

Georgios Grivas

Chemical Engineer, NTUA

PhD, Department of Chemical Sciences, NTUA

Post-Doctoral Fellow,

*Institute for Environmental Research and Sustainable Development,
National Observatory of Athens (IERSD, NOA)*

Curriculum Vitae

Athens

January 2022

A1. Personal Information

Date / Place of Birth: 31.07.1977 / Athens
Nationality: Greek
Work Address: Lofos Koufou, Penteli, 15246 (IERSD/NOA)
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Researcher id: <https://publons.com/researcher/AAX-3000-2021/>

A2. Education

University Degrees

2013 **Engineering Doctorate (PhD)**
 Department of Chemical Sciences, School of Chemical Engineering, National Technical University of Athens
 Doctoral Dissertation: “Particulate matter concentrations in the atmosphere of Athens: spatial and temporal variability – predictive models”

2000 **Chemical Engineering Diploma** (grade 7.94/10)
 School of Chemical Engineering, National Technical University of Athens
 Diploma Thesis: “Particulate matter and air quality assessment in Athens”

Languages

English: Excellent – C2 (Certificate of Proficiency in English - University of Cambridge, 1993)
 Italian: Good – B2 (CELI 3 - Università per stranieri di Perugia, 2018)

A3. Work experience

09/2016 - today **Post-Doctoral Researcher**
 Institute for Environmental Research and Sustainable Development, National Observatory of Athens

9/2013 - 8/2015 **Post-Doctoral Researcher**
 Laboratory of Hygiene, Epidemiology and Medical Statistics, School of Medicine, National and Kapodistrian University of Athens (NKUA)

1/2010 - 6/2011 **Research Associate**
 Laboratory of Hygiene, Epidemiology and Medical Statistics, School of Medicine, National and Kapodistrian University of Athens

7/2009 - 3/2010 **Scientific Associate**
 National Center for the Environment and Sustainable Development (NCESD)

03/2001 - 12/2012 **Research Associate – Teaching Assistant**
 School of Chemical Engineering, National Technical University of Athens

A4. Professional expertise

i) Scientific instrumentation

- Samplers and online analyzers for particulate matter
- Reference-grade instruments for regulatory gaseous pollutants
- Particle number counters/sizers (CPC, OPC, SPMS)
- Online analyzers for aerosol chemical composition (metals, organic aerosols, elemental carbon)
- Monitors for aerosol optical properties (e.g. online and portable aethalometers)
- Sensor-based systems for gaseous and particulate pollutants
- Passive sampling of gaseous pollutants

ii) Scientific software

- Statistical analysis and modeling: SPSS, Statistica, IgorPro, Origin, Minitab, Matlab, R©
- Spatial analysis/GIS: ESRI ArcGIS
- Specialized software for air quality and receptor modelling: EPA-PMF, EPA-UNMIX, Openair, Zefir, NOAA Hysplit etc.

B1. Research experience and interests

- *Offline and online in situ measurements for the long-term characterization of air pollution in high temporal resolution*
 - Measurement of PM and gaseous pollutants using reference-grade or portable devices
 - Monitoring of particle number concentrations and size distributions
 - Characterization of aerosol optical properties with focus on absorbing particles
 - Online chemical analysis of aerosols for organic matter, elemental carbon and trace metals
- *Utilization of innovative sensor technologies for air quality real-time monitoring in dense networks*
 - Implementation, evaluation and calibration of optical and electrochemical sensors for measurements of gaseous (CO, NO_x, O₃) and particulate (PM_{2.5}, BC) pollutants
 - Design and development of monitoring networks and online visualization platforms, aimed at providing information to citizens-authorities and supporting spatial and atmospheric models
 - Utilization of sensors in novel monitoring platforms (e.g. mobile, pedestrian, personal) to provide information on the individual exposure to harmful pollutants
- *Statistical analysis of atmospheric data for the characterization of air quality*
 - Descriptive and inferential statistics for measurement quality assurance and data analysis
 - Time-series analysis (autoregressive models, spectral analysis)
 - Spatial analysis (geostatistics, spatial interpolation, GIS analysis, regression mapping)
 - Advanced models for continuous and discrete data (linear, generalized linear, mixed effects)
 - Multivariate techniques (factor analysis, PCA, cluster analysis)
- *Chemometric methods for aerosol source apportionment*
 - Receptor modeling with focus on Positive Matrix Factorization (PMF) for diverse aerosol data (e.g. ionic/elemental composition of fine-coarse particles, organic aerosols, polycyclic aromatic compounds, physical aerosol properties) on variable spatiotemporal scales
 - Tracer-based statistical models for source apportionment

- Analysis of meteorological data and air mass back-trajectories for the geolocation of pollutant sources (e.g. CPF, CPBF, PSCF, CWT)
- *Predictive models for air pollution levels and episodes*
 - Artificial neural network models (e.g. MLP, RBF)
 - Meta-heuristic techniques for global optimization (genetic algorithms, simulated annealing)
 - Regression models, partial least square models, classification and regression trees

B2. Research projects

As subcontractor or grantee

- 1) “e-shape: EuroGEO Showcases, Pilot 2.3: EO-based pollution-health risks profiling in the urban environment”. Funding: H-2020-SC5-2018-2. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 01/2022 – today.
- 2) “PANACEA: Panhellenic infrastructure for atmospheric composition and climate change”. Funding: National Strategic Reference Framework (NSRF) 2014-2020. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 06/2020 – 12/2021.
- 3) “ERA PLANET: European network for observing our changing planet”. Funding: ERA-NET-Cofund Grant/H-2020. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 04/2021 – 12/2021.
- 4) “Long-term characterization, in high temporal resolution, of the chemical composition and sources of the atmospheric aerosol over the greater Athens area”. Funding: NSRF - Human Resources Development, Education and Lifelong Learning 2014-2020”. Contractor: University of Crete. P.I.: Prof. N. Mihalopoulos. 01/2020 – 03/2021.
- 5) “EMISSION: Environmental monitoring integrated system using an IoT network”. Funding: ERDF/GSRT, Research Create Innovate (EDK). Contractor: IERSD-NOA. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 11/2019 – 01/2021.
- 6) “PiraeusAQ: Specialized measurements of atmospheric pollution in the greater area of Piraeus”. Funding: Regional Authority of Attica. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 11/2018 – 10/2019.
- 7) “Greece: State of the environment reporting (sections: Climate Change, Air Quality, Environmental Noise)”. Funding: National Center of Environment and Sustainable Development. Contractor: IERSD-NOA. P.I.: N. Mihalopoulos. 02/2018 – 04/2018.
- 8) “RESPOZE-children: Respiratory effects of Ozone in children”. Funding: National Strategic Reference Framework (NSRF) 2007-2013, ARISTEIA-I. Contractor: NKUA - School of Medicine. P.I.: Prof. K. Katsouyanni. 07/2014 – 03/2015.
- 9) “ESCAPE: European Study of Cohorts for Air Pollution Effects”. Funding: EU 7th Framework Programme, ENV.2007.1.2.2.2. Contractor: Universiteit Utrecht/ NKUA - School of Medicine. P.I.: Prof. K. Katsouyanni. 01/2010 – 04/2011.
- 10) “Carrying-out of the national reporting obligations according to the Geneva Convention, the 166/2006/EC Regulation and the Directives 99/13/EC και 2001/81/EC”. Funding: Greek Ministry for the Environment, City Planning and Public Works. Contractor: National Center of Environment and Sustainable Development. 07/2009 – 03/2010.
- 11) “Study of fine and ultrafine particle pollution in the area of Athens - Spatiotemporal variation and source apportionment”. Funding: ESF-Greek Ministry of Education (EPEAEK-II: Pythagoras-II). Contractor: NTUA. P.I.: Prof. A. Chaloulakou. 03/2005 – 12/2007.

