

PIERO DI CARLO
CURRICULUM VITAE

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CURRENT ACADEMIC POSITION

1/12/2021 - present: **Professor** SC 02/C1, SSD FIS/06, Department of Innovative Technologies in Medicine & Dentistry - University "G. d'Annunzio" of Chieti-Pescara

PREVIOUS ACADEMIC POSITIONS

1/05/2018 – 30/11/2021: **Associate Professor** SC 02/C1, SSD FIS/06, Department of Innovative Technologies in Medicine & Dentistry - University "G. d'Annunzio" of Chieti-Pescara

1/06/2016 – 30/04/2018: **Assistant professor with tenure** SC 02/C1, SSD FIS/06, Department of Psychological Sciences of Health and Territory - University "G. d'Annunzio" of Chieti-Pescara.

15/04/2008 - 31/05/2016: **Assistant professor with tenure** SC 02/C1, SSD FIS/06, Department of Physical and Chemical Sciences - University of L'Aquila.

EDUCATION

4/02/2002 **PhD in physics**, University of L'Aquila. Thesis: 'Production and loss of hydroxyl radical in a forest and in a city'

13/06/1997 **Degree in Physics**, score: 110/110 laude. University of L'Aquila. Thesis: 'Observation of sodium in the upper atmosphere with LIDAR techniques'.

ACCADEMIC AND ADMINISTRATIVE GOVERNANCE

2024 – present	Member of the National Scientific Qualification Commission (ASN) for Competition Sector 02/C1 - Astronomy, Astrophysics, Earth and Planetary Physics
2024 – present	Member of the National Study Group on Indoor Pollution of the National Institute of Health (ISS)
2024 - 2025	Member of the Board of Directors of the Leonardo da Vinci Telematic University (UNIDAV)

2024-2025 Delegate of the Rector for the University Research and Ranking (University of Chieti-Pescara)

2022-2023 Pro-Rector for Ranking Strategies and the Development and Enhancement of University Research (University of Chieti-Pescara)

2022-present Member of the board of the Vitality Foundation that manages the Ecosystem for Innovation, Digitalization and Sustainability in Central Italy

2019-2022 Delegate of the Rector for the University Ranking (University of Chieti-Pescara)

2020-2021 Member of the Commission of Experts of the Ministry of University and Research for the definition of the National Research Program (PNR) 2021-2027 for the Climate Change and Adaptation area, Appointment: n. 544 of 24-04-2020

2019-present Member of the University Research Steering Committee (University of Chieti-Pescara)

2019-2025 Member of the Coordination committee of the VQR evaluation 2015-2019 (University of Chieti-Pescara)

2020-present Member of the Scuola Superiore (University of Chieti-Pescara)

2021-2022 Member of the Technical Committee of the University Center UdaTechlab

2020-present Member of the board of the Ab.Side Consortium and representative of the University of Chieti-Pescara

2020 Participates as a representative of the University at the States General of the Mountain (Roccaraso – AQ, 24 July 2020)

2018-present University Referent of the GdL Climate Change of the Network of Universities for Sustainable Development (RUS)

2019-present University co-Referent of the GdL Energy of the University Network for Sustainable Development (RUS)

2016-present Member of the Technical-Scientific Committee of the Liceo Scientifico 'G. Galilei' of Pescara

2019 University Representative at the MIUR at the Energy and Climate table for the definition of the PNR (Meetings on 12.04.2019 in Rome and 7.05.2019 in Trieste (University of Chieti-Pescara).

2019 Participates in the Magnifici Meeting of the CRUI as a Representative of the University at the Energy and Climate Table (University of Udine 29-30 May 2019), (University of Chieti-Pescara).

2018-2020 National Coordinator of the China Macro – Green Economy Working Group for the Ministry of Economic Development

2018-2020 Member of the Department Commission (DISPUTER) for Quality Assurance of Research and Third Mission

2009-present Member of the Chemistry Working Group of FAAM (Facility for Airborne Atmospheric Measure-ments), England.

2007-present Member of the User Group Selection Panel (UGSP) of EUFAR (European Facility for Airborne Research), France.

01/01/2008 – 31/10/2017 Member of the Scientific Board of the CENTER of Excellence CETEMPS-University of L'Aquila.

2013-2014 Member of the Review Group of the Department of Clinical Medicine, Public Health, Life sciences and Environment of the Program on Environmental Sciences (Master's Degree in Environmental Sciences).

March 2010 - July 2010 Member of the Commission of the Department of Physics (University of L'Aquila) for the reorganization of departmental technical-scientific services.

