

Antonio Donateo

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Scopus ID: 57042520100

Position: Senior Research Scientist at Institute of Atmospheric Sciences and Climate (ISAC) National Research Council (CNR)

EDUCATION

January 2005

Ph.D in Environmental Sciences - University of Urbino

Title: Turbulent vertical fluxes of fine particulate (PM_{2.5}) and gas in surface boundary layer

April 2000

Master Degree in Physics - University of Lecce

Title: Quantum efficiency and characteristics of electron beam generated from niobium by superficial and volumetric photoemission

MAIN RESEARCH INTERESTS

Research activity in the Institute of Atmospheric Sciences and Climate (ISAC - CNR) is on micrometeorology and characterisation of composition of atmosphere with specific focus on atmospheric aerosol and its dynamics in the boundary-layer as well as in identification and characterisation of aerosol sources. Research work is focused, principally, on these topics:

- Study of vertical turbulent fluxes for fine and ultrafine particles (in number and mass), in atmospheric surface layer to investigate the dispersive characteristics of atmosphere, with a particular focus on emission, diffusion, transport and deposition processes.
- Study of the aerosols exchange processes (both in finest fraction, accumulation and coarse size ranges) between atmosphere and cryosphere to tackle future challenges in the dynamics of particles and nanoparticles in Polar Environment (Arctic).
- Study of urban microclimate, energy and mass exchange between the city and the urban boundary layer with particular attention to the effects of local morphology on ventilation and thermal comfort.

VISITING AT INTERNATIONAL ACADEMIES

Short Term Mobility

19 June – 9 July 2011

Main Subject: Aerosol size distribution and vertical turbulent fluxes measured with different instruments: an inter comparison study

IRSN (Institut de Radioprotection et Surete Nucleaire) - Cherbourg-Octeville (France).

Short Term Mobility

10 October – 24 November 2007

Main Subject: Measurements of tracer concentration and turbulent fluxes in a small-scale model of a street canyon

University of Surrey – Department of Fluids and Systems

Enflo (Environmental Flow Research Centre) – Prof. A.G. Robins

International Stage

24 April – 26 May 2001

Main subject: study of instruments for meteorological and climate measurement

University of Ioannina (Greece) - Department of Physic

Meteorology and Climatology Laboratory - Prof. B.D. Katsoulis.

RESEARCH PROJECTS

2022-2025. National Biodiversity Future Center –NBFC – Spoke 6. MUR-PNRR.

Role: Participant Scientist

2020-2022. A-PAW (Air Pollution in the Arctic Winter): an Italian contribution to the ALPACA field experiment. Programma di Ricerche in Artico (PRA). Role: Participant Scientist

2020-2021. ALFA (Aerosol Fluxes in Arctic). Artic field grant funded by RCN (Research Council of Norway). Role: Principal Investigator

2019-2024. Joint Research Center ENI CNR – Artico – Aldo Pontremoli. Role: WP Leader.

2019-2020. PAPER (Paper Analyser for Particulate Exposure Risk). POR Puglia FESR-FSE 2014-2020 - Asse prioritario 1 - Azione 1.6. Role: Participant Scientist

2017-2018. Smart Data Cloud. Italian Minister for the Economic Development (MISE). Role: Participant Scientist

2018-2019. ECOMOBILITY (ECOLOGical supporting for traffic Management in cOastal areas By using an InteLLigenT sYstem). Interreg Italy-Croatia 2014-2018. Role: Participant Scientist. Member of the Steering Committee.

2017-2018. CITY TREE SCALER. EIT Climate-KIC. Green City Solutions has developed a patented solution, called “CityTree”, which features special moss cultures that intercept air pollutants in urban ambient air, contributing to both mitigate climate change and improve air quality. Role: Coordinator of Research Unit.

2015-2018. AIR SEA LAB: Climate Air Pollution Interaction in Coastal Environment. National Research council (CNR) Joint Lab Project. Role: Field Campaign Leader at Mace Head.

2014–2015. POSEIDON (Pollution Monitoring of Ship Emissions: an Integrated Approach for Harbours of the Adriatic Basin). European Territorial Cooperation MED 2007-2013. Role: Field Campaign Leader.

2012–2014. PROMETEOS (Prodotti, Metodologie e Tecnologie Originali e Sostenibili per la Diagnostica e la Conservazione dell’Edilizia Storica). P.O. PUGLIA FESR 2007-2013 Linea 1.2. Role: Participant Scientist.

2012–2015. PON I-AMICA (Infrastruttura di Alta Tecnologia per il Monitoraggio Integrato Climatico Ambientale). P.O.N. Ricerca e Competitività 2007-2013 – Asse I. Role: Field Campaign Leader.

