

## ***SHORT CURRICULUM VITAE***

**Last Name:** Hatzianastassiou  
**First Name:** Nikolaos

**Date of Birth:** 22 May 1968  
**Place of Birth:** Serres, Greece  
**Nationality:** Greek  
**Marital Status:** Married, 1 child  
**Work address:** Laboratory of Meteorology, Physics Department,  
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**Current Position:** Associate Professor  
**Current Employer:** University of Ioannina, Physics Department  
Ioannina, Greece

### **ACADEMIC PROFILE:**

**2014 -** **UNIVERSITY OF IOANNINA** – Physics Department, Laboratory of Meteorology, Ioannina, Greece  
*Position: Associate Professor*

**2010 - 2014** **UNIVERSITY OF IOANNINA** – Physics Department, Laboratory of Meteorology, Ioannina, Greece  
*Position: Tenured Assistant Professor*

**2010, May-July** **PRINCETON UNIVERSITY – Geophysical Fluid Dynamics Laboratory (GFDL)**  
Princeton, NJ, USA  
*Position: Visiting Fulbright Fellow*

**2006 - 2010** **UNIVERSITY OF IOANNINA** – Physics Department, Laboratory of Meteorology, Ioannina, Greece  
*Position: Assistant Professor (tenured tracked)*

**2000 - 2006** **UNIVERSITY OF IOANNINA** – Physics Department, Laboratory of Meteorology, Ioannina, Greece  
*Position: Lecturer*

**1997 - 2000**

**FOUNDATION FOR RESEARCH AND TECHNOLOGY-HELLAS (FORTH) – Environmental Research Laboratory (ERL)**  
Heraklion, Crete, Greece  
*Position: Research Scientist*

**1997, July-August**

International School of Space Physics and Tropospheric Chemistry, CNES (Centre National D'Etudes Spatiales), Riom, France

**1994 - 1997**

**UNIVERSITE BLAISE PASCAL (CLERMONT-FERRAND II) FRANCE - Laboratoire de Meteorologie Physique (LaMP)**  
*Diploma: Doctorat (PhD)*

Diploma Thesis: Etude de l'effet indirect des particules d'aérosol sur le bilan radiatif lors de cycles nuageux consecutifs  
Study of the indirect effect of aerosol particles during repeated cloud cycles

Supervisor: Prof. Andrea Flossmann

**1991 - 1992**

**UNIVERSITE BLAISE PASCAL (CLERMONT-FERRAND II) FRANCE - Laboratoire de Meteorologie Physique (LaMP)**  
*Diploma: D.E.A (Diplome d'Etudes Approfondies des Sciences de la Terre et de l'Atmosphere, option Atmosphere, MSc degree)*

Diploma Thesis: Simulations numeriques de la couche limite atmospherique nuageuse (Marginal Ice Zone Experiment 1984, M.I.Z.EX'84)  
Numerical simulations of the cloud-topped atmospheric boundary layer (M.I. Z.EX'84)

Supervisor: Prof. Charles Fravallo

**1986 - 1990**

**ARISTOTELIAN UNIVERSITY OF THESSALONIKI (GREECE) – Physics Department**  
*Diploma: Ptihion (Bachelor's degree)*

Diploma Thesis: Diurnal variation of water vapour amounts in Thessaloniki, Greece, during the period 1970-1980

Supervisor: Prof. Haralambos Sahsamanglou

## **RESEARCH INTERESTS:**

1. Cloud Physics (aerosol-cloud interactions)
2. Atmospheric Solar and Terrestrial Radiation Transfer
3. Aerosol-Cloud-Radiation interactions (direct and indirect aerosol effects)
4. Energy budget with emphasis on radiation and precipitation
5. Local, regional and global energy and radiation budgets
6. Aerosol physical, optical and radiative properties
7. Physical climatology

## **TEACHING EXPERIENCE:**

1. *Undergraduate level* (15 years, Atmospheric Physics, Physical Climatology, Dynamical Meteorology, Fluid Dynamics)
2. *Postgraduate level* (15 years, Climatology, Atmospheric Physics, Radar Meteorology, Micrometeorology, Cloud Physics)
3. *Graduate-level training and knowledge update programs* (1 year, General Climatology, Aerosol Remote Sensing)
4. *Research Supervision* [supervisor of 3 PhD Diploma Theses (1 ongoing), 17 postgraduate diploma theses, 33 undergraduate diploma theses and 3 post-docs]
5. *Laboratories* (Atmospheric Physics, majors, Physics Department of the University of Ioannina, 2000-2015)