COORDINATOR OF PHD PROGRAM

2020-present Coordinator of the PhD in Science and Technology for Sustainable Development (from cycle XXXVI, University of Chieti-Pescara).

MEMBER OF THE PHD BOARD

2017-2020 Member of the Board of Professors of the PhD Course in Earthquake and Environmental Hazard of the University of Chieti-Pescara (from cycle XXXIII to XXXV)
2017-2020 Vice-Coordinator of the PhD Course in Earthquake and Environmental Hazard of the University of Chieti-Pescara (from cycle XXXIII to XXXV)
2014-2016 Member of the Board of Professors of the PhD Course in Physical and Chemical Sciences of the University of L'Aquila (from cycle XXX to XXXII).

MEMBER OF THE DOCTORAL SELECTION BOARD

2021-2020 Member of the selection board of the PhD in Science and Technology for Sustainable Development of the University of Chieti-Pescara, XXXVII cycle.
2017 Member of the selection board of the PhD in Earthquake and Environmental Hazard of the University of Chieti-Pescara, XXXIII cycle.
2016 Member of the final examination of the PhD in Sciences, University of Chieti-Pescara, XXVIII cycle.
2011 Member of the selection board of the PhD in Physics, University of L'Aquila, XXVII cycle.

MANAGEMENT OF INTERNATIONAL SUMMER SCHOOLS

26/06/2017 – 06/07/2017 Director of the International Summer School (7th EUFAR FP7 Training Course): "School and Training on Aircraft New techniques for Atmospheric Composition Observation", University of Cambridge (UK).

17 – 28/08/2011 Director of the International Summer School (4th EUFAR FP7 Training Course) entitled: "School On Aircraft Techniques for the studies of Atmospheric chemistry", Pescara.

MEMBER OF THE ORGANIZING AND SCIENTIFIC COMMITTEES OF CONGRESSES AND SUMMER SCHOOLS

17-21/05/2021 Member of the organizing committee of the Climate Exp0 Conference within the framework of the pre-COP6 conferences. Chair of the adaptation and resilience session 3. (Online conference)
22/11/2019 Head of the organizing committee of the 1st National Meeting of the Climate Change Working Group of the Network of Universities for Sustainable Development (RUS), Chieti.
07 – 12/04/2019 Co-Chair of the session: 'Airborne observations, campaigns, applications and future plans' of the European Geosciences Union (EGU) General Assembly, Vienna (Austria).
26/06/ – 06/07/2017 Head of the Organizing Committee of the International Summer School (7th EUFAR FP7 Training Course): "School and Training on Aircraft New techniques for Atmospheric Composition Observation", University of Cambridge (UK).

- 07 – 12/04/2013 Co-Convener of the session: Impact of boreal wildfires on tropospheric chemistry of the European Geosciences Union (EGU) General Assembly, Vienna (Austria).
- 03 – 07/09/2012 Local organizer of the 9th International Symposium on Tropospheric Profiling, L'Aquila
- 17 – 28/08/2011 Responsible of the organizing committee of the International Summer School (4th EUFAR FP7 Training Course) entitled: "School On Aircraft Techniques for the studies of Atmospheric chemistry", Pescara
- 11 – 14/02/2009 Co-organizer of the 6th Air Fluorescence Workshop, Gran Sasso National Laboratories, L'Aquila
- 22 - 26/09/2008 Responsible organization of the International Summer School on Atmospheric and Oceanic Sciences entitled 'Aerosols and Climate Change', L'Aquila.
- 20 – 24/09/ 2004 Responsible organization of the International Summer School on Atmospheric and Oceanic Sciences entitled 'Observing systems for atmospheric composition', L'Aquila

MEMBER OF OTHER SELECTION OR COMPETITION BOARDS

- 2020 Member of the selection board for n. 3 position of Technologist cat. D4 - competition code 3TECN at the University of Chieti-Pescara. Appointment D.D. n. 3/2020, prot. 1136 of 9/01/2020.
- 2020 Member of the board for the selection of n. 1 research project – GO FOR IT initiative at the University of Chieti-Pescara. Appointment D.R. n. 1055/2020, prot. 55853 of 18/09/2020.
- 2019 Member of the selection board of 2 euro-design experts Municipality of San Vito (CH). Municipal Council Resolution no. 34 of 08/04/2019.
- 2019 Member of the selection board of the Energy Manager of the University of Chieti-Pescara. Appointment D.D. n. 97/2019, prot. 26270 of 11/04/2019.

