

# DR. THEODORE M. GIANNAROS

## Curriculum Vitae - April 2024

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### PERSONAL DETAILS

Current position	Senior Researcher (elected)
Current affiliation	National Observatory of Athens, Institute for Environmental Research & Sustainable Development
Work address	Lofos Koufou, 15236 Penteli, Greece
Email	thgian@noa.gr
Telephone	+30 210 3490903 (Work), +30 6972 994032 (Mobile)
Date & place of birth	September 21, 1982, Thessaloniki, Greece
Citizenship	Greek
Marital status	Divorced (2 children)
Military service	Accomplished (04/2013 – 11/2013, Artillery – Hellenic Army)

### CAREER SUMMARY

Since 2020, I serve as a Researcher at the Institute for Environmental Research & Sustainable Development of the National Observatory of Athens in Greece (2020 – 2023: Associate Researcher, 2023 – today: Senior Researcher). My primary field of expertise is **atmospheric modeling**, with particular emphasis on **numerical weather prediction** and **regional climate modeling**. I have been working with atmospheric numerical models for more than 10 years, focusing particularly on the development of tools and services that support the protection of the environment, life, and property. In recent years, I have been specializing in **fire meteorology**, **fire spread prediction** and **fire-atmosphere interactions**. Within this context, I currently lead fire weather research within the METEO Unit of IERSD/NOA. My publication record includes **50 publications** in international peer-reviewed scientific journals, which have attracted more than **1,000 citations** (h-index = 20, Scopus – 13 April 2024).

### EDUCATION

- 2009 – 2013 **Ph.D.** in Atmospheric Physics, School of Physics, Aristotle University of Thessaloniki, Greece
- 2005 – 2007 **M.Sc.** in Environmental Physics, School of Physics, Aristotle University of Thessaloniki, Greece
- 2000 – 2005 **B.Sc.** in Physics, School of Physics, Aristotle University of Thessaloniki, Greece

### PROFESSIONAL EXPERIENCE

- 2023 - Senior Researcher at the Institute for Environmental Research & Sustainable Development of the National Observatory of Athens in Greece, in the field of **“Meteorology – Development and implementation of numerical models”**
- 2020 – 2023 Associate Researcher at the Institute for Environmental Research & Sustainable Development of the National Observatory of Athens in Greece, in the field of **“Meteorology – Development and implementation of numerical models”**
- 2014 – 2019 Research Fellow (post doctorate) at the Institute for Environmental Research & Sustainable Development of the National Observatory of Athens in Greece, in the field of **“Numerical weather prediction and modeling”**

2013 – 2014 Research Fellow (post doctorate) at the Laboratory of Atmospheric Physics of the Aristotle University of Thessaloniki in Greece, in the field of “**Mesoscale atmospheric modeling**”

2007 – 2013 Research Fellow (Ph.D. student) at the *Laboratory of Atmospheric Physics* of the *Aristotle University of Thessaloniki* in Greece, in the field of “**Mesoscale atmospheric modeling**”

## RESEARCH PROJECTS – ROLES

	<b>Project title</b>	<b>Funding source</b>	<b>Duration</b>	<b>Role/Budget</b>
1	<b>NERO</b> <i>European Network on Extreme Fire Behavior</i>	COST	2023 – 2027	Action Chair <b>~600,000 euros (IERSD/NOA)</b>
2	<b>FLAME</b> <i>Flammable Greece: Increasing awareness and preparedness for extreme fire weather and behavior</i>	Hellenic Foundation for Research and Innovation	2020 – 2024	Principal Investigator & Coordinator <b>163,701 euros (IERSD/NOA)</b>
3	<b>DISARM</b> <i>Drought and fire observatory and early warning system</i>	European Union & National Resources	2017 – 2019	Researcher
4	<b>BERTISS</b> BalkanMed real time severe weather service	European Union & National Resources	2017 – 2019	Researcher
5	<b>VI-SEEM</b> VRE for regional interdisciplinary communities in southeast Europe and the eastern Mediterranean	European Commission	2015 – 2017	Researcher
6	<b>TALOS</b> Thunder and lightning observation system	European Union & National Resources	2014 – 2015	Researcher
7	<b>AIOLOS</b> Resolution of complex problems in the analysis of “next-generation” wind turbines	European Union & National Resources	2012 – 2015	Researcher
8	<b>PASODOBLE</b> Promote air quality services integrating observations – Development of basic localized information for Europe	European Commission	2011 – 2012	Researcher
9	<b>APICE</b> Common Mediterranean strategy and local practical actions for the mitigation of port, industries and cities emissions	European Union	2011 – 2012	Researcher
10	<b>UHI</b> Urban heat islands and urban	European Space Agency	2009 – 2012	Researcher

thermography

11	<b>PROMOTE-2</b>	European Space Agency	2007 – 2009	Researcher
	Protocol monitoring for the GMES-2 service element			

## PUBLICATIONS

### Summary of published work<sup>1</sup>

Total publications	50
Total citations	1,101
H-index	20
Average citations/item	22.0
Average citations/year	67.4

<sup>1</sup> Source: Scopus (last updated: April 2024)

### Monographs

**Giannaros TM** (2013) Study of the urban heat island effect using a mesoscale atmospheric model and analyzing experimental data. Doctoral Dissertation. Aristotle University of Thessaloniki, 186 pp. (in English).