## PUBLICATIONS

### International Journals with referees<sup>1</sup>

- [1] **N. Hatzianastassiou\***, W. Wobrock, A. I. Flossmann: The role of droplet spectra for cloud radiative properties; *Quarterly Journal of the Royal Meteorological Society*, 123, No 544, 2215-2230, 1997
- [2] **N. Hatzianastassiou**, W. Wobrock, A. I. Flossmann: The effect of cloud processing of aerosol particles on clouds and radiation, *Tellus*, 50B, 478-490, 1998
- [3] **N. Hatzianastassiou\***, B. Croke, K. Koutoulaki, I. M. Vardavas: A model for the longwave radiative budget of the northern hemisphere: Comparison with Earth Radiation Budget Experiment data, *Journal of Geophysical Research*, 104, 9489-9500, 1999
- [4] **N. Hatzianastassiou\***, I. M. Vardavas: The shortwave radiation budget of the Northern Hemisphere using ISCCP and NCEP/NCAR climatological data, *Journal of Geophysical Research*, 104, 24401-24421, 1999
- [5] **N. Hatzianastassiou\***, I. M. Vardavas: The net radiation budget of the Northern Hemisphere, *Journal of Geophysical Research*, 104, 27341-27359, 1999
- [6] **N. Hatzianastassiou\***, I. M. Vardavas: Longwave radiation budget of the Southern Hemisphere using ISCCP C2 climatological data, *Journal of Geophysical Research*, 106, 17785-17798, 2001
- [7] **N. Hatzianastassiou\***, N. Cleridou, I. M. Vardavas: Polar cloud climatologies derived from ISCCP and ERBE data, *Journal of Climate*, 14, 3851-3862, 2001
- [8] **N. Hatzianastassiou\***, I. M. Vardavas: Shortwave radiation budget of the Southern Hemisphere using ISCCP C2 and NCEP/NCAR climatological data, *Journal of Climate*, 14, 4319-4329, 2001
- [9] **N. Hatzianastassiou\***, B. Katsoulis, I. M. Vardavas: Global Distributions of Aerosol Direct Radiative Forcings in the Ultraviolet and Visible arising under Clear Skies. Model, Input Data and Model Results, *Tellus*, 56B, 51-71, 2004
- [10] K. G. Pavlakis, D. Hatzidimitriou, C. Matsoukas, E. Drakakis, **N. Hatzianastassiou\***, I. M. Vardavas: Ten-year global distribution of downwelling longwave radiation. *Atmospheric Chemistry and Physics*, 4, 127-142, 2004
- [11] **N. Hatzianastassiou\***, C. Matsoukas, D. Hatzidimitriou, K. Pavlakis, E. Drakakis, I. Vardavas: Ten year Radiation Budget of the Earth: 1984-1993, *International Journal of Climatology*, 24, 1785-1802, 2004

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<sup>1</sup> \* denotes the corresponding author

- [12] **N. Hatzianastassiou\***, B. Katsoulis, I. M. Vardavas: Sensitivity Analysis of Aerosol Direct Radiative Forcings in the Ultraviolet - Visible wavelengths and Consequences for the Heat Budget, *Tellus*, 56B, 368-381, 2004
- [13] K. G. Pavlakis, **N. Hatzianastassiou**, C. Matsoukas, E. Drakakis, I. M. Vardavas: On the Decadal Increase in the Tropical Mean Outgoing Longwave Radiation for the period 1984-2000, *Atmospheric Chemistry and Physics*, 4, 1419-1425, 2004
- [14] **N. Hatzianastassiou\***, A. Fotiadi, C. Matsoukas, K. G. Pavlakis, E. Drakakis, D. Hatzidimitriou, I. Vardavas: Long-Term Global Distribution of Earth's Shortwave Radiation Budget at the Top Of Atmosphere, *Atmospheric Chemistry and Physics*, 4, 1217-1235, 2004
- [15] C. Pappas, **N. Hatzianastassiou\***, B. D. Katsoulis: Analysis of cold spell characteristics in the Greek region, *Climate Research*, 27, 211-223, 2004
- [16] B. D. Katsoulis, **N. Hatzianastassiou\***: Analysis of hot spell characteristics in the Greek region, *Climate Research*, 28, 229-241, 2005
- [17] C. Matsoukas, A. C. Banks, **N. Hatzianastassiou**, K. G. Pavlakis, D. Hatzidimitriou, E. Drakakis, P. W. Stackhouse, I. Vardavas: Monthly energy budget of the Mediterranean Sea, *Journal of Geophysical Research*, 110, C12008, doi:10.1029/2004JC002566, 2005
- [18] **N. Hatzianastassiou\***, C. Matsoukas, A. Fotiadi, K. G. Pavlakis, E. Drakakis, D. Hatzidimitriou, I. Vardavas: Global Distribution of Earth's Surface Shortwave Radiation Budget, *Atmospheric Chemistry and Physics*, 5, 2847-2867 2005
- [19] A. Fotiadi, **N. Hatzianastassiou\***, C. Matsoukas, K. G. Pavlakis, E. Drakakis, D. Hatzidimitriou, and I. Vardavas: Analysis of the Decrease in the Tropical Mean Outgoing Shortwave Radiation at the Top of Atmosphere for the period 1984-2000, *Atmospheric Chemistry And Physics*, 5, 1721-1730, 2005
- [20] A. Fotiadi, **N. Hatzianastassiou\***, P. W. Stackhouse Jr, C. Matsoukas, K. G. Pavlakis, E. Drakakis, D. Hatzidimitriou, and I. Vardavas: Spatial and temporal distribution of long-term solar surface radiation budget over Greece, *Quarterly Journal of the Royal Meteorological Society*, 132, No 621, 2693-2718, 2006
- [21] A. Fotiadi, **N. Hatzianastassiou\***, E. Drakakis, C. Matsoukas, K. G. Pavlakis, D. Hatzidimitriou, E. Gerasopoulos, N. Mihalopoulos, I. Vardavas: Aerosol physical and optical properties in the Eastern Mediterranean Basin, Crete, from Aerosol Robotic Network data, *Atmospheric Chemistry and Physics*, 6, 5399-5413, 2006
- [22] **N. Hatzianastassiou\***, B. D. Katsoulis, and V. Antakis: Extreme nitrogen oxide and ozone concentrations in Athens atmosphere in relation to meteorological conditions, *Environmental Monitoring and Assessment*, 128, 447-464, 2007
- [23] N. Kalivitis, E. Gerasopoulos, M. Vrekoussis, G. Kouvarakis, N. Kubilay, **N. Hatzianastassiou**, I. Vardavas, N. Mihalopoulos: Dust transport over the eastern

Mediterranean derived from Total Ozone Mapping Spectrometer, Aerosol Robotic Network, and surface measurements, *Journal of Geophysical Research*, 112, D03202, doi:10.1029/2006JD007510, 2007