INTERNATIONALIZATION

PROFESSIONAL AND TRAINING EXPERIENCES ABROAD

- 02/08/2022 - 11/08/2022 **Erasmus Teacher Mobility, University of Gothenburg (Sweden).** The objective of the mobility was to strength our knowledge about the impact of atmospheric pollution on human health, carrying out laboratory experiment and teaching activities.
- 21/07/2016 - 25/08/2016 **Visiting Professor, Harvard University (USA).** Appointed as Associate Fellow of the John A. Paulson School of Engineering and Applied Sciences. Research assignment: The contribution of particle organonitrates to NO_y using GoAmazon data.
- 05/08/2014 - 07/09/2014 **Visiting Scientist, University of York (UK).** Research Fellowship of the National Centre for Atmospheric Science (NCAS). Research assignment: Students training on the use of the Laser Induced Fluorescence instrument for measurement of atmospheric NO₂'.
- 01/12/2010 - 12/12/2010 **Visiting Scientist, Tokyo Metropolitan University (Japan).** Bilateral project Japan/Italy funded by the Ministry of Foreign Affairs.

- 04/02/2006 - 22/02/2006 **Visiting scientist, Argonne National Laboratory Chicago (USA).** Measurements of fluorescence and cross section of nitrogen using the AWA particle accelerator as a source.
- 05/10/2003 – 30/10/2003 **Visiting scientist, Pennsylvania State University (USA).** Conclusion of the research project: 'Missing OH reactivity'.
- 29/08/2001 - 30/10/2001 **Visiting scholar, Pennsylvania State University (USA).** Project title: 'Analysis of OH reactivity measurement in a forest'.
- 01/05/2000 - 06/12/2000 **Visiting scholar, Pennsylvania State University (USA).** Research project: 'Development of a new instrument for OH reactivity measurement in a forest'. PhD activities with participation in two campaigns of measures PROPHET 2000 and TexAQS.
- 01/03/1998 - 20/03/1998 **Visiting scholar, Sodankyla Finnish Meteorological Institute (Finland).** Measurements with DIAL (Differential Absorption Lidar) system of stratospheric and tropospheric ozone profiles, aerosol and temperature.

MEMBER OF THE FOLLOWING INTERNATIONAL SCIENTIFIC SOCIETIES

- 2002 –present *America Geophysical Union*
 2017 –present *European Geosciences Union*

ORGANIZATION, DIRECTION AND COORDINATION OF INTERNATIONAL RESEARCH CENTERS OR GROUPS

- 04-06/07/2022 **Mission Scientist on-board the French ATR-42 instrumented aircraft,** responsible for flight planning and all on-board instrumentation for the ACROSS campaign, Aerodrome de Cergy Pontoise-Paris (France).
- 03-04/07/2017 **Mission Scientist on-board the British instrumented aircraft BAe-146,** responsible for flight planning and all the instrumentation on board for the STANCO campaign, Cranfield (UK).
- 24-28/08/2011 **Mission Scientist on-board the British instrumented aircraft BAe-146,** responsible for flight planning and all the instrumentation on board for the SONATA campaign, Pescara.

Responsible for the following expeditions in international measurement campaigns: coordination and organization of measures with the TD-LIF system and the activities of the research group involved (on average 1 research fellow, 1 PhD student, 1 technician, in addition to myself):

- 01/07/2022-12/07/2022 **On-board the French INSTRUMENTED AIRCRAFT ATR-42.** ACROSS measurement campaign, Aerodrome de Cergy Pontoise-Paris (**France**).
- 01/07/2017-06/07/2017 **On-board the British instrumented aircraft BAe146.** Campaign of measures STANCO, Cranfield airport (**UK**).
- 08/01/2015-15/02/2015 **Atmospheric Observatory, CVAO - NCAS (Cape Verde).** Campaign of measures with the University of York.
- 22/04/2014-15/06/2014 **Auchencorth Moss Station (Edinburgh, Scotland).** ACTRIS measurement campaign.
- 24/08/2011-28/08/2011 **On-board the British instrumented aircraft BAe146.** SoNATA measurement campaign, Pescara airport.
- 05/07/2011 – 03/08/2011 **On-board the British instrumented aircraft BAE146.** BORTAS measurement campaign, Halifax airport (**Canada**).

- 04/01/2011 – 28/01/2011 **On-board the British instrumented aircraft BAE146.** RONOCO WINTER measurement campaign, East Midlands airport (**England**).
- 31/08/2010 – 09/09/2010 **On-board the British instrumented aircraft BAE146.** SeptEx measurement campaign, East Midlands airport (**England**).
- 12/07/2010 – 30/07/2010 **On-board the British instrumented aircraft BAE146.** RONOCO measurement campaign, East Midlands airport (**England**).
- 28/06/2008 – 26/07/2008 **Observation tower of Bukit Atur.** OP3 measurement campaign, Borneo forest (**Malaysia**).
- 02/07/2007 – 30/07/2007 **Intercompaction campaign** with system of Prof. Kajii of Tokyo Metropolitan University. University of L'Aquila.

