

# Curriculum Vitae

---

## General Data

Name : Christos Matsoukas  
Year of Birth : 1971  
Birthplace : Volos, Greece  
Address : Dept. of Environment, Xenia Building, University Hill  
Mytilene, 81100, Greece  
Telephone : +30 22510 36289, +30 972292091  
E-mail : matsoukas@aegean.gr  
Nationality : Greek

## Education

**1989-1994** Physics Degree from the Aristotle University of Thessaloniki, Greece  
**1994-2000** Doctor of Philosophy Degree from the Department of Civil and Environmental Engineering, Univ. of Cincinnati, Ohio, USA  
Dissertation Title: "Precipitation Estimation and Forecast Using Radar and Rain Gage Measurements with Artificial Neural Networks".

---

## Professional Experience

**9/1995 – 9/1998** Research Assistant at the University of Cincinnati under the NASA Earth System Science Fellowship, Ohio, USA  
**1/2001 – 7/2001** Teacher of the "Atmospheric Pollution" course of the "Agricultural Environment and Natural Resources Management" Program at the University of Thessaly, Greece  
**11/2001 – 6/2005** Post doctoral fellow at the Environmental Research Laboratory, Foundation for Research and Technology – Hellas (FORTH), Greece. Funded by the "European Surface Radiation Budget" program (<http://esrb.iesl.forth.gr>).  
**9/2002 – 9/2005** Visiting Assistant Professor at the Department of Physics, University of Crete, Greece.  
**6/2005 – 9/2005** Visiting Scientist at the Climate Monitoring Satellite Application Facility (CMSAF) of the German Weather Service (DWD), Offenbach, Germany  
**10/2005 – 3/2006** Visiting Assistant Professor at the Department of Environment, University of the Aegean, Greece.  
**7/2005 – 12/2007** Collaborating researcher at the Environmental Research Laboratory, Foundation for Research and Technology – Hellas (FORTH), Greece.  
**4/2012 – 6/2012** Visiting Scientist at the Max Planck Institute for Meteorology, in Hamburg, Germany  
**3/2006 – Present** Assistant Professor at the Department of Environment, University of the Aegean, Greece.

---

## Research Interests

- Radiation transfer modeling in the atmosphere
  - Spatiotemporal characteristics of the hydrological cycle
  - Oceanic energy budget, ocean/atmosphere interactions
  - Anthropogenic effects on the planetary energy budget and climate change
- 

## Publications in Refereed Journals

1. **C. Matsoukas**, S. Islam, R. Kothari: "Fusion of radar and rain gage measurements for an accurate estimation of rainfall", *J. Geophys. Res.-Atmos.* 104 (D24): 31437-31450, 1999
2. **C. Matsoukas**, S. Islam, I. Rodriguez-Iturbe: "Detrended fluctuation analysis of rainfall and streamflow time series", *J. Geophys. Res.-Atmos.* 105 (D23): 29165-29172, 2000
3. K.G. Pavlakis, D. Hatzidimitriou, **C. Matsoukas**, E. Drakakis, N. Hatzianastassiou, I. Vardavas: "Ten-year global distribution of downwelling longwave radiation", *Atmos. Chem. Phys.*, 4: 127-142, Jan 30 2004
4. N. Hatzianastassiou, **C. Matsoukas**, D. Hatzidimitriou, K.G. Pavlakis, E. Drakakis, and I. Vardavas: "Ten year radiation budget of the Earth: 1984-1993", *Int. J. Climatol.*, 24: 1785-1802, 2004
5. N. Hatzianastassiou, A. Fotiadi, **C. Matsoukas**, E. Drakakis, K.G. Pavlakis, D. Hatzidimitriou, I. Vardavas: "Long-term global distribution of Earth's shortwave radiation budget at the top of the atmosphere", *Atmos. Chem. Phys.*, 4: 1217-1235, 3 August 2004
6. D.Hatzidimitriou, I. Vardavas, K.G. Pavlakis, N. Hatzianastassiou, **C. Matsoukas**, E. Drakakis: "On the decadal increase in the tropical mean outgoing longwave radiation for the period 1984-2000", *Atmos. Chem. Phys.*, 4: 1419-1425, 27 August 2004
7. A. Fotiadi, N. Hatzianastassiou, **C. Matsoukas**, K.G. Pavlakis, E. Drakakis, D.Hatzidimitriou, I. Vardavas: "Analysis of the decrease in the tropical mean outgoing shortwave radiation at the top of the atmosphere for the period 1984-2000", *Atmos. Chem. Phys.*, 5: 1721-1730, 11 July 2005
8. N. Hatzianastassiou, **C. Matsoukas**, A. Fotiadi, K.G. Pavlakis, E. Drakakis, D. Hatzidimitriou, I. Vardavas: "Global distribution of Earth's surface shortwave radiation budget", *Atmos. Chem. Phys.*, 5: 2847-2867, 1 November 2005
9. **C. Matsoukas**, A.C. Banks, N. Hatzianastassiou, K.G. Pavlakis, D. Hatzidimitriou, E. Drakakis, P.W. Stackhouse, I. Vardavas: "Seasonal heat budget of the Mediterranean Sea", *J. Geophys. Res.-Oceans*, 110, C12008, doi:10.1029/2004JC002566, 2005
10. A. Fotiadi, N. Hatzianastassiou, P. W. Stackhouse Jr., **C. Matsoukas**, E. Drakakis, K. G. Pavlakis, D. Hatzidimitriou, 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
11. A. Fotiadi, N. Hatzianastassiou, E. Drakakis, **C. Matsoukas**, K. G. Pavlakis, D. Hatzidimitriou, E. Gerasopoulos, N. Mihalopoulos, and I. Vardavas: "Aerosol physical and optical properties in the Eastern Mediterranean Basin, Crete, from Aerosol Robotic Network data", *Atmos. Chem. Phys.*, 6: 5399-5413, 4 December 2006