- [24] K. G. Pavlakis, D. Hatzidimitriou, E. Drakakis, C. Matsoukas, A. Fotiadi, **N. Hatzianastassiou**, I. M. Vardavas: ENSO surface longwave radiation forcing over the tropical Pacific. *Atmospheric Chemistry and Physics*, 7, 2013-2026, 2007
- [25] **N. Hatzianastassiou\***, C. Matsoukas, E. Drakakis, P. W. Stackhouse Jr, P. Koepke, A. Fotiadi, K. G. Pavlakis, I. M. Vardavas: The direct effect of aerosols on solar radiation based on satellite observations, reanalysis datasets, and spectral aerosol optical properties from Global Aerosol Data Set (GADS). *Atmospheric Chemistry and Physics*, 7, 2585-2599, 2007
- [26] **N. Hatzianastassiou\***, C. Matsoukas, A. Fotiadi, E. Drakakis, P. W. Stackhouse Jr, P. Koepke, K. G. Pavlakis, I. M. Vardavas: Modelling the direct effect of aerosols in the solar near-infrared on a planetary scale. *Atmospheric Chemistry and Physics*, 7, 3211-3229, 2007
- [27] C. Matsoukas, A. C. Banks, K. G. Pavlakis, **N. Hatzianastassiou**, P. W. Stackhouse, I. Vardavas: Seasonal heat budgets of the Red and Black Seas, *Journal of Geophysical Research*, 112, C10017, doi: 10.1029/2006JC003849, 2007
- [28] D. G. Kaskaoutis, H. D. Kambezidis, **N. Hatzianastassiou**, P. G. Kosmopoulos, K. V. S. Badarinath: Aerosol climatology: on the discrimination of aerosol types over four AERONET sites. *Atmospheric Chemistry and Physics Discussions*, 7, 6357-6411, 2007
- [29] D. G. Kaskaoutis, H. D. Kambezidis, **N. Hatzianastassiou**, P. G. Kosmopoulos, K. V. S. Badarinath: Aerosol climatology: dependence of the Angstrom exponent on wavelength over four AERONET sites. *Atmospheric Chemistry and Physics Discussions*, 7, 7347-7397, 2007
- [30] **N. Hatzianastassiou\***, B. Katsoulis, J. Pnevmatikos, V. Antakis: Spatial and temporal variation of precipitation in Greece and surrounding regions based on Global Precipitation Climatology Project (GPCP) data. *Journal of Climate*, 21, 1349-1370, 2008
- [31] C. D. Papadimas, **N. Hatzianastassiou\***, N. Mihalopoulos, X. Querol, I. Vardavas: Spatial and temporal variability in aerosol properties over the Mediterranean basin based on 6-year (2000-2006) MODIS data. *Journal of Geophysical Research*, 113, D11205, doi:10.1029/2007JD009189, 2008
- [32] K. Pavlakis, **N. Hatzianastassiou**, C. Matsoukas, A. Fotiadi, and I. Vardavas: ENSO surface shortwave radiation forcing over the tropical Pacific. *Atmospheric Chemistry and Physics*, 8, 5565-5577, 2008

- [34] Matsoukas, C., A.C. Banks, K.G. Pavlakis, **N. Hatzianastassiou**, P.W. Stackhouse Jr., and I. Vardavas, Reply to comment by Kara and Barron on 'Seasonal heat budgets of the Red and Black seas', *J. Geophys. Res.*, 113, C12009, doi:10.1029/2008JC004917, 2008
- [33] C. D. Papadimas, **N. Hatzianastassiou\***, N. Mihalopoulos, M. Kanakidou, B. Katsoulis, I. Vardavas: Assessment of the MODIS Collections C005 and C004 aerosol optical depth products over the Mediterranean basin. *Atmospheric Chemistry and Physics*, 9, 2987-2999, 2009
- [35] **N. Hatzianastassiou\***, A. Gkikas,, N. Mihalopoulos, O. Torres, and B. Katsoulis: Natural versus anthropogenic aerosols in the eastern Mediterranean basin derived from multi-year TOMS and MODIS satellite data. *Journal of Geophysical Research*, 114, D24202, doi:10.1029/2009JD011982, 2009
- [36] A. Gkikas, **N. Hatzianastassiou\***, and N. Mihalopoulos: Aerosol events in the broader Mediterranean basin based on 7-year (2000-2007) MODIS C005 data. *Annales Geophysicae*, 27, 3509-2522, 2009
- [37] C.D. Papadimas, A.K. Fotiadi, **N. Hatzianastassiou**, I. Vardavas, and A. Bartzokas: Regional covariability and teleconnection patterns in surface solar radiation on a planetary scale. *International Journal of Climatology*, doi: 10.1002/joc.2031, 30, 2314-2329, 2010
- [38] C. Matsoukas, **N. Hatzianastassiou**, A. Fotiadi, K.G. Pavlakis, and I. Vardavas, Arctic sea-ice extent and its effect on the absorbed (net) solar flux at the surface, based on ISCCP-D2 cloud data for 1983-2007, *Atmospheric Chemistry and Physics*, 10, 777-787, 2010
- [39] S. Myriokefalitakis, E. Vignati, K. Tsigaridis, C. Papadimas, J. Sciare, N. Mihalopoulos, M. C. Facchini, M. Rinaldi, F. J. Dentener, D. Ceburnis, **N. Hatzianastassiou**, C. D. O'Dowd, M. vanWeele, and M. Kanakidou, Global Modeling of the Oceanic Source of Organic Aerosols, *Advances in Meteorology*, Article ID 939171, 16 pages, doi:10.1155/2010/939171, 2010
- [40] M. Kanakidou, N. Mihalopoulos, T. Kindap, U. Im, M. Vrekoussis, E. Gerasopoulos, E. Dermizaki, A. Unal, M. Koçak, K. Markakis, D. Melas, G. Kouvarakis, A. F. Youssef, A. Richter, **N. Hatzianastassiou**, A. Hilboll, F. Ebojje, F. Wittrock, C. von Savigny, J. P. Burrows, A. Ladstaetter-Weissenmayer and H. Moubasher, Megacities as hot spots of air pollution in the East Mediterranean, *Atmospheric Environment*, 45, 1223-1235, 2011
- [41] C. Matsoukas, N. Benas, **N. Hatzianastassiou**, K.G. Pavlakis, M. Kanakidou and I. Vardavas, Potential evaporation trends over land between 1983–2008: driven by radiative fluxes or vapour-pressure deficit?, *Atmospheric Chemistry and Physics*, 11, 7601-7616, 2011
- [42] N. Benas, **N. Hatzianastassiou**, C. Matsoukas, A. Fotiadi, N. Mihalopoulos and I. Vardavas, Aerosol shortwave direct radiative effect and forcing based on