- 12) "Upgrading the curriculum of the School of Chemical Engineering, NTUA, by incorporating information technologies". Funding: ESF - Greek Ministry of Education (EPEAEK-II). Contractor: NTUA. P.I.: Prof. G. Androutsopoulos. 09/2004 – 03/2005.
- 13) "Risk assessment and good practices for SMEs in the metal processing sector". Funding: Hellenic Institute for Occupational Health and Safety (ELINYAE). Contractor: NTUA. P.I.: Prof. N. Spyrellis. 10/2002 – 01/2003
- 14) "Study of the chemical composition of respirable particles (PM₁₀) in the atmosphere of Athens". Funding: ERDF - Greek Ministry for the Environment, City Planning and Public Works (EPPER 2000-2006). Contractor: Aristotle University of Thessaloniki. P.I.: Prof. T. Kouimtzis. 07/2001 – 06/2002.
- 15) "Creation of a laboratory network for total environmental quality control". Funding: Operational Program for Research and Technology (EPET-II), GSRT-Impetus. Contractor: NKUA. P.I.: Prof. Dem. Assimakopoulos. 04/2001 – 10/2001.

As participant in the research group

- 16) "GAUSS: Generating Advanced Usage of Earth Observation for Smart Statistics". Funding: European Space Agency. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 10/2021 – today.
- 17) "Regional plan for adaptation to Climate Change". Funding: Regional Authority of Attica. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 03/2020 – 07/2020.
- 18) "InfraStress: Improving resilience of sensitive industrial plants & infrastructures exposed to cyber-physical threats, by means of an open testbed stress-testing system". Funding: H2020. Contractor: IERSD-NOA. P.I.: Dr. E. Gerasopoulos. 09/2019 – 11/2019.
- 19) "ACTRIS II: Aerosols, Clouds, and Trace Gases Research Infrastructure Network". Funding: H2020. Contractor: IERSD-NOA. P.I.: Prof. N. Mihalopoulos. 09/2017 – 04/2018.
- 20) "TRANSPHORM: Transport Related Air Pollution and Health impacts – Integrated Methodologies for Assessing Particulate Matter". Funding: EU 7th Framework Programme. Contractor: Universiteit Utrecht. P.I: Prof. G. Hoek. 01/2010 – 04/2011.
- 21) "Creation of educational material using multimedia for innovative technologies and management systems in the environment, energy and safety sectors". Funding: ERDF-INTERREG. Contractor: NTUA. P.I.: Prof N. Spyrellis. 11/2000 – 06/2001.

B3. Research grants

- 09/2016– National Scholarships Foundation / SIEMENS: Post-doctoral research grant (22,000€)
- 08/2017 *National Observatory of Athens (IESRD-NOA)*
Subject: "Chemical composition of particulate matter in the atmosphere of Athens and identification/quantification of sources "
- 01/2020– ESF - Human Resources Development, Education and Lifelong Learning 2014–2020
03/2021 (EDVM-B): Grant for young researchers (19,500€)
University of Crete (Department of Chemistry)
Subject: "Long-term characterization, in high temporal resolution, of the chemical composition and sources of the atmospheric aerosol over the greater Athens area"

B4. Participation in Scientific Unions

- Member of the Atmospheric Chemistry and Physics Group (APCG), IERSD-NOA
- Member of the general assembly of the research infrastructure PANGEA
- Member of the European Geosciences Union

C1. Reviewed publications

i) Dissertations

- 1) **G. Grivas**: "Particulate matter and air quality assessment in Athens", *Diploma Thesis*. School of Chemical Engineering, NTUA, 2000, pages 212.
- 2) **G. Grivas**: "Particulate matter concentrations in the atmosphere of Athens: spatial and temporal variability – predictive models", *Doctoral Dissertation*. School of Chemical Engineering, NTUA, 2013, pages 506, <https://www.didaktorika.gr/eadd/handle/10442/43211>

ii) Book Chapters

- 1) N. Mihalopoulos, V. Assimakopoulos, E. Gerasopoulos, C. Giannakopoulos, **G. Grivas**, A. Kotronarou: "Climate Change – Air Quality – Environmental Noise", in: "*Greece: State of the Environment Report 2018*". Athens: National Center of Environment and Sustainable Development, ISBN: 978-960-99033-7-0, pp. 24-225, [download link](#)
- 2) D. Kaskaoutis, E. Liakakou, **G. Grivas**, E. Gerasopoulos, N. Mihalopoulos, A. Alastuey, F. Dulac, M. Pandolfi, J. Sciare, G. Titos. "Chemical composition and levels of concentrations of aerosols in the Mediterranean", in: "*Atmospheric Chemistry in the Mediterranean Region*", edited by: F. Dulac, S. Sauvage, E. Hamonou. Cham CH: Springer, 2022.
- 3) D. Kaskaoutis, E. Liakakou, **G. Grivas**, E. Gerasopoulos, N. Mihalopoulos, A. Alastuey, F. Dulac, U.C. Dumka, M. Pandolfi, M. Pikridas, J. Sciare, G. Titos "Inter-annual variability and long-term trends of aerosols above the Mediterranean", in: "*Atmospheric Chemistry in the Mediterranean Region*", edited by: F. Dulac, S. Sauvage, E. Hamonou. Cham CH: Springer, 2022

iii) Journal articles (45)

- 1) A. Chaloulakou, **G. Grivas**, N. Spyrellis: "Neural network and multiple regression models for PM₁₀ prediction in Athens. A comparative assessment", *Journal of the Air and Waste Management Association*, 53, 1183-1190, 2003, [doi: 10.1080/10473289.2003.10466276](https://doi.org/10.1080/10473289.2003.10466276)
- 2) **G. Grivas**, A. Chaloulakou, C. Samara, N. Spyrellis: "Spatial and temporal variation of PM₁₀ mass concentrations within the Greater Area of Athens, Greece", *Water Air Soil Pollution*, 158, 357-371, 2004, [doi: 10.1023/B:WATE.0000044859.84066.09](https://doi.org/10.1023/B:WATE.0000044859.84066.09)
- 3) A. Chaloulakou, P. Kassomenos, **G. Grivas**, N. Spyrellis: "Particulate matter and black smoke concentration levels in Central Athens, Greece", *Environment International*, 31, 651-659, 2005, [doi: 10.1016/j.envint.2004.11.001](https://doi.org/10.1016/j.envint.2004.11.001)
- 4) N. Manalis, **G. Grivas**, V. Protonotarios, A. Moutsatsou, C. Samara, A. Chaloulakou: "Toxic metal content of particulate matter (PM₁₀) within the Greater Area of Athens", *Chemosphere*, 60, 557-566, 2005, [doi: 10.1016/j.chemosphere.2005.01.003](https://doi.org/10.1016/j.chemosphere.2005.01.003)
- 5) **G. Grivas**, A. Chaloulakou: "Artificial neural network models for prediction of PM₁₀ hourly concentrations, in the Greater Area of Athens, Greece", *Atmospheric Environment*, 40, 1216-1229, 2006, [doi: 10.1016/j.atmosenv.2005.10.036](https://doi.org/10.1016/j.atmosenv.2005.10.036)
- 6) I. Gavriil, **G. Grivas**, P. Kassomenos, A. Chaloulakou, N. Spyrellis: "An application of theoretical probability distributions, to the study of PM₁₀ and PM_{2.5}-time series in Athens, Greece", *Global Nest Journal*, 8, 241-251, 2006, [doi: 10.30955/gnj.000401](https://doi.org/10.30955/gnj.000401)
- 7) E. Diapouli, **G. Grivas**, A. Chaloulakou, N. Spyrellis: "PM₁₀ and ultrafine particles counts in-vehicle

