

Curriculum Vitae

General Data

Name : Christos Matsoukas
Year of Birth : 1971
Birthplace : Volos, Greece
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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 Gauge 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
3/2000 – 11/2001 Compulsory military service in the Greek army as "Computer Programmer/Analyst"
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.
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 – 7/2019 Assistant Professor at the Department of Environment, University of the Aegean, Greece
7/2019 – Present Associate Professor at the Department of Environment, University of the Aegean, Greece

Research Interests

- Radiation transfer modeling in the atmosphere
 - Radiative effects and optical properties of atmospheric aerosols
 - Spatiotemporal characteristics of the hydrological cycle
 - Oceanic energy budget, ocean/atmosphere interactions
 - Anthropogenic effects on the planetary energy budget and climate change
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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, 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, 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, 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, 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, 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", *Q. J. Roy. Meteor. Soc.*, 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, 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, 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. 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
22. N. Hatzianastassiou, C. D. Papadimas, **C. Matsoukas**, K. Pavlakis, A. Fotiadi, M. Wild, 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, 2012
23. C. D. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, M. Kanakidou, N. Mihalopoulos, I. Vardavas: "The direct effect of aerosols on solar radiation over the broader Mediterranean basin", *Atmos. Chem. Phys.*, 12, 7165-7185, 2012
24. 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, J. Quaas, Fred G. Rose, S. Kato, S. T. Rumbold, I. Vardavas, N. Hatzianastassiou, **C. Matsoukas**, H. Yu, F. Zhang, H. Zhang, P. Lu: "Intercomparison of shortwave radiative transfer schemes in global aerosol modeling: results from the AeroCom Radiative Transfer Experiment", *Atmos. Chem. Phys.*, 13, 2347-2379, doi:10.5194/acp-13-2347-2013, 2013
25. V. Pappas, N. Hatzianastassiou, C. Papadimas, **C. Matsoukas**, S. Kinne, I. Vardavas: "Evaluation of spatio-temporal variability of Hamburg Aerosol Climatology against aerosol datasets from MODIS and CALIOP", *Atmos. Chem. Phys.*, 13, 8381-8389, doi:10.5194/acp-13-8381-2013, 2013

