the HNMS, Ministry of Culture and IASA .
18. Master DEgree on POLLution, DIspersion Modelling (MADEPODIM). Supported by EU TEMPUS (Contract # TEMPUS31062-2003). Master Degree Program in Environmental Studies at the Université des Sciences et de la Technologie d'Oran, Algeria in cooperation with Ecole Central de Nantes, France. (2005-2007).
19. An integrated operational system for observing and forecasting waves with applications in shipping (ESPEN). Funded by the GSRT program “Antagonism”. Coordinator for the AM&WFG (2004-2007)
20. Prediction of Waves, Wakes and Offshore Wind (POWWOW). Supported by EU DG-General (FP6, SES6-019898). Coordinator for the AM&WFG (2006-2008).
21. Data Integration System for Eutrophication Assessment in Coastal Waters (INSEA). Supported by EU DG (FP6 STREP SSA Aeronautics and Space Contract # 12336). Coordinator for the AM&WFG (2006-2008).
22. Climate Change and Impact Research: the Mediterranean Environment (CIRCE). Supported by EU DG-General (FP6 Integrated Project 036961). **Coordinator for the Research Line 8 “Air Pollution and Climate”**. (2007-2011).
23. Grid-enabled Remote Instrumentation with Distributed Control and Computation (GRIDCC). Supported by EU DG-General (FP6 STREP IST Contract # 511382). Responsible for meteorological Applications on GRID Environment (2004-2007).
24. Study of the PM10 of anthropogenic and natural origin and estimation of the impacts on the climate of Greece and the Greater Area around it. Funded by the Ministry of Education and Religion, Project PYTHAGORAS. **Coordinator** (2005-2007).
25. POSEIDON Project II. Upgrade of the forecasting system POSEIDON of the Hellenic Centre for Marine Research –HCMR- (new version of SKIRON/dust with data assimilation). Funded by the EFTA and European Development Bank and the Greek Ministry of Development. Coordinator of this part of POSEIDON-II project (subcontractor to Fugro-Oceanor). (2006-2008).
26. Characteristic scales of transport and transformation of air pollutants – climatic impacts. Funded by GSRT (Program PENED). (2005-2008). Coordinator.
27. Development of an Operational Marine Modeling System. Supported by King Fahd University and ARAMCO, Saudi Arabia (2006-2008). Coordinator.
28. Development of a multi-scale air quality modelling system. Supported by EUROCONTROL. Three-year assistantship for the student Jonilda Kushta (PhD) (2006-2009).
29. Marine Renewable Integrated Application Platform (MARINA Platform). FP7 FP7-ENERGY - Project 241402 (duration 48 months, 2010-2014). Coordinator for NKUA.
30. Advanced Tools for the Management of Electricity Grids with Large-Scale Wind Generation (Contract Agreement 038692, ANEMOS.PLUS (2009-2011). Subcontractor.
31. Weather-wave-dust and ocean circulation forecasting system for Saudia Arabia, Arabian and Red Seas (WASSF) (2010-2015). Coordinator.
32. Photochemical Ozone Modeling System for the Eastern Province of the Kingdom of Saudi Arabia. Project ASC RFQ 2475 (2010-2011). Coordinator.
33. Flash flooding warning/guidance system for the Kingdom of Saudi Arabia. Research and development project (2012-2014). Coordinator.
34. Fog forecasting capabilities model for the Kingdom of Saudi Arabia (FFCM). Research project (EPD), (2012-2014). Coordinator.
35. Aerosol characterization for the Kigdom of Saudi Arabia. Research project (2013-2016). Coordinator.
36. Integrated Research Programme on Wind Energy, IRPWIND, (contract # 609795), an EERA project, FP7 Energy, 2013-2016. Coordinator for KNUA.
37. EMODNET, No. MARE/2012/11: Growth and innovation in ocean economy- Gaps and priorities in sea basin observation and data. LOT NO: 2 – THE MEDITERRANEAN FP7, 2013-2017. Coordinator for NKUA.
38. Earth2Observe: Global Earth Observation for integrated water resource assessment. FP7-ENV-2013, contract # 603608. 2014-2018. Participant.
39. An Operational Weather Forecasting System for the Qatar Aviation Authority/Qatar Meteorological Department. 2013-2015. Coordinator.
40. Operational weather and Ozone prediction system for the State of Texas, USA (Subcontractor to Ramboll/Environ Inc). 2013-2015.
41. Development of 30-year dust climatology for the Arabian Peninsula. (2014-2017). Coordinator.

