

Curriculum Vitae
Dr. S. Myriokefalitakis
Senior Researcher

PERSONAL INFORMATION

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RESEARCH STATEMENT

My research focuses on the impacts of air quality, specifically through gas-phase chemistry and multiphase processes, on climate via changes in biogeochemical cycles. This involves developing new modeling tools to study the effects of multiphase processes on atmospheric nutrients. The goal is to enhance our understanding and forecasting capabilities of how air pollutants, along with nutrient-containing aerosols and bioaerosols, synergistically affect the carbon cycle, climate, and their feedback mechanisms.

CURRENT POSITION

2022 - now	Senior Researcher Environmental Research and Sustainable Development (IERSD), National Observatory of Athens (NOA), Greece
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PREVIOUS POSITIONS

	Research Associate
2018-2022	Associate Researcher Environmental Research and Sustainable Development (IERSD), National Observatory of Athens (NOA), Greece
2016 -2018	Marie Curie Research Fellow Marine and Atmospheric Research (IMAU), Department of Physics and Astronomy, Utrecht University, Utrecht, The Netherlands
2017	Visiting Researcher Swedish Meteorological and Hydrological Institute (SMHI), Norrköping, Sweden
2015	Fulbright Research Scholar Earth Institute, Centre for Climate Systems Research, Columbia University, New York, USA
	Research Fellow
2005 - 2011	Environmental Chemical Processes Laboratory (ECPL), Department of Chemistry, University of Crete, Heraklion, Greece
2014 - 2015	
2011 - 2013	Institute of Chemical Engineering Sciences (ICE-HT), Foundation for Research and Technology (FORTH), Patras, Greece

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EDUCATION

2005 - 2009	Department of Chemistry, University of Crete, Greece, Thesis title: <i>Study of the Impact of Heterogeneous Reactions on Tropospheric Ozone, Aerosols and the Radiation Balance of the Atmosphere Using 3-d Global Simulations, Surface and Satellite Data, PhD in Atmospheric Chemistry</i>
2004 - 2006	Department of Chemistry, University of Crete, Greece, Thesis title: <i>Development of a chemical code and its application to the study of the global distribution of glyoxal and formaldehyde by using a 3-d global model, MSc in Chemistry</i>
2000 - 2004	Department of Chemistry, University of Crete, Greece, Diploma thesis title: <i>Application of a 0-d model to simulate the photochemical production of ozone in the marine boundary layer of the East Mediterranean, University Degree in Chemistry</i>

FELLOWSHIPS

2020	COST Action STSM mobility grant (INDUST)
2018 - 2020	Research grant for young researchers, National Observatory of Athens, Greece (2806/1/22-10-2018).
2016 - 2018	Marie Skłodowska-Curie Individual Fellowship (Marie-Curie H2020-MSCA-IF-2015) “ODEON: Online Deposition over the Ocean”.
2014 - 2015	Fulbright grant (Fulbright-Hays Act, Public Law 256, Congress), Columbia University, New York, NY, Earth Institute, Centre for Climate Systems Research, NASA, US.
2005 - 2008	PhD Scholarship from the Greek General Secretariat for Research and Technology through the program of research PEDED 2003 (03ED373), Department of Chemistry, University of Crete, Greece.

RESEARCH PROJECTS

Project Title	Funding source	Period	Role of the PI
Development services for improving air quality forecasting system	World Bank	2024 - 2026	co-PI (PI on behalf of NOA)
impRovEments in the simulation of aerosol-clImate liNkages in earth system models: From glObal to Regional sCalEs	Hellenic Foundation for Research and Innovation,	2023-2025	PI - supervisor of 1 PostDoc and 1 PhD student
Dust-ocean modeling and observing study (DOMOS)	European Space Agency	2021-2023	Researcher (PI on behalf of IERSD-NOA)
Constrained aerosol forcing for improved climate projections (FORCeS)	European Commission	2000-2022	Researcher (PI on behalf of NOA) and supervisor of 1 MSc student
Acidic gas-phase pollutants and their contribution to the atmospheric oxidative capacity and acidity in Athens (ACIDS)	Ministry of Development and Investments, Greece	2020-2022	co-PI and supervisor of 1 PhD student
Atmospheric impacts on the ocean system	National Observatory of Athens, Greece	2018-2020	PI and supervisor of 1 MSc student