26. N. Cleridou, N. Benas, **C. Matsoukas**, B. Croke, I. Vardavas : “Water resources of Cyprus under changing climatic conditions: Modelling approach, validation and limitations”, *Environ. Modell. Softw.*, 60, 202-218, 2014
27. M. Pyrina, N. Hatzianastassiou, **C. Matsoukas**, A. Fotiadi, C. D. Papadimas, K. G. Pavlakis, I. Vardavas: “Cloud effects on the solar and thermal radiation budgets of the Mediterranean basin”, *Atmos. Res.*, 152, 14-28, 2015
28. M. B. Korras-Carraca, N. Hatzianastassiou, **C. Matsoukas**, A. Gkikas, C. D. Papadimas: “The regime of aerosol asymmetry parameter over Europe, the Mediterranean and the Middle East based on MODIS satellite data: evaluation against surface AERONET measurements”, *Atmos. Chem. Phys.*, 15, 13113–13132, 2015
29. E. Triantafyllou, M. Giamarelou, E. Bossioli, P. Zarnpas, C. Theodosi, **C. Matsoukas**, M. Tombrou, N. Mihalopoulos, G. Biskos : “Particulate pollution transport episodes from Eurasia to a remote region of northeast Mediterranean”, *Atmos. Environ.*, 128, 45–52, 2016
30. A. A. Floutsi, M. B. Korras-Carraca, **C. Matsoukas**, N. Hatzianastassiou, G. Biskos : “Climatology and trends of aerosol optical depth over the Mediterranean basin during the last 12 years (2002–2014) based on Collection 006 MODIS-Aqua data ”, *Sci. Total Environ.*, 551-552, 292-303, doi: 10.1016/j.scitotenv.2016.01.192, 2016
31. A. Lázaro, A. Chroni, T. Tschulin, J. Devalez, **C. Matsoukas**, T. Petanidou : “Electromagnetic radiation of mobile telecommunication antennas affects the abundance and composition of wild pollinators”, *J. Insect Conserv.*, doi: 10.1007/s10841-016-9868-8, 2016
32. V. S. Thomaidi, **C. Matsoukas**, A. S. Stasinakis: “Risk assessment of triclosan released from sewage treatment plants in European rivers using a combination of risk quotient methodology and Monte Carlo simulation”, *Sci. Total Environ.*, 603-604, 487-494, doi: 10.1016/j.scitotenv.2017.06.113, 2017
33. V. K. Stathopoulos, **C. Matsoukas**: “Long-term memory and multifractality of downwelling longwave radiation flux at the Earth’s surface”, *Clim. Dyn.*, 52(9), 5723-5738, doi: ,10.1007/s00382-018-4473-z, 2018
34. V. Tzallas, N. Hatzianastassiou, N. Benas, J. F. Meirink, **C. Matsoukas**, P. Stackhouse Jr., I. Vardavas: “Evaluation of CLARA-A2 and ISCCP-H Cloud Cover Climate Data Records over Europe with ECA&D Ground-Based Measurements”, *Remote Sens.*, 11, 212, doi:10.3390/rs11020212, 2019
35. M. B. Korras-Carraca, V. Pappas, N. Hatzianastassiou, I. Vardavas, **C. Matsoukas**: “Global vertically resolved aerosol direct radiation effect from three years of CALIOP data using the FORTH radiation transfer model”, *Atmos. Res.*, 224C, 138–156, doi: 10.1016/j.atmosers.2019.03.024, 2019
36. V. S. Thomaidi, A. Tsahouridou, **C. Matsoukas**, A. S. Stasinakis, M. Petreas, O. I. Kalantzi: “Risk assessment of PFASs in drinking water using a probabilistic risk quotient methodology”, *Sci. Total Environ.*, 712, doi: 10.1016/j.scitotenv.2019.136485, 2020
37. N. Hatzianastassiou, E. Ioannidis, M. Gavrouzou, M. B. Korras-Carraca, C. D. Papadimas, **C. Matsoukas**, N. Benas, A. Fotiadi, M. Wild, I. Vardavas: “Global Dimming and Brightening Features during the First Decade of the 21st Century”, *Atmosphere*, 11, 308; doi:10.3390/atmos11030308, 2020
38. V. K. Stathopoulos, N. Evangeliou, A. Stohl, S. Vratolis, **C. Matsoukas**, K. Eleftheriadis: “Large circulation patterns strongly modulate long-Term variability of Arctic black carbon levels and areas of origin”, *Geophys. Res. Lett.*, 48, e2021GL092876, doi:10.1029/2021GL092876, 2021
39. O. P. Koutsou, M. S. Fountoulakis, **C. Matsoukas**, N. M. Fyllas, A. S. Stasinakis: "Estimation of N₂O emissions from wastewater characteristics in constructed wetlands", *J. Environ. Chem. Eng.*, 9, doi: 10.1029/j.jece.2021.106632, 2021

40. M.-B. Korras-Carraca, A. Gkikas, **C. Matsoukas**, N. Hatzianastassiou: "Global Clear-Sky Aerosol Speciated Direct Radiative Effects over 40 Years (1980–2019)", *Atmosphere*, 12, 1254, doi:10.3390/atmos12101254, 2021
 41. M. Stamatis, N. Hatzianastassiou, M. B. Korras-Carraca, **C. Matsoukas**, M. Wild, I. Vardavas: "Interdecadal Changes of the MERRA-2 Incoming Surface Solar Radiation (SSR) and Evaluation against GEBA & BSRN Stations", *Appl. Sci.*, 12, 10176, doi: 10.3390/app121910176, 2022
 42. M. Gavrouzou, N. Hatzianastassiou, M. B. Korras-Carraca, M. Stamatis, C. Lolis, **C. Matsoukas**, N. Mihalopoulos, I. Vardavas: "Three-Dimensional Distributions of the Direct Effect of an Extended and Intense Dust Aerosol Episode (16–18 June 2016) over the Mediterranean Basin on Regional Shortwave Radiation, Atmospheric Thermal Structure, and Dynamics", *Appl. Sci.*, 13, 6878, doi: 10.3390/app13126878, 2023
 43. M. Stamatis, N. Hatzianastassiou, M. B. Korras-Carraca, **C. Matsoukas**, M. Wild, I. Vardavas: "An Assessment of Global Dimming and Brightening during 1984–2018 Using the FORTH Radiative Transfer Model and ISCCP Satellite and MERRA-2 Reanalysis Data". *Atmos.*, 14(8), doi: 10.3390/atmos14081258, 2023
 44. V. D. Bakatsoula, M. B. Korras-Carraca, N. Hatzianastassiou, **C. Matsoukas**: "A comparison of atmospheric aerosol absorption properties from the MERRA-2 reanalysis with AERONET". *Atmos. Environ.*, 311C, 119997, doi: 10.1016/j.atmosenv.2023.119997, 2023
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Conferences