PARTICIPATION OR DIRECTION OF EDITORIAL BOARDS OF SCIENTIFIC JOURNALS

- **Editor of international journals with I.F.**

- 2022 – present Associate Editor of Plos One journal
- 2013 – present Associate Editor of Atmospheric Measurements Techniques journal
- 2017 – present Associate Editor of The Open Atmospheric Science Journal
- 2020 – present Editorial Board Member of Atmosphere journal
- 2020 – 2021 Guest editor of the Special issue 'Statistical Approaches to Investigate Air Quality' of Atmosphere journal
- 2019 – 2020 Editor of the Special Issue 'StratoClim stratospheric and upper tropospheric processes for better climate predictions' of the journals: Atmospheric Chemistry and Physics and Atmospheric Measurements Techniques (inter-journal ACP/AMT)
- 2019 – 2020 Guest editor of the Special issue "Analysis and Monitoring Climate Change Impact on Energy Performance of Sustainable Buildings" of Sustainability journal
- 2018 – 2019 Guest editor of the Special issue 'High Altitude Site Observations of the *Atmospheric Chemical Composition*' of Atmosphere journal

- **Reviewer for the following international journals with I.F.:**

- 2021 Atmospheric Chemistry and Physics, Plos One
- 2020 Environmental Science & Technology
- 2019 Building and Environment
- 2018 Atmospheric Measurements Technique, Environment pollution, Atmospheric Environment
- 2017 International Journal of Environmental Research and Public Health
- 2016 Scientific Report, 2 articles on Science of the Total Environment, Atmospheric Measurements Technique, Atmospheric Chemistry and Physics, Atmospheric Environment
- 2015 Nature Communication; Atmospheric Pollution Research, Atmospheric Measurements Technique, Lincei Reports, Water, Air, & Soil Pollution.
- 2014 Environment pollution, Environmental Science & Technology,
- 2013 Science of the Total Environment, Environmental Science & Technology.
- 2012 2 articles on Atmospheric Chemistry and Physics, 2 on Environmental Earth Sciences.
- 2011 Atmospheric Chemistry and Physics, Environmental Earth Sciences, 2 articles on Annales Geophysicae.
- 2010 Analytical chemistry, Science of the Total Environment.

- 2009 Journal of Geophysical Research, Atmospheric chemistry and physics, Environmental Geology.
- 2008 Geophysical Research Letters, Environmental Geology.

- **Reviewer of research proposals and PhD Theses or foreign universities:**

- 2025 Referee 1 research proposal "University Calls" of the University La Sapienza of Rome
- 2024 Scientific revision of the implementation manual of the "Budoia Charter" (Fondazione Lombardia per l'Ambiente)
- 2023 Referee 1 research proposal Fondazione CARITRO
- 2022 Referee 2 proposals of the CNR call ATMO-ACCESS TransNational Access
- 2022 Referee 1 proposal of the University of Camerino call FAR-PNR
- 2020 Referee 2 proposals of the MUR call PON-FSE
- 2017 Referee PhD Thesis University of Messina
- 2016 Referee project National Research Program in Antarctica
- 2016 - 2012 Student grant for the American Geophysical Union, USA.
- 2009 Proposal Natural Environment Research Council (NERC), UK.
- 2013 External Referee Master Thesis University of York (UK).

ACHIEVEMENT OF INTERNATIONAL AWARDS AND RECOGNITIONS

- 2011 – 2016 The article Di Carlo P, et al., Science, 30, 304, 722-725, 2004 is in first place (for citations) in: "top 20 of articles published on the same topic" for the years 2011-2016. Source SCOPUS; ISI web of Knowledge, BioMedLib.
- 5 - 8/03/ 2013 Best presentation at the International Congress of Trufficulture, Teurel (Spain).
- 2004 Article in the American weekly ScienceWeek of 18/06/2004, on the results of the article: Di Carlo P, et al., Science, 30, 304, 722-725, 2004.

