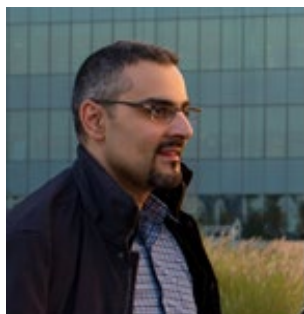


# Curriculum Vitae

## Personal Information

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**Name:** Christos Spyrou

**Date and Place of Birth:** 2-4-1979, Athens

**Contact info:** ☎ 0030 – 2108832048 (34)  
✉ [cspyrou@academyofathens.gr](mailto:cspyrou@academyofathens.gr)

**ORCID** 0000-0002-3074-3230

**Title:** **Associate Researcher**  
Research Centre for Atmospheric Physics and  
Climatology – Academy of Athens

## Synopsis

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Dr. Christos Spyrou is an Associate Researcher in the Research Centre for Atmospheric Physics and Climatology of the Academy of Athens. He got his degree in Physics from the Department of Physics of the National and Kapodistrian University of Athens (NKUA) in 2002. On 2004 he got his Master's Degree on Environmental Physics and Meteorology from NKUA and on 2011 he successfully defended his PhD thesis titled "Development Of Algorithms For The Calculation Of The Feedback Of Naturally Produced Particles Of Radiative Transfer And Energy Balance". He has worked in the framework of **24** Projects funded by the EU and the Greek Government as a Senior Researcher. He has **40** original publications in peer-reviewed scientific journals and an h-index of **18** (1212 citations, excluding self-citations. Source: Scopus). He has more than 50 publications in conference proceedings and international workshops. He is the co-author of **5** book chapters on desert dust, the radiative feedbacks of aerosols and numerical modeling and he is a reviewer in **19** international scientific journals. On 2018 he became an Editor for the "International Journal of Environmental Monitoring and Analysis" and on 2023 a Guest editor for "Sustainability". He was in charge of the SKIRON/Eta model operational forecasts of the Atmospheric Modelling and Weather Forecasting Group of NKUA from 2008 up to 2018. In 2018 he was assigned the teaching of the "Climate Change" course in the Geography Department of Harokopio University of Athens. In 2020 he became a member of the ReACT team (Remote sensing of Aerosols, Clouds and Trace gases) of the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens.

## Education

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### Studies

- **PhD**, National and Kapodistrian University of Athens, School of Sciences, Faculty of Physics, Department of Environmental Physics, Development Of Algorithms For The Calculation Of The Feedback Of Naturally Produced Particles Of Radiative Transfer And Energy Balance, 2011, University of Athens, PhD dissertation. Available at: <http://phdtheses.ekt.gr/eadd/handle/10442/26160?locale=en>
- **M.Sc**, National and Kapodistrian University of Athens, School of Sciences, Faculty of Physics, Department of Environmental Physics, 2004
- **B.Sc.**, National and Kapodistrian University of Athens, School of Sciences, Faculty of Physics, 2002

**Foreign Languages**

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Listening	Reading
<b>English</b>	<b>C2</b>	<b>C2</b>	<b>C2</b>	<b>C2</b>	<b>C2</b>
	Certificate of Proficiency in English, University of Cambridge				
<b>French</b>	<b>B1</b>	<b>B1</b>	<b>B2</b>	<b>B1</b>	<b>A2</b>
	Diplôme D`Études Francaises ,Sorbonne 2em Degré				
	Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user Common European Framework of Reference for Languages				

**Computer Skills**

- Unix
- Linux
- Visualization Tools (NCAR,NCL,IDV,GRADS)
- Programming Languages: FORTRAN, Bash (sh,ksh,csh)
- Bash Scripting
- Microsoft Office (Word, EXCEL, PowerPoint, Front Page)

**Algorithm Development/ Operational use of Models and Data Assimilation Systems****• Workstation ETA**

- SKIRON/Eta <http://forecast.uoa.gr/forecastnewinfo.php>
- POSEIDON [http://poseidon.hcmr.gr/weather\\_forecast.php?area\\_id=gr](http://poseidon.hcmr.gr/weather_forecast.php?area_id=gr)
- DREAM-NMM <http://pre-tect.space.noa.gr/instruments/17/>

**• WRF (Weather Research and Forecasting model)**

- WRF-NMM <https://dtcenter.org/wrf-nmm/users/>
- WRF-ARW <http://www2.mmm.ucar.edu/wrf/users/model.html>
- WRF-Chem <https://www2.acom.ucar.edu/wrf-chem>

**• CHAOS (Chemical Hydrological Atmospheric Ocean wave System)**

<http://dx.doi.org/10.1016/j.atmosres.2017.08.019>

**• NEMO (Nucleus for European Modelling of the Ocean)**

<https://www.nemo-ocean.eu/>

**• LAPS (Local Analysis and Prediction System)**

<https://journals.ametsoc.org/doi/pdf/10.1175/1520-0434%281996%29011%3C0273%3ATLAAPS%3E2.0.CO%3B2>

**• SWAN wave model**

<https://www.tudelft.nl/citg/over-faculteit/afdelingen/hydraulic-engineering/sections/environmental-fluid-mechanics/research/swan>

### Areas of Scientific Interest

- Weather Forecasting and numerical models
- Data Assimilation
- Air-Sea Interaction
- Nowcasting
- Air Pollution
- Desert Dust
- Climate Change

