Fr. Ioannis N. Kapsomenakis

Senior Researcher (Researcher Grade B)
Research Centre for Atmospheric Physics and Climatology, Academy of Athens

PROFILE

Physicist with a PhD in Climatology and more than fifteen years of research experience in climate science, with a focus on the Mediterranean and Greece. His work covers the monitoring, modelling and interpretation of climate variability and change, the evaluation of climate model simulations, atmospheric physics and chemistry and remote sensing, as well as the impacts of climate on cultural heritage, agriculture, public health and buildings.

POSITIONS

2024 – present	**Senior Researcher (Researcher Grade B)** Research Centre for Atmospheric Physics and Climatology, Academy of Athens
2020 – 2024	**Associate Researcher (Researcher Grade C)** Research Centre for Atmospheric Physics and Climatology, Academy of Athens

EDUCATION

2009	**PhD in Climatology – Climate Change** National and Kapodistrian University of Athens
2005	**MSc in Environmental Physics – Meteorology** National and Kapodistrian University of Athens
2002	**BSc in Physics** National and Kapodistrian University of Athens

RESEARCH INTERESTS

- Climate change and planetary-scale change
- Climate model simulations and their evaluation
- Atmospheric physics and chemistry
- Remote sensing
- Climate change impacts and adaptation

RESEARCH OUTPUT AT A GLANCE

50+	original articles in international peer-reviewed journals
80+	contributions to conference proceedings
2,200+	citations of published work
25+	European and national research projects

CONTRIBUTION TO NATIONAL CLIMATE CHANGE STUDIES

- Contributor to the National Climate Change Adaptation Strategy of Greece (established by Law 4414/2016), on which national adaptation policy is based, and to its ongoing revision.
- Member of the author team of the Bank of Greece Climate Change Impacts Study Committee report on the environmental, economic and social impacts of climate change in Greece (2011).

- Contributor to the Regional Climate Change Adaptation Plans of the Regions of Peloponnese, Crete and Attica.

RESEARCH PROJECTS

2022–2025 **Copernicus Atmosphere Monitoring Service, CAMS2_82: Evaluation and quality control (EQA) of global products**
Quality control of the CAMS atmospheric composition products.

LIFE-IP AdaptInGR: Boosting the implementation of adaptation policy across Greece
Climate change impacts in Greece and adaptation planning.

Participation in more than 25 European and national research projects.