- and on-road in the Athens Area”, *Water Air Soil Pollution Focus*, 8, 89-97, 2008, [doi: 10.1007/s11267-007-9136-8](https://doi.org/10.1007/s11267-007-9136-8)
- 8) **G. Grivas**, A. Chaloulakou, P. Kassomenos: “An overview of the particle pollution problem in the Metropolitan Area of Athens, Greece. Assessment of controlling factors and potential impact of long range transport”, *Science of the Total Environment*, 389, 165-177, 2008, [doi: 10.1016/j.scitotenv.2007.08.048](https://doi.org/10.1016/j.scitotenv.2007.08.048)
 - 9) E. Koulouri, **G. Grivas**, E. Gerasopoulos, A. Chaloulakou, N. Mihalopoulos, N. Spyrellis: “A study of size-segregated particle (PM₁, PM_{2.5}, PM₁₀) concentrations over Greece”, *Global Nest Journal*, 10, 132-139, 2008, [doi: 10.30955/gnj.000554](https://doi.org/10.30955/gnj.000554)
 - 10) C. Theodosi, **G. Grivas**, P. Zarmpas, A. Chaloulakou, N. Mihalopoulos: “Mass and chemical composition of size-segregated aerosols (PM₁, PM_{2.5}, PM₁₀) over Athens, Greece: Local versus regional sources”, *Atmospheric Chemistry and Physics*, 11, 11895-11911, 2011, [doi: 10.5194/acp-11-11895-2011](https://doi.org/10.5194/acp-11-11895-2011)
 - 11) **G. Grivas***, S. Cheristanidis, A. Chaloulakou: “Elemental and organic carbon in the urban environment of Athens. Seasonal and diurnal variations and estimates of secondary organic carbon”, *Science of the Total Environment*, 414, 535-545, 2012, [doi: 10.1016/j.scitotenv.2011.10.058](https://doi.org/10.1016/j.scitotenv.2011.10.058)
 - 12) P. Kassomenos, S. Vardoulakis, A. Chaloulakou, **G. Grivas**, R. Borge, J. Lumbreras: “Levels, sources and seasonality of coarse particles (PM₁₀-PM_{2.5}) in three European Capitals - Implications for particulate pollution control”, *Atmospheric Environment*, 54, 337-347, 2012, [doi: 10.1016/j.atmosenv.2012.02.051](https://doi.org/10.1016/j.atmosenv.2012.02.051)
 - 13) M. Eeftens, M.-Y. Tsai, C. Ampe, B. Anwander, R. Beelen, T. Bellander, G. Cesaroni, M. Cirach, J. Cyrys, K. de Hoogh, A. De Nazelle, F. de Vocht, C. Declercq, A. Dedele, K. Eriksen, C. Galassi, R. Grazuleviciene, **G. Grivas**, (...), G. Hoek: “Spatial variation of PM_{2.5}, PM₁₀, PM_{2.5} absorbance and PMcoarse concentrations between and within 20 European study areas and the relationship with NO₂ – Results of the ESCAPE project”, *Atmospheric Environment*, 62, 303-317, 2012, [doi: 10.1016/j.atmosenv.2012.08.038](https://doi.org/10.1016/j.atmosenv.2012.08.038)
 - 14) J. Cyrys, M. Eeftens, J. Heinrich, C. Ampe, A. Armengaud, R. Beelen, T. Bellander, T. Beregszaszi, M. Birk, G. Cesaroni, M. Cirach, K. de Hoogh, A. De Nazelle, F. de Vocht, C. Declercq, A. Dedele, K. Dimakopoulou, K. Eriksen, C. Galassi, R. Grauleviciene, **G. Grivas**, (...), G. Hoek: “Variation of NO₂ and NO_x concentrations between and within 36 European study areas: Results from the ESCAPE study”, *Atmospheric Environment*, 62, 374-390, 2012, [doi: 10.1016/j.atmosenv.2012.07.080](https://doi.org/10.1016/j.atmosenv.2012.07.080)
 - 15) P. Kassomenos, S. Vardoulakis, A. Chaloulakou, A. Paschalidou, **G. Grivas**, R. Borge, J. Lumbreras: “Study of PM₁₀ and PM_{2.5} levels in three European cities: Analysis of inter- and intra-urban variations”, *Atmospheric Environment*, 87, 153-163, 2014, [doi: 10.1016/j.atmosenv.2014.01.004](https://doi.org/10.1016/j.atmosenv.2014.01.004)
 - 16) M. Wang, R. Beelen, T. Bellander, M. Birk, G. Cesaroni, M. Cirach, J. Cyrys, K. de Hoogh, C. Declercq, K. Dimakopoulou, M. Eeftens, K.T. Eriksen, F. Forastiere, C. Galassi, **G. Grivas**, (...), B. Brunekreef: “Performance of multi-city land use regression models for nitrogen dioxide and fine particles”, *Environmental Health Perspectives*, 122, 843-849, 2014, [doi: 10.1289/ehp.1307271](https://doi.org/10.1289/ehp.1307271)
 - 17) M.Y. Tsai, G. Hoek, T. Beregszaszi, G. Cesaroni, M. Cirach, J. Cyrys, K. de Hoogh, A. De Nazelle, F. de Vocht, C. Declercq, R. Ducret-Stich, M. Eeftens, C. Galassi, R. Grazuleviciene, T. Grazuleviciene, **G. Grivas**, (...), B. Brunekreef: “Spatial variation of PM elemental composition between and within 20 European study areas - Results of the ESCAPE project”, *Environment International*, 84, 181-192, 2015, [doi: 10.1016/j.envint.2015.04.015](https://doi.org/10.1016/j.envint.2015.04.015)
 - 18) E. Samoli, K. Dimakopoulou, D. Evangelopoulos, S. Rodopoulou, A. Karakatsani, L. Veneti, M.