### Participation in Projects

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1. **SALAM-MED** (Sustainable Approaches to Land and water Management in Mediterranean Drylands) Funded by the EU (HORIZON 2020). **2024**
2. **AGRORAY** (Development of an integrated weather forecasting system and specialized indicators for the agricultural sector - KMP6-0078047) Funded by the Prefecture of Central Macedonia. **2022 – Today**
3. **NESTOR** (NaturE based SoluTiOns for addressing uRban heat island - ATTP4-0317076) Funded by the Prefecture of Attica. **2022 – Today**
4. **BIOASTY** (Bioclimatic urban design services for the sustainability and resilience of the urban environment in the context of climate change) Funded by NSRF. **2023 – Today**
5. **MegDETH** (Mineralogy of Dust Emissions and impacts on Environment and Health) Funded by the the Hellenic Foundation for Research and Innovation (H.F.R.I.). **2021 – 2023**
6. **D-TECT** (Does dust triboelectrification affect our climate?) Funded by the EU (European Research Council - ERC). **2020 - 2022**
7. **OPERANDUM** (OPEn-air laboRAtoRies for Nature based solUtions to Manage environmental riks) Funded by the EU (HORIZON 2020). **2019 - 2022**. <https://site.unibo.it/operandum/en>
  - i. Task leader in Work Package 5.2 “Multiple Impact Modelling”
8. **i-ALARMS** (Ionian-Adriatic earLY wARning Monitoring System). **2019**. <https://greece-albania.eu/> Funded by the EU and the Greek Government. Interreg IPA CBC «Greece - Albania 2014-2020»
9. Maintenance and upgrade of the meteorological forecasts of the **POSEIDON** system” funded by the EU and the Greek Government, subcontracting of the **HIMIOFOTS** project. **2018 – 2019**.
10. **MARINA** (MARine Renewable INtegrated Application Platform) Funded by the EU (FP7) 2011 – 2013, 201-2018 - <http://msp-platform.eu/projects/marina-platform>
11. **IRPWIND** (Integrated Research Programme on Wind Energy), Funded by the EU (FP7) 2017 - [http://cordis.europa.eu/project/rcn/111468\\_en.html](http://cordis.europa.eu/project/rcn/111468_en.html)
12. “Meteorological modelling in the context of the NWP and HPC Project of Qatar Civil Aviation Authority, Meteorology”. Funded by the Qatari Civil Aviation Agency, 2016
13. “Study the energy reduction in power systems in ships, through innovative management of power recovery (**ECOMARINE**), Funded by the EU ((National Strategic Reference Framework – NSRF), 2014 – 2016.
14. **E-Wave** (Integrated high resolution system for monitoring and quantifying the wave energy potential in the EEZ of Cyprus) Funded by the Research Promotion Foundation of Cyprus. 2012. <http://www.oceanography.ucy.ac.cy/ewave/>
15. **WASSF** (Weather, dust transport, sea and ocean state forecasting system for the Arabian Peninsula, the Arabian (Persian) Gulf and the Red Sea”). Funded by the Saudi Aramco, 2010 – 2011.
16. “Study of the measured Particle Matter exceedances in Greece. Funded by the Greek Ministry for the

- Environment, Physical Planning and Public Works, 2010
17. “Study of the microclimate of the Metropolitan Park in Athens and the potential changes and energy effects”. Funded by the Greek Ministry for the Environment, Physical Planning and Public Works, 2009
  18. **POW WOW** (Prediction Of Waves, Wakes and Offshore Wind), Funded by the EU (FP6) 2009 - [http://cordis.europa.eu/result/rcn/47011\\_en.html](http://cordis.europa.eu/result/rcn/47011_en.html)
  19. **CIRCE** (Climate Change and Impact Research the Mediterranean Environment), Funded by the EU (FP6) 2008 – 2010 - <http://climate-adapt.eea.europa.eu/metadata/projects/climate-change-and-impact-research-the-mediterranean-environment>
  20. “Study of the dispersion and diffusion of the air pollutants from the current and future units of the power stations in Soroni Rhodes”, Funded by the Hellenic Public Power Corporation (HPPC, DEI), 2006.
  21. **INSEA** (Data Integration System for Eutrophication Assessment in Coastal Waters), Funded by the EU (FP6) 2007 – 2008, 2011 - [http://www.2020-horizon.com/INSEA-Data-Integration-System-for-Eutrophication-Assessment-in-Coastal-Waters\(INSEA\)-s27752.html](http://www.2020-horizon.com/INSEA-Data-Integration-System-for-Eutrophication-Assessment-in-Coastal-Waters(INSEA)-s27752.html)
  22. “Forecasting Systems for simulating the Saharan and East Asia Gobi Deserts dust cycle in the atmosphere. Evaluation of two systems”. Funded by the Greek Government. 2007
  23. **ESPEN** (An Enhanced operational System for wave monitoring and Prediction with Applications in Hellenic Navigation). Funded by the EU (FP6) and the Greek Government. 2007 - <http://forecast.uoa.gr/espen.php>
  24. “Study of the natural and anthropogenic aerosols and estimation of the effects on the Climate of Greece”, Funded by the Greek Government, 2006

### Positions of Trust

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1. Research proposal evaluator for the U.S. National Science Foundation; <https://www.nsf.gov/>
2. Quest Editor for the Special Issue “Nature-Based Solutions to Address Climate Change for Sustainable Development”, in Sustainability 2023
3. Member of the Committee for the evaluation of candidates for the «Prefectural Scientific Council of Research and Innovation of the Prefecture of Sterea Ellada», Jan 2023, Online Publication Number: ΨΖΕΥ7ΛΗ-25Θ.
4. Editorial Board Member in “International Journal of Environmental Monitoring and Analysis (IJEMA); <http://www.sciencepublishinggroup.com/ijema>

### Publications in Peer Review Scientific Journals (Scopus H-index 17)

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1. Katsafados, P.; Saviolakis, P.-M.; Varlas, G.; Ben-Romdhane, H.; Pavlopoulos, K.; Spyrou, C.; Farrah, S. Investigation of the Synoptic and Dynamical Characteristics of Cyclone Shaheen (2021) and its Influence on the Omani Coastal Region. *Atmosphere* 2024, 15, 222. <https://doi.org/10.3390/atmos15020222>
2. Solomos, S.; Spyrou, C.; Barreto, A.; Rodríguez, S.; González, Y.; Neophytou, M.K.A.; Mouzourides, P.; Bartsotas, N.S.; Kalogeri, C.; Nickovic, S.; Vimic A.V.; Mandic, M.V; Pejanovic, G.; Cvetkovic, B.; Amiridis, V.; Sykioti, O.; Gkikas, A.; Zerefos, C. The Development of METAL-WRF Regional Model for the Description of Dust Mineralogy in the Atmosphere. *Atmosphere* 2023, 14,1615. <https://doi.org/10.3390/atmos14111615>.
3. Drakaki, E., Amiridis, V., Tsekeri, A., Gkikas, A., Proestakis, E., Mallios, S., Solomos, S., Spyrou, C., Marinou, E., Ryder, C. L., Bouris, D., and Katsafados, P.: Modeling coarse and giant desert dust particles, *Atmos. Chem. Phys.*, 22, 12727–12748, <https://doi.org/10.5194/acp-22-12727-2022>, 2022.

