

Stergios Misios
CURRICULUM VITAE
Assistant Researcher
Academy of Athens, Greece

Personal

Born: 31 January 1980, Ptolemaida, Greece
Family: Married, two children
Working Address: Research Centre for Atmospheric Physics and Climatology, Academy of Athens, Greece

Professional Positions

2024-now Assistant researcher, Research Centre for Atmospheric Physics and Climatology, Academy of Athens

2021-2023: National Observatory of Athens

- **Marie Skłodowska-Curie fellow** in the action “Climatic impacts of volcanic ash electrification — ElectricVolcano”.

2020-2021: Democritus University of Thrace, Greece

- **Co-Principal Investigator** in a young-researchers group (with one PhD student and Prof. K. Kourtidis) funded by the Greek Ministry of Education on “Cosmic and electric impacts on aerosols and clouds”.

2019-2022: Department of Geoscience, Aarhus University, Denmark

- **Principal Investigator** funded by a **personal research grant** from the Vellux Foundation, Denmark, Villum Experiment “Environmental consequences of solar cosmic rays”.

2016-2019: Atmospheric, Oceanic and Planetary Physics, University of Oxford, UK

- **Post-doctoral research associate** funded by the NERC, UK project “Decadal influence of Solar cycle”.

2016-2017: Department of Geoscience, Aarhus University, Denmark

- **Post-doctoral assistant** (part-time) funded by the Villum Young Investigator Grant, Denmark, “Solar variability and North Atlantic climate during the last 1500 years”.
- Teaching a block course “Practical Climate Modelling”.

2012-2016: Laboratory of Atmospheric Physics, Aristotle University of Thessaloniki, Greece

- **Post-doctoral research associate** funded by the FP7 project “First European Comprehensive Solar Irradiance Data Exploitation”.
- **Post-doctoral research associate** funded by EUMETSAT “Validation and continuous quality assurance for total ozone column”.

2012: Max Planck Institute for Meteorology, Germany

- **Post-doctoral research associate**

2008-2012: International Max Planck Research School on Earth System Modelling, Max Planck Institute for Meteorology, Germany

- **Research assistant** funded by the CAWSES-ARTOS (The Atmospheric Response to Solar Variability)

2005-2007: *Cram and public schools, Greece*

- Teaching physics and telecommunications

Education

2012: Doctor of Philosophy in Natural Sciences, Max-Planck Institute for Meteorology/University of Hamburg, Germany. *Advisers:* Dr. H. Schmidt, Dr. M. Giorgetta, and Prof. B. Stevens

Dissertation: *Influences of the 11-yr solar cycle on the tropical atmosphere and oceans*

2007: Master of Science, Laboratory of Atmospheric Physics/Aristotle University of Thessaloniki, Greece. *Adviser:* Prof. K. Tourpali

Thesis: *Influence of the solar activity on the stratospheric climate and circulation.*

2004: Diploma in Physics, Aristotle University of Thessaloniki, School of Physics, Greece. *Adviser:* Prof. A. Bais

Thesis: *Error estimation of narrow-band UV instruments for monochromatic radiation measurements.*

Synopsis of research interests

I am a climate modeler involved in the development and evaluation of the MPI-ESM, EMAC/MESSy and HadGEM3-GC3.1 global climate models. My research blends modelling and observations to help articulate the role of external forcings in the climate system. I have co-led the SPARC SolarMIP (Solar Model Intercomparison Project) an international programme for the first ever intercomparison of the CMIP5 climate model simulations about the solar cycle availability and effects in the atmosphere and surface. Likewise, I have employed global climate models under the VolMIP (Volcanic Forcings Model Intercomparison) to disentangle effects of volcanic eruptions in the climate system on global and regional scales, such as the Mediterranean climate. With the chemistry climate model EMAC/MESSy, I am responsible for the quantification of the radiative forcing of stratospheric aerosols of volcanic and wild-fires origin. I have also deployed instrumentation for measuring Atmospheric Electricity in the Chelmos high-altitude observatory and the Villum Research Station, Greenland. Lately, I am interested in developing methodologies for climate-related financial disclosures for the benefit of business activities.