### Published refereed journal articles

1. Giannaros C, Agathangelidis I, Galanaki E, Kartalis C, Kotroni V, Lagouvardos K, **Giannaros TM**, Matzarakis A. Hourly values of an advanced human-biometeorological index for diverse populations from 1991 to 2020 in Greece. *Scientific Data* **2024**, *11*, 76.
2. Papavasileiou G., Giannaros TM. Synoptic-scale drivers of fire weather in Greece. *Science of the Total Environment* **2024**, *925*, 171715.
3. Pandey P, Huidobro G, Lopes LF, Ganteaume A, Ascoli D, Colaco C, Xanthopoulos G, **Giannaros TM.**, Gazzard R, Boustras G, Steelman T, Charlton V, Ferguson E, Kirschner J, Little K, Stoof C, Nikolakis W, Fernández-Blanco CR, Ribotta C, Lambrechts H, Fernandez M, Dossi S, 2023: A global outlook on increasing wildfire risk: Current policy situation and future pathways. *Trees, Forests and People* **2023**, *14*, 100431.
4. Lagouvardos K., Papavasileiou G., Papagiannaki K., Dafis S., Galanaki E., **Giannaros TM.**, Koletsis I, Kotroni V. Regional precipitation index: Method analysis and application over Greece. *Atmospheric Science Letters* **2024**, *24*, e1184.
5. **Giannaros TM**, Papavasileiou G. Changes in European fire weather extremes and related atmospheric drivers. *Agricultural and Forest Meteorology* **2023**, *342*, 109749.
6. Giannaros C, Agathangelidis I, Papavasileiou G, Galanaki E, Kotroni V, Lagouvardos K, **Giannaros TM**, Kartalis C, Matzarakis A. The extreme heat wave of July – August 2021 in the Athens urban area (Greece): Atmospheric and human-biometeorological analysis exploiting ultra-high resolution numerical modeling and the local climate zone framework. *Science of the Total Environment* **2023**, *857*, 159300.
7. Papavasileiou G, Kotroni V, Lagouvardos K, **Giannaros TM**. Observational and numerical study of a giant hailstorm in Attica, Greece, on 4 October 2019. *Atmospheric Research* **2022**, *278*, 106341.
8. Monteiro A, Basart S, Kazadzis S, Votsis A, Gkikas A, Vandenbussche S, Tobias A, Gama C, García-Pando CP, Terradellas E, Notas G, Middleton N, Kushta J, Amiridis V, Lagouvardos K, Kosmopoulos P, Kotroni V, Kanakidou M, Mihalopoulos N, Kalivitis N, Dagsson-Waldhauserová P, El-Askary H, Sievers K, **Giannaros TM**, Mona L, Hirtl M, Skomorowski P, Virtanen TH, Christoudias T, Di Mauro B, Trippetta S, Kutuzov S, Meinander O, Nickovic S. Multi-sectoral impact assessment of an extreme African dust episode in the Eastern Mediterranean in March 2018. *Science of the Total Environment* **2022**, *843*, 156861.

9. Giannaros C, Dafis S, Stefanidis S, **Giannaros TM**, Koletsis I, Oikonomou C. Hydrometeorological analysis of a flash flood event in an ungauged Mediterranean watershed under an operational forecasting and monitoring context. *Meteorological Applications* **2022**, *29*, e2079.
10. **Giannaros TM**, Papavasileiou G, Lagouvardos K, Kotroni V, Dafis S, Karagiannidis A, Dragozi E. Meteorological analysis of the 2021 extreme wildfires in Greece: Lessons learned and implications for early warning of the potential for pyroconvection. *Atmosphere* **2022**, *13*, 475.
11. Kotroni V, Lagouvardos K, Bezes A, Dafis S, Galanaki E, Giannaros C, **Giannaros TM**, Karagiannidis A, Koletsis I, Kopania T, Papagiannaki K, Papavasileiou G, Vafeiadis V, Vougioukas E. Storm naming in the Eastern Mediterranean: Procedures, events review and impact on the citizens risk perception and readiness. *Atmosphere* **2021**, *12*, 1537.
12. Dragozi E, **Giannaros TM**, Kotroni V, Lagouvardos K, Koletsis I. Dead fuel moisture content (DFMC) estimation using MODIS and meteorological data: The case of Greece. *Remote Sensing* **2021**, *13*, 4224.
13. Vukovic Vimic A, Cvetkovic B, **Giannaros TM**, Shahbazi R, Sehat Kashani S, Prieto S, Kotroni V, Lagouvardos K, Pejanovic G, Petkovic S, Nickovic S, Vujadinovic M, Basart S, Darvishi Bolorani A, Terradellas E. Numerical simulation of Tehran dust storm on 2 June 2014: A case study of agricultural abandoned lands as emission sources. *Atmosphere* **2021**, *12*(8), 1054.
14. Galanaki E, Lagouvardos K, Kotroni V, **Giannaros TM**, Giannaros C. Implementation of WRF-Hydro at two drainage basins in the region of Attica, Greece, for operational flood forecasting. *Natural Hazards and Earth System Sciences* **2021**, *21*, 1983-200.
15. Giannaros C, Galanaki E, Kotroni V, Lagouvardos K, Oikonomou C, Haralambous H, **Giannaros TM**. Pre-operational application of a WRF-Hydro-based fluvial flood forecasting system in the southeast Mediterranean. *Forecasting* **2021**, *3*, 437-446.
16. Karagiannidis A, Lagouvardos K, Kotroni V, **Giannaros TM**. Assessment of the v2016 NWCSAF CRR and CRR-Ph precipitation estimation performance over the Greek area using rain gauge data as ground truth. *Meteorology and Atmospheric Physics* **2021**, *133*, 879-890.
17. Lavin-Gulon A, Fernandez J, Bastin S, Cardoso RM, Fita L, **Giannaros TM**, Georgen K, Gutierrez JM, Kartsios S, Katragkou E, Lorenz T, Milovac J, Soares PMM, Sobolowski S, Warrach-Sagi K. Internal variability versus multi-physics uncertainty in a regional climate model. *International Journal of Climatology* **2021**, *41*, 656-671.
18. **Giannaros TM**, Lagouvardos K, Kotroni V. Performance evaluation of an operational rapid response fire spread forecasting system in the southeast Mediterranean (Greece). *Atmosphere* **2020**, *11*, 1264.
19. Papagiannaki K, **Giannaros TM**, Lykoydis S, Kotroni V, Lagouvardos K. Weather-related thresholds for wildfire danger in a Mediterranean region: The case of Greece. *Agricultural and Forest Meteorology* **2020**, *291*, 108076.
20. Kotroni V, Cartalis C, Michaelides S, Stoyanova J, Tymvios F, Bezes A, Christoudias T, Dafis S, Giannakopoulos C, **Giannaros TM**, Georgiev C, Karagiannidis A, Karali A, Koletsis I, Lagouvardos K, Lemesios I, Mavrakou T, Papagiannaki K, Polydoros A, Proestos Y. DISARM early warning system for wildfires in the eastern Mediterranean. *Sustainability* **2020**, *12*, 6670.
21. **Giannaros TM**, Kotroni V, Lagouvardos K. Climatology and trend analysis (1987 – 2016) of fire weather in the Euro-Mediterranean. *International Journal of Climatology* **2021**, *41*, 491-508.
22. Giannaros C, Kotroni V, Lagouvardos K, **Giannaros TM**, Pikridas C. Assessing the impact of GNSS ZTD data assimilation into the WRF modeling system during high-impact rainfall events over Greece. *Remote Sensing* **2020**, *12*, 383.
23. Lagouvardos K, Kotroni V, **Giannaros TM**, Dafis S. Meteorological conditions conducive to the rapid spread of the deadly wildfire in eastern Attica, Greece. *Bulletin of the American Meteorological Society* **2019**, *100*, 2137-2145.
24. Gkikas A, **Giannaros TM**, Kotroni V, Lagouvardos K. Assessing the radiative impacts of an extreme desert dust outbreak and the potential improvements on short-term weather forecasts: The case of February 2015. *Atmospheric Research* **2019**, *226*, 152-170.
25. Karagiannidis A, Lagouvardos K, Kotroni V, **Giannaros TM**, Lykoudis S, Betz H-D. Modeling lightning density using cloud top parameters. *Atmospheric Research* **2019**, *222*, 163-171.