4. Spyrou, C.; Loupis, M.; Charizopoulos, N.; Arvanitis, P.; Mentzafou, A.; Dimitriou, E.; Debele, S.E.; Sahani, J.; Kumar, P. Evaluating Nature-Based Solution for Flood Reduction in Spercheios River Basin Part 2: Early Experimental Evidence. *Sustainability*, 2022, 14, 10345. <https://doi.org/10.3390/su141610345>
5. Spyrou, C.; Solomos, S.; Bartsotas, N.S.; Douvis, K.C.; Nickovic, S. Development of a Dust Source Map for WRF-Chem Model Based on MODIS NDVI. *Atmosphere*, 2022, 13, 868. <https://doi.org/10.3390/atmos13060868>
6. Bourma, E., Perivoliotis, L., Petihakis, G., Korres, G., Frangoulis, C., Ballas, D., Zervakis, V., Tragou, E., Katsafados, P., Spyrou, C., M., Dassenakis, S., Poulos, P., Megalofonou, S., Sofianos, T., Paramana, G., Katsaounis, A., Karditsa, S., Petrakis, A.-M. Mavropoulou, V., Paraskevopoulou, N., Milatou, P., Pagonis, S., Velanas, M., Ntoumas, I., Mamoutos, M., Pettas, S., Christodoulaki, D., Kassis, M., Sotiropoulou, A., Mavroudi, A., Moira, D., Denaxa, G., Anastasopoulou, E., Potiris, V., Kolovogiannis, A.-A., Dimitrakopoulos, S., Petalas 3 and N., Zisis, 2022. The Hellenic Marine Observing, Forecasting and Technology System—An Integrated Infrastructure for Marine Research. *J. Mar. Sci. Eng.* 2022, 10, 329. <https://doi.org/10.3390/jmse10030329>.
7. Prashant Kumar, Sisay E. Debele, Jeetendra Sahani, Nidhi Rawat, Belen Marti-Cardona, Silvia Maria Alfieri, Bidroha Basu, Arunima Sarkar Basu, Paul Bowyer, Nikos Charizopoulos, Glauco Gallotti, Juvonen Jaakko, Laura S. Leo, Michael Loupis, Massimo Menenti, Slobodan B. Mickovski, Seung-Jae Mun, Alejandro Gonzalez-Ollauri, Jan Pfeiffer, Francesco Pilla, Julius Proll, Martin Rutzinger, Marco Antonio Santo, Srikanta Sannigrahi, Christos Spyrou, Heikki Tuomenvirta, Thomas Zieher (2021). Nature-based solutions efficiency evaluation against natural hazards: Modelling methods, advantages and limitations, *Science of The Total Environment*, 784, 2021, 147058, <https://doi.org/10.1016/j.scitotenv.2021.147058>.
8. Glauco Gallotti, Marco Antonio Santo, Ilektra Apostolidou, Jacopo Alessandri, Alberto Armigliato, Bidroha Basu, Sisay Debele, Alessio Domeneghetti, Alejandro Gonzalez-Ollauri, Prashant Kumar, Angeliki Mentzafou, Francesco Pilla, Beatrice Pulvirenti, Paolo Ruggieri, Jeetendra Sahani, Aura Salmivaara, Arunima Sarkar Basu, Christos Spyrou, Nadia Pinardi, Elena Toth, Silvia Unguendoli, Umesh Pranavam Ayyappan Pillai, Andrea Valentini, George Varlas, Giorgia Verri, Filippo Zaniboni and Silvana Di Sabatino (2021). On the Management of Nature-Based Solutions in Open-Air Laboratories: New Insights and Future Perspectives. *Resources*, 2021, 10, 36. <https://doi.org/10.3390/resources10040036>
9. Christos Spyrou, Michael Loupis, Nikos Charizopoulos, Ilektra Apostolidou, Angeliki Mentzafou, George Varlas, Anastasios Papadopoulos, Elias Dimitriou, Depy Panga, Lamprini Gkeka, Paul Bowyer, Susanne Pfeifer, Sisay E. Debele and Prashant Kumar (2021) Evaluating Nature-Based Solution for Flood Reduction in Spercheios River Basin under Current and Future Climate Conditions, *Sustainability* 2021, 13, 3885. <https://doi.org/10.3390/su13073885>
10. Prashant Kumar, Sisay E. Debele, Jeetendra Sahani, Nidhi Rawat, Belen Marti-Cardona, Silvia Maria Alfieri, Bidroha Basu, Arunima Sarkar Basu, Paul Bowyer, Nikos Charizopoulos, Juvonen Jaakko, Michael Loupis, Massimo Menenti, Slobodan B. Mickovski, Jan Pfeiffer, Francesco Pilla, Julius Pröll, Beatrice Pulvirenti, Martin Rutzinger, Srikanta Sannigrahi, Christos Spyrou, Heikki Tuomenvirta, Zoran Vojinovic, Thomas Zieher (2021). An overview of monitoring methods for assessing the performance of nature-based solutions against natural hazards, *Earth-Science Reviews*, 217 (2021) 103603, <https://doi.org/10.1016/j.earscirev.2021.103603>.
11. George Varlas, Eleni Marinou, Anna Gialitaki, Nikolaos Siomos, Konstantinos Tsarpalis, Nikolaos Kalivitis, Stavros Solomos, Alexandra Tsekeri, Christos Spyrou, Maria Tsihla, Anna Kampouri, Vassilis Vervatis, Elina Giannakaki, Vassilis Amiridis, Nikolaos Mihalopoulos, Anastasios Papadopoulos and Petros Katsafados, (2021) Assessing Sea-State Effects on Sea-Salt Aerosol Modeling in the Lower Atmosphere Using Lidar and In-Situ Measurements, *Remote Sensing*, 2021, 13, 614, <https://doi.org/10.3390/rs13040614>.
12. Kampouri, A., Amiridis, V., Solomos, S., Gialitaki, A., Marinou, E., Spyrou, C., Georgoulis, A.K., Akritidis, D., Papagiannopoulos, N., Mona, L., Scollo, S., Tsihla, M., Tsikoudi, I., Pytharoulis, I., Karacostas, T., Zanis, P., (2021) Investigation of Volcanic Emissions in the Mediterranean: “The Etna–Antikythera Connection”. *Atmosphere* 2021, 12, 40.
13. Christos Spyrou, George Varlas, Aikaterini Pappa, Angeliki Mentzafou, Petros Katsafados, Anastasios Papadopoulos, Marios N. Anagnostou and John Kalogiros, (2020) Implementation of a Nowcasting Hydrometeorological System for Studying Flash Flood Events: The Case of Mandra, Greece, *Remote Sensing* 2020, 12, 2784; doi:10.3390/rs12172784.