12. N. Hatzianastassiou, **C. Matsoukas**, A. Fotiadi, E. Drakakis, P. W. Stackhouse, P. Koepke, K. G. Pavlakis, D. Hatzidimitriou and I. Vardavas: "Modelling the direct effect of aerosols in the solar near-infrared on a planetary scale", *Atmos. Chem. Phys.*, 7, 3211-3229, 2007
  13. K. G. Pavlakis, D. Hatzidimitriou, E. Drakakis, **C. Matsoukas**, A. Fotiadi, N. Hatzianastassiou, and I. Vardavas: "ENSO surface longwave radiation forcing over the tropical Pacific", *Atmos. Chem. Phys.*, 7, 2013-2026, 2007
  14. N. Hatzianastassiou, **C. Matsoukas**, E. Drakakis, P. W. Stackhouse, P. Koepke, A. Fotiadi, K. G. Pavlakis, and I. 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)", *Atmos. Chem. Phys.*, 7, 2585-2599, 2007
  15. **C. Matsoukas**, A.C. Banks, K.G. Pavlakis, N. Hatzianastassiou, P.W. Stackhouse, I. Vardavas: "Seasonal heat budget of the Red and Black Seas", *J. Geophys. Res.-Oceans*, 112, C10017, doi:10.1029/2006JC003942, 2007
  16. K.G. Pavlakis, N. Hatzianastassiou, **C. Matsoukas**, A. Fotiadi, I. Vardavas: "ENSO surface shortwave radiation forcing over the Pacific", *Atmos. Chem. Phys.*, 8, 5565-5577, 2008
  17. **C. Matsoukas**, A.C. Banks, K.G. Pavlakis, N. Hatzianastassiou, P.W. Stackhouse Jr., I. Vardavas: "Reply to comment by Kara and Barron on 'Seasonal heat budgets of the Red and Black Seas'", *J. Geophys. Res.-Oceans*, 113, C12009, doi:10.1029/2008JC004917, 2008
  18. R. Mueller, **C. Matsoukas**, A. Gratzki, H.D. Behr, R. Hollmann: "The CM-SAF operational scheme for the satellite based retrieval of solar surface irradiance - a LUT based eigenvector hybrid approach", *Remote Sens. Environ.*, 113(5), 1012-1024, doi:10.1016/j.rse.2009.01.012, 2009
  19. **C. Matsoukas**, N. Hatzianastassiou, A. Fotiadi, K.G. Pavlakis, I. Vardavas: "The effect of Arctic sea-ice extent on the absorbed (net) solar flux at the surface, based on ISCCP-D2 cloud data for 1983–2007 ", *Atmos. Chem. Phys.*, 10, 777-787, 2010
  20. **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?", *Atmos. Chem. Phys.*, 11, 7601-7616, 2011
  21. 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", *Atmos. Sci. Lett.*, doi: 10.1002/asl.361, 2011
  22. N. Benas, N. Hatzianastassiou, **C. Matsoukas**, A. Fotiadi, N. Mihalopoulos, I. Vardavas: "Aerosol shortwave daily radiative effect and forcing based on MODIS Level 2 data in the Eastern Mediterranean (Crete)", *Atmos. Chem. Phys.*, 11, 12647-12662, 2011
  23. 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", *Atmos. Chem. Phys. Discuss.*, 11, 30009–30051, 2011
- 