- 11 – 15 December 1995, AGU Fall Meeting, San Francisco, California, U.S.A.*
- 1) **C. Matsoukas**, Z. Hu and S. Islam: "On the relationship between spin-up processes and time scale of forcing data for land surface models", *Eos Trans.*, 76(46), Fall Meet. Suppl., p. 92, 1995
- 20 – 24 May 1996, AGU Spring Meeting, Baltimore, Maryland, U.S.A.*
- 2) **C. Matsoukas**, S. Islam and R. Kothari.: "Fusion of raingauge and radar measurements for an accurate estimation of rainfall"
- 2 – 7 February 1997, 77th AMS Annual Meeting and Exhibition, American Meteorological Society, Long Beach, California, U.S.A.*
- 3) **C. Matsoukas**, S. Islam and R. Kothari: "Multisensor fusion of precipitation measurements",
- 29 June – 1 July 1999, Sixth International Conference on Precipitation: Predictability of Rainfall at the Various Time Scales, Hawaii, U.S.A.*
- 4) **C. Matsoukas**, S. Islam and R. Kothari: "Intercomparison of cokriging and artificial neural network for the multi-sensor estimation of rainfall"
- 25 – 28 September 2002, 6th Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Ioannina, Greece*
- 5) N. Hatzianastassiou, **C. Matsoukas**, D. Hatzidimitriou, K. Pavlakis, E. Drakakis, I. Vardavas: "Global shortwave radiation budget"
 - 6) K. Pavlakis, D. Hatzidimitriou, N. Hatzianastassiou, E. Drakakis, **C. Matsoukas**, I. Vardavas: "The Earth's longwave radiation budget"

- 7) **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"

24 – 29 April 2005, European Geosciences Union, General Assembly 2005, Vienna, Austria

- 8) **C. Matsoukas**, A.C. Banks, N. Hatzianastassiou, I. Vardavas: "The seasonal energy budgets of the Mediterranean and Red Seas"
9) I. Vardavas, **the ESRB team**: "The Earth's radiation budget on a daily 1x1 degree resolution from the ESRB project"

2 – 7 April 2006, European Geosciences Union, General Assembly 2006, Vienna, Austria

- 10) A. Fotiadi, E. Drakakis, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas "Aerosol properties in the eastern Mediterranean based on the AERONET station at FORTH/Crete"
11) **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"
12) N. Hatzianastassiou, **C. Matsoukas**, A. Fotiadi, I. Vardavas: "Modelling the direct effect of aerosols on near-infrared solar radiation on a global scale"

24 – 26 May 2006, 8th Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Athens, Greece

- 13) N. Hatzianastassiou, A. Fotiadi, C. Papadimas, **C. Matsoukas**, M. Drakakis, D. Hatzidimitriou, I. Vardavas: "Study of aerosol radiation forcing over the Eastern Mediterranean"
14) 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)"
15) **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"

15 – 20 April 2007, European Geosciences Union, General Assembly 2007, Vienna, Austria

- 16) **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Multiyear global analysis of the aerosol direct radiative effect from satellite TOMS data"
17) 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)"

28 – 31 May 2008, 9th Hellenic Conference in Meteorology, Climatology and Atmospheric Physics, Thessaloniki, Greece

- 18) 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"

- 19) 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"

*24 – 29 August 2008, European Aerosol Conference (EAC 2008),
Thessaloniki, Greece*

- 20) 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)"

*26 – 29 March 2009, 8th Environmental Conference of the Greek Physicists
Union, Heraklion, Crete, Greece*

- 21) N. Benas, N. Cleridou, C. Papadimas, A. Fotiadi, K. Pavlakis, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Energy budget of the solar and terrestrial radiation at the Earth's surface"

*13 – 18 April 2009, European Geosciences Union, General Assembly 2009,
Vienna, Austria*

- 22) 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"
23) 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 "

*6 – 11 September 2009, European Aerosol Conference (EAC 2009),
Karlsruhe, Germany*

- 24) C. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, and I. Vardavas: "Comparison between MODIS and GADS aerosols asymmetry factor on a planetary scale"

*2 – 4 November 2009, International workshop on Atmospheric Composition
Changes: Climate-Chemistry Interactions, Lecce, Italy*

- 25) N. Hatzianastassiou, C. Papadimas, **C. Matsoukas**, I. Vardavas: "The direct effect of aerosols on solar radiation in the dawn of the 21th century, its changes and their role for global dimming and brightening"