14. G. Varlas, V. Vervatis, C. Spyrou, E. Papadopoulou, A. Papadopoulos, P. Katsafados, (2020) Investigating the impact of atmosphere–wave–ocean interactions on a Mediterranean tropical-like cyclone, *Ocean Modelling*, Volume 153, 2020, 101675, ISSN 1463-5003, doi: 10.1016/j.ocemod.2020.101675.
15. George Varlas, Christos Spyrou, Anastasios Papadopoulos, Gerasimos Korres, Petros Katsafados, (2020) One-year assessment of the two-way coupled atmosphere-ocean wave modeling system CHAOS over the Mediterranean and Black Seas, *Mediterranean Marine Science*, 21(2), 372-385, doi: <https://doi.org/10.12681/mms.21344>
16. Triantafyllou, E., Diapouli, E., Korras-Carraca, M.B., Manousakas, M., Psanis, C., Floutsi, A.A., Spyrou, C., Eleftheriadis, K., Biskos, G., (2020). Contribution of locally-produced and transported air pollution to particulate matter in a small insular coastal city, *Atmospheric Pollution Research*, Volume 11, Issue 4, April 2020, Pages 667-678, doi: 10.1016/j.apr.2019.12.015.
17. Christakos, K., Varlas, G., Cheliotis, I., Spyrou, C., Aarnes, O.J., Furevik, B.R. (2020). Characterization of Wind-Sea- and Swell-Induced Wave Energy along the Norwegian Coast. *Atmosphere* 2020, 11, 166, doi:10.3390/atmos11020166.
18. Jeetendra Sahani, Prashant Kumar, Sisay Debele, Christos Spyrou, Michael Loupis, Leonardo Aragão, Federico Porcù, Mohammad Aminur Rahman Shah, Silvana Di Sabatino (2019). Hydro-meteorological risk assessment methods and management by nature-based solutions, *Science of the Total Environment*, 696 (2019) 133936, doi: 10.1016/j.scitotenv.2019.133936.
19. Solomos, S., Abuelgasim, A., Spyrou, C., Biniotoglou, I., and Nickovic, S.: Development of a dynamic dust source map for NMME-DREAM v1.0 model based on MODIS Normalized Difference Vegetation Index (NDVI) over the Arabian Peninsula, *Geosci. Model Dev.*, 12, 979-988, <https://doi.org/10.5194/gmd-12-979-2019>, 2019.
20. Varlas, G., M., Anagnostou, C., Spyrou , A., Papadopoulos, J., Kalogiros, A., Mentzafou, S., Michaelides, E., Baltas, E., Karymbalis and P., Katsafados, (2019). A multi-platform hydrometeorological analysis of the flash flood event of 15 November 2017 in Attica, Greece, *Remote Sensing*, 2019, 11, 45; doi:10.3390/rs11010045.
21. Mitsakou, C., S. Dimitroulopoulou, C. Heaviside, K. Katsouyanni, E. Samoli, S. Rodopoulou, C. Costa, R. Almendra, P. Santana, M. M., Dell’Olmo, C., Borell, D., Corman, N., Zengarini, P., Deboosere, C., Franke, J. Schweikart, M., Lustigova, C., Spyrou, K. de Hoogh, D., Fecht, J., Gulliver, S., Vardoulakis (2019). Environmental public health risks in European metropolitan areas within the EURO-HEALTHY project. *Science of the Total Environment*, 658 (2019) 1630–1639, doi: 10.1016/j.scitotenv.2018.12.130.
22. Katsafados, P., Varlas, G., Papadopoulos, A., Spyrou, C., & Korres, G. (2018). Assessing the implicit rain impact on sea state during Hurricane Sandy (2012). *Geophysical Research Letters*, 45(21), pp. 12,015-12,022; <https://doi.org/10.1029/2018GL078673>
23. Tsarpalis, K., A. Papadopoulos, N. Mihalopoulos, C. Spyrou, S. Michaelides and P. Katsafados, 2018: The Implementation of a Mineral Dust Wet Deposition Scheme in the GOCART-AFWA Module of the WRF Model, *Remote Sensing*, 2018, 10, 1595; doi:10.3390/rs10101595.
24. Christos Spyrou, 2018: Direct radiative impacts of desert dust on atmospheric water content, *Aerosol Science and Technology*, 52:6, 693-701 DOI:10.1080/02786826.2018.1449940.
25. de Andrade Campos, D., Chou, S.C., Spyrou, C., Chagas, J.C.S., Bottino, M.J., 2018: Eta model simulations using two radiation schemes in clear-sky conditions. *Meteorology and Atmospheric Physics*, (2018), doi:10.1007/s00703-017-0500-6
26. Ansmann Albert, Franziska Rittmeister, Ronny Engelmann, Sara Basart, Oriol Jorba, Christos Spyrou, Samuel Remy, Annett Skupin, Holger Baars, Patric Seifert, Fabian Senf, and Thomas Kanitz, 2017: Profiling of Saharan dust from the Caribbean to western Africa – Part 2: Shipborne lidar measurements versus forecasts, *Atmos. Chem. Phys.*, 17, 14987–15006, 2017, doi: 10.5194/acp-17-14987-2017.
27. Patlakas Platon, Eleni Drakaki, George Galanis, Christos Spyrou and George Kallos, 2017: Wind gust estimation by combining a numerical weather prediction model and statistical post-processing, *Energy Procedia*, 125, pp 190-198, 2017, doi:10.1016/j.egypro.2017.08.179
28. Diapouli, E., Manousakas, M. I., Vratolis, S., Vasilatou, V., Pateraki, S., Bairachtari, K. A., Querol, X., Amato,