26. Giannaros C, Melas D, **Giannaros TM**. On the short-term simulation of heat waves in the Southeast Mediterranean: Sensitivity of the WRF model to various physics schemes. *Atmospheric Research* **2019**, 218, 99-116.
27. Fita L, Polcher J, **Giannaros TM**, Lorenz T, Milovac J, Sofiadis G, Katragkou E, Bastin S. CORDEX-WRF v1.3: Development of a module for the Weather Research and Forecasting (WRF) model to support the CORDEX community. *Geoscientific Model Development* **2019**, 12, 1029-1066.
28. **Giannaros TM**, Kotroni V, Lagouvardos K (2019) IRIS – Rapid response fire spread forecasting system: Development, calibration and evaluation. *Agricultural and Forest Meteorology* **2019**, 279, 107745.
29. **Giannaros TM**, Lagouvardos K, Kotroni V, Matzarakis A. Operational forecasting of human-biometeorological conditions. *International Journal of Biometeorology* **2018**, 62, 1339-1343.
30. Dafis S, Fierro A, **Giannaros TM**, Lagouvardos K, Kotroni V, Mansell T. Performance evaluation of an explicit lightning forecasting system. *Journal of Geophysical Research – Atmospheres* **2018**, 123, 5130-5148.
31. **Giannaros TM**, Kotroni V, Lagouvardos K, Matzarakis A. Climatology and trends of the Euro-Mediterranean thermal bioclimate. *International Journal of Climatology* **2018**, 38, 3290-3308.
32. Giannaros C, Nenes A, **Giannaros TM**, Kourtidis K, Melas D. A comprehensive approach for the simulation of the urban heat island effect with the WRF/SLUCM modeling system: The case of Athens (Greece). *Atmospheric Research* 2018, 201, 86-101.
33. **Giannaros TM**, Kotroni V, Lagouvardos K, Dellis D, Tsanakas P, Mavrellis G, Symeonidis P, Vakkas T. Ultra-high-resolution wind forecasting for the sailing events at the Rio de Janeiro 2016 Summer Olympic Games. *Meteorological Applications* **2018**, 25, 86-93.
34. Flaounas E, Kotroni V, Lagouvardos K, Klose M, Flamant C, **Giannaros TM**. Sensitivity of the WRF-Chem (V3.6.1) model to different dust emission parameterization: Assessment in the broader Mediterranean region. *Geoscientific Model Development* **2017**, 10, 2925-2945.
35. Dafis S, Lagouvardos K, Kotroni V, **Giannaros TM**, Bartzokas A. Observational and modeling study of a mesoscale convective system during the HyMeX-SOP1. *Atmospheric Research* **2017**, 187, 1-15.
36. **Giannaros TM**, Melas D, Ziomas I. Performance evaluation of the Weather Research and Forecasting (WRF) model for assessing wind resource in Greece. *Renewable Energy* **2017**, 102(A), 190-198.
37. **Giannaros TM**, Lagouvardos K, Kotroni V. Performance evaluation of an operational lightning forecasting system in Europe. *Natural Hazards* **2017**, 85, 1-18.
38. Koletsis I, **Giannaros TM**, Lagouvardos K, Kotroni V. Observational and numerical study of the Vardaris wind regime in northern Greece. *Atmospheric Research* **2016**, 171, 107-120.
39. Zempila M-M, **Giannaros TM**, Bais, A, Melas D, Kazantzidis A. Evaluation of WRF shortwave radiation parameterizations in predicting global horizontal irradiance in Greece. *Renewable Energy* **2016**, 86, 831-840.
40. **Giannaros TM**, Kotroni V, Lagouvardos K. WRF-LTNGDA: A lightning data assimilation technique implemented in the WRF model for improving precipitation forecasts. *Environmental Modeling and Software* **2016**, 76, 54-68.
41. Liora N, Poupkou A, **Giannaros TM**, Kakosimos KE, Stein O, Melas D. Impacts of natural emissions sources on particle pollution levels in Europe. *Atmospheric Environment* **2016**, 137, 171-185.
42. Liora N, Markakis K, Poupkou A, **Giannaros TM**, Melas D. The Natural Emissions Model (NEMO): Description, application and model evaluation. *Atmospheric Environment* **2015**, 122, 493-504.
43. **Giannaros TM**, Kotroni V, Lagouvardos K. Predicting lightning activity in Greece with the Weather Research and Forecasting (WRF) model. *Atmospheric Research* **2015**, 156, 1-13.
44. **Giannaros TM**, Melas D, Matzarakis A. Evaluation of thermal bioclimate based on observations and numerical simulations: An application to Greece. *International Journal of Biometeorology* **2015**, 59, 151-164.
45. Karagiannidis A, Poupkou A, **Giannaros TM**, Giannaros C, Melas D, Argiriou A. The air quality of a Mediterranean urban environment area and its relation to major meteorological parameters. *Water, Air & Soil Pollution* **2015**, 226, 1-13.