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Online Deposition over ocean (ODEON)	MSCA-Individual Fellowship, European Commission	2016-2018	PI
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EXPERIENCE IN OTHER RESEARCH PROJECTS			
Project Title	Organization	Period	Role
ECLIPSE: Evaluating the Climate and Air Quality Impacts of Short-lived Pollutants	Foundation of Research and Technology-Hellas (FORTH ICE-HT),	2012 - 2013	Research Associate
PEGASOS: Pan-European Gas-Aerosols-Climate Interaction Study	Foundation of Research and Technology-Hellas (FORTH ICE-HT), Greece	2011-2012	Research Associate
ARGO: Global Ocean Observing Infrastructure (EURO ARGO/ 704))	Department of Chemistry, University of Crete, Greece	2010-2011	Research Associate
EUCAARI: European Integrated Project on Aerosol Cloud Climate and Air Quality Interactions, Contract No 036833-2	Department of Chemistry, University of Crete, Greece	2008-2009	Research Associate
OOMPH: Organics over the Ocean Modifying Particles in both Hemispheres”	Department of Chemistry, University of Crete, Greece	2006 - 2007	Research Associate
CREATE: Construction, use and Delivery of an European Aerosol Database, Department of Chemistry	Department of Chemistry, University of Crete, Greece	2004-2005	Research Associate
The impact of heterogeneous reactions on the energy balance and the chemical composition of Mediterranean atmosphere using global 3-dimensional simulations, ground and satellite observations (03ED373)	Greek General Secretariat for Research and Technology PEDED 2003	2005-2008	Research fellow

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS	
2023 - now	Supervisor of 2 PhD students and 1 Postdoc, National Observatory of Athens (NOA)
2020-now	Supervisor of 1 PhD student (in cooperation with University of Crete)
2008-2010	Assistance in supervision of Master Student (1), Department of Chemistry, University of Crete, Greece
2010-2016	Assistance in supervision of PhD (1) and MSc (1) Student and Postdoctoral fellow (1), Department of Chemistry, University of Crete, Greece

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TEACHING ACTIVITIES

2010 – 2013	Teacher of Environmental Literacy – Second Chance School, Institute of Adult Continuing Education, Greece
2010 – 2011	Teacher of Meteorology Laboratory Exercises – Department of Organic, Greenhouse Crops and Floriculture, School of Agricultural Technology, Technological and Education Institute of Crete, Greece
2006	Teaching assistant in Analytical Chemistry II Laboratory, Department of Chemistry, University of Crete, Greece
2005 – 2009	Teaching assistant in Computational Environmental Chemistry course, Department of Chemistry, University of Crete, Greece

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2023 – now	Member of the Hellenic Aerosol Association (HAA)
2018 – now	Marie Curie Alumni Association (Greek Chapter)
2004 – now	Member of Association of Greek Chemists (www.eex.gr)

PUBLICATIONS (peer-reviewed)