42. EMODNET, Contract No EASME/EMFF/2014/1.3.1.3/LOT 4/SI2.709436: Growth and innovation in ocean economy- Gaps and priorities in sea basin observation and data. LOT NO: 4 – BLACK SEA H2020, 2015-2018. Coordinator.
43. TERNA Energy. Wind forecasting for selected locations in Greece, Bulgaria and Poland. 2014-2020. Coordinator.
44. ELLINIKI TEXNODOMIKI – ANEMOS: Wind forecasting for selected locations in Greece. 2015-2020. Coordinator.
45. Weather-wave-dust and ocean circulation forecasting system for Saudia Arabia, Arabian and Red Seas – Fog and Flood Forecasting System (WASSF-II) (2016-2020). Coordinator.
46. Atmospheric and sea state modeling – Hands on training. Qatar Aviation Authority/Qatar Meteorological Department. 2016. Coordinator.
47. ENI SpA. High-resolution meteo-oceanographic data for various places on earth. Contract No 2500028180, 2017- 2020. Coordinator.
48. ADMIE: Weather forecasting and historical data services for load forecasting in Greece. 2018-2021. Coordinator.
49. OPERANDUM. OPEn-air laboRatories for Nature baseD solUtions to Manage environmental risks. HORIZON2020. 2018-2022. Scientific Coordinator for ITC S.A.
50. Development of numerical models to improve the accuracy of weather forecast initiative. General Authority of Metrology and Environment Protection - GAMEP, Jeddah, Saudi Arabia. 2019-2021.

### **Consulting work**

1. Model simulations and report preparation for the Chevron Refinery fire in Berkeley, California, August (2012).
2. Forensic reports for more than fifty ship accidents worldwide (since 1989 until today).

### **Cooperation with other universities or institutes**

#### **International**

1. National Center for Atmospheric Research, Boulder, Colorado, USA.
2. Georgia Institute of Technology, School of Geophysical Sciences, Atlanta, Georgia, USA.
3. Colorado State University, Dept. of Atmospheric Science, Fort Collins, Colorado, USA.
4. The Hebrew University of Jerusalem, Dept. of Soil and Water Science, Rehovot, Israel.
5. Tel-Aviv University, Dept. of Geophysics and Planetary Sciences, Tel-Aviv, Israel.
6. CENER, Pamplona, Spain.
7. TECHNION, Department of Environment, Haifa, Israel.
8. University of Hamburg, Institut fur Anorganische und Angewandte Chemie, Germany.
9. Atmospheric Science Research Institute (ASRC), State University of New York at Albany.
10. Hanoi University, Hanoi, Vietnam
11. University Polytechnic of Catalunya, Barcelona, Spain
12. Environmental Protection Agency–EPA, Air Pollution Modeling Development, North Carolina, USA.
13. KAUST, Saudi Arabia
14. University of Edinburg, Scotland
15. Danish Technological University (DTU)
16. University of Connecticut, USA
17. NTNU, Norway
18. DELTARES, NL
19. CMCC, Italy
20. INGV, Italy
21. University of Bologna, Italy

#### **National**

1. National Technical University, Depts of Naval Technology, Aerodynamics, Electrical Eng. Athens
2. University of Thessaloniki, Dept. of Geology, Dept. of Mechanical Engineering, Thessaloniki
3. University of Crete, Dept. of Chemistry, Heraklion
4. Power Production Company (PPC), Athens
5. University of the Aegean
6. Hellenic National Meteorological Service
7. Hellenic Centre for Marine Research