- Sionidou, I. Tsolakoglou, I. Krasanaki, **G. Grivas**, D. Papakosta, K. Katsouyanni: "Is daily exposure to ozone associated with respiratory morbidity and lung function in a representative sample of schoolchildren? Results from a panel study in Greece", *Journal of Exposure Science and Environmental Epidemiology*, 27, 346-351, 2017, [doi: 10.1038/jes.2016.32](https://doi.org/10.1038/jes.2016.32)
- 19) K. Dimakopoulou, **G. Grivas**, E. Samoli, S. Rodopoulou, D. Spyrtatos, D. Papakosta, A. Karakatsani, A. Chaloulakou, K. Katsouyanni: "Determinants of personal exposure to ozone in school children. Results from a panel study in Greece", *Environmental Research*, 154, 66-72, 2017, [doi: 10.1016/j.envres.2016.12.020](https://doi.org/10.1016/j.envres.2016.12.020)
- 20) **G. Grivas***, K. Dimakopoulou, D. Papakosta, A. Karakatsani, K. Katsouyanni, A. Chaloulakou: "Ozone exposure assessment for children in Greece: Results from the RESPOZE study", *Science of the Total Environment*, 581-582, 518-529, 2017, [doi: 10.1016/j.scitotenv.2016.12.159](https://doi.org/10.1016/j.scitotenv.2016.12.159)
- 21) A. Karakatsani, E. Samoli, S. Rodopoulou, K. Dimakopoulou, D. Papakosta, D. Spyrtatos, **G. Grivas**, S. Tassi, N. Aggelis, A. Thirios, A. Tsiotsios, K. Katsouyanni: "Weekly personal ozone exposure and respiratory health in a panel of Greek schoolchildren", *Environmental Health Perspectives*, 125, 077016/1-12, 2017, [doi:10.1289/EHP635](https://doi.org/10.1289/EHP635)
- 22) N. Angelis, D. Spyrtatos, K. Domvri, K. Dimakopoulou, E. Samoli, G. Kalamaras, A. Karakatsani, **G. Grivas**, K. Katsouyanni, D. Papakosta: "Effect of ambient ozone exposure assessed by individual monitors on nasal function and exhaled NO among school children in the area of Thessaloniki, Greece", *Journal of Occupational and Environmental Medicine*, 59, 509-515, 2017, [doi: 10.1097/JOM.0000000000001011](https://doi.org/10.1097/JOM.0000000000001011)
- 23) **G. Grivas***, S. Cheristanidis, A. Chaloulakou, P. Koutrakis, N. Mihalopoulos: "Elemental composition and source apportionment of fine and coarse particles at traffic and urban background locations in Athens, Greece", *Aerosol and Air Quality Research*, 18, 1642-1659, 2018, [doi: 10.4209/aaqr.2017.12.0567](https://doi.org/10.4209/aaqr.2017.12.0567)
- 24) C. Theodosi, M. Tsagkaraki, P. Zarmpas, **G. Grivas**, E. Liakakou, D. Paraskevopoulou, M. Lianou, E. Gerasopoulos, N. Mihalopoulos: "Multiyear chemical composition of the fine aerosol fraction in Athens, Greece, with emphasis on the contribution of residential heating in winter time", *Atmospheric Chemistry and Physics*, 18, 14371-14391, 2018, [doi: 10.5194/acp-18-14371-2018](https://doi.org/10.5194/acp-18-14371-2018)
- 25) I. Stavroulas, A. Bougiatioti, **G. Grivas**, D. Paraskevopoulou, M. Tsagkaraki, P. Zarmpas, E. Liakakou, E. Gerasopoulos, N. Mihalopoulos: "Sources and processes that control the submicron organic aerosol composition in an urban Mediterranean environment (Athens): a high temporal resolution chemical composition measurement study", *Atmospheric Chemistry and Physics*, 19, 901-919, 2019, [doi: 10.5194/acp-19-901-2019](https://doi.org/10.5194/acp-19-901-2019)
- 26) **G. Grivas***, I. Stavroulas, E. Liakakou, D. Kaskaoutis, A. Bougiatioti, D. Paraskevopoulou, E. Gerasopoulos, N. Mihalopoulos: "Measuring the spatial variability of Black Carbon in Athens during wintertime", *Air Quality Atmosphere and Health*, 12, 1405-1417, 2019, [doi: 10.1007/s11869-019-00756-y](https://doi.org/10.1007/s11869-019-00756-y)
- 27) K. Dimakopoulou, J. Douros, E. Samoli, A. Karakatsani, S. Rodopoulou, D. Papakosta, **G. Grivas**, G. Tsilingiridis, I. Mudway, N. Moussiopoulos, K. Katsouyanni: "Long-term exposure to ozone and children's respiratory health: Results from the RESPOZE study", *Environmental Research*, 182, 109002, 2020, [doi: 10.1016/j.envres.2019.109002](https://doi.org/10.1016/j.envres.2019.109002)
- 28) E. Liakakou, I. Stavroulas, D. Kaskaoutis, **G. Grivas**, D. Paraskevopoulou, U.C. Dumka, M. Tsagkaraki, A. Bougiatioti, K. Oikonomou, J. Sciare, E. Gerasopoulos, N. Mihalopoulos: "Long-term variability, source apportionment and spectral properties of black carbon at an urban background site in Athens, Greece", *Atmospheric Environment*, 222, 117137, 2020, [doi: 10.1016/j.atmosenv.2020.117137](https://doi.org/10.1016/j.atmosenv.2020.117137)

[10.1016/j.atmosenv.2019.117137](https://doi.org/10.1016/j.atmosenv.2019.117137)

- 29) E. Liakakou, D. Kaskaoutis, **G. Grivas**, I. Stavroulas, M. Tsagkaraki, D. Paraskevopoulou, A. Bougiatioti, E. Gerasopoulos, N. Mihalopoulos: "Long-term brown carbon spectral characteristics in a Mediterranean city (Athens)", *Science of the Total Environment*, 708, 135019, 2020, [doi: 10.1016/j.scitotenv.2019.135019](https://doi.org/10.1016/j.scitotenv.2019.135019)
- 30) D. Kaskaoutis, **G. Grivas**, C. Theodosi, M. Tsagkaraki, D. Paraskevopoulou, I. Stavroulas, E. Liakakou, A. Gkikas, N. Hatzianastassiou, C. Wu, E. Gerasopoulos, N. Mihalopoulos: "Carbonaceous aerosols in contrasting atmospheric environments in Greek Cities: Evaluation of the EC-tracer methods for secondary organic carbon estimation", *Atmosphere*, 11, 161, 2020, [doi: 10.3390/atmos11020161](https://doi.org/10.3390/atmos11020161)
- 31) P. Kalkavouras, A. Bougiatioti, **G. Grivas**, I. Stavroulas, N. Kalivitis, E. Liakakou, E. Gerasopoulos, C. Pilinis, N. Mihalopoulos: "On the regional aspects of new particle formation in the Eastern Mediterranean: a comparative study between a background and an urban site based on long term observations", *Atmospheric Research*, 239, 104, 911, 2020, [doi: 10.1016/j.atmosres.2020.104911](https://doi.org/10.1016/j.atmosres.2020.104911)
- 32) S. Cheristanidis, **G. Grivas**, A. Chaloulakou: "Determination of total and lung-deposited particle surface area concentrations, in central Athens, Greece", *Environmental Monitoring and Assessment*, 192, 62, 2020, [doi: 10.1007/s10661-020-08569-8](https://doi.org/10.1007/s10661-020-08569-8)
- 33) I. Stavroulas, **G. Grivas***, P. Michalopoulos, E. Liakakou, A. Bougiatioti, P. Kalkavouras, K.M. Fameli, N. Hatzianastassiou, N. Mihalopoulos, E. Gerasopoulos: "Field evaluation of low-cost PM sensors (Purple Air PA-II) under variable urban air quality conditions, in Greece", *Atmosphere*, 11, 926, 2020, [doi: 10.3390/atmos11090926](https://doi.org/10.3390/atmos11090926)
- 34) **G. Grivas***, E. Athanasopoulou, A. Kakouri, J. Bailey, E. Liakakou, I. Stavroulas, P. Kalkavouras, A. Bougiatioti, D. Kaskaoutis, M. Ramonet, N. Mihalopoulos, E. Gerasopoulos: "Integrating in situ measurements and city scale modelling to assess the COVID-19 lockdown effects on emissions and air quality in Athens, Greece", *Atmosphere*, 11, 1174, 2020, [doi: 10.3390/atmos11111174](https://doi.org/10.3390/atmos11111174)
- 35) K. Dimitriou, **G. Grivas**, E. Liakakou, E. Gerasopoulos, N. Mihalopoulos: "Assessing the contribution of regional sources to urban air pollution by applying 3D-PSCF modeling", *Atmospheric Research*, 248, 10518, 2021, [doi: 10.1016/j.atmosres.2020.105187](https://doi.org/10.1016/j.atmosres.2020.105187)
- 36) R. Dahmardeh Behrooz, D. Kaskaoutis, **G. Grivas**, N. Mihalopoulos: "Human health risk assessment for toxic elements in the extreme ambient dust conditions observed in Sistan, Iran", *Chemosphere*, 262, 127835, 2021, [doi: 10.1016/j.chemosphere.2020.127835](https://doi.org/10.1016/j.chemosphere.2020.127835)
- 37) D. Kaskaoutis, **G. Grivas**, I. Stavroulas, E. Liakakou, U.C. Dumka, K. Dimitriou, E. Gerasopoulos, N. Mihalopoulos: "In situ identification of aerosol types in Athens, Greece, based on long-term optical and on online chemical characterization", *Atmospheric Environment*, 246, 118070, 2021, [doi: 10.1016/j.atmosenv.2020.118070](https://doi.org/10.1016/j.atmosenv.2020.118070)
- 38) D. Kaskaoutis, **G. Grivas**, E. Liakakou, N. Kalivitis, G. Kouvarakis, I. Stavroulas, P. Kalkavouras, P. Zampas, U.C. Dumka, E. Gerasopoulos, N. Mihalopoulos: "Assessment of the COVID-19 Lockdown effects on spectral aerosol scattering and absorption properties in Athens, Greece", *Atmosphere*, 12, 231, 2021, [doi: 10.3390/atmos12020231](https://doi.org/10.3390/atmos12020231)
- 39) M. Tsagkaraki, C. Theodosi, **G. Grivas***, E. Vargiakaki, J. Sciare, C. Savvides, N. Mihalopoulos: "Spatiotemporal variability and sources of aerosol water-soluble organic nitrogen (WSO_N), in the Eastern Mediterranean", *Atmospheric Environment*, 246, 118144, 2021, [doi: 10.1016/j.atmosenv.2020.118144](https://doi.org/10.1016/j.atmosenv.2020.118144)
- 40) D. Kaskaoutis, **G. Grivas***, I. Stavroulas, A. Bougiatioti, E. Liakakou, U.C. Dumka, E. Gerasopoulos,