1. Myriokefalitakis, S., Karl, M., Weiss, K. A., Karagiannis, D., Athanasopoulou, E., Kakouri, A., Bougiatioti, A., Liakakou, E., Stavroulas, I., Papangelis, G., Grivas, G., Paraskevopoulou, D., Speyer, O., Mihalopoulos, N., and Gerasopoulos, E.: Analysis of secondary inorganic aerosols over the greater Athens area using the EPISODE–CityChem source dispersion and photochemistry model, *Atmos. Chem. Phys.*, 24, 7815–7835, <https://doi.org/10.5194/acp-24-7815-2024>, 2024.
2. Chatziparaschos, M., Myriokefalitakis, S., Kalivitis, N., Daskalakis, N., Nenes, A., Gonçalves Ageitos, M., Costa-Surós, M., Pérez García-Pando, C., Vrekoussis, M., and Kanakidou, M.: *Assessing the global contribution of marine, terrestrial bioaerosols, and desert dust to ice-nucleating particle concentrations*, EGUSphere, 1–28, <https://doi.org/10.5194/egusphere-2024-952>, 2024.
3. Bergas-Massó, E., Gonçalves Ageitos, M., Myriokefalitakis, S., Miller, R. L., van Noije, T., Le Sager, P., Montané Pinto, G., and Pérez García-Pando, C.: Pre-Industrial, Present and Future Atmospheric Soluble Iron Deposition and the Role of Aerosol Acidity and Oxalate Under CMIP6 Emissions, *Earth's Future*, 11, e2022EF003353, <https://doi.org/10.1029/2022EF003353>, 2023.
4. Chatziparaschos, M., Daskalakis, N., Myriokefalitakis, S., Kalivitis, N., Nenes, A., Gonçalves Ageitos, M., Costa-Surós, M., Pérez García-Pando, C., Zanolí, M., Vrekoussis, M., and Kanakidou, M.: *Role of K-feldspar and quartz in global ice nucleation by mineral dust in mixed-phase clouds*, *Atmospheric Chemistry and Physics*, 23, 1785–1801, <https://doi.org/10.5194/acp-23-1785-2023>, 2023.
5. Hamilton, D. S., Baker, A. R., Iwamoto, Y., Gassó, S., Bergas-Masso, E., Deutch, S., Dinasquet, J., Kondo, Y., Llort, J., Myriokefalitakis, S., Perron, M. M. G., Wegmann, A., and Yoon, J.-E.: *An aerosol odyssey: Navigating nutrient flux changes to marine ecosystems*, *Elementa: Science of the Anthropocene*, 11, 00037, <https://doi.org/10.1525/elementa.2023.00037>, 2023.