SCIENTIFIC RESEARCH

LINES OF RESEARCH

- 1) Development of advanced instrumentation for the observation of trace compounds in the atmosphere (Dari-Salzburg et al., 2008 and other works on the TD-LIF).
- 2) Study of the atmosphere on board instrumented aircraft. I conceived, designed and built a laser-induced fluorescence system (TD-LIF), unique in Europe, certified for flight on board the FAAM BAe-146 instrumented aircraft, by the British BAE system in 2010 and for the French ATR-42 aircraft of Safire. The TD-LIF has been used in several international measurement campaigns (Di Carlo et al., 2013 and subsequent works on the TD-LIF).
- 3) Study of the atmosphere in the high mountains in background conditions. I conceived, designed and installed the Portella del Gran Sasso Climate Observatory, located at 2401 m. above sea level, the highest altitude in the Apennines, included in the network of share high mountain observatories, of which I was responsible from 2012 to 2017 (Cristofanelli, Di Carlo et al., 2013 and work years later on observations in the mountains).
- 4) Analysis of time series of climate data and impacts on biodiversity (Aruffo et al., 2019; By Carlo et al., 2019).
- 5) Impact of air pollutants on human health (Poma et al., 2017; Poma et al., 2019 and subsequent works).
- 6) the impact of the chemical-physical parameters of the atmosphere in the spread of viruses

such as SARS-COV-2 (Di Carlo et al., 2020; Di Carlo et al., 2021),

- 7) Development of 'low cost' sensors for atmospheric trace gas measurements with drones (funded by the PON-EOLO project).

ABILITY TO ATTRACT INTERNATIONAL FUNDING

- IP of the following projects financed by international competitive calls:

- 2021-2022 Co-PI of the project: Atmospheric ChemistRy Of the Suburban foreSt – Aircraft Observations (ACROSS-AO). French National Research Agency (ANR). Grant ref. (for the University of Chieti-Pescara funds): ANR-20-CE01-0010-05. Funding: 15,565€
- 2016–2017 PI of the project: School and Training on Aircraft New techniques for Atmospheric Composition Observation (STANCO). AndUFAR (European Facility For Airborne Research / call for Transnational Access). Funding: 210,000€.
- 2014 PI of the project: Students training on the use of the Laser Induced Fluorescence instrument for measurement of atmospheric NO₂. Call NCAS (National Centre for Atmospheric Science, UK) Visiting Scientist Program fellowship. Funding: £2,500
- 2014 ACTRIS TNA. Title: Nitrogen Oxides and nitrate radical flux and concentration measurements in the Auchencorth moss Supersite (NOMAS). Funding: 4,500€.
- 2010 – 2011 PI of the project: School ON Aircraft Techniques for the studies of Atmospheric chemistry (SONATA). EUFAR (European Facility For Airborne Research / call for Transnational Access). Funding: 130,000€.
- 2008 - 2009 PI of the project: Study of Oxidant and Photochemical Processes above a South-East Asian tropical rain forest: Observations of NO₂ and NO_y using LIF technique. (call ACCENT). Funding: 22,700€.

- Supervisor of the following project funded by competitive tender (Beneficiary Dr. Eleonora Aruffo):

- 2019 -2021 H2020-MSCA-IF-2018, Type of action: MSCA-IF-GF, Proposal number: 840217, Title: 'SAPIENTIAM - Secondary organic Aerosols Production in pre and post-Industrial-like ENvironments: The Impact of biogenic and Anthropogenic emissions on cliMate'. Financing: 168,369 €

- Principal investigator of the following projects funded as subcontractor:

- 2017 – 2021 Interreg – Europe Title: 'Coalesce - Community owned and led energy for security climate change and employment', Subcontractor Financing: 32,000€.
- 2011 – 2012 Natural Environment Research Council (NERC) (England). Project title: Observation and data analysis of NO₂, PNs, ANs and HNO₃ onboard the BAE146 during BORTAS campaign (Grant Reference NE/F017391/1). Funding: £50,000.
- 2009 – 2011 Natural Environment Research Council (NERC) and York University (England). Project title: Certification of the LIF system to be installed on BAE aircrafts and observation onboard the BAE146 during RONOCO campaign. Funding: £100,000.

- Science team member of the following projects:

ESA-ENVISAT CAL/VAL (2001-2003), ESA-ENVISAT GASTRAN 2 (1999-2000), NOAA- (#40RANROM1560) (2000-2001), NSF- (#ATM-9974335) (2000-2001), CE-APE GAIA (1998-1999), CE-APE THESEO (#ENV4-CT970533) (1998-1999).

ABILITY TO ATTRACT FUNDING AT NATIONAL LEVEL

- National Coordinator of the following projects financed by national competitive calls:

- 2026-2029 PI of the EASSITECH, Call: Agenzia per la Coesione 'Ecosistemi per l'innovazione'.

CUP: D25E25000290001. Financing 18,500,000€.