Research projects and personal funding

- ImSTEAM: Immersive STEAM Education Academy, ERASMUS+, 2026-2028
- RescueΚλίμα, Rescuing the 20th century Greek climate history of extremes, Principal investigator, 2026-2028
- C3S-NCP, Seasonal to decadal predictions for national renewable energy management, Co-principal investigator, 2024-2026
- TACOS (TMAC-2 - TRUTHS Mission Accompanying Consolidation Study-2), 2024-2025

- Erasmus+, Asian Clusters in Agriculture and Climate Change (Aligning), Work package leader, 2024-2026
- Erasmus+ Denmark, ReEngineering BUSIness under cLimaTe crisis (ReBUILD), Co-principal investigator, 2022-2024
- SCOSTEP campaign grant, Atmospheric electricity measurements at the Villum Research Station, 2022
- HFRI Greece, Fire smoke in the stratosphere: a new climate forcer (StratoFIRE), Co-principal investigator, 2022-2025
- Marie Skłodowska-Curie fellowship EC, Climatic impacts of volcanic ash electrification ElectricVolcano, Principal investigator, 2021-2023
- Vellux Foundation Denmark, “Environmental consequences of solar cosmic rays”, Principal investigator, 2019-2022
- Ministry of Education Greece, Cosmic and electric impacts on aerosols and clouds, Principal investigator, 2020-2021
- COST Action ELECTRONET, Short term mission grant for research visit to PMOD-WRC, Davos (2800 EUR)
- Deutsche Akademische AustauschDienst (DAAD) Germany, Research Visit at the GEOMAR Helmholtz-Z. Ozeanforschung Kiel, 2015
- NERC UK, Decadal influence of Solar Cycle (DISC), Post-doctoral research associate, 2016-2019
- FP7, SOLID: First European SOLar Irradiance Data Exploitation, Post-doctoral research associate, 2013-2016
- DFG Germany, CAWSES-ARTOS: The Atmospheric Response to Solar Variability, Doctoral student, 2008-2012
- EUMETSAT, Validation and continuous quality assurance for total ozone column, Post-doctoral research associate, 2012
- EU, SCOUT-O3, Stratospheric-Climate links with emphasis on the upper troposphere and lower stratosphere, Field campaign assistant, 2007

Professional Activities

- Science discipline representative of the SCOSTEP (Scientific Committee on Solar-Terrestrial Physics), 2020-2025
- Group co-leader of the SPARC SOLARIS-HEPPA, 2016-2022
- Member of the VolMIP (Model Intercomparison Project on the climatic response to Volcanic forcing) consortium. 2017-present
- Co-author of the SPARC project LOTUS (Long-term Ozone Trends and Uncertainties in the Stratosphere), in support of the WMO/UNEP 2018 Ozone Assessment. 2016-2018
- Member of the COST action “Atmospheric Electricity Network-ELECTRONET”, 2020-2021
- Principal investigator of WCRP Solar Model Intercomparison Project (SolarMIP), 2014-2015
- Member of the COST action “TOwards a more complete assessment of. the impact of Solar variability on the Earth's Climate-TOSCA”, 2013-2016

Publications

I have contributed to 22 refereed publications to the scientific literature. These have resulted in an (ISI) h-index of 13 and more than 1500 citations according to the Scopus metrics (18/08/26). A research highlight is a publication in the Proceedings of the National Academy of Sciences of the United States of America. I have also contributed to 4 book chapters and 2 assessment reports. I have given more than 60 talks (3 invited) in international conferences and projects meetings, while he has communicated physics- and climate-related topics to secondary and high schools in national science events.

Peer-reviewed

22) D. Zanchettin, **S. Misios**, C. Timmreck, K. Tsigaridis, A. Rubino, V. Zago, Initial climate state provides model-dependent constraints on volcanic cooling, but predictability remains limited, *Scientific Reports*, 2026 (accepted)

21) D. Zanchettin, K. Modali, L. Marshall, S.W. Fang, **S. Misios**, F.S.R. Pausata, A. Rubino, C. Timmreck & V. Zago, Volcano–climate interactions: reframing the volcano–climate puzzle, *Rendiconti Lincei. Scienze Fisiche e Naturali*, 2026, <https://doi.org/10.1007/s12210-026-01446-5>

20) **S. Misios**, P.L.M. Gonzalez, L.J. Gray, S. Osprey, H. Ma, Diagnosing the 11-year solar cycle's influence on the East Atlantic pattern, *Quarterly Journal of Royal Meteorological Society*, 2026, <https://doi.org/10.1002/qj.70187>

19) V. Amiridis et al., Natural Aerosols, Gaseous Precursors and Their Impacts in Greece: A Review from the Remote Sensing Perspective, *Atmosphere*, 2024, <https://doi.org/10.3390/atmos15070753>

18) V. Amiridis, A. Kampouri, A. Gkikas, **S. Misios**, ..., A.G. Straume: Aeolus winds impact on volcanic ash early warning systems for aviation, *Scientific Reports*, 2023

17) S.G. Kaiser Kudsk, M.F. Knudsen, C. Karoff, C. Baittinger, **S. Misios**, J. Olsen: Solar minima and changes in the 11- and 22-year solar cycles between AD 650 and 1950: - novel insights from a global compilation of new and existing high- resolution 14C records, *Quaternary Science Reviews*, 2022