46. Poupkou A, Markakis K, Liora N, **Giannaros TM**, Zanis P, Im U, Daskalakis N, Myriokefalitakis S, Kaiser JW, Melas D, Kanakidou M, Zerefos C. A modeling study of the impact of the 2007 Greek forest fires on the gaseous pollutant levels in the Eastern Mediterranean. *Atmospheric Research* **2014**, *149*, 1-17.
47. **Giannaros TM**, Melas D, Daglis IA, Keramitsoglou I. Development of an operational modeling system for urban heat islands: An application to Athens, Greece. *Natural Hazards and Earth System Sciences* **2014**, *14*, 347-358.
48. **Giannaros TM**, Melas D, Daglis IA, Keramitsoglou I, Kourtidis K. Numerical study of the urban heat island over Athens (Greece) with the WRF model. *Atmospheric Environment* **2013**, *73*, 103-111.
49. **Giannaros TM**, Melas D. Study of the urban heat island in a coastal Mediterranean city: the case study of Thessaloniki, Greece. *Atmospheric Research* **2012**, *118*, 103-120.
50. Poupkou A, **Giannaros TM**, Markakis K, Kioutsoukis I, Curci G, Melas D, Zerefos C. A model for European biogenic volatile organic compounds emissions: Software development and first validation. *Environmental Modeling & Software* **2010**, *25*, 1845-1856.

Submitted manuscripts – Under review

Currently none.

Published articles in conference proceedings

1. Papavasileiou G, **Giannaros TM**. Validation of ERA5 fire weather conditions in Greece between 2007 and 2019: A preliminary analysis. Proceedings of the *IX International Conference on Forest Fire Research*, 11 – 18 November **2022**, Coimbra, Portugal.
2. **Giannaros TM**, Papavasileiou G. Spatiotemporal analysis of fire danger extremes in Europe between 1980 and 2019: Preliminary results. Proceedings of the *IX International Conference on Forest Fire Research*, 11 – 18 November **2022**, Coimbra, Portugal.
3. Papavasileiou G, **Giannaros TM**. Critical fire weather patterns of Greece: Forecasting fire weather conditions in the medium-range. Proceedings of the *9<sup>th</sup> International Conference on Civil Protection and New Technologies (Safe Greece 2022)*, 29 September – 1 October **2022**, Thessaloniki, Greece.
4. **Giannaros TM**, Bezes A, Dafis S, Dragozi E, Karagiannidis A, Koletsis I, Kotroni V, Kyros G, Lagouvardos K, Papavasileiou G. Firescope: A fire weather information and early warning system supporting the shift from suppression to prevention in Europe and Greece. Proceedings of the *9<sup>th</sup> International Conference on Civil Protection and New Technologies (Safe Greece 2022)*, 29 September – 1 October **2022**, Thessaloniki, Greece.
5. Kotroni V, **Giannaros TM**, Dragozi E, Lagouvardos K, Bezes A, Koletsis I. Early warning system for forest fires in Greece: Developments and upgrades in the frame of the Climact project. Proceedings of the *EGU General Assembly 2022*, 23 – 27 May 2022, Vienna, Austria, & Online.
6. Dragozi E, **Giannaros TM**, Kotroni V, Lagouvardos K, Koletsis I. Operational estimation of daily dead fuel moisture content (DFMC): The case of Greece. Proceedings of the *EGU General Assembly 2022*, 23 – 27 May **2022**, Vienna, Austria, & Online.
7. **Giannaros TM**, Papavasileiou G, Lagouvardos K, Kotroni V, Dafis S, Karagiannidis A, Dragozi E. Lessons learned from the extreme wildfires of early August 2021 in Greece. Proceedings of the *EGU General Assembly 2022*, 23 – 27 May **2022**, Vienna, Austria, & Online.
8. Papavasileiou G, **Giannaros TM**. The catastrophic 2021 wildfires in Greece: An outbreak of pyroconvective events. Proceedings of the *III International Conference on Fire Behavior and Risk*, 3 – 6 May **2022**, Sardinia, Italy.
9. **Giannaros TM**, Papavasileiou G. The Varympompi 2021 (Athens, Greece) extreme wildfire: Insights from coupled fire-atmosphere numerical simulations. Proceedings of the *III International Conference on Fire Behavior and Risk*, 3 – 6 May **2022**, Sardinia, Italy.
10. **Giannaros TM**, Papavasileiou G, Lagouvardos K, Kotroni V, Dafis S, Karagiannidis A. Early warning of extreme pyroconvective events: Lessons learned from the early August 2021 wildfires in Greece.