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6. Hamilton, D. S., Perron, M. M. G., Bond, T. C., Bowie, A. R., Buchholz, R. R., Guieu, C., Ito, A., Maenhaut, W., **Myriokefalitakis, S.**, Olgun, N., Rathod, S. D., Schepanski, K., Tagliabue, A., Wagner, R., and Mahowald, N. M.: *Earth, Wind, Fire, and Pollution: Aerosol Nutrient Sources and Impacts on Ocean Biogeochemistry*, Annual Review of Marine Science, 14, 303–330, <https://doi.org/10.1146/annurev-marine-031921-013612>, 2022.
7. Liakakou, E., Fourtziou, L., Paraskevopoulou, D., Speyer, O., Lianou, M., Grivas, G., **Myriokefalitakis, S.**, and Mihalopoulos, N.: *High-Resolution Measurements of SO₂, HNO₃ and HCl at the Urban Environment of Athens*, Greece: Levels, Variability and Gas to Particle Partitioning, Atmosphere, 13, 218, <https://doi.org/10.3390/atmos13020218>, 2022.
8. **Myriokefalitakis, S.**, Bergas-Massó, E., Gonçalves-Ageitos, M., Pérez García-Pando, C., van Noije, T., Le Sager, P., Ito, A., Athanasopoulou, E., Nenes, A., Kanakidou, M., Krol, M. C., and Gerasopoulos, E.: *Multiphase processes in the EC-Earth model and their relevance to the atmospheric oxalate, sulfate, and iron cycles*, Geosci. Model Dev., 15, 3079–3120, <https://doi.org/10.5194/gmd-15-3079-2022>, 2022.
9. van Noije, T., Bergman, T., Le Sager, P., O'Donnell, D., Makkonen, R., Gonçalves-Ageitos, M., Döscher, R., Fladrich, U., von Hardenberg, J., Keskinen, J.-P., Korhonen, H., Laakso, A., **Myriokefalitakis, S.**, Ollinaho, P., Pérez García-Pando, C., Reerink, T., Schrödner, R., Wyser, K., and Yang, S.: EC-Earth3-AerChem: a global climate model with interactive aerosols and atmospheric chemistry participating in CMIP6, Geoscientific Model Development, 14, 5637–5668, <https://doi.org/10.5194/gmd-14-5637-2021>, 2021.
10. Baker, A. R., Kanakidou, M., Nenes, A., **Myriokefalitakis, S.**, Croot, P. L., Duce, R. A., Gao, Y., Guieu, C., Ito, A., Jickells, T. D., Mahowald, N. M., Middag, R., Perron, M. M. G., Sarin, M. M., Shelley, R., and Turner, D. R.: *Changing atmospheric acidity as a modulator of nutrient deposition and ocean biogeochemistry*, Science Advances, 7, eabd8800, <https://doi.org/10.1126/sciadv.abd8800>, 2021.
11. Kanakidou, M., **Myriokefalitakis, S.**, and Tsagkaraki, M.: *Atmospheric inputs of nutrients to the Mediterranean Sea*, Deep Sea Research Part II: Topical Studies in Oceanography, 171, 104606, <https://doi.org/10.1016/j.dsr2.2019.06.014>, 2020.
12. **Myriokefalitakis, S.**, Gröger, M., Hieronymus, J., and Döscher, R.: *An explicit estimate of the atmospheric nutrient impact on global oceanic productivity*, Ocean Sci., 16(5), 1183–1205, doi:10.5194/os-16-1183-2020, 2020.
13. **Myriokefalitakis, S.**, Daskalakis, N., Gkouvousis, A., Hilboll, A., van Noije, T., Williams, J. E., Le Sager, P., Huijnen, V., Houweling, S., Bergman, T., Nüß, J. R., Vrekoussis, M., Kanakidou, M., and Krol, M. C.: *Description and evaluation of a detailed gas-phase chemistry scheme in the TM5-MP global chemistry transport model (r112)*, Geosci. Model Dev., 13(11), 5507–5548, doi:10.5194/gmd-13-5507-2020, 2020.
14. Fanourgakis, G. S., Kanakidou, M., Nenes, A., Bauer, S. E., Bergman, T., Carslaw, K. S., Grini, A., Hamilton, D. S., Johnson, J. S., Karydis, V. A., Kirkevåg, A., Kodros, J. K., Lohmann, U., Luo, G., Makkonen, R., Matsui, H., Neubauer, D., Pierce, J. R., Schmale, J., Stier, P., Tsigaridis, K., van Noije, T., Wang, H., Watson-Parris, D., Westervelt, D. M., Yang, Y., Yoshioka, M., Daskalakis, N., Decesari, S., Gysel-Beer, M., Kalivitis, N., Liu, X., Mahowald, N. M., **Myriokefalitakis, S.**, Schrödner, R., Sfakianaki, M., Tsimpidi, A. P., Wu, M., and Yu, F.: *Evaluation of global simulations of aerosol particle and cloud condensation nuclei number*, with implications for cloud droplet formation, Atmospheric Chemistry and Physics, 19, 8591–8617, <https://doi.org/10.5194/acp-19-8591-2019>, 2019.
15. Ito, A., **Myriokefalitakis, S.**, Kanakidou, M., Mahowald, N. M., Scanza, R. A., Hamilton, D. S., Baker, A. R., Jickells, T., Sarin, M., Bikkina, S., Gao, Y., Shelley, R. U., Buck, C. S., Landing, W. M., Bowie, A. R., Perron, M. M. G., Guieu, C., Meskhidze, N., Johnson, M. S.,