MODIS Level 2 data in the Eastern Mediterranean (Crete), *Atmospheric Chemistry and Physics*, 11, 12647-12662, 2011

- [43] E. Houssos, C. J. Lolis, A. Gkikas, **N. Hatzianastassiou**, and A. Bartzokas, On the atmospheric circulation characteristics associated with fog in Ioannina, north-western Greece, *International Journal of Climatology*, 32, 1647-1862, DOI: 10.1002/joc.2399, 2012
- [44] **N. Hatzianastassiou\***, C. D. Papadimas, C. Matsoukas, K. Pavlakis, A. Fotiadi, M. Wild, and I. Vardavas, Recent regional surface solar radiation dimming and brightening patterns: inter-hemispherical asymmetry and a dimming in the Southern Hemisphere, *Atmospheric Science Letters*, 13, 43-48, doi:10.1002/asl.361, 2012
- [45] A. Gkikas, E. E. Houssos, **N. Hatzianastassiou\***, C. D. Papadimas, and A. Bartzokas, Synoptic conditions favouring the occurrence of aerosol episodes over the broader Mediterranean basin, 138B, 932-949, *Quarterly Journal of the Royal Meteorological Society*, DOI: 10.1002/qj.978, 2012
- [46] C. D. Papadimas, A. Bartzokas, C. J. Lolis, and **N. Hatzianastassiou**, Sea level pressure – air temperature teleconnections during Northern Hemisphere winter, *Theoretical and Applied Climatology*, 108, 1173-189, DOI: 10.1007/s00704-011-0523-8, 2012
- [47] C. D. Papadimas, **N. Hatzianastassiou\***, C. Matsoukas, M. Kanakidou, N. Mihalopoulos, and I. Vardavas, The direct effect of aerosols on solar radiation over the broader Mediterranean basin, *Atmospheric Chemistry and Physics*, 12, 7165-7185, 2012
- [48] M. Rojas, L. Z. Li, M. Kanakidou, **N. Hatzianastassiou**, G. Seze, and H. Le Treut, Winter weather regimes over the Mediterranean region: their role for the regional climate and projected changes in the 21st century, 41, 3, 551-571, *Climate Dynamics*, DOI 10.1007/s00382-013-1823-8, 2013
- [49] V. Pappas, **N. Hatzianastassiou\***, C. Papadimas, C. Matsoukas, S. Kinne, and I. Vardavas, Evaluation of spatio-temporal variability of Hamburg Aerosol Climatology against aerosol datasets from MODIS and CALIOP, *Atmospheric Chemistry and Physics*, 13, 8381-8399, doi:10.5194/acp-13-8381-2013, 2013
- [50] C. A. Randles, S. Kinne, G. Myhre, M. Schulz, P. Stier, J. Fischer, L. Doppler, E. Highwood, C. Ryder, B. Harris, J. Huttunen, Y. Ma, R. T. Pinker, B. Mayer, D. Neubauer, R. Hitzenberger, L. Oreopoulos, D. Lee, G. Pitari, G. Di Genova, Fred G. Rose, S. Kato, S. T. Rumbold, I. Vardavas, **N. Hatzianastassiou**, C. Matsoukas, H. Yu, F. Zhang, H. Zhang, and P. Lu, Intercomparison of shortwave radiative transfer schemes in global aerosol modeling: Results from the AeroCom Radiative Transfer Experiment, *Atmospheric Chemistry and Physics*, 13, 2347–2379, 2013
- [51] G. Athanassiou, **N. Hatzianastassiou\***, A. Gkikas, and C. Papadimas, Estimating aerosol optical depth over the broader Greek area from MODIS



satellite data, *Water, Air, & Soil Pollution*, 224:1-14, DOI 10.1007/s11270-013-1605-2, 2013