## Participation in societies

1. American Geophysical Union
2. American Meteorological Society
3. Hellenic Meteorological Society
4. European Geosciences Union

## Other activities

1. **Associate Editor (current):**
  - “**Atmosphere**”
  - “**Journal of Aerospace Operations**”  
  - **Associate Editor or Member of the editorial board (past):**
  - “Environmental Fluid Mechanics” (1992-2015)
  - “The Journal of Atmosphere - Ocean Systems”
  - “Advances in Meteorology”
  - “International Journal of Geosciences” (2010)
  - “Atmospheric Pollution Research”
2. **Guest Editor:**
  - “**The Global Atmosphere Ocean System**”, Special issue dedicated to POSEIDON forecasting system. (2001)
  - “**Environmental Fluid Mechanics**”: Special issue dedicated to 5<sup>th</sup> RAMS users workshop. (2005)
  - “**Environmental Fluid Mechanics**”: Special Issue, selected papers, MERCYMS project. (2007)
  - “**Environmental Fluid Mechanics**”: Special Issue, selected papers, CMAQ Workshop. (2008)
  - “**Atmospheric Chemistry and Physics**”: Special Issue on Desert dust and its impact in air quality and climate (2012)
3. **Conference Organizer**
  - **Host Organizer for the 19th ITM of NATO-CCMS on Air Pollution Modeling and its Application**, Lyktos Beach Hotel, Ierapetra, Crete, 29 September - 4 October 1991.
  - **Host Organizer for the 5<sup>th</sup> RAMS conference on Regional Scale Modeling and Applications**, Santorini, Greece, 29 September - 1 October 2003.
  - **Organizer of the International Symposium on Regional Weather Forecasting in Parallel Computer Environments**. University of Athens, 15-18 October 1997.
  - **Host Organizer of the 6<sup>th</sup> International Workshop on Sand and Dust storms and Associated Dustfall**, Glyfada, Athens, Greece, 7-9 September 2011.
  - **Host Organizer for the 35th ITM on Air Pollution Modeling and its Application**, Minoan Spa & Resort, Chania, Crete 3-7 October 2016.

## Modelin Systems Developed

- The model development is the major activity. The models developed during the last 20 years are the
- **SKIRON**
  - **SKIRON with dust cycle**
  - **SKIRON with Hg cycle**
  - **RAMS with Hg cycle**
  - **RAMS6/ICLAMS** development with dust, sea salt, gas and aqueous phase chemistry, gas to particle conversion, heterogeneous chemistry, CCN and GCCN predictive quantities (**ICLAMS model**)
  - Data assimilation of satellite data on the new **WAM4** model (stand alone version of ECMWF model developed at the AM&WFG)
  - Modifications of the **CAMx** photochemical model to simulate gas to particle conversion and heterogeneous chemistry
  - Modifications of the **LAPS** limited area data assimilation system to utilize various sources of input data and prepare boundary conditions for SKIRON and RAMS models and be used for high resolution reanalysis.