*2 – 7 May 2010, European Geosciences Union, General Assembly 2010,
Vienna, Austria*

- 26) C. D. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: "Anthropogenic aerosols over southern Europe and their direct effect on solar radiation"

*25 – 28 May 2010, 10th International Conference on Meteorology,
Climatology and Atmospheric Physics, Patras, Greece*

- 27) 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"
- 28) C. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: "The direct effect of anthropogenic aerosols on solar radiation over the broader Mediterranean Region"

3 – 8 April 2011, European Geosciences Union, General Assembly 2011, Vienna, Austria

- 29) 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"
- 30) C. Papadimas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: "The effect of clouds on shortwave radiation over the Mediterranean basin based on recent satellite data"

22 – 27 April 2012, European Geosciences Union, General Assembly 2012, Vienna, Austria

- 31) V. Pappas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: "Vertical distributions of aerosols and clouds over the greater Mediterranean basin using CALIOP observations"
- 32) 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"

30 May – 1 June 2012, 11th International Conference on Meteorology, Climatology and Atmospheric Physics, Athens, Greece

- 33) 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"

06 – 10 August 2012, International Radiation Symposium 2012, Berlin, Germany

- 34) 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"

07-12 April 2013, European Geosciences Union, General Assembly 2013, Vienna, Austria

- 35) V. Pappas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: "Aerosol effect on atmospheric heating rates in the Mediterranean region using vertically resolved satellite aerosol data"
- 36) C. Papadimas, A. Gkikas, N. Hatzianastassiou, **C. Matsoukas**, S. Kazadzis, S. Basart, J. Baldasano, I. Vardavas: "Dust radiative effect over Europe, Mediterranean, Sahara and Middle East from a radiative transfer model using BSC-DREAM8b aerosol optical data"

06-09 September 2013, Royal Meteorological Society Student Conference, Reading, U.K.

- 37) M. Korras-Carraca, V. Pappas, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Aerosol effects on atmospheric heating/cooling rates on global scale using vertically resolved satellite aerosol data"

27 April – 2 May 2014, European Geosciences Union, General Assembly 2014, Vienna, Austria

- 38) M. B. Korras Carraca, V. Pappas, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Global profiles of the direct aerosol effect using vertically resolved aerosol data"
- 39) N. Hatzianastassiou, C. D. Papadimas, A. Gkikas, **C. Matsoukas**, A. M. Sayer, N. C. Hsu, I. Vardavas: "Aerosol radiative effects over global arid and semi-arid regions based on MODIS Deep Blue satellite observations"

28-31 May 2014, 12th International Conference on Meteorology, Climatology and Atmospheric Physics, Heraklion, Greece

- 40) M. B. Korras-Carraca, V. Pappas, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Aerosol forcing efficiency from the FORTH radiative transfer model with CALIOP AOD vertical profiles"
- 41) N. Benas, **C. Matsoukas**, A. Fotiadi, N. Hatzianastassiou, K. Pavlakis, I. Vardavas: "The aerosol effect on potential evaporation at the Athens main water supply reservoirs "
- 42) M. B. Korras-Carraca, V. Pappas, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Aerosol effect on atmospheric heating rate profiles using vertically resolved satellite aerosol data"
- 43) V. Pappas, N. Hatzianastassiou, **C. Matsoukas**, I. Vardavas: "Sensitivity of the atmospheric heating/cooling rate profile to the vertical distribution of aerosols"
- 44) M. Pyrina, C. D. Papadimas, A. Fotiadi, K. Pavlakis, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Cloud effects on tropical longwave radiation budget"

12-17 April 2015, European Geosciences Union, General Assembly 2015, Vienna, Austria

- 45) A. Floutsi, M. Korras-Carraca, **C. Matsoukas**, G. Biskos: "The regime of aerosol optical depth over Central Asia based on MODIS Aqua Deep Blue data "
- 46) M. B. Korras-Carraca, N. Hatzianastassiou, **C. Matsoukas**, A. Gkikas, C. Papadimas, A. Sayer: "The regime of aerosol asymmetry parameter and Angstrom exponent over Europe, Mediterranean and Middle East based on MODIS satellite data. Intercomparison of MODIS-Aqua C051 and C006 retrievals "

5-7 June 2015, 8th Conference on Environmental Policy and Management, Mytilene, Greece

- 47) A. A. Floutsi, M. B. Korras-Carraca, **C. Matsoukas**: "Optical depth of particulate matter over the Mediterranean"

3-5 September 2015, 14th International Conference on Environmental Science and Technology, CEST2015, Rhodes, Greece