- [52] A. Gkikas, **N. Hatzianastassiou\***, N. Mihalopoulos, V. Katsoulis, S. Kazadzis, J. Pey, X. Querol and O. Torres, The regime of desert dust episodes in the Mediterranean based on contemporary satellite observations and ground measurements, *Atmospheric Chemistry and Physics*, 13, 12135-12154, doi:10.5194/acp-13-12135-2013, 2013
- [53] M. Pyrina, **N. Hatzianastassiou\***, C. Matsoukas, A. Fotiadi, C. D. Papadimas, K. Pavlakis, I. Vardavas, Cloud effects on the solar and thermal radiation budgets of the Mediterranean basin, *Atmospheric Research*, 152, 14-28, doi:10.1016/j.atmosres.2013.11.009, 2015
- [54] A. Gkikas, E. E. Houssos, C. J. Lolis, A. Bartzokas, N. Mihalopoulos, and **N. Hatzianastassiou\***, Atmospheric circulation evolution related to desert dust episodes over the Mediterranean, *Quarterly Journal of the Royal Meteorological Society*, 141A, 1634-1645, 2015
- [55] E. Flaounas, V. Kotroni, K. Lagouvardos, S. Kazadzis, A. Gkikas, and **N. Hatzianastassiou**, Atmospheric circulation evolution related to desert dust episodes over the Mediterranean, *Atmospheric Science Letters*, 16, 473-478, doi: 10.1002/asl.584, 2015
- [56] **N. Hatzianastassiou\***, C. D. Papadimas, C. J. Lolis, A. Bartzokas, V. Levizzani, J. Pnevmatikos and V. Katsoulis, Spatial and temporal variability of precipitation over the Mediterranean Basin based on 32-year satellite Global Precipitation Climatology Project data. Part-I: Evaluation and climatological patterns, *International Journal of Climatology*, under revision, 2015
- [57] **N. Hatzianastassiou\***, C. D. Papadimas, C. J. Lolis, A. Bartzokas, V. Levizzani, J. Pnevmatikos and V. Katsoulis, Spatial and temporal variability of precipitation over the Mediterranean Basin based on 32-year satellite Global Precipitation Climatology Project data. Part-II: inter-annual variability and trends, *International Journal of Climatology*, under revision, 2015
- [58] M. Korras Carracca, **N. Hatzianastassiou\***, C. Matsoukas, A. Gkikas, C. D. Papadimas, The regime of aerosol asymmetry parameter over Europe, Mediterranean and Middle East based on MODIS satellite data: evaluation against surface AERONET measurements, *Atmospheric Chemistry and Physics*, 14, 22677-22713, 2015
- [59] A. Gkikas, S. Basart, **N. Hatzianastassiou**, Marinou, E., Amiridis, V., Kazadzis, S., Pey, J., Querol, X., Jorba, O., Gassó, S., and Baldasano, J. M., Mediterranean desert dust outbreaks and their vertical structure based on remote sensing data, *Atmos. Chem. Phys. Discuss.*, 15, 27675-27748, doi:10.5194/acpd-15-27675-2015, 2015
- [60] A. A. Floutsi, M. B. Korras-Carracca, C. Matsoukas, **N. Hatzianastassiou**, G. Biskos, Climatology and trends of aerosol optical depth over the Mediterranean 1

basin 2 during the last 12 years (2002-2014) based on Collection 006 MODIS Aqua Data, *The Science of Total Environment*, submitted, 2015

### **Publications in Conference Proceedings with referees (peer review)**

- [1] H. Sahsamanoglou, T. Makrogiannis, and **N. Hatzianastassiou**, 1993: Les précipitations dans les Balkans durant les quarante dernières années (Precipitations in Balkans during the last 40 years). 6ème Colloque Internationale de Climatologie, AIC (Association Internationale de Climatologie), Thessaloniki, 20-22 September 1993, pp. 217-226.
- [2] **N. Hatzianastassiou**, 1994: Numerical simulations of the atmospheric boundary layer in cloudy conditions (M.I.Z.EX'84). 2<sup>nd</sup> Greek National Conference on Meteorology Climatology and Atmospheric Physics, Thessaloniki, 29-30 September 1994, pp. 659-667.
- [3] **N. Hatzianastassiou**, W. Wobrock, and A. I. Flossmann, 1995: Simulations numériques de la redistribution du spectre d'aérosols lors d'un cycle (condensation/évaporation) d'un nuage convectif (Numerical simulations of the cloud processing of aerosol particles during a convective cloud cycle). Atelier de Modélisation, CNRM (Centre National de Recherches Meteorologiques), Toulouse, France, 28-30 November 1995, pp. 339-346.
- [4] **N. Hatzianastassiou**, W. Wobrock, and A. I. Flossmann, 1996: Effect of repeated cloud events on aerosol particles and their direct and indirect radiative properties, in Proceedings of 12<sup>th</sup> International Conference on Clouds and Precipitation (ICCP), Zurich, Switzerland, 19-23 August 1996, pp 943-946.
- [5] **N. Hatzianastassiou**, W. Wobrock, and A. I. Flossmann, 1996: On the indirect effect of aerosol particles on solar radiation, 3d Greek National Conference on Meteorology Climatology and Atmospheric Physics, Athens, 25-27 September 1996, pp. 187-192.
- [6] A. I. Flossmann, W. Wobrock, and **N. Hatzianastassiou**, 1999: Study of the evolution of the indirect effect of aerosol particles during cloud cycling. International Conference and Workshops. Ocean color, land surfaces, radiation and clouds, aerosols; the contribution of POLDER and new generation spaceborn sensors to global change studies, CNES (Centre National d'Etudes Spatiales), 18-22 January 1999, Meribel, France
- [7] **N. Hatzianastassiou**, W. Wobrock, and A. I. Flossmann, 2000: Influence of the cloud processing of aerosol particles on clouds and aerosol radiative properties during repeated cloud cycles, in Proceedings of 13<sup>d</sup> International Conference on Clouds and Precipitation (ICCP), Reno, Nevada, USA, August 2000, pp 868-871.
- [8] **N. Hatzianastassiou**, 2001: The effect of aerosol processing by clouds on their direct effect and on the longwave radiation, in Proceedings of 5th Greek National Conference on Meteorology Climatology and Atmospheric Physics, Thessaloniki, September 2000, pp. 495-502.
- [9] **N. Hatzianastassiou**, N. Cleridou, and I. M. Vardavas, 2001: Global radiation budget using the new ISCCP D2 satellite data, in International Radiation Symposium IRS-2000, Current Problems in Atmospheric Radiation, W. L. Smith

and Yu. M. Timofeyev (Eds.). A. Deepak Publishing, Hampton, Virginia. pp. 524-528.