## Operational modeling activities (developed and administered by the AM&WFG)

- **SKIRON at HNMS:** The SKIRON modeling system is developed by the AM&WFG and is still in operation at the Hellenic National Meteorological Service (HNMS). Operational period 1996-today.
- **POSEIDON at HCMR:** A SKIRON modeling version is developed and is in operation at the Hellenic Centre for Marine Research – HCMR. Operational period 1998-today.
- **Weather-Wave-Desert Dust and Air Pollution forecasts at University of Athens:** The AM&WFG operates a weather-dust-wave-air pollution forecasting web since 1997. SKIRON, RAMS/ICLAMS, WAM, CAMx models are running operationally at the premises of the University of Athens for various locations and forecasting horizons (48-120 hours). Specialized data sets are available for renewable energy; ship optimal routing and safety etc. More than 10,000 visits per day are usually recorded during the last 5 years (<http://forecast.uoa.gr>). Operational period 1997-today.
- **SKIRON at UAE Air Force:** A SKIRON/Dust modeling version was developed and operated for the United Arab Emirates Air Force during the period 2003-2004.
- **Weather and wave forecasts for Athens2004 Olympics:** The AM&WFG in collaboration with the HNMS operated the high-resolution weather, wave and air quality forecasting system (2004).
- **SKIRON system at SUNY/ASRC, USA:** SKIRON is running operationally at the State University of New York at Albany, Atmospheric Science Research Institute (SUNY/ASRC) and the 48-hour forecast during the last 17 years. The domain covered is the Eastern part of USA with grid size of 10 km.
- **NHREAS forecasting system for HNMS:** NHREAS is running operationally at the Hellenic National Meteorological Service (HNMS) providing very-high resolution weather and wave forecasts as well as ship safety calculations (2000-today).
- **Weather and Wave operational system at Chapman:** A combination of RAMS and WAM models is running operationally at Chapman University providing high resolution weather and wave forecasts for California and East Pacific. (2009-today).
- **Wave prediction at NPS:** A WAM version is implemented and running operationally at Naval Postgraduate School, Monterey, California, at the framework of an established collaboration (2009-today).
- **Weather operations at KFUPM:** Development and operation of the OMMS for King Fahd University of Petroleum and Mines (KFUPM) for the Saudi Aramco ARAMCO (SKIRON and WAM models running operationally for the Arabian Peninsula, Red Sea and Arabian Gulf). (2005-2009).
- **WASSF operations for the Arabian Peninsula:** The AM&WFG developed and operates a weather, dust, wave, ocean currents and tides forecasting system (7-day) for the Arabian Peninsula. Regular operational products as well as specialized data sets are prepared on daily base for land, water and coastal operations. The area covered is the Arabian Peninsula, Red Sea and Arabian Gulf. Period of operations is 2010-2015.
- **Air Pollution Operational Forecasting:** We provide daily air pollution forecasting for CIPA (Consorzio Industriale Protezione Ambiente, Siracusa, Sicily) and partitioning of aerosols in anthropogenic and natural). Operational period 2006-today.
- **O3KSA:** A 48-hour O3 analysis and forecasting system for the Arabian Gulf Region. It is based on the WRF and CAMx models. Operational period 2010-2014.
- **Weather, desert dust, wave and sea state forecasting for the Qatar Meteorology Department, Qatar Civil Aviation Authority.** Operational period December 2013 – today.
- **WASSF-II operations for the Arabian Peninsula:** The AM&WFG extended the WASSF system and operates it. It includes weather, dust, flood, fog, wave, ocean currents and tides forecasting system (7-day). Regular operational products as well as specialized data sets are prepared on daily base for



specialized applications. The area covered is the Arabial Peninsula, Red Sea and Arabian Gulf. Period of operations is 2016-today.

- Operational weather forecasting system for **sailing activities (America's Cup, Volvo Racing)**. Collaboration with the Emirates Team New Zealand (ETNZ) (since 2004).
- **Other operational activities:** The Weather Forecasting System SKIRON has been in use in several locations for research and operational use: Iowa State University, NOAA/FSL, NOAA/NCEP, SUNY/ASRC, Institute of Global Environment and Society (COLA), The Hebrew University of Jerusalem, Tel-Aviv University, University of Calabria, National Environmental Research Institute of Denmark, University of Cyprus, Meteorological Service of Egypt, Meteorological Service of Belgium, Hanoi University, CENER in Pamplona. King Fahd University of Saudi Arabia etc.