16) **S. Misios**, I. Logothetis, M. F. Knudsen, C. Karoff, V. Amiridis, K. Tourpali: Decline of Etesian winds after large volcanic eruptions in the last millennium, *Weather and Climate Dynamics*, 2022, <https://doi.org/10.5194/wcd-2022-16>

15) **S. Misios**, M. Kassoar, E. Kassoar, L. Gray, J. Haigh, S. Stathopoulos, K. Kourtidis, G. Myhre, D. Olivié, D. Shindell and T. Tang: Similar patterns of tropical precipitation and circulation changes under solar and greenhouse gas forcing, *Environmental Research Letters*, 2021, <https://doi.org/10.1088/1748-9326/ac28b1>

14) I. Logothetis, S. Dafka, K. Tourpali, **S. Misios**, P. Zanis, E. Xoplaki, J. Luterbacher, E. Papagianoulis: The Southeast Asian monsoon and El Niño–Southern Oscillation impact on the summer atmospheric circulation of East Mediterranean during 20th century based on ERA-20C and CMIP5 simulations, *International Journal of Climatology*, 2021, <https://doi.org/10.1002/joc.7510>

- 13) M.B. Andrews, J.K. Ridley, R.A. Wood, ..., **S. Misios**,... R.T. Sutton: Historical Simulations with HadGEM3-GC3.1 for CMIP6, Journal of Advances in Modeling Earth Systems, 2020, <https://doi.org/10.1029/2019MS001995>
- 12) Logothetis I., Tourpali K., **Misios S.**, Zanis P., Etesians and the Summer Circulation over East Mediterranean in CMIP5 Simulations: Connections to the West Indian Summer Monsoon, International Journal of Climatology, 2019, <https://doi.org/10.1002/joc.6259>
- 11) **S. Misios**, L.J. Gray, M.F. Knudsen, C. Karoff, H. Schmidt and J.D. Haigh: Slowdown of the Walker circulation at Solar Cycle Maximum, Proceedings of the National Academy of Sciences of the United States of America, 2019, <https://doi.org/10.1073/pnas.1815060116>
- 10) Gray, L.J., Ball, W., **Misios, S.**, Solar influences on climate over the Atlantic / European sector, AIP Conference Proceedings, 2017, <https://doi.org/10.1063/1.4975498>
- 9) K. Matthes, B. Funke, ..., **S. Misios**,..., S. Versick: Solar Forcing for CMIP6 (v3.2), Geoscientific Model Development, 2017, <https://doi.org/10.5194/gmd-10-2247-2017>
- 8) M. Haberreiter, M. Schoell, T. Dudok de Wit, M. Kretzschmar, **S. Misios**, K. Tourpali, and W. Schmutz: A new observational solar irradiance composite, Journal of Geophysical Research-Space Physics, 2017, <https://doi.org/10.1002/2016JA023492>, cited:42
- 7) **S. Misios**, D.M. Mitchell, L.J. Gray, K. Tourpali, K. Matthes, L. Hood, H. Schmidt, G. Chiodo, R. Thieblemont, E. Rozanov, D. Shindell, A. Krivolutsky: Solar Signals in CMIP-5 Simulations: Effects of Atmosphere-Ocean Coupling, Quarterly Journal of Royal Meteorological Society, 2016, <https://doi.org/10.1002/qj.2695>
- 6) L. Hood, **S. Misios**, D.M. Mitchell, L.J. Gray, K. Tourpali, K. Matthes, H. Schmidt, G. Chiodo, R. Thieblemont, E. Rozanov, D. Shindell, A. Krivolutsky: Solar Signals in CMIP-5 Simulations: The Ozone Response, Quarterly Journal of Royal Meteorological Society, 2015, <https://doi.org/10.1002/qj.2553>
- 5) D.M. Mitchell, **S. Misios**, L.J. Gray, K. Tourpali, K. Matthes, L. Hood, H. Schmidt, G. Chiodo, R. Thieblemont, E. Rozanov, D. Shindell, A. Krivolutsky: Solar Signals in CMIP-5 Simulations: The Stratospheric Pathway, Quarterly Journal of Royal Meteorological Society, 2015, <https://doi.org/10.1002/qj.2530>
- 4) D.M. Mitchell, L.J. Gray, M. Fujiwara, T. Hibino, J. A. Anstey, W. Ebisuzaki, Y. Harada, C. Long, **S. Misios**, P. A. Stott, D. Tan: Signatures of Natural Variability in the Atmosphere using Multiple Reanalysis Datasets, Quarterly Journal of Royal Meteorological Society, 2014, <https://doi.org/10.1002/qj.2492>
- 3) Fountoulakis I., Bais A., Tourpali K., Fragkos K., **Misios S.**: Projected changes in solar UV radiation over the Arctic and subarctic Ocean: Effects from changes in reflectivity, clouds and ozone, Journal of Geophysical Research, 2014, <https://doi.org/10.1002/2014JD021918>
- 2) **Misios, S.** and Schmidt, H.: The role of the oceans in shaping the tropospheric response to the 11-yr solar cycle, Geophysical Research Letters, 2013, <https://doi.org/10.1002/2013GL058439>
- 1) **Misios, S.**, and Schmidt, H.: Mechanisms involved in the amplification of the 11-yr solar cycle signal in the tropical Pacific Ocean, Journal of Climate, 2012, <https://doi.org/10.1175/JCLI-D-11-00261.1>