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16. Kalivitis, N., Kerminen, V.-M., Kouvarakis, G., Stavroulas, I., Tzitzikalaki, E., Kalkavouras, P., Daskalakis, N., **Myriokefalitakis, S.**, Bougiatioti, A., Manninen, H. E., Roldin, P., Petäjä, T., Boy, M., Kulmala, M., Kanakidou, M., and Mihalopoulos, N.: *Formation and growth of atmospheric nanoparticles in the eastern Mediterranean: Results from long-term measurements and process simulations*, Atmospheric Chemistry and Physics, 1–38, <https://doi.org/10.5194/acp-19-2671-2019>, 2019.
17. Meskhidze, N., Völker, C., Al-Abadleh, H. A., Barbeau, K., Bressac, M., Buck, C., Bundy, R. M., Croot, P., Feng, Y., Ito, A., Johansen, A. M., Landing, W. M., Mao, J., **Myriokefalitakis, S.**, Ohnemus, D., Pasquier, B., and Ye, Y.: *Perspective on identifying and characterizing the processes controlling iron speciation and residence time at the atmosphere-ocean interface*, Marine Chemistry, 217, 103704, <https://doi.org/10.1016/j.marchem.2019.103704>, 2019.
18. **Myriokefalitakis, S.**, Ito, A., Kanakidou, M., Nenes, A., Krol, M. C., Mahowald, N. M., Scanza, R. A., Hamilton, D. S., Johnson, M. S., Meskhidze, N., Kok, J. F., Guieu, C., Baker, A. R., Jickells, T. D., Sarin, M. M., Bikkina, S., Shelley, R., Bowie, A., Perron, M. M. G., and Duce, R. A.: *Reviews and syntheses: the GESAMP atmospheric iron deposition model intercomparison study*, Biogeosciences, 15(21), 6659–6684, doi:10.5194/bg-15-6659-2018, 2018.
19. **Myriokefalitakis, S.**, Fanourgakis, G., and Kanakidou, M.: *The Contribution of Bioaerosols to the Organic Carbon Budget of the Atmosphere*, Perspectives on Atmospheric Sciences, Springer International Publishing, 845–851, https://doi.org/10.1007/978-3-319-35095-0_121, 2017.
20. Amanatidis, D. G., **Myriokefalitakis, S.**, and Daskalakis, N.: *Evaluation of a Coupled Mesoscale Meteorology and Chemistry Model Over the Mediterranean*, Perspectives on Atmospheric Sciences, Cham., 1223–1229, <https://doi.org/10.1007/978-3-319-35095-01>, 2017.
21. Kanakidou, M., **Myriokefalitakis, S.**, Daskalakis, N., Fanourgakis, G., Nenes, A., Baker, A. R., Tsigaridis, K., and Mihalopoulos, N.: *Past, Present, and Future Atmospheric Nitrogen Deposition*, Journal of the Atmospheric Sciences, 73, 2039–2047, <https://doi.org/10.1175/JAS-D-15-0278.1>, 2016.
22. Daskalakis, N., Tsigaridis, K., **Myriokefalitakis, S.**, Fanourgakis, G. S., and Kanakidou, M.: *Large gain in air quality compared to an alternative anthropogenic emissions scenario*, Atmospheric Chemistry and Physics, 16, 9771–9784, <https://doi.org/10.5194/acp-16-9771-2016>, 2016.
23. **Myriokefalitakis, S.**, Nenes, A., Baker, A. R., Mihalopoulos, N., and Kanakidou, M.: *Bioavailable atmospheric phosphorous supply to the global ocean: a 3-D global modeling study*, Biogeosciences, 13(24), 6519–6543, doi:10.5194/bg-13-6519-2016, 2016.
24. **Myriokefalitakis, S.**, Daskalakis, N., Fanourgakis, G. S., Voulgarakis, A., Krol, M. C., Aan de Brugh, J. M. J., and Kanakidou, M.: *Ozone and carbon monoxide budgets over the Eastern Mediterranean*, Science of The Total Environment, 563–564, 40–52, <https://doi.org/10.1016/j.scitotenv.2016.04.061>, 2016.
25. Quennehen, B., Raut, J.-C., Law, K. S., Ancellet, G., Clerbaux, C., Kim, S.-W., Lund, M. T., Myhre, G., Olivié, D. J. L., Safieddine, S., Skeie, R. B., Thomas, J. L., Tsyro, S., Bazureau, A., Bellouin, N., Daskalakis, N., Hu, M., Kanakidou, M., Klimont, Z., Kupiainen, K., **Myriokefalitakis, S.**, Quaas, J., Rumbold, S. T., Schulz, M., Cherian, R., Shimizu, A., Wang, J., Yoon, S.-C., and Zhu, T.: *Multi-model evaluation of short-lived pollutant distributions over East Asia during summer 2008*, Atmospheric Chemistry and Physics, 16, 10765–10792, <https://doi.org/10.5194/acp-16-10765-2016>, 2016.