## Current fields of interest

- Regional/Mesoscale Model development and applications
- Extreme event analysis
- Aerosol-radiation-cloud-precipitation interaction - Heterogeneous chemical processes
- Wave analysis and modeling
- Wind, Solar and Ocean Energy Applications (Modeling).
- Air-Sea interaction processes and marine meteorology
- Regional Climate and downscaling
- Air pollution and climate interactions
- Data Assimilation

## Teaching

The teaching experience started on 1977. Several courses of undergraduate and graduate level have been offered during the last twenty years. The courses offered are in the following topics:

- Dynamic Meteorology
- Synoptic Meteorology
- Numerical Techniques Used in Atmospheric Sciences
- Numerical Weather Prediction
- Mesoscale Phenomena
- Air Pollution Modeling
- Cloud microphysics
- Mathematics in Atmospheric Science - Boundary value problems
- Dynamics of the Atmosphere and Ocean

## PhDs guided

- Pavlos Kassomenos (University of Ioannina as Professor)
- Maria Varinou (General Secretariat of Civil Protection)
- Anastasios Papadopoulos (Hellenic Center for Marine Research)
- Petros Katsafados (Harocopion University of Athens as Assistant Professor)
- Elias Mavromatidis (Harocopio University of Athens)
- Antigoni Voudouri (Hellenic National Meteorological Service)
- Marina Asitha (University of Connecticut)
- George Emmanouil (NRC Democritus)
- Christos Spyrou (Observatory of Athens)
- Stavros Solomos (National Academy of Athens)
- Jonilda Kushta (Cyprus Institute)
- Christina Kalogeri (post Doc at the AM&WFG)
- Nikos Bartzotas (Observatory of Athens)
- Platon Patlakas (post doc at the AM&WFG)

## SUMMARY OF THE ACTIVITIES

<b>1. Publications in International Journals (peer review)</b>	<b>: 145</b>
<b>2. Publications in International Conferences</b>	<b>: &gt;400</b>
<b>3. Technical Reports of Professional assignments and projects under contracts</b>	<b>: &gt; 600</b>
<b>4. Books – Book chapters</b>	<b>: 12</b>
<b>5. Conference Presentations - Seminars</b>	<b>: &gt;180</b>
<b>6. Invited speaker-invited papers – invited lectures</b>	<b>: 73</b>
<b>7. Number of Projects Externally Funded</b>	<b>: 96</b>
<b>8. Number of Projects Acting as Coordinator or Principal Investigator:</b>	<b>80</b>
<b>9. References according to the Science Citation Index</b>	<b>: &gt;6900</b>
<b>10. References not appearing in the Citation Index</b>	<b>: &gt;2000</b>
<b>11. H-index</b>	<b>: 41</b>
<b>12. i10-index</b>	<b>: 90</b>
<b>13. PhDs guided:</b>	<b>: 14</b>
<b>14. PhDs currently guiding</b>	<b>: 3</b>

## Selected and recent publications

### In Scientific Journals:

1. Kallos, G., P. Kassomenos, and R.A. Pielke, 1993: Synoptic and mesoscale weather conditions during air pollution episodes in Athens, Greece. Boundary-Layer Meteorol., 62, pp. 163-184.
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5. Nickovic, S., G. Kallos, A. Papadopoulos and O. Kakaliagou, 2001: A model for prediction of desert dust cycle in the atmosphere. J. Geoph. Res., Vol. 106, D16, 18113-18129.
6. Rodriguez, S., X. Querol, A. Alastuey, G. Kallos and O. Kakaliagou, 2001. Saharan dust contributions to PM10 and TSP levels in Southern and Eastern Spain. Atmos. Environ. 35, 2433-2447.
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12. Kallos, G., A. Papadopoulos, P. Katsafados, and S. Nickovic, 2005: "Trans-Atlantic Saharan dust transport: Model simulation and results". J. Geophysical Research, 111, D09204, doi: 10.1029/2005JD006207.
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14. Kariniotakis, G., I. Marti, T.S., Nielsen, G., Giebel, J. Tambke, I. Waldi, J. Usaola, R. Brownsword, G. Kallos, U. Foken, I. Sanchez, N. Hatzigargyriou, A.M. Palomares, P. Frasyssinet, 2006: Advanced short-term forecasting of wind generation – ANEMOS. IEEE Trans. On Power Systems – invited paper to Special Section on Power System Performance Issues Associated with Wind Energy. 2006, 1-9.
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