- [10] **N. Hatzianastassiou**, B. Katsoulis, and I. Vardavas, 2002: The direct effect of aerosols on shortwave radiation on a global scale, in Proceedings of 6th Greek National and International Conference on Meteorology Climatology and Atmospheric Physics, Ioannina, Greece, September 2002, pp. 528-538.
- [11] **N. Hatzianastassiou**, C. Matsoukas, D. Hatzidimitriou, C. Pavlakis, E. Drakakis, and I. Vardavas, 2002: Global shortwave radiation budget, in Proceedings of 6th Greek National and International Conference on Meteorology Climatology and Atmospheric Physics, Ioannina, Greece, September 2002, pp. 598-605.
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- [60] M. Korras-Carraca, V. Pappas, C. Matsoukas, N. **Hatzianastassiou**, and I. Vardavas, 2013: Aerosol effects on atmospheric heating/cooling rates on global scale using vertically resolved satellite aerosol data, *Royal Meteorological Society (RMetS) Student Conference 2013*, University of Reading, London, U.K., 6 - 9 September 2013
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## **Citations**

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## Dissertations

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- [1] I. Vardavas, **N. Hatzianastassiou**, D. Hatzidimitriou, C. Matsoukas, K. G. Pavlakis and E. Drakakis: European Component on GEWEX Surface Radiation Budget, European Commission, technical report, 2005.
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- [4] I. Vardavas, **N. Hatzianastassiou**, A. Fotiadi, C. Matsoukas, C. Papadimas and K. G. Pavlakis: The Water Resources of Greece under Changing Climatic Conditions, Final Report, J. S. Latsis Public Benefit Foundation Research Programme 2010.

- [5] **N. Hatzianastassiou**, C. Papadimas and A. Gkikas: Aerosol properties in the broader area of Epirus and northwestern Greece by using contemporary satellite data, Final Report of project 80030, Research projects within the fields of the University of Ioannina, Research Committee of the University of Ioannina, 2010.
- [6] Regional Assessment Climate Change in the Mediterranean (RACCM), EU(6th Framework Program, Project No.036961) Climate Change and Impact Research: the Mediterranean Environment (CIRCE) Integrated Project.
- [7] GEWEX Radiative Flux Assessment (RFA), A project of the World Climate Research Programme Global Energy and Water Cycle Experiment (GEWEX) Radiation Panel, World Climate Research Programme, WCRP Report No. 19/2012, 2012.

### **Books**

- [1] B. Katsoulis and **N. Hatzianastassiou**: Atmospheric Physics, Ioannina University Press, Ioannina, Greece, 2010
- [2] Mechanisms of Climate Variability, Air Quality and Impacts of Atmospheric Constituents in the Mediterranean Region, in Regional Assessment of Climate Change in the Mediterranean (RACCM), Advances in Global Change Research, Vol. 50, Springer, 2013

### **Notes**

- [1] **N. Hatzianastassiou**: Physical Climatology, Notes for undergraduate students, Ioannina, Greece, 2015
- [2] **N. Hatzianastassiou**: Climatology, Notes for post-graduate students, Ioannina, Greece, 2015
- [3] **N. Hatzianastassiou**: Atmospheric Physics, Notes for undergraduate students, Ioannina, Greece, 2015
- [4] **N. Hatzianastassiou**: Atmospheric Physics, Notes for postgraduate students, Ioannina, Greece, 2015

### **Lectures and Seminars**

1. **N. Hatzianastassiou**: Interactions of Aerosols – Clouds – Radiation, given at Universite Blaise Pascal, Clermont-Ferrand, France, October 1996

2. **N. Hatzianastassiou:** On the indirect effect of aerosol particles, given to postgraduate and graduate students of the Laboratory of Meteorology and Atmospheric Physics of the University of Leipzig-Germany, Clermont-Ferrand, France, November 1996
3. **N. Hatzianastassiou:** Computation of the Earth's radiation budget using numerical models and satellite data, Seminar given to the postgraduate students of the Laboratory of Meteorology, given at the Physics Department, University of Ioannina, 31 January 2000
4. **N. Hatzianastassiou:** Modelling the interactions of aerosols, clouds, and radiation, and the Earth's radiation budget, Seminar given to the Physics Department, University of Ioannina, 1 February 2000
5. **N. Hatzianastassiou:** Pollution and atmospheric aerosol particles, Seminar given to the assembly of the Greek human capital network STEPA, University of Ioannina, 6 April 2001
6. **N. Hatzianastassiou:** Modelling the shortwave and longwave radiation budget on global scale, University La Sapienza, Rome, 20 June 2001
7. **N. Hatzianastassiou:** A 17-year global distribution of the Earth's shortwave radiation budget, Universite Blaise Pascal, Clermont-Ferrand, France, 17 September 2005
8. **N. Hatzianastassiou:** Global distribution of the Earth's shortwave radiation budget, University of Ioannina, 16 December 2005
9. **N. Hatzianastassiou:** Optical properties and direct effect of aerosols on the solar radiation budget, 2<sup>nd</sup> Meeting of the Hellenic Association for Aerosol Research (HAAR), National Centre for Scientific Research "Demokritos", 13 December 2007
10. **N. Hatzianastassiou:** Tropospheric aerosols: how these tiny particles affect the Earth's solar radiation budget and climate?, Physics Department, University of Ioannina, 5 February 2010
11. **N. Hatzianastassiou:** Tendencies of shortwave radiation budget beyond 2000, global dimming and brightening and possible implications for climate, Geophysical Fluid Dynamics Laboratory (GFDL), Princeton, USA, 14 July 2010

### **Invited Talks**

1. **N. Hatzianastassiou:** Global radiation budget using the new ISCCP D2 satellite data, Saint Petersburg, Russia, 25 July 2000