- N. Mihalopoulos: "Apportionment of black and brown carbon spectral absorption sources in the urban environment of Athens, Greece, during winter", *Science of the Total Environment*, 801, 149739, 2021, [doi:10.1016/j.scitotenv.2021.149739](https://doi.org/10.1016/j.scitotenv.2021.149739)
- 41) D. Kaskaoutis, **G. Grivas**, I. Stavroulas, E. Liakakou, U.C. Dumka, E. Gerasopoulos, N. Mihalopoulos: "Effect of aerosol types from various sources at an urban location on spectral curvature of scattering and absorption coefficients", *Atmospheric Research*, 264, 105165, 2021, [doi: 10.1016/j.atmosres.2021.105865](https://doi.org/10.1016/j.atmosres.2021.105865)
- 42) R. Sheoran, U.C. Dumka, D. Kaskaoutis, **G. Grivas**, K. Ram, J. Prakash, R. Hooda, R. Tiwari, N. Mihalopoulos: "Chemical Composition and Source Apportionment of Total Suspended Particulates in the Central Himalayan Region", *Atmosphere*, 12, 1228, 2021, [doi: 10.3390/atmos12091228](https://doi.org/10.3390/atmos12091228)
- 43) I. Tsiodra, **G. Grivas**, K. Tavernaraki, A. Bougiatioti, M. Apostolaki, D. Paraskevopoulou, A. Gogou, C. Parinos, K. Oikonomou, M. Tsagkaraki, P. Zarmas, A. Nenes, N. Mihalopoulos: "Annual exposure to PAHs in urban environments linked to wintertime wood-burning episodes", *Atmospheric Chemistry and Physics*, 21, 17865–17883, 2021, [doi: 10.5194/acp-21-17865-2021](https://doi.org/10.5194/acp-21-17865-2021)
- 44) I. Stavroulas, **G. Grivas***, E. Liakakou, P. Kalkavouras, A. Bougiatioti, D. Kaskaoutis, M. Lianou, K. Papoutsidaki, M. Tsagkaraki, P. Zarmas, E. Gerasopoulos, N. Mihalopoulos: "Online chemical characterization and sources of submicron aerosol in the major Mediterranean port city of Piraeus, Greece", *Atmosphere*, 12, 1686, 2021, [doi: 10.3390/atmos12121686](https://doi.org/10.3390/atmos12121686)
- 45) E. Liakakou, L. Foutziou, D. Paraskevopoulou, O. Speyer, M. Lianou, **G. Grivas**, S. Myriokefalitakis, N. Mihalopoulos: "Levels, variability and phase partitioning of high resolution measurements of SO₂, HNO₃ and HCl at an urban location in the Eastern Mediterranean". *Atmosphere*, 2022.

* as corresponding author

iv) Conference articles published in scientific journals (3)

- 1) A.B. Prosmittis, E. Diapouli, **G. Grivas**, A. Chaloulakou, N. Spyrellis: "Continuous field measurements of organic and elemental carbon concentrations in Athens, Greece", *Journal of Aerosol Science*, 35(S2), 1077-1078, 2004, [doi: 10.1016/S0021-8502\(19\)30273-3](https://doi.org/10.1016/S0021-8502(19)30273-3)
- 2) **G. Grivas**, C. Asteriou, A. Chaloulakou, N. Spyrellis: "Particle number size distribution at a roadside location in Athens, Greece", *Journal of Aerosol Science*, 35(S1), 553-554, 2004, [doi: 10.1016/j.jaerosci.2004.06.042](https://doi.org/10.1016/j.jaerosci.2004.06.042)
- 3) **G. Grivas**, V. Kanouta, P. Kassomenos, A. Chaloulakou, N. Spyrellis: "Comparison between low-volume gravimetric sampler and beta attenuation monitor for PM₁₀ measurements in Athens, Greece", *Journal of Aerosol Science*, 35(S1), 653-654, 2004, [doi: 10.1016/j.jaerosci.2004.06.054](https://doi.org/10.1016/j.jaerosci.2004.06.054)

v) Studies presented in international conferences (48)

- 1) A. Chaloulakou, P. Kassomenos, **G. Grivas**, N. Manalis, N. Spyrellis: "On the PM₁₀-PM_{2.5} episodes in Athens during summer 2000", *7th International Conference on Environmental Science and Technology*, 3-6 September 2001, Ermoupolis, GR, pp. 114-120.
- 2) A. Chaloulakou, P. Kassomenos, **G. Grivas**, V. Kanouta, N. Spyrellis: "Continuous measurements of PM₁₀/PM_{2.5} and black smoke concentrations at a fixed site in Athens Greece", *4th International Conference on Urban Air Quality- Measurement, Modeling and Management*, 25-27 March 2003, Prague, CZ, pp. 306-309.
- 3) E.C. Alexopoulos, L. Diapouli, **G. Grivas**, S. Sarvanidis, A. Chaloulakou: "Monitoring particles and