2012–2014. CESAPO (Contribution of Emission Sources on the Air quality of the Port-cities in Greece and Italy). Interreg Greece-Italy 2007-2013. Role: Field Campaign Leader.

2012. Valutazione del contributo di inquinamento, da particolato atmosferico e gas, delle navi nell’area del porto turistico di Venezia. Convenzione di ricerca sperimentale tra ISAC-CNR ed IDPA-CNR, progetto finanziato dall’Autorità Portuale di Venezia. Role: Field Campaign Leader

2010–2013. ABLCLIMAT (Arctic and Antarctic: the influence of the Atmospheric Boundary Layer on CLIMATE). PNRA (Programma Nazionale Ricerche in Antartide), progetto n. A3.02/2009. Role: Participant Scientist.

2010–2012. A.I.Te.C.H. (Applied Innovation Technologies for Diagnosis and Conservation of Built Heritage). POR Puglia FESR e FSE 2007–2013. Role: Participant Scientist.

2009. Valutazione del contributo di inquinamento, da particolato atmosferico e gas, delle navi nell’area del porto turistico di Venezia. Convenzione di ricerca sperimentale tra ISAC-CNR ed IDPA-CNR, project funded by Autorità Portuale di Venezia. Role: Field Campaign Leader.

2008-2009. MONITER (Monitoraggio degli Inceneritori nel Territorio dell’Emilia Romagna). Linea progettuale 2: Controllo della qualità dell’aria. Azione 8: Micrometeorologia e Profili di Concentrazione. Project funded by Environmental Agency Emilia-Romagna. Role: Coordinator of Research Unit.

2007. Misurazione dell'influenza del traffico portuale sulla qualità dell'aria per la città di Venezia: valutazione del flusso verticale turbolento di PM2.5 e di gas atmosferici. Convenzione di ricerca sperimentale tra ISAC-CNR ed IDPA-CNR. Role: Participant Scientist.

2006-2008. ERESIA (Environment Remote Sensing Interregional Agency), Agenzia Interregionale per il Monitoraggio e la Salvaguardia Ambientale Satellitare. Interreg IIIA Italia-Grecia. Role: Participant Scientist.

2004-2006. Bilancio dei flussi di micro-inquinanti organici e inorganici all'interfaccia atmosfera-acqua della laguna di Venezia. Project funded by CONSORZIO per la Gestione del Centro di Coordinamento delle Attività di Ricerca inerenti il Sistema LAGunare di Venezia (CORILA). Role: Field Campaign Leader.

2004-2006. Antartide: caratterizzazione chimico-fisica dell'aerosol antartico e processi di rimozione. PNRA (Programma Nazionale Ricerche in Antartide), progetto n.6.7/2004. Role: Participant Scientist.

2004-2006. Sviluppo di un Sistema Integrato Modellistica Numerica – Strumentazione e Tecnologia Avanzate per lo Studio e le Previsioni del Trasporto e della Diffusione di Inquinanti in Atmosfera. MIUR (Ministero dell'Università e della Ricerca). Role: Participant Scientist.

TEACHING AND SUPERVISOR

2024-2025. Adjunct Professor of Applied Mathematics in the Environmental Sciences degree program at the University of Salento (Italy)

2024-2025. Adjunct Professor of Ecological Modelling in the Environmental Sciences degree program at the University of Salento (Italy)

2023. Supervisor for a Bachelor Thesis in Scienze e Tecnologie Ambientali. UniSalento.
Candidate: Simone Amico
Title: Analisi del trend climatico nel Salento attraverso indici di temperatura nel periodo 1981-2022.

2022. Supervisor for a Master Thesis in Scienze e Tecnologie Ambientali. UniSalento.
Candidate: Francesco Giangrande
Title: Analisi morfologica e classificazione delle zone climatiche locali: applicazione alla città di Bari.

2021. Supervisor for a Master Thesis in Scienze e Tecnologie Ambientali. UniSalento.
Candidate: Raffaele Quaranta
Title: Caratterizzazione dell'isola di calore urbana nella città di Lecce.

2017. Supervisor for a Master Thesis in Ingegneria Energetica e Nucleare. Università degli Studi di Palermo.
Candidate: Gianmaria Amorelli.

Title: Messa a punto e validazione di un modello per la valutazione della velocità di deposizione secca su aree urbane e suburbane.

2023-now. Supervisor for a Research Fellow. Candidate: dr. Francesca Lucia Lovisco.
Title: Caratterizzazione chimico/fisica degli aerosol e studio dei processi di emissione, trasporto e rimozione tra criosfera ed atmosfera nella regione Artica.