- 48) E. Triantafyllou, M. Giamarelou, E. Bossioli, P. Zampas, C. Theodosi, **C.**

Matsoukas, M. Tombrou, N. Mihalopoulos, G. Biskos: "Long-range transported air pollutants from continental areas to the remote region of the North Aegean Sea "

- 49) A. Lázaro, T. Tschudin, A. Chroni, J. Devalez, **C. Matsoukas**, T. Petanidou: "Effect of mobile telecommunication antennas on the abundance of wild pollinators"

6-11 September 2015, European Aerosol Conference 2015, Milan, Italy

- 50) A. A. Floutsi, M. B. Korras-Carraca, **C. Matsoukas**, G. Biskos: "Aerosol optical properties and prevailing aerosol type over the Mediterranean"

17-22 April 2016, European Geosciences Union General Assembly, Vienna, Austria

- 51) A. A. Floutsi, M. B. Korras-Carraca, C. Matsoukas, G. Biskos: "Aerosol optical depth over central north Asia based on MODIS-Aqua data "

19-21 September 2016, 13th International Conference on Meteorology, Climatology and Atmospheric Physics, Thessaloniki, Greece

- 52) M. B. Korras-Carraca, P. E. Charalambidis, **C. Matsoukas**, C. Pilinis, C. Fountoukis, S. N. Pandis, N. Hatzianastassiou, I. Vardavas: "Aerosol radiative effects over Europe from the FORTH radiation transfer model with AtmOptC aerosol optical properties"
- 53) V. Stathopoulos, **C. Matsoukas**: "Long-term memory and multifractality of downwelling longwave flux at stations worldwide"
- 54) T. Laosoglou, N. Hatzianastassiou, N. Benas, A. Fotiadi, **C. Matsoukas**, I. Vardavas: "Study of the total and ultraviolet solar radiation in the alpine region of Ioannina (northwestern Greece)"
- 55) P. Georgakaki, C. D. Papadimas, N. Hatzianastassiou, A. Fotiadi, **C. Matsoukas**, P. W. Stackhouse, M. Kanakidou, I. Vardavas: "High-resolution direct effect of aerosols on solar radiation over the eastern Mediterranean basin"

23-28 April 2017, European Geosciences Union General Assembly, Vienna, Austria

- 56) A. A. Floutsi, M. B. Korras-Carraca, **C. Matsoukas**, R. Riva, G. Biskos: "Aerosol optical properties over Northwestern European seas"
- 57) E. Ioannidis, C. D. Papadimas, A. Fotiadi, **C. Matsoukas**, N. Hatzianastassiou, M. Wild, I. Vardavas: "Recent global dimming and brightening and its causes from a satellite perspective"
- 58) P. Georgakaki, C. D. Papadimas, N. Hatzianastassiou, A. Fotiadi, **C. Matsoukas**, P. Stackhouse, M. Kanakidou, I.M. Vardavas: "Aerosol direct effect on solar radiation over the eastern Mediterranean Sea based on AVHRR satellite measurements "

8-13 April 2018, European Geosciences Union General Assembly, Vienna, Austria

- 59) V. Tzallas, N. Hatzianastassiou, N. Benas, J.F. Meirink, **C. Matsoukas**, I. Vardavas: "A 34-year climatology and trends of CM SAF CLARA-A2 global cloud cover and comparison with ISCCP"

- 60) V. Tzallas, N. Hatzianastassiou, N. Benas, J.F. Meirink, **C. Matsoukas**, I. Vardavas, M. Wild: "Radiative fluxes and cloud radiative effect using CM SAF CLARA-A2 global cloud cover and comparison with ISCCP"
- 61) V. Stathopoulos, M. Mazzola, **C. Matsoukas**, K. Eleftheriadis: "Black Carbon measurements at different altitudes and boundary layer estimated by radiosonde, on a high-Arctic site (Ny-Ålesund, Svalbard), during 2011-2012"
- 62) K. Tsioumitas, N. Hatzianastassiou, N. Benas, D. Meloni, G. Pace, A.G. di Sarra, **C. Matsoukas**, I. Vardavas: "A 15-year climatology of the surface irradiance of the Lampedusa Island, using satellitedata of the Modis Level- 2 and Level-3 instrument of Terra satellite and comparison with measurements from algorithm using ground data"

15-17 October 2018, 14th International Conference on Meteorology, Climatology and Atmospheric Physics, Alexandroupolis, Greece