## Publications in Non-refereed Journals

Z. Hu, S. Islam and **C. Matsoukas**: "Relationships between spin-up time and the time scale of forcing data", *GEWEX News*, Vol. 6, No. 1, 1996

---

## Conferences

- 1) 11 – 15 December 1995  
**C. Matsoukas**, Z. Hu and S. Islam: "On the relationship between spin-up processes and time scale of forcing data for land surface models", AGU Fall Meeting, San Francisco, California, U.S.A., Eos Trans., 76(46), Fall Meet. Suppl., p. 92, 1995
- 2) 20 – 24 May 1996  
**C. Matsoukas**, S. Islam and R. Kothari.: "Fusion of raingauge and radar measurements for an accurate estimation of rainfall", presented at the 1996 Spring Meeting Program, American Geophysical Union, Baltimore, Maryland, U.S.A.
- 3) 2 – 7 February 1997  
**C. Matsoukas**, S. Islam and R. Kothari: "Multisensor fusion of precipitation measurements", 77th AMS Annual Meeting and Exhibition, American Meteorological Society, Long Beach, California, U.S.A.
- 4) 29 June – 1 July 1999  
**C. Matsoukas**, S. Islam and R. Kothari: "Intercomparison of cokriging and artificial neural network for the multi-sensor estimation of rainfall", Sixth International Conference on Precipitation: Predictability of Rainfall at the Various Time Scales, Hawaii, U.S.A.
- 5) 25 – 28 September 2002  
N. Hatzianastassiou, **C. Matsoukas**, D. Hatzidimitriou, K. Pavlakis, E. Drakakis, I. Vardavas, "Global shortwave radiation budget", 6<sup>th</sup> Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Ioannina, Greece
- 6) 25 – 28 September 2002  
K. Pavlakis, D. Hatzidimitriou, N. Hatzianastassiou, E. Drakakis, **C. Matsoukas**, I. Vardavas: "The Earth's longwave radiation budget", 6<sup>th</sup> Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Ioannina, Greece
- 7) 25 – 28 September 2002  
**C. Matsoukas**, E. Drakakis, K. Pavlakis, N. Hatzianastassiou, D. Hatzidimitriou, I. Vardavas: "Validation of a radiation transfer model against downward longwave flux GEBA/BSRN measurements", 6<sup>th</sup> Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Ioannina, Greece
- 8) 28 - 30 September 2004  
A. Fotiadi, G. Habilomatis, **C. Matsoukas**, K. G. Pavlakis, E. Drakakis, D. Hatzidimitriou, N. Hatzianastassiou, and I. Vardavas: "The Surface Shortwave Radiation Budget over the broader Greek area for the period 1984-2000", 7<sup>th</sup> Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Cyprus
- 9) 24 – 29 April 2005  
**C. Matsoukas**, A.C. Banks, N. Hatzianastassiou, I. Vardavas: "The seasonal energy budgets of the Mediterranean and Red Seas", European Geosciences Union, General Assembly 2005, Vienna, Austria

- 10) 24 – 29 April 2005  
I. Vardavas, **the ESRB team**: "The Earth's radiation budget on a daily 1x1 degree resolution from the ESRB project", European Geosciences Union, General Assembly 2005, Vienna, Austria
- 11) 2 – 7 April 2006  
A. Fotiadi, E. Drakakis, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas  
"Aerosol properties in the eastern Mediterranean based on the AERONET station at FORTH/Crete, European Geosciences Union, General Assembly 2006, Vienna, Austria
- 12) 2 – 7 April 2006  
**C. Matsoukas**, K. G. Pavlakis, N. Hatzianastassiou, E. Drakakis, A. Fotiadi, D. Hatzidimitriou, P. W. Stackhouse, I. Vardavas: "Global distribution of 10-year daily mean shortwave and longwave radiation at one degree spatial resolution", European Geosciences Union, General Assembly 2006, Vienna, Austria
- 13) 2 – 7 April 2006  
N. Hatzianastassiou, **C. Matsoukas**, A. Fotiadi, I. Vardavas: "Modelling the direct effect of aerosols on near-infrared solar radiation on a global scale", European Geosciences Union, General Assembly 2006, Vienna, Austria
- 14) 24 – 26 May 2006  
N. Hatzianastassiou, A. Fotiadi, C. Papadimas, **C. Matsoukas**, M. Drakakis, D. Hatzidimitriou, I. Vardavas: "Study of aerosol radiation forcing over the Eastern Mediterranean", 8<sup>th</sup> Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Athens, Greece
- 15) 24 – 26 May 2006  
A. Fotiadi, N. Hatzianastassiou, M. Drakakis, **C. Matsoukas**, K. Pavlakis, D. Hatzidimitriou, N. Mihalopoulos, I. Vardavas: "Study of the aerosol optical properties in Crete (Eastern Mediterranean)", 8<sup>th</sup> Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Athens, Greece
- 16) 24 – 26 May 2006  
**C. Matsoukas**, S. Kazadzis, A. Kazantzidis, N. Hatzianastassiou, I. Vardavas, A. Bais: "Comparison of calculated UV solar irradiance values from FORTH model with spectral measurements and results from LibRadtran model", 8<sup>th</sup> Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Athens, Greece
- 17) 15 – 20 April 2007  
**C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Multiyear global analysis of the aerosol direct radiative effect from satellite TOMS data", European Geosciences Union, General Assembly 2007, Vienna, Austria
- 18) 15 – 20 April 2007  
N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: "Modelling 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)", European Geosciences Union, General Assembly 2007, Vienna, Austria