2019-2022. Supervisor for a Research Fellow. Candidate: dr. Gianluca Pappaccogli.
Title: Caratterizzazione chimico/fisica degli aerosol e studio dei processi di emissione, trasporto e rimozione tra criosfera ed atmosfera nella regione Artica.

2014-2016. Supervisor for a Ph.D. Thesis. Candidate: dr. Eva Merico.
Title: Assessment of air pollutants contribution of harbour activities in Venice and Brindisi areas. Dottorato in Scienze Ambientali - Università Ca Foscari di Venezia- XXIX ciclo.

INSTITUTIONAL RESPONSABILITIES

2016-2019. Elected Member of Institute Council (ISAC-CNR).
2018 - now. Scientific Responsible of the Research Agreement between ISAC-CNR and DEIM (University of Palermo)
2016 - now. Referent of Staff Training in ISAC
2014 - now. Scientific Responsible of the Urban Meteorological Station.

ASSOCIATIONS AND WORKING GROUP

2008 - now. Member of the Italian Aerosol Society (IAS)
2018 - Member of the Best Poster Award Commission for PM2018
2013 - now. Member of the Italian Physics Society (SIF).
2003-2004. Member of the task force of the Apulia Region for “Strategic Environmental Evaluation for Sustainable Development of the Puglia”.

NATIONAL/INTERNATIONAL INVITED LECTURES

2024 – International IAS (Italian Aerosol Society) summer school on Polar and Mountains Areas: theoretical and practical aspects. Venice 16-21 June, 2024.

WORKSHOP AND CONFERENCE ORGANIZATION

2025 - Member of the Conference Committee of the 5th International Electronic Conference on Atmospheric Sciences (ECAS2025). 4-6 June 2025. Chair S8 Aerosol Section

2023 - Member of the Organization Committee of the European WRF-CHEM workshop, Lecce, Italia, 9-11 May 2023.

2021 – Member of the Scientific Committee for the Workshop: Aerosol in Siti Montani, Falcade (BL), Italy, 9 September 2021.

2021 - Member of the Conference Committee of the 4th International Electronic Conference on Atmospheric Sciences (ECAS2021). 16-31 July 2021.

2013 - Member of the Organization Committee of the International Workshop on Characterization of atmospheric pollution in harbour areas, Lecce, Italia, 26 June 2013.

EDITORIAL ACTIVITY

Editor at Frontiers in Environmental Science: Atmosphere and Climate (3 paper edited)

Academic Editor at Atmosphere (MDPI) (119 papers edited, 52 papers pre-check)

Academic Editor at Advances in Meteorology (Wiley) (10 papers edited)

Guest Editor for a Special Issue for Atmosphere (MDPI). Title “Recent Advances in Air Pollution in Italy”

Reviewer for several Scientific Journals, among them:

- Nature NPJ – Climate and Atmospheric Science
- Atmosphere (MDPI)
- Atmospheric Research (Elsevier)
- Atmospheric Environment (Elsevier)
- Sustainable City and Societies (Elsevier)
- Science of Total Environment (Elsevier)
- Atmospheric Pollution Research (Elsevier)
- Measurement (Elsevier)
- Environments (MDPI)
- Forest (MDPI)
- Transportation Research Part D: Transport and Environment (Elsevier)
- International Journal of Sustainable Transportation (Taylor & Francis)
- Environmental Science and Pollution Research (Springer)

PUBLICATIONS

Total publications: 68 (ISI-WoS)

h-index: 25 (ISI-WoS)

Number of citations: 2051 (ISI-WoS)

Citing Articles: 1875 (ISI-WoS)