- 63) V. Tzallas, N. Hatzianastassiou, N. Benas, J.F. Meinrink, **C. Matsoukas**, M. Wild, I. Vardavas: "Global shortwave radiation budget using CM SAF CLARA-A2 global cloud cover data"
- 64) V. Tzallas, N. Hatzianastassiou, N. Benas, J.F. Meirink, **C. Matsoukas**, I. Vardavas, "CM SAF CLARA-A2 global cloud cover climatology and comparison with ISCCP and ECA&D"
- 65) E. Ioannidis, N. Hatzianastassiou, C.D. Papadimas, N. Benas, A. Fotiadi, **C. Matsoukas**, M. Wild, I. Vardavas: "Global downward surface solar radiation tendencies in the first decade of 2000s"
- 66) K. Tsioumitas, N. Hatzianastassiou, N. Benas, S. Dafis, D. Meloni, G. Pace, A. G. di Sarra, **C. Matsoukas**, I. Vardavas: "Modeling 15-year surface solar radiation fluxes in central Mediterranean (Lampedusa island) using MODIS satellite and local cloud optical thickness data"

7-12 April 2019, European Geosciences Union General Assembly, Vienna, Austria

- 67) M. B. Korras Carraca, V. Pappas, N. Hatzianastassiou, I. Vardavas, C. Matsoukas: "Sensitivity of the aerosol direct radiative effect on the aerosol layer height"
- 68) A. Kakouri, M. B. Korras-Carraca, T. Kontos, **C. Matsoukas**, N. Hatzianastassiou, A. A. Floutsi, E. Kostopoulou: "Climatology and trends of aerosol optical depth on global scale using CALIOP vertically resolved data during 2007-2017"
- 69) V. Pappas, N. Hatzianastassiou, C. Papadimas, **C. Matsoukas**, S. Kinne, I. Vardavas: "Direct Radiative Effect of Natural and Anthropogenic Aerosols and their Vertical Profile based on Max-Planck Aerosol Climatology (MACv2)"

8-12 April 2019, Central Asian Dust Conference, Dushanbe, Tajikistan

- 70) A. A. Floutsi, M. B. Korras Carraca, **C. Matsoukas**, N. Hatzianastassiou, G. Biskos: "The regime of Aerosol Optical Depth and Ångström exponent over Central and South Asia"

29 May – 1 June 2019, 32nd International Climatology Conference, Thessaloniki, Greece

- 71) V. Tzallas, N. Hatzianastassiou, P. Stackhouse, N. Benas, J. F. Meirink, **C. Matsoukas**, I. Vardavas: "Intercomparison of the ISCCP-D2 and ISCCP-H

climatological cloud cover data sets and validation against ground based products from ECA&D”

24 – 25 June 2019, 2nd International Climatology ADAPTtoCLIMATE, Heraklion, Greece

- 72) A. Kakouri, M. B. Korras Carraca, T. Kontos, **C. Matsoukas**, N. Hatzianastassiou, A. A. Floutsi, E. Kostopoulou: "An 11 - year global 3D climatology and trends of aerosol optical depth using satellite data from CALIOP”

3 – 5 June 2019, 5th CM SAF User Workshop, Mainz, Germany

- 73) V. Tzallas, N. Hatzianastassiou, N. Benas, J. F. Meinrck, **C. Matsoukas**, P. Stackhouse, I. Vardavas: "Intercomparison of CLARA-A2 and ISCCP-H cloud cover data sets and evaluation with ECA&D ground-based measurements over Europe”

29 September – 1 October 2020, 2nd Scientific Conference PANACEA, online

- 74) V. K. Stathopoulos, O. Soupiona, M. B. Korras-Carraca, S. Samaras, A. Papayannis, M. Mylonaki, C. A. Papanikolaou, R. Foskinis, N. Hatzianastassiou, I. Vardavas, **C. Matsoukas**: "Case study analysis of aerosol shortwave radiative forcing over Athens, using the FORTH radiative transfer model, multi-wavelength Raman-lidar measurements and satellite observations”

16 – 30 November 2020, The 3rd International Electronic Conference on Atmospheric Sciences, Online

- 75) M. B. Korras-Carraca, A. Gkikas, A. M. da Silva, C. Matsoukas, N. Hatzianastassiou: "Optical Properties and Direct Radiative Effects of Aerosol Species at Global Scale Based on the Synergistic Use of MERRA-2 Optical Properties and the Forth Radiative Transfer Model”

19 – 30 April 2021, European Geosciences Union virtual General Assembly

- 76) M. Stamatis, N. Hatzianastassiou, M. B. Korras Carraca, **C. Matsoukas**, M. Wild, I. Vardavas: "Comparative analysis of the incoming surface and outgoing top of atmosphere solar radiation based on MERRA-2 & CERES data”