Proceedings of the 8<sup>th</sup> *International Conference on Civil Protection and New Technologies (Safe Greece 2021)*, 24 – 26 November **2021**, Online.

11. **Giannaros TM**, Kotroni V, Lagouvardos K. IRIS: Rapid response fire spread forecasting system – Operational implementation and evaluation during the 2019 fire season. Proceedings of the 15<sup>th</sup> *International Conference on Meteorology, Climatology and Atmospheric Physics*, 26 – 29 September **2021**, Ioannina, Greece.
12. **Giannaros TM**, Kotroni V, Lagouvardos K. Lightning forecasting in Europe: Results obtained from one year of operational simulations. *Perspectives on Atmospheric Sciences* **2017**, 33-39. Proceedings of the *XIII International Conference on Meteorology, Climatology and Atmospheric Physics*, 19 – 21 September **2016**, Thessaloniki, Greece.
13. Giannaros C, Melas D, **Giannaros TM**. Evaluation of WRF parameterization schemes during heat-wave events over the greater area of south-east Mediterranean. *Perspectives on Atmospheric Sciences* **2017**, 17-23. Proceedings of the *XIII International Conference on Meteorology, Climatology and Atmospheric Physics*, 19 – 21 September **2016**, Thessaloniki, Greece.
14. Dafis S, Lagouvardos K, Kotroni V, **Giannaros TM**, Bartzokas A. Numerical simulations and observational study of a mesoscale convective system in France, during the HyMeX-SOP1 using the WRF model. *Perspectives on Atmospheric Sciences* **2017**, 41-47. Proceedings of the *XIII International Conference on Meteorology, Climatology and Atmospheric Physics*, 19 – 21 September **2016**, Thessaloniki, Greece.
15. Karagiannidis A, Lagouvardos K, Kotroni V, **Giannaros TM**. Validating SAF NWC products over the Greek area. *Perspectives on Atmospheric Sciences* **2017**, 203-208. Proceedings of the *XIII International Conference on Meteorology, Climatology and Atmospheric Physics*, 19 – 21 September **2016**, Thessaloniki, Greece.
16. Liora N, Poupkou A, Giannaros TM, Melas D. Study of the impact of natural sources on the air quality – Evaluation of a natural emissions model. *AIP Conference Proceedings* **2016**, 1722, 270004. Proceedings of the 9<sup>th</sup> *International Physics Conference of the Balkan Physical Union*, 24 – 27 August **2015**, Istanbul, Turkey.
17. Bais A, Kazantzidis A, **Giannaros TM**, Zempila M-M, Kazadzis S, Nikitidou E, Tzoumanikas P, Salamalikis V, Kosmidis E, Melas D, Zerefos C, Fragkos K, Fountoulakis I, Drosoglou T, Kotti MC. The Hellenic Solar Energy Network: Validation of products. Proceedings of the *XII International Conference on Meteorology, Climatology and Atmospheric Physics*, 28 – 31 May **2014**, Heraklion, Greece.
18. Liora N, Poupkou A, Markakis K, **Giannaros TM**, Melas D. Sea salt and wind blow dust emissions in the Eastern Mediterranean – Study of the natural PM emissions dependence on meteorology. Proceedings of the *XII International Conference on Meteorology, Climatology and Atmospheric Physics*, 28 – 31 May **2014**, Heraklion, Greece.
19. Karagiannidis A, Poupkou A, Giannaros C, **Giannaros TM**, Dimopoulos S, Liora N, Melas D. Meteorological factors affecting the air pollution of the city of Patras. Proceedings of the *XII International Conference on Meteorology, Climatology and Atmospheric Physics*, 28 – 31 May **2014**, Heraklion, Greece.
20. Poupkou A, Liora N, Karagiannidis A, **Giannaros TM**, Giannaros C, Melas D, Argiriou A. Maritime sector emissions contribution to the particulate matter pollution in a Mediterranean city port: A modeling approach. *Air Pollution Modeling and its Application XXIII* **2014**, 307-310. Proceedings of the *33rd International Technical Meeting on Air Pollution Modeling and its Application*, 26 – 30 August **2013**, Miami (Florida), USA.
21. Bais A, Kazantzidis A, Zerefos CS, Melas D, Kosmidis E, Kazadzis S, Nikitidou E, **Giannaros TM**, Zempila M-M. Hellenic network for solar energy. *Advances in Meteorology, Climatology and Atmospheric Physics* **2012**, 391-396. Proceedings of the *XI International Conference on Meteorology, Climatology and Atmospheric Physics*, 29 May – 1 June **2012**, Athens, Greece.
22. Poupkou A, Markakis K, Liora N, **Giannaros TM**, Im U, Daskalakis N, Myriokefalitakis S, Melas D, Zanis P, Kanakidou M, Zerefos CS. Study of the impact of an intense biomass burning event on the air quality in the eastern Mediterranean. *Advances in Meteorology, Climatology and Atmospheric Physics*