- CO in occupational field", *8th International Symposium of the ISSA Research Section*, 19-21 May 2003, Athens, GR, pp. 308-312.
- 4) J. Mantis, C. Samara, Th. Kouimtzis, **G. Grivas**, V. Kanouta, A. Karamberi, V. Protonotarios, N. Manalis, A. Moutsatsou, A. Chaloulakou, N. Spyrellis: "Chemical composition of PM₁₀ in the atmosphere of Athens, Greece", *8th Conference on Environmental Science and Technology*, 8-10 September 2003, Lemnos, GR, pp. 573-581.
 - 5) I. Gavriil, **G. Grivas**, P. Kassomenos, A. Chaloulakou, N. Spyrellis: "Statistical distributions of particulate matter applied to the study of the atmospheric pollution problem in the area of Athens", *9th Conference on Environmental Science and Technology*, 1-3 September 2005, Rhodes, GR, pp. 453-458.
 - 6) **G. Grivas**, A. Chaloulakou, A. Berner, H. Hauck: "Preliminary source apportionment of PM_{2.5} particulate matter in Vienna, Austria, using receptor modeling techniques", *European Aerosol Conference 2005*, 28 August – 2 September 2005, Ghent, BE, p. 389.
 - 7) I. Gavriil, **G. Grivas**, E. Diapouli, V. Kanouta, A. Chaloulakou, N. Spyrellis: "PM_{2.5} concentration time-series in Athens, Greece", *European Aerosol Conference 2005*, 28 August – 2 September 2005, Ghent, BE, p. 387.
 - 8) E. Diapouli, D. Alamanou, **G. Grivas**, V. Kanouta, A. Chaloulakou, N. Spyrellis: "Mass and number PM concentrations in-vehicle and near major roads in the Athens area", *Protection and Restoration of the Environment VIII*, 3-7 July 2006, Chania, GR, p. 283.
 - 9) B. Georgalas, **G. Grivas**, A. Chaloulakou: "Comparison between a direct-reading real-time aerosol monitor and a gravimetric instrument for PM₁ measurements in the atmosphere of Athens, Greece", *7th International Aerosol Conference*, 10-15 September 2006, St. Paul, MN, US, pp. 481-482.
 - 10) **G. Grivas**, E. Diapouli, V. Kanouta, G. Biskos, A. Chaloulakou, N. Spyrellis, P. Koutrakis: "First results from an integrated fine particulate matter (PM₁ and PM_{2.5}) study in the Greater Area of Athens, Greece", *7th International Aerosol Conference*, 10-15 September 2006, St. Paul, MN, US, pp. 1193-1194.
 - 11) M. Constantopoulou, **G. Grivas**, V. Kanouta, P. Kassomenos, A. Chaloulakou: "Reflectance of PM₁₀ and PM_{2.5} filters as an indicator of combustion-related particle emissions, in Central Athens, Greece", *7th International Aerosol Conference*, 10-15 September 2006, St. Paul, MN, US, pp. 1508-1509.
 - 12) P. Kassomenos, S. Vardoulakis, R. Borge, J. Lumbreras, A. Chaloulakou, **G. Grivas**, A. Vlahogianni: "Sources influencing PM₁₀ and PM_{2.5} levels in three European cities - Implications for population exposure", *6th International Conference on Urban Air Quality*, 27-29 March 2007, Limassol, CY.
 - 13) E. Koulouri, **G. Grivas**, E. Gerasopoulos, A. Chaloulakou, N. Mihalopoulos, N. Spyrellis: "A study of size-segregated Particle (PM₁, PM_{2.5}, PM₁₀) concentrations over Greece", *10th Conference on Environmental Science and Technology*, 5-7 September 2007, Kos, GR, pp. 730-737.
 - 14) **G. Grivas**, A. Chaloulakou, N. Spyrellis: "Continuous measurements of particle number concentrations, in Athens, Greece", *European Aerosol Conference 2007*, 9-14 September 2007, Salzburg, AU, p. T15A013.
 - 15) G. Biskos, **G. Grivas**, E. Diapouli, S. Vratolis, A. Chaloulakou, K. Eleftheriadis: "Measurements of fine and ultrafine aerosol particles in the atmosphere of Athens, Greece", *European Aerosol Conference 2007*, 9-14 September 2007, Salzburg, AU, p. LP31.
 - 16) **G. Grivas**, A. Chaloulakou, N. Spyrellis: "Elemental and organic carbon content of PM_{2.5} particles

- in Athens, Greece”, *European Aerosol Conference 2008*, 24-29 August 2008, Thessaloniki, GR, p. 713-T02A079P.
- 17) **G. Grivas**, A. Chaloulakou, N. Mihalopoulos: “Source apportionment of PM_{2.5} particles in Athens, Greece”, *European Aerosol Conference 2008*, 24-29 August 2008, Thessaloniki, GR, p. 565-T10A029O.
- 18) P. Kassomenos, S. Vardoulakis, R. Borge, J. Lumbreras, A. Chaloulakou, **G. Grivas**: “Sources influencing PM₁₀ and PM_{2.5} levels in three European cities - implications for population exposure”, *7th International Conference on Air Quality-Science and Application*, 24-27 March 2009, Istanbul, TR, pp. 133-136.
- 19) S. Cheristanidis, **G. Grivas**, A. Chaloulakou: “Estimation of secondary organic carbon levels, in the urban area of Athens”, *8th International Aerosol Conference*, 29 August – 3 September 2010, Helsinki, FI, p. 1308.
- 20) S. Cheristanidis, **G. Grivas**, A. Chaloulakou: “Continuous measurements of organic carbon and elemental carbon in Athens area”, *Protection and Restoration of the Environment X*, 5-9 July 2010, Corfu, GR, p. PRE1234ACT.
- 21) K. Katsouyanni, K. Dimakopoulou, K. de Hoogh, S. Floud, M. Petrakis, A. Chaloulakou, **G. Grivas**: “Understanding the common exposure to transportation noise and air pollution and their potential health endpoints”, *23rd Conference of the International Society for Environmental Epidemiology*, 13-16 September 2011, Barcelona, ES, p. S0044, [doi: 10.1289/isee.2011.01834](https://doi.org/10.1289/isee.2011.01834)
- 22) E. Samoli, A. Karakatsani, K. Dimakopoulou, S. Rodopoulou, **G. Grivas**, K. Katsouyanni: “Exposure to ozone and respiratory function in children: results from the RESPOZE panel study in Greece”, *27th Conference of the International Society for Environmental Epidemiology*, 30 August – 3 September 2015, Sao Paulo, BR, p. 2357, [doi: 10.1289/isee.2015.2357](https://doi.org/10.1289/isee.2015.2357)
- 23) E. Samoli, A. Karakatsani, S. Rodopoulou, K. Dimakopoulou, D. Papakosta, **G. Grivas**, J. Douros, K. Katsouyanni: “Effects of exposure to ozone on children’s respiratory health”, *28th Conference of the International Society for Environmental Epidemiology*, 1-4 September 2016, Rome, IT, p. S-057, [doi: 10.1289/isee.2016.3857](https://doi.org/10.1289/isee.2016.3857)
- 24) K. Dimakopoulou, J. Douros, E. Samoli, A. Karakatsani, S. Rodopoulou, D. Papakosta, **G. Grivas**, N. Moussiopoulos, K. Katsouyanni: “Effects of long-term exposure to ozone on children’s respiratory health: results from the RESPOZE study”. *11th UK & Ireland Occupational and Environmental Epidemiology Meeting*, 23 April 2018, London, UK.
- 25) A. Bougiatioti, I. Stavroulas, D. Paraskevopoulou, **G. Grivas**, P. Zarmas, E. Liakakou, E. Gerasopoulos, N. Mihalopoulos: “Source apportionment and variability of submicron organic aerosol from year long near real time measurements over an urban Mediterranean area”, *10th International Aerosol Conference*, 2-7 September 2018, St. Louis, MI, US, p. 4CA.30.
- 26) M. Tsagkaraki, C. Theodosi, A. Metaxatos, P. Zarmas, **G. Grivas**, E. Liakakou, E. Gerasopoulos, N. Mihalopoulos: “Navarino Environmental Observatory: Part II Chemical composition and sources of aerosols”, *14th International Conference on Meteorology, Climatology and Atmospheric Physics*, 15-17 October 2018, Alexandroupolis, GR.
- 27) N. Papadakis, D. Stouraitis, A. Bartzas, E. Gerasopoulos, **G. Grivas**, E. Athanasopoulou, I. Stavroulas, P. Syropoulou, A. Agrafiotis, I. Christakis, T. Migos, I. Stavrakas, K. Ioannidis: “EMISSION: Environmental monitoring integrated system using an IoT network”, *23rd International Transport and Air Pollution Conference*, 15-17 May 2019, Thessaloniki, GR.
- 28) I. Stavroulas, E. Liakakou, **G. Grivas**, N. Mihalopoulos, E. Gerasopoulos: “Characterization of