26-29 September 2021, 15th International Conference on Meteorology, Climatology and Atmospheric Physics, Ioannina, Greece

- 77) M. B. Korras-Carraca, A. Gkikas, C. Matsoukas, N. Hatzianastassiou: "Climatology and trends of Aerosol Optical Properties and Direct Radiative Effect of main aerosol types based on MERRA-2 reanalysis data”
- 78) V. K. Stathopoulos, O. Soupiona, M. B. Korras-Carraca, S. Samaras, A. Papayannis, M. Mylonaki, C. A. Papanikolaou, R. Foskinis, N. Hatzianastassiou, I. Vardavas, **C. Matsoukas**: "Case study analysis of aerosol shortwave radiative effect over Athens, using the FORTH radiative transfer model, multi-wavelength Raman-lidar measurements and satellite observations”

- 79) A. Kakouri, M. B. Korras-Carraca, N. Hatzianastassiou, **C. Matsoukas**, A. Gkikas, T. Kontos: "Estimation of the Spatio-temporal Distribution of wildfires in the Mediterranean Basin with the use of Remote Sensing Data and Correlation with Biomass Burning Aerosol Load"

9 – 12 May 2022, 30th European Biomass Conference and Exhibition

- 80) A. Katsara, E. Zkeri, M. Aloupi, **C. Matsoukas**, M. S. Fountoulakis, A. S. Stasinakis: "Cultivation of the macrophyte *Lemna minor* and the microalgae *Chlorella sorokiniana* in thermal mineral waters"

23 – 27 May 2022, European Geosciences Union General Assembly, Vienna, Austria & Online

- 81) M. Gavrouzou, N. Hatzianastassiou, M. B. Korras-Carraca, C. Lolis, **C. Matsoukas**, N. Mihalopoulos, I. Vardavas: "Direct radiative effects of an intense dust episode over the Mediterranean Basin (16-18 June 2016)"

4 – 8 July 2022, International Radiation Symposium, Thessaloniki, Greece

- 82) M. B. Korras-Carraca, A. Gkikas, A. M. da Silva, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas: "Vertically resolved Aerosol Optical Properties and Direct Radiative Effects, at Global Scale, over a 40-year Period (1980-2019)"
- 83) M. Stamatis, N. Hatzianastassiou, M. B. Korras-Carraca, **C. Matsoukas**, M. Wild, I. Vardavas: "The Global Dimming and Brightening Based on MERRA-2 Reanalysis Data and its Evaluation against GEBA & BSRN Ground-Based Networks"
- 84) M. Gavrouzou, K. Tsioumitas, S. Dafis, N. Benas, G. Pace, D. Meloni, **C. Matsoukas**, N. Hatzianastassiou, A. G. di Sarra, I. Vardavas: "Modeling of Surface Solar Radiation in the Central Mediterranean Using Satellite and Surface-based Cloud Input Data"
- 85) M. Gavrouzou, N. Hatzianastassiou, M. B. Korras-Carraca, C. Lolis, **C. Matsoukas**, N. Michalopoulos, I. Vardavas: "Vertically resolved dust direct effect during the intense Mediterranean dust aerosol episode of 16 June 2016"

4 – 9 September 2022, International Aerosol Conference, Athens, Greece

- 86) M. Stamatis, N. Hatzianastassiou, M. B. Korras Carraca, **C. Matsoukas**, M. Wild, I. Vardavas: "A detailed assessment of the contribution of aerosols to Global Dimming and Brightening using a radiative transfer model and MERRA-2 aerosol optical properties"
- 87) M. Gavrouzou, N. Hatzianastassiou, M. B. Korras-Carraca, C. Lolis, **C. Matsoukas**, N. Mihalopoulos, I. Vardavas: "Direct radiative effects of Mediterranean dust episodes"
- 88) M. B. Korras-Carraca, K. Skyllakou, D. Manetas, **C. Matsoukas**, N. Hatzianastassiou, I. Vardavas, S.N. Pandis, A. Nenes: "Biomass-burning aerosol direct radiative effects over Europe using detailed optical properties from the chemical transport model PMCAMx-SR"
- 89) K. Skyllakou, M. B. Korras-Carraca, D. Manetas, **C. Matsoukas**, N. Hatzianastassiou, S. N. Pandis, A. Nenes: "Predicted Concentrations and Optical Properties of Brown Carbon from Biomass Burning over Europe"