- 2012**, 1189-1195. Proceedings of the *XI International Conference on Meteorology, Climatology and Atmospheric Physics*, 29 May – 1 June **2012**, Athens, Greece.
23. Mamunta P, Ceriola G, Daglis IA, de Ridder K, **Giannaros TM**, Keramitsoglou I, Bino M, Melas D, Montero-Herrero E, Paganini M, Palacios M, Radius A, Sapage T, Tamane M, Tambuyzer H, Viel M. Urban heat islands and urban thermography. Proceedings of the *ESA Living Planet Symposium*, 28 June – 2 July **2010**, Bergen, Norway.
24. Daglis IA, Rapsomanikis S, Kourtidis K, Melas D, Papayannis A, Keramitsoglou I, **Giannaros TM**, Amiridis V, Petropoulos G, Georgoulas A, Sobrino J-A, Mamunta P, Grobner J, Paganini M, Bianchi R. Results of the DUE Thermopolis campaign with regard to the urban heat island (UHI) effect in Athens. Proceedings of the *ESA Living Planet Symposium*, 28 June – 2 July **2010**, Bergen, Norway.
25. Daglis IA, Keramitsoglou I, Amiridis V, Petropoulos G, Melas D, **Giannaros TM**, Kourtidis K, Sobrino JA, Mamunta P, Grobner J, Paganini M, Bianchi R. Investigating the urban heat island (UHI) effect in Athens through a combination of space, air-borne and ground-based observations. Proceedings of the *X International Conference on Meteorology, Climatology and Atmospheric Physics*, 25 – 28 May **2010**, Patras, Greece.
26. Kioutsoukis I, Poupkou A, Katragkou E, **Giannaros TM**, Markakis K, Balis D, Melas D, Zerefos C. Performance evaluation of the MM5/CAMx system for Europe (2003). Proceedings of the *X International Conference on Meteorology, Climatology and Atmospheric Physics*, 25 – 28 May **2010**, Patras, Greece.
27. **Giannaros TM**, Melas D, Kontogianni P. An observational study of the urban heat island in the greater Thessaloniki area: Preliminary results and development of a forecasting service. *AIP Conference Proceedings* **2010**, 1203, 991. Proceedings of the *7th General Conference of the Balkan Physical Union*, 9 – 13 September **2009**, Alexandroupolis, Greece.
28. Poupkou A, Kioutsoukis I, Lissaridis I, Markakis K, **Giannaros TM**, Katragkou E, Melas D, Zerefos C, Viras L. Evaluation in the greater Athens area of an air quality forecast system. Proceedings of the *IX National-International Conference on Meteorology-Climatology and Atmospheric Physics*, 28 – 31 May **2008**, Thessaloniki, Greece.

## CONFERENCE ACTIVITY

### Oral presentations

1. **Giannaros TM**. Climatology, trends, and atmospheric drivers of fire weather extremes in Europe. Presentation at the *3<sup>rd</sup> Mediterranean Geosciences Union Annual Meeting*, 26 – 30 November **2023**, Istanbul, Türkiye.
2. **Giannaros TM**. Spatiotemporal analysis of fire danger extremes in Europe between 1980 and 2019: Preliminary results. Presentation at the *IX International Conference on Forest Fire Research*, 11 – 18 November **2022**, Coimbra, Portugal.
3. **Giannaros TM**. Firescope: A fire weather information and early warning system supporting the shift from suppression to prevention in Europe and Greece. Presentation at the *9<sup>th</sup> International Conference on Civil Protection and New Technologies (Safe Greece 2022)*, 29 September – 1 October **2022**, Thessaloniki, Greece.
4. **Giannaros TM**. The 2021 extreme wildfires in Greece: Lessons learned and implications for early warning of the potential for pyroconvective events. Presentation at the *Fire & Climate Conference of the International Association for Wildland Fire*, 23 – 27 May **2022**, Pasadena, California, USA, & Online.
5. **Giannaros TM**. Lessons learned from the extreme wildfires of early August 2021 in Greece. Presentation at the *EGU General Assembly 2022*, 23 – 27 May **2022**, Vienna, Austria, & Online.
6. **Giannaros TM**. The Varympompi 2021 (Athens, Greece) extreme wildfire: Insights from coupled fire-atmosphere numerical simulations. Presentation at the *III International Conference on Fire Behavior and Risk*, 3 – 6 May **2022**, Sardinia, Italy.