REFEREED JOURNAL (JCR) – LAST 5 YEARS

1. **Donateo** A., G. Pappaccogli, F. Scoto, M. Busetto, F.L. Lovisco, N. Brett, D. Keller, B. Barret, E. Dieudonné, R. Pohorsky, A. Baccharini, S. Bekki, J.-C. Raut, J. Schmale, K.S. Law, S.R. Arnold, G.J. Fochesatto, W.R. Simpson, S. Decesari. Aerosol dry deposition fluxes on snow during the ALPACA campaign in Fairbanks, Alaska. *Atmospheric Chemistry and Physics*, 25, 18129–18156, 2025, <https://doi.org/10.5194/acp-25-18129-2025>.
2. **Donateo** A., D. Famulari, D. Giovannelli, A. Mariani, M. Mazzola, S. Decesari, G. Pappaccogli. Observations of methane net sinks in the Arctic tundra. *Biogeosciences*, 22, 2889–2908, 2025. <https://doi.org/10.5194/bg-22-2889-2025>.
3. Pohorsky R., A. Baccharini, N. Brett, B. Barret, S. Bekki, G. Pappaccogli, E. Dieudonné, B. Temime-Roussel, B. D'Anna, M. Cesler-Maloney, **A. Donateo**, S. Decesari, K.S. Law, W.R. Simpson, J. Fochesatto, S.R. Arnold, J. Schmale. In situ vertical observations of the layered structure of air pollution in a continental high latitude urban boundary layer during winter. *Atmospheric Chemistry and Physics*, 25, 3687–3715, 2025. <https://doi.org/10.5194/acp-25-3687-2025>.
4. N. Brett, K.S. Law, S.R. Arnold, J. Fochesatto, J.C. Raut, T. Onishi, R. Gilliam, K. Fahey, D. Huff, G. Pouliot, B. Barret, E. Dieudonné, R. Pohorsky, J. Schmale, A. Baccharini, S. Bekki, G. Pappaccogli, F. Scoto, S. Decesari, **A. Donateo**, M. Cesler-Maloney, W. Simpson, B. D'Anna, B. Temime-Roussel, J. Savarino, S. Albertin, J. Mao, P.F. DeCarlo, V. Selimovic, R. Yokelson. Investigating processes influencing simulation of local Arctic wintertime anthropogenic pollution in Fairbanks, Alaska, during ALPACA-2022. *Atmos. Chem. Phys.*, 25, 1063–1104, 2025. <https://doi.org/10.5194/acp-25-1063-2025>.
5. Esposito A., G. Pappaccogli, **A. Donateo**, P. Salizzoni, G. Maffei, T. Semeraro, J.L. Santiago, R. Buccolieri. Urban morphology and surface urban heat island relationship during heatwaves: A study of Milan and Lecce (Italy). *Remote Sens.* 2024, 16, 4496. <https://doi.org/10.3390/rs16234496>
6. Metrangolo C., A. Dinoi, A. Esposito, G. Pappaccogli, **A. Donateo**, J.L. Santiago, R. Buccolieri (2024). Assessing urban air pollution dynamics: the impact of traffic emissions and urban morphology in Lecce and Bari, Italy. *Bulletin of Atmospheric Science and Technology* 5:13. <https://doi.org/10.1007/s42865-024-00076-9>
7. Pappaccogli G., F. Giangrande, A. Esposito, **A. Donateo**, P. Lionello, R. Buccolieri. Dynamics of Urban Heat Island Intensity in Lecce, Italy: Seasonal, Diurnal and Heat Wave Influence. *Bulletin of Atmospheric Science and Technology*, 5:8. <https://doi.org/10.1007/s42865-024-00072-z>
8. Simpson W.R., J. Mao, G.J. Fochesatto, K.S. Law, P.F. DeCarlo, J. Schmale, K.A. Pratt, S.R. Arnold, J. Stutz, J.E. Dibb, J. Creamean, R.J. Weber, B. Williams, B. Alexander, L. Hu, R. Yokelson, M. Shiraiwa, S. Decesari, C. Anastasio, B. D'Anna, R. Gilliam, A. Nenes, J.M. St. Clair, B. Trost, J. Flynn, J. Savarino, L. Conner, N. Kettle, K. Heeringa, S. Albertin, A. Baccharini, B. Barret, M. Battaglia, S. Bekki, T.J. Brado, N. Brett, D. Brus, J.R. Campbell, M. Cesler-Maloney, S. Cooperdock, K. Cysneiros de Carvalho, H. Delbarre, P. DeMott, C.J.S. Dennehy, E. Dieudonné, K.K. Dingilian, **A. Donateo**, K.M. Douglgeris, K.C. Edwards, K. Fahey, T. Fang, F. Guo, L.M.D. Heinlein, A. Holen, D. Huff, A. Ijaz, S. Johnson, S. Kapur, D. Ketcherside, E. Levin, E. Lill, A. Moon, T. Onishi, G. Pappaccogli, R. Perkins, R. Pohorsky, J.-C. Raut, F. Ravetta, T. Roberts,