- F., Alastuey, A., Karanasiou, A. A., Lucarelli, F., Nava, S., Calzolari, G., Gianelle, V. L., Colombi, C., Alves, C., Custódio, D., Pio, C., Spyrou, C., Kallos, G. B., and Eleftheriadis, K.: AIRUSE-LIFE +: estimation of natural source contributions to urban ambient air PM<sub>10</sub> and PM<sub>2.5</sub> concentrations in southern Europe – implications to compliance with limit values, *Atmos. Chem. Phys.*, **17**, 3673-3685, doi:10.5194/acp-17-3673-2017, 2017.
29. C. Kalogeri, G. Galanis, C. Spyrou, D. Diamantis, F. Baladima, M. Koukoula, G. Kallos, 2017: Assessing the European offshore wind and wave energy resource for combined exploitation. *Renewable Energy*, **101** (2017) 244-264, doi: 10.1016/j.renene.2016.08.010.
  30. T. M. Saeed, H. Al-Dashti and C. Spyrou 2014: Aerosol's optical and physical characteristics and direct radiative forcing during a shamal dust storm, a case study. *Atmos. Chem. Phys.*, **14**, 3751–3769, doi:10.5194/acp-14-3751-2014, 2014.
  31. G. Kallos, S. Solomos, J. Kushta, C. Mitsakou, C. Spyrou, N. Bartsotas, C. Kalogeri, 2014: Natural and anthropogenic aerosols in the Eastern Mediterranean and Middle East: Possible impacts, *Science of the Total Environment*, 488–489 (2014) 389–397, doi: 10.1016/j.scitotenv.2014.02.035.
  32. Kushta, J., G. Kallos, M. Astitha, S. Solomos, C. Spyrou, C. Mitsakou, and J. Lelieveld, 2014: Impact of natural aerosols on atmospheric radiation and consequent feedbacks with the meteorological and photochemical state of the atmosphere, *J. Geophys. Res. Atmos.*, **119**, 1463–1491, doi: 10.1002/2013JD020714.
  33. C. Spyrou, G. Kallos, C. Mitsakou, P. Athanasiadis, C. Kalogeri and M. J. Iacono, 2013: Modeling the radiative effects of desert dust on weather and regional climate. *Atmos. Chem. Phys.*, **13**, 5489–5504, doi:10.5194/acp-13-5489-2013, 2013.
  34. Antuña J. C., V. Cachorro, R. Estevan, Á. de Frutos, B. Barja, Y. Benouna, B. Torres, D. Fuertes, R. González, C. Toledano, G. Kallos, C. Spyrou, 2012: Characterizing aerosol optical depth measurements and forecasts of Saharan dust events at Camagüey, Cuba, during July 2009. *Optica Pura Y Aplicada*, ISSN-e 2171-8814, Vol. 45, N°. 4, 2012, doi:10.7149/OPA.45.4.415.
  35. C. Spyrou, C. Mitsakou, G. Kallos, P. Louka, and G. Vlastou, 2010: An improved limited area model for describing the dust cycle in the atmosphere. *Journal Of Geophysical Research*, **115**, D17211, doi:10.1029/2009JD013682, 2010.
  36. M. Astitha, G. Kallos, C. Spyrou, W. O'Hirok, J. Lelieveld and H. A. C. Denier van der Gon, 2010: Modelling the chemically aged and mixed aerosols over the eastern central Atlantic Ocean – potential impacts. *Atm. Chem. Phys.*, **10**, 5797–5822, 2010, doi: 10.5194/acp-10-5797-2010.
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## Book Chapters

1. George Varlas, Marios Anagnostou, Christos Spyrou, Aikaterini Pappa, Angeliki Mentzafou, Anastasios Papadopoulos, John Kalogiros, Petros Katsafados and Silas Michaelides: Chapter 22 “Multiplatform hydrometeorological analysis of a flood flash event” of Silas Michaelides (ed.) 2021: “Precipitation Science:



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2. Petros Katsafados, Elias Mavromatidis and Christos Spyrou, July 2020: “Numerical Weather Prediction and Data Assimilation”, Vol. 6. Print ISBN:9781786301413 Online ISBN:9781119560463.doi:10.1002/9781119560463. iSTE Ltd 2020, Wiley
  3. George Kallos, Christina Mitsakou, Andres Alastuey, John van Ardenne, Marina Astitha, Michael Cusack, Ulrike Doering, Evangelos Gerasopoulos, Nikolaos Hatzianastassiou, Maria Kanakidou, Jonilda Kushta, Jos Lelieveld, Zev Levin, Nikolaos Mihalopoulos, Millán Millán, José L. Palau, N. Perez, Jorge Pey, Xavier Querol, Stavros Solomos, Christos Spyrou, Chris Theodosi, Christos Zerefos: Vol.1 – Part I - Chapter 4: “Mechanisms of climate variability, air quality and impacts of atmospheric constituents in the Mediterranean Region”, Regional Assessment Climate Change in the Mediterranean (RACCM), Springer (ISBN:978-94-007-5780-6 ISSN:15740919) 2013. doi: 10.1007/978-94-007-5781-3\_4.
  4. George Kallos, Petros Katsafados and Christos Spyrou: Part II – Chapter 5: “Desert dust uptake-transport and deposition mechanisms – impacts of dust on radiation, clouds and precipitation” of Gualtieri C. and D.T. Mihailovic, (eds.) 2012: “Fluid Mechanics of Environmental Interfaces”, Second Edition. Taylor & Francis Ltd (ISBN 978-0-415-62156-4), pp.107.
  5. P. Kishcha, P. Alpert, A. Shtivelman, S.O. Krichak, J.H. Joseph, G. Kallos, P. Katsafados, C. Spyrou, G.P. Gobbi, F. Barnaba, S. Nickovic, C. Perez, J.M. Baldasano: Chapter 1.5: “Assessment of dust forecast errors by using lidar measurements over Rome” in Developments in Environmental Science Volume 6, Air Pollution Modeling and Its Application XVIII - Edited by Carlos Borrego and Eberhard Renner. ISBN: 978-0-444-52987-9. ISSN:1474-8177/DOI:10.1016/S1474-8177(07)06015-9, 44-54, 2007

## Teaching Experience

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1. **2018**: Independent teaching assignment of the “Climate Change” course in the Geography Department of Harokopio University of Athens.
2. **2016**: Training on Weather forecasting and Numerical Modelling of Qatar Civil Aviation Authority personnel during the “Meteorological modelling in the context of the NWP and HPC Project of Qatar Civil Aviation Authority, Meteorology” project funded by the Qatari Civil Aviation Agency, 2016

## Presentations in Conferences – Publications in Conference Proceedings

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1. Solomos, S.; Spyrou, C.; Bartsotas, N.S.; Sykioti, O.; Amiridis, V.; Gkikas, A.; Marinou, E.; Katsafados, P.; Tsarpalis, K.; Pejanovic, G.; et al. The Development of a Dust Mineralogy Map from Satellite Retrievals and Implementation in WRF-Chem. Environ. Sci. Proc. 2023, 26, 54. <https://doi.org/10.3390/environsciproc2023026054>
2. Bampzelis, D.; Kartsios, S.; Pytharoulis, I.; Kostopoulos, V.; Spyrou, C.; Tegoulis, I.; Zanis, P. Synoptic, Dynamic Analysis and Numerical Simulations of Extreme Flood Cases in Pieria Region. Environ. Sci. Proc. 2023, 26, 65. <https://doi.org/10.3390/environsciproc2023026065>.
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8. Solomos, Stavros, Christos Spyrou, Nikolaos Bartsotas, Petros Katsafados and Slobodan Nickovic, Assimilation of satellite retrievals for dust modeling applications, *International Radiation Symposium 2022*, Thessaloniki, Greece, 4-8 July 2022
9. Drakaki, E., Amiridis, V., Tsekeri, A., Mallios, S., Papangelis, G., Spyrou, C., Ryder, C., and Katsafados, P.: Transport of non-spherical desert dust particles, *EGU General Assembly 2022*, Vienna, Austria, 23–27 May 2022, EGU22-3703, <https://doi.org/10.5194/egusphere-egu22-3703>, 2022.
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26. K. Tsarpalis, P. Katsafados, A. Papadopoulos, N. Mihalopoulos, S. Solomos and C. Spyrou, 2018: The synergy of the unbalanced mesoscale circulations and the polar-subtropical jetstreams to severe dust transport phenomena over the Mediterranean, *EMS Annual Meeting: European Conference for Applied Meteorology and Climatology* 2018, 3–7 September 2018, Budapest, Hungary.
27. Katsafados P., Spyrou C., V.M. Nomikou, A. Papadopoulos, 2017: LAPS nowcasting – Development and evaluation, *2nd European Nowcasting Conference*, 3 - 5 May 2017, Headquarters of DWD, Offenbach, Germany.
28. G. Kallos, P. Patlakas, N. Bartsotas , C. Spyrou, J. Al Qahtani , I. Alexiou , and A. M Bar, 2017: Modeling the dust cycle from sand dunes to haboobs, *European Geosciences Union General Assembly 2017*, Vienna, Austria, 23–28 April 2017
29. Patlakas, P., Kushta, J., Drakaki, E., Al Qahtani, J., Alexiou, I., Bartsotas, N., Spyrou, C., Kallos, G., 2016: The dust cycle in the Arabian Peninsula and its role in the urban air quality, *35th International Technical Meeting on Air Pollution Modelling and its Application (ITM)*, 3-7 October, 2016, Chania, Crete, Greece
30. M. Astitha, C. Spyrou, S. Kontos, G. Kallos, J. Lelieveld, 2013: Investigating the coherence between a global and a limited area model for dust particle production and distribution in N. Africa, *33rd International Technical Meeting on Air Pollution Modelling and its Application (ITM)*, 26 – 30 August 2013, Miami, Florida, USA.