SELECTED PEER-REVIEWED JOURNAL ARTICLES

1. Papadimitriou, N., Fountoulakis, I., Gkikas, A., Papachristopoulou, K., Kazantzidis, A., Kazadzis, S., Pfenninger, S., **Kapsomenakis, J.**, Eleftheratos, K., Argiriou, A. A., Doppler, L., Zerefos, C. S. (2026). PV power modelling using solar radiation from ground-based measurements and CAMS: Assessing the diffuse component related uncertainties leveraging the Global Solar Energy Estimator (GSEE). *Atmospheric Measurement Techniques*, 19, 1227–1244. doi:10.5194/amt-19-1227-2026
2. Ntagkounakis, G., Nastos, P., **Kapsomenakis, J.**, Douvis, K. (2025). Creation and comparison of high-resolution daily precipitation gridded datasets for Greece using a variety of interpolation techniques. *Hydrology*, 12, 31. doi:10.3390/hydrology12020031
3. Dimitriadou, L., Nastos, P., Eleftheratos, K., **Kapsomenakis, J.**, Zerefos, C. (2022). Mortality related to air temperature in European cities, based on threshold regression models. *International Journal of Environmental Research and Public Health*, 19, 4017. doi:10.3390/ijerph19074017
4. **Kapsomenakis, J.**, Douvis, C., Poupkou, A., Zerefos, S., Solomos, S., Stavraka, T., Melis, N. S., Kyriakidis, E., Kremlis, G., Zerefos, C. (2022). Climate change threats to cultural and natural heritage UNESCO sites in the Mediterranean. *Environment, Development and Sustainability*. doi:10.1007/s10668-022-02677-w
5. Eleftheratos, K., **Kapsomenakis, J.**, Fountoulakis, I., Zerefos, C. S., et al. (2022). Ozone, DNA-active UV radiation, and cloud changes for the near-global mean and at high latitudes due to enhanced greenhouse gas concentrations. *Atmospheric Chemistry and Physics*, 22, 12827–12855. doi:10.5194/acp-22-12827-2022
6. Georgoulias, A. K., Akritidis, D., Kalisoras, A., **Kapsomenakis, J.**, Melas, D., Zerefos, C. S., Zanis, P. (2022). Climate change projections for Greece in the 21st century from high-resolution EURO-CORDEX RCM simulations. *Atmospheric Research*, 106049. doi:10.1016/j.atmosres.2022.106049
7. Kairis, O., Karamanos, A., Voloudakis, D., **Kapsomenakis, J.**, Aratzioglou, C., Zerefos, C., Kosmas, C. (2022). Identifying degraded and sensitive to desertification agricultural soils in Thessaly, Greece, under simulated future climate scenarios. *Land*, 11, 395. doi:10.3390/land11030395
8. Solomos, S., Dimitriadou, L., **Kapsomenakis, J.**, Binietoglou, I., Nastos, P., Zerefos, C. (2022). Development of the weather and climate service "CRITERION" for the touristic sector in e-SHAPE. *FMI's Climate Bulletin: Research Letters*, 4(1). doi:10.35614/ISSN-2341-6408-IK-2022-03-RL
9. Wagner, A., Bennouna, Y., Blechschmidt, A.-M., Brasseur, G., Chabrillat, S., Christophe, Y., Errera, Q., Eskes, H., Flemming, J., Hansen, K. M., Inness, A., **Kapsomenakis, J.**, Langerock, B., Richter, A., Sudarchikova, N., Thouret, V., Zerefos, C. (2021). Comprehensive evaluation of the Copernicus Atmosphere Monitoring Service (CAMS) reanalysis against independent observations: Reactive gases. *Elementa: Science of the Anthropocene*, 9(1). doi:10.1525/elementa.2020.00171
10. Zerefos, C., Solomos, S., **Kapsomenakis, J.**, Poupkou, A., Dimitriadou, L., Polychroni, I., Kalabokas, P., Philandras, C., Thanos, D. (2020). Lessons learned and questions raised during and post-COVID-19 anthropopause period in relation to the environment and climate. *Environment, Development and Sustainability*. doi:10.1007/s10668-020-01075-4
11. Zerefos, C., Solomos, S., Melas, D., **Kapsomenakis, J.**, Repapis, C. (2020). The role of weather during the Greek–Persian "Naval Battle of Salamis" in 480 B.C. *Atmosphere*, 11, 838. doi:10.3390/atmos11080838
12. Fountoulakis, I., Diémoz, H., Siani, A., Laschewski, G., Filippa, G., Arola, A., Bais, A. F., et al. (2020). Solar UV irradiance in a changing climate: Trends in Europe and the significance of spectral monitoring in Italy. *Environments*, 7(1), 1. doi:10.3390/environments7010001

13. Zerefos, C., **Kapsomenakis, J.**, Eleftheratos, K., Tourpali, K., Petropavlovskikh, I., Hubert, D., Godin-Beekmann, S., Steinbrecht, W., Frith, S., Sofieva, V., Hassler, B. (2018). Representativeness of single lidar stations for zonally averaged ozone profiles, their trends and attribution to proxies. *Atmospheric Chemistry and Physics*, 18(9), 6427–6440.

14. Zerefos, C. S., Eleftheratos, K., **Kapsomenakis, J.**, Solomos, S., Inness, A., Balis, D., Redondas, A., et al. (2017). Detecting volcanic sulfur dioxide plumes in the Northern Hemisphere using the Brewer spectrophotometers, other networks, and satellite observations. *Atmospheric Chemistry and Physics*, 17, 551–574. doi:10.5194/acp-17-551-2017

15. Voloudakis, D., Karamanos, A., Economou, G., Kalivas, D., Vahamidis, P., Kotoulas, V., **Kapsomenakis, J.**, Zerefos, C. (2015). Prediction of climate change impacts on cotton yields in Greece under eight climatic models using the AquaCrop crop simulation model and discriminant function analysis. *Agricultural Water Management*, 147, 116–128.

16. **Kapsomenakis, J.**, Kolokotsa, D., Nikolaou, T., Santamouris, M., Zerefos, S. C. (2013). Forty years increase of the air ambient temperature in Greece: The impact on buildings. *Energy Conversion and Management*, 74, 353–365.

17. Nastos, P. T., Politi, N., **Kapsomenakis, J.** (2013). Spatial and temporal variability of the Aridity Index in Greece. *Atmospheric Research*, 119, 140–152.