- E.S.Robinson, F.Scoto, V.Selimovic, M.O.Sunday, B.Temime-Roussel, X.Tian, J.Wu, Y.Yang. Overview of the Alaskan Layered Pollution and Chemical Analysis (ALPACA) field experiment. *ACS Environmental Science and Technology Air* 2024,1, 200–222. <https://doi.org/10.1021/acsestair.3c00076>
9. **Donateo A.**, O. Palusci, G. Pappaccogli, A. Esposito, A. Martilli, J.L. Santiago, R. Buccolieri. Analysis of urban heat island and human thermal comfort in a Mediterranean city: A case study of Lecce (Italy). *Sustainable cities and Society* 98 (2023) 104849. <https://doi.org/10.1016/j.scs.2023.104849>.
 10. **Donateo A.**, G. Pappaccogli, D. Famulari, M. Mazzola, F. Scoto, S. Decesari. Characterization of size-segregated particles turbulent flux and deposition velocity by eddy correlation method at an Arctic site. *Atmospheric Chemistry and Physics*, 23, 7425–7445, 2023. <https://doi.org/10.5194/acp-23-7425-2023>
 11. Scoto F., G. Pappaccogli, M. Mazzola, **A. Donateo**, R. Salzano, Monzali M, F. De Blasi, C. Larose, J.C. Gallet, S. Decesari, A. Spolaor, 2023. Automated observation of physical snowpack properties in Ny-Ålesund. *Frontiers in Earth Science* 11:1123981. doi: 10.3389/feart.2023.1123981
 12. Esposito A., M. Grulois, G. Pappaccogli, O. Palusci, **A. Donateo**, P. Salizzoni, J.L. Santiago, A. Martilli, G. Maffei, R. Buccolieri. On the calculation of urban morphological parameters using GIS: an application to Italian cities. *Atmosphere* 2023, 14, 329. <https://doi.org/10.3390/atmos14020329>
 13. Pettinari, P.; **Donateo, A.**; Papandrea, E.; Bortoli, D.; Pappaccogli, G.; Castelli, E. Analysis of NO₂ and O₃ Total Columns from DOAS Zenith-Sky Measurements in South Italy. *Remote Sensing* 2022, 14, 5541. <https://doi.org/10.3390/rs14215541>.
 14. Buccolieri, R.; Esposito, A.; Pappaccogli, G.; Grulois, M.; **Donateo, A.**; Santiago, J.L.; Martilli, A.; Maffei, G.; Salizzoni, P. Local Climate Zones (LCZs) and Urban Morphological Parameters Using GIS: An Application to Italian Cities. *Environmental Science Proceedings* 2022, 19, 15. <https://doi.org/10.3390/ecas2022-12795>.
 15. Pappaccogli G., D.Famulari, **A.Donateo**. *Impact of filtering methods on ultrafine particles turbulent fluxes by eddy covariance*. *Atmospheric Environment* 285 (2022) 119237. <https://doi.org/10.1016/j.atmosenv.2022.119237>.
 16. Villani M.G., F.Russo, M.Adani, A.Piersanti, L.Vitali, L.Ciancarella, G.Zanini, **A.Donateo**, M.Rinaldi, C.Carbone, S.Decesari, P.Saenger. *Evaluating the impact of a wall-type green infrastructure on PM₁₀ and NO_x concentrations in an urban street environment*. *Atmosphere* 2021, 12, 839. <https://doi.org/10.3390/atmos12070839>.
 17. **Donateo A.**, A.Dinoi, G.Pappaccogli. *Impact on ultrafine particles concentration and turbulent fluxes of SARS-CoV-2 lockdown in a suburban area in Italy*. *Atmosphere* 2021, 12, 407. <https://doi.org/10.3390/atmos12030407>.
 18. **Donateo A.**, M.Rinaldi, M.Paglione, M.G. Villani, F.Russo, C.Carbone, N.Zanca, G.Pappaccogli, F.M.Grasso, M.Busetto, P.Sänger, L.Ciancarella, S.Decesari, 2021. *An evaluation of the performance of a green panel in improving air quality, the case study in a street canyon in Modena, Italy*. *Atmospheric Environment*, 247, 118189. <https://doi.org/10.1016/j.atmosenv.2021.118189>

19. **Donateo A.**, Villani M.G., Lo Feudo T., Chianese E., 2020. *Editorial: Recent Advances of Air Pollution Studies in Italy*. *Atmosphere*, 11, 1054. <https://doi.org/10.3390/atmos11101054>
 20. Calidonna C.R., Avolio E., Ammoscato I., Gullì D., De Pino M., **Donateo A.**, Lo Feudo T. *Five years of dust episodes at Southern Italy GAW Regional Coastal Mediterranean Observatory: multisensor and modeling analysis*. *Atmosphere* 2020, 11, 456. <https://doi.org/10.3390/atmos11050456>.
 21. **Donateo A.**, Lo Feudo T., Marinoni A., Calidonna C.R., Contini D., Bonasoni P., 2020. *Long-term observations of aerosol optical properties at three GAW regional sites in the Central Mediterranean*. *Atmospheric Research*, 241. <https://doi.org/10.1016/j.atmosres.2020.104976>.
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Date, 07/01/2026

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