2. **N. Hatzianastassiou:** The shortwave and longwave radiation budgets for the northern and southern hemispheres, University La Sapienza (Rome I), Rome, Italy, 25 June 2001
3. **N. Hatzianastassiou:** Modelling the aerosol direct effect on solar radiation arising under clear skies, University Blaise Pascal, Clermont-Ferrand, France, 29 June 2003
4. **N. Hatzianastassiou:** Modelling the aerosol direct effect on solar radiation based on global data sets, Maximilian University of Munich, Munich, Germany, 28 September 2003
5. **N. Hatzianastassiou:** The direct effect of aerosols on the radiation budget and climate of the Earth-atmosphere system: its variability in space and time, European Geosciences Union General Assembly 2009, Vienna, Austria, 19 - 24 April 2009

### **Workshop participations**

1. 4<sup>th</sup> International Cloud Modeling Workshop, Group of NARE '93 experiment, Clermont-Ferrand, France, 12-16 August 1996
2. Reduction of errors in assessment of aerosol forcing of the climate using model, satellite, network and in-situ measurements, in "Ocean color, land surfaces, radiation and clouds, aerosols: the contribution of POLDER and new generation spaceborne sensors to global change studies, Meribel, France, 18-22 January, 1999
3. 1<sup>st</sup>-2<sup>nd</sup>-3<sup>d</sup>-4<sup>th</sup>-5<sup>th</sup>-6<sup>th</sup> European Component of GEWEX Surface Radiation Budget Experiment meetings (1<sup>st</sup>-3<sup>d</sup>-5<sup>th</sup>-6<sup>th</sup> meetings at Heraklion, Crete in 2001, 2002, 2003, 2004, 2<sup>nd</sup> meeting at the Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, 2002, 4<sup>th</sup> meeting at the Free University of Berlin, Germany, 2003)
4. Workshop on Validation of Radiative Fluxes at TOA and Surface Derived from Satellite Measurements and Climate Modeling, at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland, 6-8 October 2004

### **Conferences organizing and scientific committees**

1. 4<sup>th</sup> International Cloud Modeling Workshop, Group of NARE '93 experiment, Clermont-Ferrand, France, 12-16 August 1996
2. 6<sup>th</sup> Hellenic Conference on Meteorology-Climatology-Atmospheric Physics, Ioannina, Greece, 25-28 September 2002
3. Climate Change Impacts on Mediterranean Storms, European Geosciences Union, 12<sup>th</sup> Plinius Conference on "Mediterranean Storms", Corfu, Greece, 1-4 September 2010

4. Mediterranean Storms. Disasters and Climate Change: know to adapt, European Geosciences Union, 13<sup>th</sup> Plinius Conference on "Mediterranean Storms", Savona, Italy, 7-9 September 2011
5. European Geosciences Union (EGU) General Assembly 2013, session in Atmospheric Sciences, AS3.14: Mediterranean aerosols: from physico-chemical and optical properties to radiative and climate effects, Vienna, Austria, 7-12 April 2013
6. European Geosciences Union (EGU) General Assembly 2014, session in Atmospheric Sciences, AS4.11: Mediterranean aerosols: from physico-chemical and optical properties to radiative and climate effects, Vienna, Austria, 27 April-02 May 2014
7. 11<sup>th</sup> International Conference on Meteorology-Climatology-Atmospheric Physics, Heraklion, Crete, 28-31 May 2014
8. American Geophysical Union (AGU) Fall Meeting 2015, session 038: Improved Understanding of the Surface Energy Balance and the Spatio-temporal Variation of its components, San Francisco, USA, 15 - 19 December 2014
9. European Geosciences Union (EGU) General Assembly 2015, session in Atmospheric Sciences, AS4.9: Mediterranean aerosol and gaseous precursors: from processes to regional impacts, Vienna, Austria, 12 - 17 April 2015
10. European Geosciences Union (EGU) General Assembly 2016, session in Atmospheric Sciences, AS3.18: Mediterranean aerosol and gaseous precursors: from processes to regional impacts, Vienna, Austria, 17 - 22 April 2016

### **Teaching-Academics**

#### *Undergraduate courses*

1. Dynamical Meteorology (Dept. of Physics, University of Ioannina) 2000-2001
2. Atmospheric Physics (Dept. of Physics, University of Ioannina) 2000-2015 – *plus Laboratories*
3. Physical Climatology (Dept. of Physics, University of Ioannina) 2003-2015
4. Fluid Mechanics (Dept. of Physics, University of Ioannina) 2002-2003
5. General Climatology (University of Ioannina, Program: Sciences and Culture – Option Environment) 2000-2002

#### *Graduate course*

1. Satellite Aerosol Sensing (Aristotelian University of Thessaloniki, 2014)

#### *Postgraduate courses*

1. General Climatology (MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina) 2000-2015
2. Physical Meteorology and Atmospheric Thermodynamics (MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina) 2000-2007
3. Atmospheric Physics (MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina) 2007-2015



3. Radiometeorology (MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina) 2001-2003
4. Cloud Physics (MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina) 2002-2005
5. Hydrometeorology (MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina) 2002-2005
6. Micrometeorology (MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina) 2010

#### *Supervisions*

1. 33 undergraduate Diploma theses at the Dept. of Physics, University of Ioannina
2. 17 postgraduate Diploma theses at the MSc Program: Atmospheric Sciences and Environment, Dept. of Physics, University of Ioannina
3. 3 PhDs (Dept. of Physics, University of Ioannina – 1 ongoing)
4. 3 post-doc students

#### *Committees*

1. Participation in various MSc and PhD Committees in Greece
2. Participation in PhD Committees in Switzerland (ETH), Italy (University of Siena), Spain (University of Valladolid)
3. Participation in electoral committees in Greece