- atmospheric pollution at the major Greek port city of Piraeus”, *European Aerosol Conference 2019*, 25-30 September 2019, Gothenburg, SE, p. O10_F5_A04.
- 29) A. Bougiatioti, I. Stavroulas, D. Paraskevopoulou, **G. Grivas**, E. Liakakou, E. Gerasopoulos, N. Mihalopoulos: “Fat Thursday (Tsiknopempti) as an important source of organic aerosol in the urban environment of Athens”, *European Aerosol Conference 2019*, 25-30 September 2019, Gothenburg, SE, p. O10_F4_b.
- 30) E. Liakakou, A. Bougiatioti, **G. Grivas**, I. Stavroulas, P. Kalkavouras, D. Paraskevopoulou, M. Lianou, E. Gerasopoulos, N. Mihalopoulos: “High resolution online aerosol measurements during the 1st PANACEA summer campaign in Athens, Greece”, *1st Scientific Conference PANACEA*, 24-29 September 2019, Heraklion, GR, p. 40.
- 31) E. Gerasopoulos, E. Athanasopoulou, M. Ramacher, A. Kakouri, O. Speyer, M. Karl, I. Stavroulas, **G. Grivas**, J. Bailey: “City scale air pollution modelling and high resolution exposure mapping of an urban hotspot in the Eastern Mediterranean”, *AGU Fall Meeting 2020*, 7-11 December 2019, San Francisco, CA, US, p. A13Q-3154, agu.confex.com/agu/fm19/meetingapp.cgi/Paper/514777
- 32) I. Zyrichidou, P. Syropoulou, S. Tekes, **G. Grivas**, I. Stavroulas, E. Athanasopoulou, E. Gerasopoulos, I. Christakis, T. Migos, I. Stavrakas, G. Hloupis, O. Tsakiridis, K. Ioannidis, N. Papadakis: “City-wide air quality measurements system based on an IoT network”, *12th International Conference on Air Quality – Science and Application*, 18-22 May, 2020 (online conference), p. 129.
- 33) E. Liakakou, I. Stavroulas, D. Kaskaoutis, **G. Grivas**, D. Paraskevopoulou, U.C. Dumka, M. Tsagkaraki, A. Bougiatioti, K. Oikonomou, J. Sciare, E. Gerasopoulos, N. Mihalopoulos: “Levels and sources of Black Carbon long-term measurements in Athens, Greece”, *12th International Conference on Air Quality – Science and Application*, 18-22 May, 2020 (online conference), p. 19.
- 34) E. Liakakou, A. Panopoulou, **G. Grivas**, S. Sauvage, T. Kritikou, E. Gerasopoulos, N. Mihalopoulos: “Volatile Organic Compounds in the atmosphere of the Greater Athens area: The case of a port site close to Piraeus, Greece”, *EGU General Assembly 2020*, 4-8 May 2020 (online conference), p. D2956, [doi: 10.5194/egusphere-egu2020-20087](https://doi.org/10.5194/egusphere-egu2020-20087)
- 35) I. Stavroulas, **G. Grivas**, P. Michalopoulos, E. Liakakou, A. Bougiatioti, P. Kalkavouras, K.M. Fameli, N. Hatzianastassiou, N. Mihalopoulos, E. Gerasopoulos: “Evaluation and field deployment of low-cost PM sensors in different urban environments in Greece”, *2nd Scientific Conference PANACEA*, 29 September – 1 October 2020 (online conference), p. 54.
- 36) D. Kaskaoutis, **G. Grivas**, I. Stavroulas, E. Liakakou, K. Dimitriou, E. Gerasopoulos, N. Mihalopoulos: “Identification of key aerosol types in Athens based on long-term in situ optical and chemical properties”. *2nd Scientific Conference PANACEA*, 29 September – 1 October 2020 (online conference), p. 34.
- 37) I. Stavroulas, **G. Grivas**, N. Mihalopoulos: “Trends and spatial characteristics of PM₁ aerosol chemical composition over the Greater Athens Area, using high temporal resolution measurements”, *3rd International Electronic Conference on Atmospheric Sciences (ECAS 2020)*, 16 – 30 November 2020 (online conference), [doi: 10.3390/ecas2020-08139](https://doi.org/10.3390/ecas2020-08139)
- 38) I. Tsiodra, K. Tavernaraki, A. Bougiatioti, **G. Grivas**, M. Apostolaki, D. Paraskevopoulou, A. Gogou, C. Parinos, M. Tsagkaraki, P. Zarmpas, A. Nenes, N. Mihalopoulos: “Year-long variability of polycyclic aromatic hydrocarbons (PAHs) and their contribution to winter intense pollution events in the urban environment of Athens, Greece”, *EGU General Assembly 2021*, 19 – 30 April 2021 (online conference), p. EGU21-11550, [doi: 10.5194/egusphere-egu21-11550](https://doi.org/10.5194/egusphere-egu21-11550)
- 39) D. Paraskevopoulou, **G. Grivas**, A. Bougiatioti, I. Stavroulas, M. Tsagkaraki, E. Liakakou, A. Nenes, N. Mihalopoulos: “PM-induced oxidative potential: Two years measurements and source