7. **Giannaros TM.** Early warning of extreme pyroconvective events: Lessons learned from the early August 2021 wildfires in Greece. Presentation at *8<sup>th</sup> International Conference on Civil Protection and New Technologies (Safe Greece 2021)*, 24 – 26 November **2021**, Online.
8. **Giannaros TM.** IRIS: Rapid response fire spread forecasting system – Operational implementation and evaluation during the 2019 fire season. Presentation at the *15<sup>th</sup> International Conference on Meteorology, Climatology and Atmospheric Physics*, 26 – 29 September **2021**, Ioannina, Greece.
9. **Giannaros TM.** IRIS – Rapid response fire spread forecasting system: Operational implementation and evaluation during the 2019 fire season. Presentation at the *3<sup>rd</sup> Scientific Forum for Reducing Risk of Natural Disasters*, 5 – 6 March **2020**, Athens, Greece.
10. **Giannaros TM.** IRIS – Rapid Response Fire Spread Forecasting System. Presentation at the *European Meteorological Society Annual Meeting 2019*, 9 September **2019**, Copenhagen, Denmark.
11. **Giannaros TM.** Probabilistic fire spread prediction: The case of the deadly wildfire in Mati, Greece. Presentation at the *Using ECMWF Forecasts Workshop 2019*, 3 – 6 June **2019**, Reading, United Kingdom.
12. **Giannaros TM.** Development of a rapid-response forecasting system for fire spread prediction in the context of the DISARM project. Presentation at the *2<sup>nd</sup> Scientific Forum for Reducing Risk of Natural Disasters*, 14 – 15 March **2019**, Athens, Greece.
13. **Giannaros TM.** The Euro-Mediterranean thermal bioclimate: Climatology and trends. Presentation at the *11<sup>th</sup> HyMeX Workshop*, 29 May – 2 June **2018**, Lecce, Italy.
14. **Giannaros TM.** The Euro-Mediterranean thermal bioclimate: Climatology and trends. Presentation at the *VI-SEEM International Conference*, 16 May **2018**, Sofia, Bulgaria.
15. **Giannaros TM.** On the impact of dust on Mediterranean cyclones: the Mediane case of December 2005. Presentation at the *18<sup>th</sup> Cyclone Workshop*, 1 – 6 October **2017**, Saint Adele (Quebec), Canada.
16. **Giannaros TM.** On the impact of dust on Mediterranean cyclones: the Mediane case of December 2005. Presentation at the *10<sup>th</sup> HyMeX Workshop*, 4 – 7 July **2017**, Barcelona, Spain.
17. **Giannaros TM.** Lightning forecasting in Europe and other lightning-related activities at NOA, Greece. Presentation at *The Bathsheva de Rothschild Seminar on the Atmospheric Global Electric Circuit*, 5 – 10 February **2017**, Mitzpe Ramon, Israel.
18. **Giannaros TM.** Lightning forecasting in Europe: Results obtained from one year of operational simulations. Presentation at the *XIII International Conference on Meteorology, Climatology and Atmospheric Physics*, 19 – 21 September **2016**, Thessaloniki, Greece.
19. **Giannaros TM.** Performance evaluation of an operational lightning forecasting system. Presentation at the *9th HyMeX Workshop*, 21 – 25 September **2015**, Mykonos Island, Greece.
20. **Giannaros TM.** On the impact of air quality on human health: Application of an air quality index for Thessaloniki, Greece. Presentation at the *9th International Conference on Air Quality – Science and Application*, 24 – 28 March **2014**, Garmisch-Partenkirchen, Germany.
21. **Giannaros TM.** Development of a modeling system for urban heat islands: An application to Athens and Thessaloniki, Greece. Presentation at the *XI International Conference on Meteorology, Climatology and Atmospheric Physics*, 29 May – 1 June **2012**, Athens, Greece.
22. **Giannaros TM.** Implementing mesoscale atmospheric models for simulating urban heat island and estimating thermal comfort indices. Presentation at the *X International Conference on Meteorology, Climatology and Atmospheric Physics*, 25 – 28 May **2010**, Patras, Greece.
23. **Giannaros TM.** An observational study of the urban heat island in the greater Thessaloniki area: Preliminary results and development of a forecasting service. Presentation at the *7th General Conference of the Balkan Physical Union*, 9 – 13 September **2009**, Alexandroupolis, Greece.

#### Poster presentations

1. **Giannaros TM,** Kotroni V, Lagouvardos K, Galanaki E, Dafis S. HERMES: An integrated severe and extreme weather forecasting service. *11<sup>th</sup> HyMeX Workshop*, 29 May – 2 June **2018**, Lecce, Italy.

2. **Giannaros TM**, Kotroni V, Lagouvardos K. Implementation of a lightning data assimilation technique in the Weather Research and Forecasting (WRF) model for improving precipitation prediction. *European Geosciences Union General Assembly 2015*, 12 – 17 April **2015**, Vienna, Austria.
3. **Giannaros TM**, Melas D, Ziomas I. Evaluation of the performance of a mesoscale modeling system for wind resource assessment. *5th International Meeting on Meteorology and Climatology of the Mediterranean*, 2 – 4 March **2015**, Istanbul, Turkey.
4. **Giannaros TM**, Melas D, Ziomas I. Performance evaluation of a mesoscale modeling system for wind resource assessment. *13th International Conference on Environmental Science and Technology (CEST2013)*, 5 – 7 September **2013**, Athens, Greece.
5. **Giannaros TM**, Melas D, Korosoglou P, Kanellopoulos C, Keramitsoglou I. Implementing WRF on the GRID in the context of the THERMOPOLIS2009 campaign. *SEE-GRID-SCI User Forum 2009*, 9 – 10 December **2009**, Istanbul, Türkiye.

## HONORS AND AWARDS

- |             |   |
|-------------|---|
| 2023        | Best Paper Award, <i>3<sup>rd</sup> Mediterranean Geosciences Union Annual Meeting</i> (for paper presented in Track 1. Atmospheric Sciences, Meteorology, Climatology, Oceanography) |
| 2014        | Young Scientist Travel Award, <i>European Meteorological Society</i> (for participating in the 9 <sup>th</sup> International Conference on Air Quality – Science and Application)     |
| 2011 – 2012 | Scholarship for Excellence in Research, Aristotle University of Thessaloniki (awarded for the research conducted in the context of my Ph.D. studies)                                  |