### **Past and Present Scientific International Collaborations**

1. NASA Langley Research Center, USA (Dr. Paul Stackhouse)
2. ETH, Zurich, Switzerland (Professor Atsumu Ohmura and Dr Martin Wild)
3. University of Munich, Germany (Dr Peter Koepke)
4. Université Blaise Pascal, France (Professors Andrea Flossman and Wolfram Wobrock)
5. Free University of Berlin, Germany (Dr. Dirk Koslowsky and Dr. Heiner Billing)
6. NASA, Goddard Institute for Space Studies, GISS, USA (Dr William Rossow)
7. University of Maryland, USA, (Professor Rachel Pinker)
8. NASA, Goddard Space Flight Center (GSFC), USA, (Dr. Omar Torres)
9. University of Tokyo (Dr Toshihiko Takemura)
10. Harvard University, Smithsonian Center for Astrophysics (Dr. Willie Soon)
11. Spanish Research Council (CSIC), Institute of Environmental Sciences and Water Research, IDAEA, (Prof. Xavier Querol)
12. Department of Global Ecology Carnegie Institution of Washington, USA (Prof. Ken Caldeira)
13. Institute of Atmospheric Sciences and Climate, Italian National Research Council (CNR), (Dr Vincenzo Levizzani)
14. Research School of Biological Sciences, Australian National University, (Dr Michael Roderick)
15. Max Planck Institute for Meteorology, Hamburg, Germany (Dr. Stefan Kinne)

16. Geophysical Fluid Dynamics Laboratory (GFDL), Princeton, USA (Dr. V. Ramaswamy and Dr. Paul Ginoux)
17. Italian National Agency for New Technologies, Energy and the Environment, ENEA, (Dr. Alcide Giorgio di Sarra)

### **Participation in International Commissions**

1. International Radiation Commission (IRC), Working Group on Radiation
2. Global Energy and Water Cycle Experiment (GEWEX), Radiative Flux Assessment (RFA)
3. International Precipitation Working Group (IPWG), Coordination Group for Meteorological Satellites (CGMS) and World Meteorological Organization (WMO)

### **Participation in Journals Editorial Boardings**

1. The Scientific World Journal (TSWJ) – since 2012
2. International Journal of Atmospheric Sciences – since 2012
3. Dataset Papers in Geosciences – since 2012
4. Aegean Journal of Environmental Sciences (AEJES) – since 2014

**FOREIGN LANGUAGES:** I) English (fluently written and spoken), II) French (fluently written and spoken), III) Italian (some written and spoken)

**INFORMATICS:** Languages: Fortran, Pascal, Basic, html  
Platforms: Ms-Dos, Unix, Vax, Linux, Macintosh, Windows, Xwindows  
Computers: Pc's, Workstations, Cray, X-terminals  
Graphics: IDL, Matlab, xmgr, Grad's, xgs, xv, canvas, excel, deltagraph, xfig, Power-Point, DISLIN, surfer, Paint, Acrobat, Matlab, Origin, ...  
Editors: latex, word, notepad, wordpad, emacs, vi, ...

**MILITARY SERVICE:** Completed (1992-1994)

**MEMBERSHIPS:**

1. AGU (American Geophysical Union)
2. EGU (European Geosciences Union)
3. AMS (American Meteorological Society)
4. RMS (Royal Meteorological Society)
5. AIC (Association Internationale de Climatologie)
6. European Meteorological Society (EMS)
7. International Association of Meteorology and Atmospheric Science (IAMAS)
8. European Aerosol Assembly (EAA)
9. Hellenic Meteorological Society (HMS)
10. Hellenic Physical Society (HPS)
11. American Institute Of Physics (AIP)
12. Hellenic Association for Aerosol Research (HAAR)

#### **AWARDS-DISTINCTIONS:**

1. Ministere Francaise de l'Education Superieure et de la Recherche, Scholarship (1994-1997)
2. Society for Civilisation of Serres, Award of best student, 1986
3. Travel Support Award, International Radiation Commission (IRC), World Meteorological Organization, 2000
4. International Commission on Clouds and Precipitation (ICCP), IAMAS, World Meteorological Organization, Travel Support Award, 2000
5. Deutscher Akademischer Austausch Dienst (DAAD), Award, 2003
6. International Commission on Clouds and Precipitation (ICCP), IAMAS, World Meteorological Organization, Travel Support Award, 2004
7. Associate Fellow of the Royal Meteorological Society (RMS), February 2004
8. Member of Radiation Flux Assessment (RFA) Team, Global Energy and Water Cycle Experiment (GEWEX), World Climate Research Programme (WCRP), 2009 -
9. Member of International Radiation (IRC) Radiation Budget Working Group, 2010 - present
10. Fulbright Award, 2009-2010
11. European Geosciences Union (EGU) complimentary membership for 2012 for the EGU related activities performed

#### **REFeree OF INTERNATIONAL PEER REFEREED JOURNALS:**

1. Journal of Geophysical Research
2. Journal of Climate
3. Atmospheric Chemistry and Physics
4. Atmospheric Environment
5. Journal of Applied Meteorology
6. Quarterly Journal of the Royal Meteorological Society
7. Tellus
8. Geophysical Research Letters

12. Remote Sensing of Environment
13. Atmospheric Research
14. Journal of Environmental Management
15. Annales Geophysicae
16. Environmental Monitoring and Assessment
17. Journal of Weather Modification
18. Journal of Atmospheric and Solar Terrestrial Physics
19. Natural Hazards and Earth System Sciences
20. Climate Dynamics
21. Advances in Meteorology
22. Atmospheric Pollution Research
23. The Scientific World Journal
24. Atmospheric Measurements and Techniques
25. The Science of Total Environment
26. Environmental Modelling and Software
27. Meteorology and Atmospheric Physics
28. Remote Sensing Letters
29. Solar Energy

**REFEREE OF SCIENTIFIC PROPOSALS:**

Evaluator of scientific proposals in Greece, as well as in Science Foundations of Germany, Switzerland and Israel and other international programmes (Italy).