2020-2023 PI of 2 projects PON 2014-2020 Research and Innovation (Grant ref. DOT1753918, Competitive Call 2019). Funding 2 PhD scholarships for 3 years: 172,600€

2020-2021 PI project Bando Leonardo da Vinci 2020 – Action 1 (Grant ref. ID 293036 Directorial Decree MUR n. 1184 of 24.07.2020, MUR ANNOUNCEMENT). Financing 6,000€

2018 -2021 PI of the project: 'RadiCA - Radiative flows to the surface and characteristics of clouds from ground measurements in the Antarctic Peninsula and in the Weddell Sea region' (Grant ref. PNRA18_00026 - CDD n. 2498 of 28 - 09 - 2018, MIUR – PNRA call). Financing: 114,950 €

2018-2021 PI of 2 PON projects 2014-2020 Research and Innovation (Grant ref. DOT1753918, Competitive Call 2017). Funding 2 PhD scholarships for 3 years: 172,600€

2010 - 2011 Japan-Italy bilateral project funded by the Ministry of Foreign Affairs. Title: 'Reactive nitrogen oxides: air pollution accumulation and atmospheric self-cleansing capacity' (Call 2010-2011). Financing of 3500€.

2011 CARISPAQ Foundation. Project title: Analysis of forest fires from the site on the Gran Sasso d'Italia: effects on air quality. Financing of 3000€.

2010 PI project: Feasibility study for the realization of a NO2 sensor for the NASA Global Hawk aircraft. (Grant ref. POR 2007-2013- Action 4). Financing of 7000€.

2000 Research funding of young researchers (MURST, now MIUR). Financing of 5000000 lire.

- Local Coordinator of the following projects financed by national competitive calls:

2022-2026 Head of Spoke One-health: Telemedicine and environment, HUB Vitality, PNRR-MUR Call 'Ecosystems for innovation'. CUP: D73C22000840006. Financing of 13,364,077€.

2020-2023 Local Co-PI Project 'EOLO - SistEmi di campiOnamento avio-trasportabili per il controllo dell'inquinamento'. PON Research and Innovation – Notice MIUR D.D. n. 1735 of 13-07-2017 (Grant ref. ARS01_01044). Funding: 543,000€.

2010-2015 SHARE Ev-K2. Project title: Realization, management of geophysical data database of high altitude stations. Financing of 35,000€.

- Coordinator of the following projects on non-competitive calls (University funds and / or research institution):

2019-2020 University of Chieti-Pescara. Project title: PLAMAR³- Ud'A for Plastics at Sea: Collection, Research, Recycling. Financing of 100,000€.

2009-2010 CETEMPS-ASI (Italian Space Agency). Project title: Realization of an airborne LIF system for NO2, PNs, ANS and HNO3 measurements. Financing of 155,000€.

2005-2008 CETEMPS- ASI (Italian Space Agency). Project title: Realization of an LIF system for NO2 measurements. Financing of 85,000€.

2001-2004 CETEMPS. Project title: Assembly and tuning of a high resolution spectrometer for DOAS system. Financing of 105,000€.

- Responsible for the following agreements with local authorities for specific projects and collaborations:

2021 Agreement with the Municipality of Pescara. Project title: Dto seap to SEAP for integrated climate action: guidelines. Duration 12 months. Funding: 38,000€.

2020 Agreement with the Municipality of San Giovanni Teatino (CH). Project title:

- Realization of study activities, investigations and technical solutions relating to the monitoring and analysis of olfactory harassment in the territory of the Municipality. Duration 30 months. Funding: 30,000€.
- 2019 Agreement with Abruzzo Region – EnergyPolicy, Air Quality and SINA Service. Project title: Realizzazione of study activities, investigations and technical solutions related to the project of Realization of Adaptation Strategies to Climate Change. Duration 12 months. Funding: 18,500€.
- 2018 Agreement with the Institute of Atmospheric and Climate Sciences of the National Research Council – ISAC-CNR. Duration 19 months. Funding: 21,960€
- 2017 Agreement with CDCA – Documentation Center on Environmental Conflicts. Project title: Elaborazione del Profilo Climatico della Regione Abruzzo. Duration 6 months. Financing 5,000€
- 2016 Agreement with Marine Protected Area "Torre del Cerrano". Project title: study of CO2 exchanges between the atmosphere and the pine forest, the dunes and the sea of the Marine Protected Area "Torre del Cerrano". Durata 1 year. Funding: 1,500€
- Science team member of the following projects:
ASI-Prisma (2010-2013), ASI– Quitsat (2006-2009), ASI–NI/065/03/0 (2004-2006), INFN–AirFIY (2002-2007), ASI–n. ARS99/15 (1999-2000), ASI–n. ARS98/62 prop.279 B (1998-1999)