18. Nastos, P. T., **Kapsomenakis, J.**, Douvis, K. C. (2013). Analysis of precipitation extremes based on satellite and high-resolution gridded data set over Mediterranean basin. *Atmospheric Research*, 131, 46–59.

19. Inness, A., Baier, F., Benedetti, A., et al., **Kapsomenakis, J.**, et al., Zerefos, C., and the MACC team (2013). The MACC reanalysis: an 8 yr data set of atmospheric composition. *Atmospheric Chemistry and Physics*, 13, 4073–4109. doi:10.5194/acp-13-4073-2013

20. Philandras, C. M., Nastos, P. T., **Kapsomenakis, J.**, Douvis, K. C., Tselioudis, G., Zerefos, C. S. (2011). Long term precipitation trends and variability within the Mediterranean region. *Natural Hazards and Earth System Sciences*, 11, 3235–3250.

21. Zanis, P., Douvis, C., **Kapsomenakis, I.**, Kioutsioukis, I., Melas, D., Pal, J. S. (2009). A sensitivity study of the Regional Climate Model (RegCM3) to the convective scheme with emphasis in central eastern and southeastern Europe. *Theoretical and Applied Climatology*, 97(3–4), 327–337. doi:10.1007/s00704-008-0075-8

22. Zanis, P., **Kapsomenakis, I.**, Philandras, C., Douvis, K., Nikolakis, D., Kanellopoulou, E., Zerefos, C. S., Repapis, C. (2008). Analysis of an ensemble of present-day and future regional climate simulations for Greece. *International Journal of Climatology*. doi:10.1002/joc.1809

BOOK CHAPTERS, REPORTS AND MONOGRAPHS

1. Karamanos, A. I., Kosmas, K., Voloudakis, D., Kairis, O., **Kapsomenakis, J.** (2022). Εκτιμήσεις των επιδράσεων της κλιματικής αλλαγής στους εδαφικούς πόρους και στις αροτραίες καλλιέργειες της Θεσσαλίας [Estimates of climate change impacts on soil resources and arable crops in Thessaly]. *Proceedings (Pragmateiai) of the Academy of Athens*, Vol. 78. Athens: Academy of Athens. In Greek.

2. Zerefos, C., **Kapsomenakis, J.**, Progiou, A., Dimitrakopoulos, D., Solomos, S., Voloudakis, D., Togia, A., Dimitrakopoulou, S., Michopoulos, I., Poulos, S., Karditsa, K., Stavraka, T. (2022). Υδροκλιματικά, βιοκλιματικά και γεωλογικά χαρακτηριστικά της Περιφέρειας Πελοποννήσου: Από το παρελθόν στο μέλλον [Hydroclimatic, bioclimatic and geological characteristics of the Peloponnese Region: From past to future]. Athens. In Greek.

3. Hubert, D., Sofieva, V. F., Ball, W. T., et al., **Kapsomenakis, J.**, et al. (2019). Challenges for trend studies. Ch. 3. In: SPARC/IO3C/GAW Report on Long-term Ozone Trends and Uncertainties in the Stratosphere (eds. Petropavlovskikh, I., et al.), SPARC Report No. 9, GAW Report No. 241, WCRP-17/2018. doi:10.17874/f899e57a20b

4. Damadeo, R., Hassler, B., Zawada, D. J., et al., **Kapsomenakis, J.**, et al. (2019). The LOTUS regression model. Ch. 4. In: SPARC/IO3C/GAW Report on Long-term Ozone Trends and Uncertainties in the Stratosphere (eds. Petropavlovskikh, I., et al.), SPARC Report No. 9, GAW Report No. 241, WCRP-17/2018. doi:10.17874/f899e57a20b

5. Hassler, B., Damadeo, R., Chang, K.-L., et al., **Kapsomenakis, J.**, et al. (2019). Time series and trend results. Ch. 5. In: SPARC/IO3C/GAW Report on Long-term Ozone Trends and Uncertainties in the Stratosphere (eds. Petropavlovskikh, I., et al.), SPARC Report No. 9, GAW Report No. 241, WCRP-17/2018. doi:10.17874/f899e57a20b

6. Zerefos, C., Repapis, C., Giannakopoulos, C., **Kapsomenakis, J.**, et al. (2011). The climate of the Eastern Mediterranean and Greece: Past, present and future. Ch. 1 in: The Environmental, Economic and Social Impacts of Climate Change in Greece, Climate Change Impacts Study Committee, Bank of Greece, pp. 1–136. ISBN 978-960-7032-49-2.