- 19) 28 – 31 May 2008  
C.D. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, and I. Vardavas:  
«Aerosol forcing on the solar energy budget over the greater area of Greece  
for the period 2000 – 2005», 9<sup>th</sup> Hellenic Conference in Meteorology,  
Climatology and Atmospheric Physics, Thessaloniki, Greece
- 20) 28 – 31 May 2008  
A. Fotiadi, N. Hatzianastassiou, M. Drakakis, **C. Matsoukas**, K. Pavlakis, C.  
Papadimas, I. Vardavas: “Study of fine and coarse mode aerosol events from  
AERONET station data in Crete (Eastern Mediterranean) over the period  
2003-2006”, 9<sup>th</sup> Hellenic Conference in Meteorology, Climatology and  
Atmospheric Physics, Thessaloniki, Greece
- 21) 24 – 29 May 2008  
A. Fotiadi, N. Hatzianastassiou, N. Benas, **C. Matsoukas**, and I. Vardavas:  
“Aerosol solar radiative effect during fine and coarse aerosol events in the  
Eastern Mediterranean (Crete)”, European Aerosol Conference (EAC 2008),  
Thessaloniki, Greece
- 22) 26 – 29 March 2009  
N. Benas, N. Cleridou, C. Papadimas, A. Fotiadi, K. Pavlakis, C. Matsoukas,  
N. Hatzianastassiou and I. Vardavas: “Energy budget of the solar and  
terrestrial radiation at the Earth's surface”, 8th Environmental Conference of  
the Greek Physicists Union, Heraklion, Crete, Greece.
- 23) 13 – 18 April 2009  
D. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, and I. Vardavas:  
“Aerosol direct radiative effect on solar radiation on planetary scale based on  
7-year spectral aerosol optical properties from MODIS”, European  
Geosciences Union, General Assembly 2009, Vienna, Austria
- 24) 13 – 18 April 2009  
N. Hatzianastassiou, C. D. Papadimas, **C. Matsoukas**, K. Pavlakis, A.  
Fotiadi, M. Wild, and I. Vardavas: “ Long-term changes of aerosol optical and  
radiative properties and their role in global dimming and brightening ”,  
European Geosciences Union, General Assembly 2009, Vienna, Austria
- 25) 6 – 11 September 2009  
C. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, and I. Vardavas:  
“Comparison between MODIS and GADS aerosols asymmetry factor on a  
planetary scale”, European Aerosol Conference, Karlsruhe, Germany
- 26) 2 – 4 November 2009  
N. Hatzianastassiou, C. Papadimas, **C. Matsoukas**, I. Vardavas: “The direct  
effect of aerosols on solar radiation in the dawn of the 21st century, its  
changes and their role for global dimming and brightening”, International  
workshop on Atmospheric Composition Changes: Climate-Chemistry  
Interactions, Lecce, Italy
- 27) 2 – 7 May 2010  
C.D. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas:  
“Anthropogenic aerosols over southern Europe and their direct effect on solar  
radiation”, European Geosciences Union, General Assembly 2010, Vienna,  
Austria