ORGANIZATION, DIRECTION AND COORDINATION OF NATIONAL RESEARCH CENTRES OR GROUPS

- 2016 – present Coordinator of the group of Physics-Chemistry of the Atmosphere and Climatology of the University of Chieti-Pescara currently formed by 2 RTDa, 1 scholarship holder, 5 PhD students, several undergraduates (www.atmo.unich.it).
- 2008 – 2017 Responsible for the activities of the research line 'Atmospheric Composition Observation' of the CETEMPS Center of Excellence-University of L'Aquila.
- 2012 – 2017 Responsible for the research activities of the Portella del Gran Sasso Observatory of the CETEMPS Center of Excellence-University of L'Aquila.
- Supervisor of the following research grants:
2022 – 2023 Project: Integration of atmospheric sensors on drones, Research Fellow Dr. Enas Abdalla. University of Chieti-Pescara.
2017 – 2018 Project: Study of climate-altering trace compounds: emissions into the atmosphere and effects on health, Research Fellow Dr. Eleonora Aruffo. University of Chieti-Pescara.
2012-2016 Project: Role of nitrogen oxides in the atmosphere: analysis of campaigns on board the BAE-146 instrumented aircraft, Research Fellow Dr. Eleonora Aruffo. University of L'Aquila.
2009-2011 Project: Measurements of NO2, ANs, PNs and HNO3 with airborne LIF system, Research Fellow Dr. Cesare Dari-Salzburg. University of L'Aquila.
 - Supervisor of the following Scholarships:
2025 – present Project: Study of radiation budgets and effects of cloudiness in polar regions, also promoting networks at regional level, Fellow Dr. Chiara Pambianco. University of Chieti-Pescara.
2020 – 2025 Project: Measurement and modelling of UV flows and columnar ozone in the Antarctic Peninsula and the Weddell Sea region and comparison with the Arctic, Fellow Dr. Boyan Petkov Fellow. University of Chieti-Pescara.

- 2017 – 2018 Project: Development and characterization of a system for environmental measurements on board drones, Fellow Dr. Simone D'Incecco. University of Chieti-Pescara.
- 2009 – 2014 Project: Development of the Information System and the management of environmental data of high-altitude areas, Dr. Marcella Busilacchio Fellow. University of L'Aquila

ACHIEVEMENT OF PATENT OWNERSHIP

- 2015 Italian patent n 0001418888 for Device for the measurement of gas concentrations granted on 26/10/2015. Inventors: Aruffo Eleonora, Del Grande Francesco, **Di Carlo Piero**, Giammaria Franco, Gianluigi Rosatelli, Visconti Guido.
- 2016 License to a private company for the industrial exploitation of the Num **Patent:** 0001418888, of which I am one of the inventors.

ACHIEVEMENT OF NATIONAL PRIZES AND AWARDS FOR RESEARCH ACTIVITIES

- 2009 Nicola Chiari Award for the best application of Measurement and Automation, second place NiDays.
- 2000 Winner of INFM scholarship for stay abroad.

PARTICIPATION AS A SPEAKER AT NATIONAL CONGRESSES AND CONFERENCES

(only oral presentations by Piero Di Carlo, complete list in the 'SCIENTIFIC PRODUCTION' section of the CV)

7. 7th Italian Society for Climate Sciences, Annual Conference, Trento (Italy): 23-25 October 2019
By Carlo P., E. Aruffo, W.H: Brune, *Impact of warming climate and changes of precipitation intensity on early grape-harvest of premium wine in Italy.*
6. 1st National Meeting of the Climate Change Working Group of the Network of Universities for Sustainable Development, Chieti, 22/11/2019
By Carlo P., E. Aruffo, Regional guidelines for climate adaptation to support the adaptation plans of universities
5. PM2016, Rome 17-20 May 2016
 Biancofiore F., M. Busilacchio, M. Verdecchia, B. Tomassetti, E. Aruffo, S. Bianco, S. Di Tommaso, C. Colangeli, **P. Di Carlo**, PM10 and PM2.5 in an urban area of the Adriatic coast: Trends and forecast using a recursive neural network model
4. III° National Congress on Environmental Health "City of Sulmona". Sulmona (AQ), 09/04/2016
By Carlo P., The phenomenon of thermal inversion and the repercussions on air quality
3. Accademia dei Lincei, Environment Day, Conference "Evolution and control of air quality on the Italian territory", Rome, 17 October 2014
By Carlo P., Observation systems for air quality
2. Accademia Nazionale dei Lincei: Conference for the celebration of Environment Day on the theme "The ozone hole: evolution and radiative problems, Rome, 5 June 2007
By Carlo P., G, Pitari, E. Mancini, S. Gentile, E. Pichelli, G. Visconti, *Surface concentration of ozone at a site in central Italy obtained from observations and statistical models.*
1. INFM Meeting 2002, Bari, ITALY, 24-28 June, 2002
Di Carlo P., F. Masci, G. Visconti, A. D' Altorio, A. Taddei and W. H. Brune, Long-path and in situ measurements of OH: on going activity at the University of L'Aquila INFM section.