Research monographs, book chapters and reports

- 1) **Misios, S.** Understanding climate system and why it's under pressure, Rebuilt MOOC, learning.rebuilt-project.eu/

- 2) Braesicke P., et al, Update on Global ozone: past, present, and future, in Scientific Assessment of Ozone Depletion: 2018, Global Ozone Research and Monitoring Project — Report No. 58, World Meteorological Organization, Geneva, Switzerland, 2018
- 3) Petropavlovskikh I. et al., Report on Long-term Ozone Trends and Uncertainties in the Stratosphere, SPARC Report No. 9, WCRP-17/2018, GAW Report No. 241, doi:10.17874/f899e57a20b
- 4) Logothetis, I.; Tourpali, K.; **Misios, S.**, The Evolution of Etesians: Trends in 20th Century and Future Projections, in Perspectives on Atmospheric Sciences, Springer, 2017
- 5) Maycock, A. C., and **S. Misios**, Bottom-up versus top-down mechanisms for solar-climate coupling, in: Earth's climate response to a changing Sun, edited by: Jean Lilensten, EDP sciences, 2015
- 6) **Misios, S.** and Schmidt, H.: Stratospheric responses to the 11-year solar cycle in MAECHAM5 with and without ocean coupling, in: Advances in Meteorology, Climatology and Atmospheric Physics, Helmis, C.; Nastos, P. (Eds.), Springer, 2013
- 7) Schmidt, H., Kieser, J., **Misios, S.**, and Gruzdev, A. M.: The Atmospheric Response to Solar Variability: Simulations with a General Circulation and Chemistry Model for the Entire Atmosphere, in: Climate and Weather of the Sun Earth System, edited by: Lübken, F.-J., Springer, 2013
- 8) Weil, M. et al.: Pathways, Impacts, and Policies on Severe Aerosol Injections into the Atmosphere, Bulletin of American Meteorological Society, 2012

Supervision

4 PhDs and 5 master students.

2026, Kalliopi Mitsopoulou, Master Thesis, Decadal forecasts for renewable energy production (Adviser Prof. H. Floca)

2025, Thanos Karagiorgas, PhD, The atmospheric electric field as a tool for studying environmental and biological processes and predicting natural disasters, Evaluation committee (Adviser prof. K. Kourtidis)

2024, Aristotelis Liakakos, Master Thesis: A study of the impact of major volcanic eruptions on atmospheric circulation in the Eastern Mediterranean during the summer using climate simulations. (Adviser prof E. Tyrllis)

2021, Sigmund Guttu, Forcing from the 11-year Solar Cycle and relevance for inter-annual to decadal climate variability, University of Oslo, Evaluation committee (with Dr. Lon Hood).

2016-2021, Sabrina Nielsen, PhD candidate: Solar variability during grand solar minima/maxima and associated influences on Earth's environment, Aarhus University (Jointly with Prof. M.F. Knudsen)

2015-2020, Ioannis Logothetis, PhD, Effects of large-scale dynamic phenomena of the summer atmospheric circulation over the Aegean basin, Aristotle University of Thessaloniki, Adviser: Prof. K. Tourpali, https://www.openarchives.gr/aggregator-openarchives/edm/phdtheses/000040-10442_47406

2015, Andreas Chrysanthou, Master Thesis: The effect of 11-year solar cycle spectral variability as calculated with libRadtran radiative transfer model and EMAC (ECHAM/MESSy) Chemistry Climate model, Aristotle University of Thessaloniki, 2015, <https://ikee.lib.auth.gr/record/280641> (joint with Prof. K. Tourpali)

- 2015**, Morfi Vaskos, Master Thesis: Solar radiation in Europe (via “CMIP5” climate models), Aristotle University of Thessaloniki, <https://ikee.lib.auth.gr/record/269783> (joint with Prof. K. Tourpali)
- 2014**, Ioannis Logothetis, Master Thesis: The Etesian winds over Aegean Sea in the 21st century from Earth System Model (ESM) simulations available from the 5th phase of CMIP, <https://ikee.lib.auth.gr/record/135159> (joint with Prof. K. Tourpali)