31. G. Kallos, S. Solomos, J. Kushta, C. Spyrou, C. Kalogeri, 2012: Natural And Anthropogenic Aerosols in the Mediterranean Region and Middle East: Patterns and Impacts, *Air Quality Management at Urban, Regional and Global Scales 4th International Symposium and IUAPPA Regional Conference*, 10 – 13 September 2012, Istanbul Technical University, Istanbul – Turkey.
32. C. Spyrou, G. Kallos, C. Mitsakou, P. Athanasiadis, and C. Kalogeri, 2012: The Effects of Naturally Produced Dust Particles on Radiative Transfer, *11th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP)*, Athens, Greece, 29 May – 1 June 2012.
33. S. Solomos, J. Kushta, C. Spyrou, C. Mitsakou, G. Kallos, 2010: A Modeling Study On The Effects Of Aerosol On Cloud Processes And Precipitation, *10th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP)*, Patra, Greece, 25 – 28 May 2010.
34. G.Kallos, S.Solomos, J.Kushta, C.Spyrou, C.Kalogeri, C.Mitsakou, 2010: Modeling Aerosol-Radiation-Cloud And Precipitation Processes, *The 6th Specialty Conference And Exhibition On Environmental Progress In The Petroleum & Petrochemical Industries*, Enviro Arabia 2010, 18-21 April 2010.
35. M.Astitha, C.Spyrou, G. Kallos, H.A.C.Denier Van Der Gon and A.J.H.Visschedijk, 2009: Chemical Composition Of Aerosols Along The Long-Range Transport Paths, *30th Nato/Sps International Technical Meeting On Air Pollution Modelling And Its Application*, 18 - 22 May, 2009, San Francisco, Usa.
36. Kallos G, C. Spyrou, C. Mitsakou, 2009: Short and Long Wave Radiative Forcing from Desert Dust and Impacts on Weather and Climate, *European Geosciences Union General Assembly 2009*, EGU2009-8867, Vienna, Austria, 19 – 24 April 2009.
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38. Mitsakou, C., Kallos, G., Papantoniou, N., Spyrou, C., Solomos, S., Astitha, M., Housiadas, C. “Lung dose from mineral Saharan dust to Greek residents”, 2008: Society of Environmental Geochemistry and Health 26<sup>th</sup> European Conference SEGH 2008, Athens, Greece, 31/3-2/4, 2008.
39. Papantoniou, N., Mitsakou, C., Solomos, S., Kousta, I., Mavromatidis, E., Spyrou,C., Astitha, M., Pytharoulis, I., Katsafados, P., Kallos, G., 2008: “Modelling in meteorological and climate applications”, 1st HellasGrid User Forum, Athens, Greece, January 10-11, 2008.
40. G. Kallos, C. Spyrou, M. Astitha, C. Mitsakou, S. Solomos, J. Kushta, I. Pytharoulis, P. Katsafados, E. Mavromatidis, N. Papantoniou, 2007: Ten-year operational dust forecasting – Recent model development and future plans. WMO/GEO Expert Meeting on “an International Sand and Dust Storm Warning System”, Barcelona, Spain, November 7-9, 2007.
41. P. Katsafados, G. Kallos, C. Spyrou and A. Papadopoulos, 2007: Geographical distribution of seasonal and annual amounts of Saharan dust deposition over Mediterranean and Europe. 8th Pan-Hellenic Geographical Conference, 4 – 7 October 2007, Athens, Greece.
42. C. Spyrou, P. Katsafados, M. Astitha, A. Papadopoulos and G. Kallos, 2007: A model to simulate the atmospheric dust cycle: sensitivity tests. 8th Pan-Hellenic Geographical Conference, 4 – 7 October 2007, Athens, Greece.
43. G. Kallos, M. Astitha, P. Katsafados, C. Spyrou and E. Mavromatidis, 2007: Saharan dust transport and its impact on air quality, ecosystems and regional climate. IUGG 2007 Perugia-XXIV General Assembly, 2-13 June 2007, Perugia, Italy, ISBN 978-88-95852-25-4.
44. G. Kallos, P. Katsafados, M. Astitha, A. Papadopoulos and C. Spyrou, 2005: “Saharan dust transport towards the Euro-Mediterranean Region and its implications to air quality, ecosystems and climate”. International Association of Meteorology and Atmospheric Sciences (IAMAS) 2005 Scientific Assembly, Beijing, China, August 2-11.
45. Kallos G., Katsafados P., Spyrou C., Papadopoulos A.: Desert dust deposition over the Mediterranean Sea estimated with the SKIRON/Eta - System validation, *4th EuroGOOS Conference – Brest – France – June 2005*.

## Workshops - Seminars

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1. C. Spyrou, 2023: Mitigation of hydrometeorological hazards due to climate change using Nature Based Solutions (NBS). Application on the Spercheios river basin. *Adaptation of the Prefecture of Sterea Ellada in climate change. 5<sup>th</sup> Informative Seminar LIFE-IP AdaptInGr – LIFE 17 IPC/GR/000006*, 17 January 2023, online.
2. C. Spyrou, 2023: Integration of climate data in the pilot public works of the Prefecture of Sterea Ellada. *Adaptation of the Prefecture of Sterea Ellada in climate change. 5<sup>th</sup> Informative Seminar LIFE-IP AdaptInGr – LIFE 17 IPC/GR/000006*, 19 January 2023, online.
3. C. Spyrou, G. Kallos, S.J. Kousta, E. Drakaki, 2016: Modeling the effects of desert dust on the atmospheric water content on the Arabian Peninsula, *8th International Workshop On Sand/Duststorms And Associated Dustfall*, 1-4 May 2016, Lisbon, Portugal.
4. J. Kushta, C. Spyrou, P. Patlakas, G. Kallos, 2016: Sandblasting Mass Efficiency as a Function of Soil Clay Contents: A comparative modelling study, *8th International Workshop On Sand/Duststorms And Associated Dustfall*, 1-4 May 2016, Lisbon, Portugal.
5. Kallos, G, Kushta, J., Patlakas P., Bartsotas, N., Spyrou, C., Drakaki, E. , Al Qahtani, J., Alexiou I., 2016: The dust cycle in the Arabian Peninsula: from sand dunes to haboobs, *8th Symposium and Exhibition on Environmental Progress in the Petroleum & petrochemical*, 22-24 February 2016, Dammam, Saudi Arabia.
6. Spyrou, C., G. Kallos, and N. Bartsotas, 2013: Modelling the regional characteristics of desert dust sources, *7th International Workshop On Sand/Duststorms And Associated Dustfall, 2-4 December 2013, ESA/ESRIN, Frascati (Rome), Italy*.
7. Finardi, S., A. D'Allura, A. Bolignano, R. Sozzi, G. P. Gobbi, C. Spyrou, and G. Kallos, 2013 : Estimation of Sahara dust contribution to PM concentrations within Rome Air Quality Prediction System, , *7th International Workshop On Sand/Duststorms And Associated Dustfall, 2-4 December 2013, ESA/ESRIN, Frascati (Rome), Italy*.
8. Mircea, M., G. Briganti, A. Malaguti, S. Finardi, C. Silibello, C. Spyrou, C. Kalogeri, G. Kallos, and G. Zanini, 2013: Modelling of Saharan dust transport to the Southern Italy, *7th International Workshop On Sand/Duststorms And Associated Dustfall, 2-4 December 2013, ESA/ESRIN, Frascati (Rome), Italy*.
9. C. Mitsakou, G. Kallos and C. Spyrou, 2011: Saharan dust levels in Greece: Impacts on urban environment and human health, *6th International Workshop On Sand/Duststorms And Associated Dustfall, 7-9 September 2011, Athens, Greece*.
10. C. Spyrou, G. Kallos, C. Mitsakou and C. Kalogeri, 2011: Radiative effects of desert dust on weather and climate, *6th International Workshop On Sand/Duststorms And Associated Dustfall, 7-9 September 2011, Athens, Greece*.
11. T. Lekas, G. Kallos, J. Kushta, S. Solomos, C. Spyrou, 2011: Impacts of dust on aviation, *6th International Workshop On Sand/Duststorms And Associated Dustfall, 7-9 September 2011, Athens, Greece*.
12. Kallos, G., Solomos, S., Kushta, I., Spyrou, C., Mavromatidis, E., Astitha, M., Mitsakou, C., 2008: 'The Integrated Community Limited Area Modeling System – ICLAMS', 3rd International Workshop on Mineral Dust, Leipzig, Germany, 15-17/9/2008.