7 – 8 October 2022, 30th Symposium of the Hellenic Nuclear Physics Society, Ioannina, Greece

- 90) F. K. Pappa, D. Avgerinos, E. Kapilaris, O. Kremenioti, G. Poulis, G. Kuburas, **C. Matsoukas**: “Radioactivity measurements in eastern Lesvos, Greece”
91) F. K. Pappa, G. Foteinis, G. Kuburas, O. Tzoraki, **C. Matsoukas**: “NORM measurements at Kalloni and Gera Gulfs, Lesvos Island, Greece”

23 – 28 April 2023, European Geosciences Union General Assembly, Vienna, Austria & Online

- 92) M. Stamatis, N. Hatzianastassiou, M. B. Korras-Carraca, **C. Matsoukas**, M. Wild, I. Vardavas: “The Global Dimming & Brightening based on FORTH radiative transfer model during 1984-2018 and its evaluation against GEBA & BSRN ground-based networks”

25 – 29 September 2023, 16th International Conference on Meteorology, Climatology and Atmospheric Physics, Athens, Greece

- 93) M. Gavrouzou, N. Hatzianastassiou, M. B. Korras-Carraca, M. Stamatis, C. J. Lolis, **C. Matsoukas**, N. Mihalopoulos, I. Vardavas: “Vertically resolved direct radiative effects of intense Mediterranean dust episodes during the period 2005-2018”
94) M. Stamatis, N. Hatzianastassiou, M. B. Korras-Carraca, **C. Matsoukas**, M. Wild, I. Vardavas: “On the Contribution of Aerosols and Clouds to Global Dimming and Brightening Using a Radiative Transfer Model, ISCCP-H Cloud and MERRA-2 Aerosol Optical Properties”

29 – 30 September 2023, 31st Symposium of the Hellenic Nuclear Physics Society, Athens, Greece

- 95) M. K. Mazioti, F. K. Pappa, G. Kuburas, **C. Matsoukas**: “Radioactivity in building materials used in Lesvos, Greece”

Research programs

- 2001-2004** «European Component of GEWEX Surface Radiation Budget (ESRB)», 5th Framework Program, European Commission
Principal Investigator: I. Vardavas, Foundation for Research and Technology – University of Crete
- 2004-2006** “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”
Principal Investigator: I. Vardavas, University of Crete
- 2005-2006** “Towards sustainable water use on Mediterranean Islands (MEDIS)”, 5th Framework Program, European Commission
Principal Investigator: M. Lange, Universitaet Muenster
- 2005-2006** “Study and experimental estimation of photovoltaic potential in Crete, using a multi-planar photovoltaic panel configuration”, Greek Ministry of Education, Program “Archimedes”
Principal Investigator: E. Drakakis, Technological Educational Institute of Crete
- 2005-2006** “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”
Principal Investigator: M. Kanakidou, University of Crete
- 2008-2009** “Water resources of Greece under changing climatic conditions”, I. Latsis Foundation, Greece
Principal Investigator: I. Vardavas, University of Crete
- 2012-2015** “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”
Principal Investigator: C. Pilinis, University of the Aegean
- 2018-2021** “Equipment for a Water and Air Quality University Laboratory and their application to the hot springs of Lesvos, upgrading the services and the radiological protection of personnel and visitors”, Regional Government of North Aegean
Principal Investigator: C. Matsoukas, University of the Aegean
- 2018-2021** “PANhellenic infrastructure for Atmospheric Composition and climate change (PANACEA)”, Operational Programme Competitiveness, Entrepreneurship & Innovation
Principal Investigator: N. Mihalopoulos, University of Crete – National Observatory of Athens
- 2019-2021** “Effect of the principal aerosol types on solar radiation: Calculations using a detailed spectral radiation transfer model and MERRA-2 aerosol data”, Operational Programme Education and Lifelong Learning
Principal Investigator: N. Hatzianastassiou, University of Ioannina
- 2021-2023** “Center for Sustainable Circular Bioeconomy and Energy”, Operational Programme Competitiveness, Entrepreneurship & Innovation
Principal Investigator: D. F. Lekkas, University of the Aegean
- 2022-2025** “Green Heritage: The impact of climate change on the Intangible Cultural Heritage”, Erasmus+ programme
Coordinator: Consiglio Nazionale delle Ricerche, Italy
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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
- Remote Sensing
- Atmospheric Chemistry and Physics
- International Journal of Physical Sciences
- Atmospheric Measurement Techniques
- Geoscience Frontiers

Editor for

- Remote Sensing
-