- 28) 25 – 28 May 2010  
V. Pappas, N. Hatzianastassiou, C. Papadimas, **C. Matsoukas**, S. Kinne, I. Vardavas: “Spatial and temporal variability of the vertical distribution of aerosols and its direct effect on solar radiation for the Mediterranean Basin”, 10th International Conference on Meteorology, Climatology and Atmospheric Physics, Patras, Greece
- 29) 25 – 28 May 2010  
C. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: “The direct effect of anthropogenic aerosols on solar radiation over the broader Mediterranean Region”, 10th International Conference on Meteorology, Climatology and Atmospheric Physics, Patras, Greece
- 30) 3 – 8 April 2011  
N. Hatzianastassiou, C. Papadimas, **C. Matsoukas**, A. Fotiadi, K. Pavlakis, M. Wild, I. Vardavas: “ Patterns of surface solar radiation dimming and brightening at the turn of 21st century ”, European Geosciences Union, General Assembly 2011, Vienna, Austria
- 31) 3 – 8 April 2011  
C. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: “ The effect of clouds on shortwave radiation over the Mediterranean basin based on recent satellite data ”, European Geosciences Union, General Assembly 2011, Vienna, Austria
- 32) 22 – 27 April 2012  
V. Pappas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: “Vertical distributions of aerosols and clouds over the greater Mediterranean basin using CALIOP observations ”, European Geosciences Union, General Assembly 2012, Vienna, Austria
- 33) 22 – 27 April 2012  
N. Hatzianastassiou, C. D. Papadimas, **C. Matsoukas**, K. Pavlakis, A. Fotiadi, M. Wild, I. Vardavas: “Features and causes of recent surface solar radiation dimming and brightening patterns”, European Geosciences Union, General Assembly 2012, Vienna, Austria
- 34) 30 May – 1 June 2012  
M. Pyrina, C.D. Papadimas, A. Fotiadi, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: “Cloud radiative effects on solar radiation over the eastern Mediterranean basin from 1984 to 2007”, 11th International Conference on Meteorology, Climatology and Atmospheric Physics, Athens, Greece
- 35) 30 July – 3 August 2012  
N. Hatzianastassiou, C. D. Papadimas, **C. Matsoukas**, K. Pavlakis, A. Fotiadi, I. Vardavas: “An updated satellite-based climatology of Cloud Effects on global Earth’s radiation budget”, 16<sup>th</sup> International Conference on Clouds and Precipitation, Leipzig, Germany
- 36) 06 – 10 August 2012  
N. Hatzianastassiou, T. Kyrtzidis, C. Papadimas, **C. Matsoukas**, M. Wild, I. Vardavas: “Solar dimming and brightening in the second half of 20th century based on ERA-40 Reanalysis Project”, International Radiation Symposium 2012, Berlin, Germany
-

## Research programs

<b>2001-2004</b>	«European Component of GEWEX Surface Radiation Budget (ESRB)», <a href="http://esrb.iesl.forth.gr">http://esrb.iesl.forth.gr</a> , 5 <sup>th</sup> Framework Program, European Commission
<b>2004-2006</b>	“The Impact of Aerosol Radiative Forcing on the Energy and Water Budget of the Eastern Mediterranean”, Greek Secretariat of Research and Technology, Program “Pythagoras II”
<b>2005-2006</b>	“Towards sustainable water use on Mediterranean Islands (MEDIS)”, <a href="http://www.uni-muenster.de/Umweltforschung/medis/">http://www.uni-muenster.de/Umweltforschung/medis/</a> , 5 <sup>th</sup> Framework Program, European Commission
<b>2005-2006</b>	“Study and experimental estimation of photovoltaic potential in Crete, using a multi-planar photovoltaic panel configuration”, Greek Ministry of Education, Program “Archimedes”
<b>2005-2006</b>	“Aerosol effects on the energy budget and the chemical composition of the atmosphere over the Mediterranean, using satellite data and 3-dimensional atmospheric transport, chemistry, and energy budget models”, Greek Secretariat of Research and Technology, Program “PENED”
<b>2008-2009</b>	“Water resources of Greece under changing climatic conditions”, I. Latsis Foundation, Greece
<b>2012-2015</b>	“Determination of the sources and physicochemical properties of fine and ultrafine suspended particles of atmospheric aerosol, which affect the climate of Greece, Greek Ministry of Education, Program “Thales”

---

## Reviewer for

- Journal of Geophysical Research
  - Environmental Modelling and Software
  - Stochastic Environmental Research & Risk Assessment
  - Geophysical Research Letters
  - Indian Journal of Radio and Space Physics
  - Remote Sensing of Environment
- 

## Languages

- Greek (Mother Tongue)
  - English (Fluent)
  - French (Basic)
  - German (Basic)
-