## TEACHING EXPERIENCE – WORKSHOPS – INVITED TALKS

1. Democritus University of Thrace: Invited lecture (“Current and emerging challenges of novel extreme wildfires”) in the frame of the M.Sc. programme “Environmental Engineering and Science”. December 21 **2023**.
2. Centre for Environmental Education, Archanes (Crete): Invited lecture (“Natural disasters in the era of climate change”) in the frame of an education workshop organized for school teachers. November 25 **2023**.
3. Wageningen University & Research: Invited lecture (“Inside the Inferno – Faced with a new wildfire reality”) in the frame of the B.Sc. course WSG-51306: Adaptation and mitigation strategies for society. September 26 **2023**.
4. RESPOND-A – Next-generation equipment tools and mission-critical strategies for first responders: Invited talk (“Current and emerging challenges of novel extreme wildfire events”) in the frame of the project’s final meeting, April 25 **2023**.
5. Advanced Fire Analysis Network: Invited talk (“Early warning of pyroconvection: Lessons learned from August 2021 in Greece”) in the frame of technical webinar, February 22 **2022**.
6. Advanced Fire Analysis Network: Invited talk (“The Varympompi (Athens, Greece) pyroconvective wildfire”) in the frame of technical workshop, January 26 **2022**.
7. Wageningen University & Research: Invited lecture (“Inside the Inferno – Faced with a new wildfire reality”) in the frame of the B.Sc. course WSG-51306: Adaptation and mitigation strategies for society. September 21 **2021**.
8. University of Crete, School of Biology: Recurring lecture (“Climate and climate change”) in the frame of the M.Sc. course Environmental Biology. October **2018 – 2022**.
9. Wageningen University & Research: Invited lecture (“The DISARM project and services: Responding to the urgent call of a new wildfire reality”) in the frame of the B.Sc. course WSG-51306: Adaptation and mitigation strategies for society. October 2 **2020**.
10. Natural History Museum of Crete: Invited talk (“Natural disasters – Reducing risk in a changing climate”) in the frame of the International Day for Disaster Risk Reduction. October 15 **2019**.

11. National Observatory of Athens: Invited talk (“Climate modeling and applications”) in the frame of the AdapTM Training Workshop. November 20 **2018**.
12. Greek Research & Technology Network: Invited lecture (“Numerical modeling with the WRF model: Introduction – Applications – Best practices”) in the frame of the PRACE Training Event. July 4 **2018**.
13. University of Patras, School of Physics: Invited lecture (“Numerical weather prediction models: A powerful tool for studying the atmosphere”) in the frame of the M.Sc. course Applied Meteorology & Environmental Physics. December 13 **2017**.
14. Institute of Physics, Belgrade: Invited talk (“The WRF-Chem model”) in the frame of the VI-SEEM REG CL regional training event. October 11 **2017**.
15. Greek Research Network & Technology: Invited lecture (“Numerical weather prediction in high-performance computing (HPC) environments: Implementation of the WRF model on ARIS”) in the frame of the Training Workshop on Meteorology and Climatology with the WRF model. December 19 **2016**.

## **PARTICIPATION IN EVALUATION COMMITTEES**

### Ph.D. theses

1. Daphne Parliari, *Combined effects of atmospheric pollution and thermal stress on the environment*. School of Physics, Aristotle University of Thessaloniki (external examiner)
2. Denis Edem Kwame Dzebre, *Sensitivity analyses of the Weather Research and Forecasting model for wind resource assessment in coastal Ghana*. Faculty of Environmental Sciences and Natural Resource Management, Norwegian University of Life Sciences (external examiner).

### Research projects

1. Greek Research & Technology Network, Greece (total proposals evaluated: 1)
2. National Science Foundation, USA (total proposals evaluated: 1)

## **SERVICE TO PROFESSION**

### Member of the editorial board of international scientific journals

Annales Geophysicae (topical editor), Forecasting (editorial board member), Atmosphere (guest editor)

### Reviewer of international scientific journals

Atmosphere (MDPI), Atmospheric Research (Elsevier), Journal of Applied Meteorology and Climatology (AMS), Journal of Geophysical Research (AGU), Scientific Reports (Nature), Science of the Total Environment (Elsevier), Theoretical and Applied Climatology (Springer), Quarterly Journal of the Royal Meteorological Society (Wiley)

## **SKILLS**

### Professional skills

*Numerical weather prediction and regional climate models:* WRF, WRF-Chem

*Coupled fire-atmosphere models:* WRF-Fire, WRF-SFIRE

*Human-biometeorological models:* RayMan Pro

*Programming languages:* Fortran, Python, NCL, GDAL, NCO, CDO, R, Visual, Unix/Windows batch programming

*Computing:* Proficient in HPC

*Geographic information systems:* Quantum GIS, ArcGIS

### Languages

*Greek:* Native

*English:* Excellent (Proficiency in English – University of Cambridge)

*French:* Adequate (DELF 1er Degree, Ministry of National Education of France)

## REFERENCES

*Dr. Vassiliki Kotroni* (Research Director)

Institute for Environmental Research & Sustainable Development

National Observatory of Athens

Lofos Koufou, 15236 Penteli, Greece

Email: kotroni@noa.gr

Tel.: +30 210 810 9126

*Dr. Konstantinos Lagouvardos* (Research Director)

Institute for Environmental Research & Sustainable Development

National Observatory of Athens

Lofos Koufou, 15236 Penteli, Greece

Email: lagouvar@noa.gr

Tel.: +30 210 810 9127

*Dr. Andreas Matzarakis* (Professor)

Research Center for Human Biometeorology

Deutscher Wetterdienst (German Weather Service)

Stefan-Meier-Str. 4, D-79104 Freiburg, Germany

Email: andreas.matzarakis@dwd.de

Tel.: +49 69 8062 9610

*Dr. Dimitrios Melas* (Professor)

Faculty of Sciences, School of Physics

Aristotle University of Thessaloniki

54 124 University Campus, Thessaloniki, Greece

Email: melas@auth.gr

Tel.: +30 2310 998124