- apportionment, on a seasonal basis, in Athens, Greece", *EGU General Assembly 2021*, 19–30 April 2021 (online conference), p. EGU21-15961, [doi:10.5194/egusphere-egu21-159612021](https://doi.org/10.5194/egusphere-egu21-159612021)
- 40) I. Tsiodra, A. Bougiatioti, **G. Grivas**, C. Parinos, D. Paraskevopoulou, A. Nenes, N. Mihalopoulos: "Polycyclic Aromatic Quinones (PAQs) in Athens aerosols", *European Aerosol Conference 2021*, 30 August – 2 September 2021 (online conference), p. OP_P1_2.
- 41) E. Liakakou, A. Panopoulou, **G. Grivas**, E. Gerasopoulos, S. Sauvage, N. Mihalopoulos. "Investigation of BVOC levels in a coastal urban environment: The Piraeus Port in Greece", *17th Conference on Environmental Science and Technology*, 1-4 September 2021, Athens, GR, p. 463.
- 42) E. Athanasopoulou, **G. Grivas**, A. Kakouri, M. Ramacher, O. Speyer, M. Karl, E. Gerasopoulos: "Synergy between different earth observation platforms towards the estimation of the intra-urban population exposure to wintertime air pollution of Athens", *16th International Conference on Meteorology, Climatology and Atmospheric Physics*, 25-29 September 2021, Ioannina, GR, pp. 13-16.
- 43) A. Kakouri, M. Ramacher, E. Athanasopoulou, **G. Grivas**, O. Speyer, M. Karl, T. Kontos, E. Gerasopoulos: "An innovative method to arrive at high resolution emissions for city scale air quality modeling", *16th International Conference on Meteorology, Climatology and Atmospheric Physics*, 25-29 September 2021, Ioannina, GR, pp. 61-64.
- 44) K. Tavernaraki, I. Tsiodra, K. Papoutsidaki, M. Tsagaraki, P. Zampas, G. Kouvarakis, **G. Grivas**, E. Liakakou, I. Stavroulas, E. Gerasopoulos, N. Mihalopoulos: "Levels and sources of Polycyclic Aromatic Hydrocarbons at the Port of Piraeus", *16th International Conference on Meteorology, Climatology and Atmospheric Physics*, 25-29 September 2021, Ioannina, GR, pp. 160-164.
- 45) M. Gavrouzou, M.B. Koras-Karraca, E. Liakakou, **G. Grivas**, A. Bougiatioti, I. Stavroulas, K. Michailidis, D. Karagkiozidis, C. Papanikolaou, R. Foskinis, M. Mylonaki, O. Soupiona, M. Koukoulis, N. Hatzianastasiou, D. Balis, A.F. Bais, A. Papayannis, E. Gerasopoulos, N. Mihalopoulos: "Overview of the 2019-2020 winter PANACEA campaign at Ioannina, Greece", *16th International Conference on Meteorology, Climatology and Atmospheric Physics*, 25-29 September 2021, Ioannina, GR, pp.339-343.
- 46) D. Kaskaoutis, R. Dahmardeh Behrooz, **G. Grivas**, A. Esmaili-Sari, N. Bahramifar, N. Mihalopoulos: "Airborne dust chemistry and health risk assessment in the Sistan Basin, southeast Iran", *16th International Conference on Meteorology, Climatology and Atmospheric Physics*, 25-29 September 2021, Ioannina, GR, p. ePP130.
- 47) D. Kaskaoutis, **G. Grivas**, I. Stavroulas, A. Bougiatioti, E. Liakakou, E. Gerasopoulos, N. Mihalopoulos: "Assessment of the spectral absorptions by Black and Brown Carbon for different sources: Application in Athens", *Climate and Atmosphere Research & Innovation in the Eastern Mediterranean & Middle East: Virtual Workshop in the framework of the 2nd International Conference on Climate Change in the Eastern Mediterranean and Middle East*, 11-12 October 2021 (online conference), p. 27.
- 48) D. Kaskaoutis, **G. Grivas**, I. Stavroulas, A. Bougiatioti, E. Liakakou, E. Gerasopoulos, N. Mihalopoulos: "Optical properties and the curvature effect in spectral scattering and absorption coefficients for key aerosol types identified in Athens", *Climate and Atmosphere Research & Innovation in the Eastern Mediterranean & Middle East: Virtual Workshop in the framework of the 2nd International Conference on Climate Change in the Eastern Mediterranean and Middle East*, 11-12 October 2021 (online conference), p. 70.

vi) Studies presented in Greek conferences (8)

- 1) **G. Grivas**, A. Chaloulakou, P. Kassomenos, V. Kanouta, N. Spyrellis: "Episodes of PM_{2.5} in the Athenian atmosphere during 1999-2000", 6th Conference of Meteorology, Climatology and Atmospheric Physics, 25-28 September 2002, Ioannina, pp. 586-590.
- 2) **G. Grivas**, V. Kanouta, V. Papapostolou, A. Chaloulakou, N. Spyrellis: "Statistical analysis of particulate matter concentration time-series in the area of Athens", 4th Panhellenic Scientific Conference of Chemical Engineering, 29-31 May 2003, Patras, pp. 1057-1060.
- 3) **G. Grivas**, V. Kanouta, P. Constantopoulou, A. Chaloulakou, N. Spyrellis: "Study of the spatial variability of PM_{2.5} concentrations. Analysis of diurnal cycles", 4th Panhellenic Scientific Conference of Chemical Engineering, 29-31 May 2003, Patras, pp. 1061-1064.
- 4) **G. Grivas**, E. Diapouli, A. Chaloulakou, N. Spyrellis: "Study of size-resolved particle number concentrations at a central location of Athens", 5th Panhellenic Scientific Conference of Chemical Engineering, 26-28 May 2005, Thessaloniki, pp. 717-720.
- 5) E. Diapouli, **G. Grivas**, A. Chaloulakou, N. Spyrellis: "Measurements and prediction models for indoor particulate matter levels", 6th Panhellenic Scientific Conference of Chemical Engineering, 31 May - 2 June 2007, Athens, pp. 581-584.
- 6) A. Chaloulakou, **G. Grivas**, E. Diapouli, G. Biskos, B. Georgalas, N. Mihalopoulos, N. Spyrellis: "Study of fine and ultrafine particle pollution in the atmosphere of Athens. Mass and number concentration levels, spatiotemporal variation and quantification of source contributions", *Pythagoras: Conference for Scientific Research at the National Technical University of Athens*, 5-8 July 2007, Plomari, Lesvos, pp. 373-380.
- 7) S. Rodopoulou, K. Dimakopoulou, A. Karakatsani, E. Samoli, **G. Grivas**, K. Katsouyanni: "Effects of ozone exposure on exhaled air pH levels used as an indicator of pulmonary inflammation in children. RESPOZE project", 5th Panhellenic Conference of the Forum of Public Health and Social Medicine, 21-23 November 2014, Thessaloniki, p. P40.
- 8) A. Kakouri, M. Ramacher, E. Athanasopoulou, **G. Grivas**, O. Speyer, M. Karl, T. Kontos, E. Gerasopoulos: "A GIS - based tool in service of high resolution air quality mapping", *Scientific Conference on Geography of the University of the Aegean*, 2-4 June 2021 (online conference).

C2. Recognition of Research Work**i) Impact** (source: 2020 Journal Impact Factors, Clarivate Analytics)

45 articles in international peer-reviewed journals (8 as first author, 17 as second author, 9 as corresponding author) with an average Journal Impact Factor: 5,08

ii) Citations (source: Scopus, January 2022)

1970 citations (excluding self-citations of author) to 45 journal articles

Average citation number per article: 43,8

h-index: 21, *h*-10: 29

iii) Selection as reviewer

Reviewer in over 60 articles for 24 journals, including *Environmental Science and Technology*, *Environmental Pollution*, *Science of the Total Environment*, *Atmospheric Chemistry and Physics* etc.

D. Teaching Experience

School of Chemical Engineering, National Technical University of Athens

- 1) *Industrial Health and Safety* (6^o,7^o,9^o semester, 2004-2012): Teaching assistant, tutoring, educational software development and preparation of educational material.
- 2) *Design of Pollution Control Installations* (9^o semester, 2006-2007): Teaching assistant, preparation of educational material.
- 3) *Risk Assessment and Management* (9^o semester, 2008-2009): Teaching assistant, preparation of educational material.
- 4) *Environmental Engineering* (8^o semester, 2011-2012): Teaching assistant

M.Sc. program “Energy Management and Environmental Protection Systems”, National Technical University of Athens - University of Piraeus

- *Safety and Health in the Workplace* (2005-2010): Teaching assistant and laboratory tutoring