## Posters

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1. Zerefos C., Kalabokas, P., Fountoulakis, I., Gkikas, A., Kapsomenakis, I., Poupkou, A., Solomos, S., Spyrou, C., Douvis, K., Stavraka, T., Luterbacher, J., Xoplaki, E., Eleftheratos, K., Gazerian, S., 2023. "Stratospheric ozone and solar UV radiation Ozone". UN Climate Change Conference (COP28) - United Arab Emirates, 30 Nov - 12 Dec 2023.
2. Zerefos C., Kalabokas, P., Fountoulakis, I., Gkikas, A., Kapsomenakis, I., Poupkou, A., Solomos, S., Spyrou, C., Douvis, K., Stavraka, T., Luterbacher, J., Xoplaki, E., Eleftheratos, K., Gazerian, S., 2023. "Warming in the broader Mediterranean region and its urban areas: Present day and future projections". UN Climate Change Conference (COP28) - United Arab Emirates, 30 Nov - 12 Dec 2023.

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4. Pappa, A., C. Spyrou, A. Gkikas, G. Papangelis, V. Amiridis, E. Gofa, P. Katsafados. 2022: Conceptualizing the assimilation of Aeolus wind products in LAPS. *4rd European Nowcasting Conference*, 21 – 24 March 2022, online event.
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6. Varlas G., Vervatis V., Spyrou C., Papadopoulou E., Papadopoulos A., and Katsafados P. 2021: Physical and dynamical considerations of three-way atmosphere-wave-ocean coupling, *15th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP)* September 26-29, 2018 Ioannina, Greece.
7. Gkikas A.1, Papangelis G., Drakaki E., Proestakis E., Spyrou C., Gialitaki A., Marinou E., Benedetti A., Rennie M., Straume A.G., Christoudias T., Kushta J., Sciare J. and Amiridis V., 2021: Improving dust forecasts through assimilation of ESA-Aeolus wind profiles, *15th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP)* September 26-29, 2018 Ioannina, Greece.
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### Technical Reports – Manuals

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1. G. Kallos, P. Katsafados, C. Spyrou, 2008: The Weather Forecasting System POSEIDON II: Operational Manual And Description Of The Model. University of Athens, Department of Applied Physics, Athens, 2008
2. G. Kallos, C. Spyrou, N.Papantoniou, C. Mitsakou, M. Astitha, S. Solomos and P. Katsafados, 2007: Analysis of the Particulate Matter Exceedances in Greece. Period 2001-2004. *Final Report Prepared for the Ministry of Environment City Planning and Public Work*, June 2007.
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### Lectures

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1. The role of Desert Dust in Climate Change: 9th of November 2016. Lecture as part of the “Environmental Hazards and Security” course (Master) in Harokopio University of Athens.

2. The role of Desert Dust in Health and Climate Change: 22nd of November 2017. Lecture as part of the “Environmental Hazards and Security” course (Master) in Harokopio University of Athens.
3. The role of Desert Dust in Health and Climate Change: December 2018. Lecture as part of the “Environmental Hazards and Security” course (Master) in Harokopio University of Athens.

### **Invited Speaker**

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1. The Role of Desert Dust in the Environment and the Climate 19th of May 2017: Invited speaker at the National and Kapodistrian University of Athens.

### **Reviewer for International Scientific Journals**

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1. Atmospheric Chemistry and Physics (Impact Factor : 5.318)
2. Scientific Research and Essays (Impact Factor : 0.74)
3. Atmospheric Environment (Impact Factor : 3.629)
4. Meteorology and Atmospheric Physics (Impact Factor : 1.172)
5. Journal Of Geophysical Research (Impact Factor : 3.44)
6. International Journal Of Climatology (Impact Factor : 3.609)
7. Environmental and Fluid Mechanics (Impact Factor : 1.603)
8. Journal of Aerosol Science (Impact Factor : 2.042)
9. Atmospheric Research (Impact Factor : 3.778)
10. Advances in Meteorology (Impact Factor : 1.277)
11. Journal of the Air and Waste Management Association (Impact Factor : 1.570)
12. Atmospheric Pollution Research (Impact Factor : 1.637)
13. International Journal of Environmental Research and Public Health (Impact Factor : 2.101)
14. Atmosphere (Impact Factor: 1.221)
15. Acta Geophysica (Impact Factor: 0.709)
16. Sustainability (Impact Factor: 1.343)
17. Remote Sensing (Impact Factor: 3.244)
18. Climate (Impact Factor: 4.805)
19. Geoscientific Model Development (Impact Factor: 6.135)