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26. Stockdale, A., Krom, M. D., Mortimer, R. J. G., Benning, L. G., Carslaw, K. S., Herbert, R. J., Shi, Z., **Myriokefalitakis, S.**, Kanakidou, M., and Nenes, A.: *Understanding the nature of atmospheric acid processing of mineral dusts in supplying bioavailable phosphorus to the oceans*, Proceedings of the National Academy of Sciences, 201608136, <https://doi.org/10.1073/pnas.1608136113>, 2016.
27. Daskalakis, N., **Myriokefalitakis, S.**, and Kanakidou, M.: *Sensitivity of tropospheric loads and lifetimes of short lived pollutants to fire emissions*, Atmospheric Chemistry and Physics, 15, 3543–3563, <https://doi.org/10.5194/acp-15-3543-2015>, 2015.
28. **Myriokefalitakis, S.**, Daskalakis, N., Mihalopoulos, N., Baker, A. R., Nenes, A., and Kanakidou, M.: *Changes in dissolved iron deposition to the oceans driven by human activity: a 3-D global modeling study*, Biogeosciences, 12, 3973–3992, doi:10.5194/bg-12-3973-2015, 2015.
29. Eckhardt, S., Quennehen, B., Olivié, D. J. L., Berntsen, T. K., Cherian, R., Christensen, J. H., Collins, W., Crepinsek, S., Daskalakis, N., Flanner, M., Herber, A., Heyes, C., Hodnebrog, Ø., Huang, L., Kanakidou, M., Klimont, Z., Langner, J., Law, K. S., Lund, M. T., Mahmood, R., Massling, A., **Myriokefalitakis, S.**, Nielsen, I. E., Nøjgaard, J. K., Quaas, J., Quinn, P. K., Raut, J.-C., Rumbold, S. T., Schulz, M., Sharma, S., Skeie, R. B., Skov, H., Uttal, T., von Salzen, K., and Stohl, A.: *Current model capabilities for simulating black carbon and sulfate concentrations in the Arctic atmosphere: a multi-model*, Atmospheric Chemistry and Physics, 15, 9413–9433, <https://doi.org/10.5194/acp-15-9413-2015>, 2015.
30. Daskalakis, N., **Myriokefalitakis, S.**, and Kanakidou, M.: *Sensitivity of tropospheric loading and lifetimes of short lived pollutants to fire emissions*, Atmos. Chem. Phys., 15, 3543–3563, doi: 10.5194/acp-15-3543-2015, 2015.
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32. Im, U., Daskalakis, N., Markakis, K., Vrekoussis, M., Hjorth, J., **Myriokefalitakis, S.**, Gerasopoulos, E., Kouvarakis, G., Richter, A., Burrows, J., Pozzoli, L., Unal, A., Kindap, T., and Kanakidou, M.: *Simulated air quality and pollutant budgets over Europe in 2008*, Science of The Total Environment, 470–471, 270–281, <https://doi.org/10.1016/j.scitotenv.2013.09.090>, 2014.
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