MEMBER OF THE FOLLOWING ITALIAN SCIENTIFIC SOCIETIES

2017-present Member of the Italian Association of Atmospheric Sciences and Meteorology

2016-present Member of the Italian Physical Society

PROFESSIONAL AND TRAINING EXPERIENCES IN ITALY

01/06/2019-present	Research Associate CAST (Center for Advanced Studies and Technology), University of Chieti-Pescara.
01/09/2016-31/05/2019	Research Associate CESI (Center of Excellence studies on aging), University of Chieti-Pescara.
01/01/2004-31/12/2011	Research Associate INFN (National Institute of Nuclear Physics), Gran Sasso National Laboratories, Assergi (L'Aquila).
01/09/2007-14/04/2008	Technical data processing (category EP1) . Winner of the open-ended public employment competition, CETEMPS Center of Excellence-Department of Physics, University of L'Aquila.
01/04/2005-31/08/2007	Technical data processing (category EP1) . Winner of the fixed-term public employment competition, CETEMPS Centre of Excellence-Department of Physics, University of L'Aquila.
12/06/2003-30/03/2005	Technical data processing (category D1) . Winner of the fixed-term public employment competition, CETEMPS Centre of Excellence-Department of Physics, University of L'Aquila.
01/02/2002-16/05/2003	Research Fellow , INFN (National Institute of Physics of Matter), Research Unit of L'Aquila, for the Development of a System of Measurements of Tropospheric Hydroxyls.
01/11/2001-31/01/2002	Holder of a research contract , INFN for the study and development of the DOAS system for tropospheric measurements of hydroxyl OH. November.
01/07/1997-31/10/1998	Holder of a research contract , Department of Physics, University of L'Aquila for the study of mesospheric sodium with LIDAR techniques.

PARTICIPATION AS A SPEAKER AT INTERNATIONAL CONGRESSES AND CONFERENCES

- **Participation in Conferences (by invitation)**

- 16 *Invited speaker at the International Symposium on Sustainable Urban Environment 2010, Tokyo, Japan, 10-11 December 2010. Title of the presentation: Observations of atmospheric species for pollution studies and possible link with other environmental researches.*
- 15 *Invited speaker at the EUFAR Expert Working Group workshop: Gas Phase Chemistry, Toulouse, France, 25-29 October 2010. Presentation title: Laser Induce Fluorescence Observation of NO₂, Peroxy Nitrates (PNs), Alkyl Nitrates (ANs) and HNO₃ on the BAE146.*
- 14 *Invited speaker at the EUFAR Expert Working Group workshop: Instrument Design and Installation, Exeter, UK, 21-23 November 2007. Title of the presentation: Development of Laser Induced Fluorescence instrument for NO₂, NO, alkyl nitrates, peroxy nitrates and HNO₃ detection.*
- 13 *Invited speaker at the Gordon Conference on Biogenic Chemistry & The Atmosphere, Ventura, California, USA February 25 – March 2, 2007. Presentation title: Oxidation of Biogenic VOC: analysis and implications from direct OH reactivity measurements.*

12 *Invited speaker at ACCENT workshop, Julich, Germany, 20-21 November 2006. Presentation title: LIF Instrument for NO₂ detection.*

• **Participation in International Conferences (only presentations orrally by Piero Di Carlo, complete list in the 'SCIENTIFIC PRODUCTION' section of the CV)**

11. COP25, Climate Change Conference, Madrid 06/12/2019 Side Event: Local adaptation to climate change in mountain municipalities: principles and practices from the territory.

Di Carlo P., *From Budoia to Appenines Charter for local adaptation to climate change in the mountains.*

10. COP25, Climate Change Conference, Madrid 05/12/2019 Side Event: Sustainability, adaptation and resilience The strategy of Abruzzo, Marche and Umbria regions.

Di Carlo P., *Agriculture and adaptation to climate change: the experience of a winery in central Italy.*

9. 6th Carpathian Convention on Climate Change meeting, Budapest (Hungary): 9 October 2019

By Carlo P., *Cooperation with the Alpine Convention – experience sharing on adaptation to climate change in the Alps.*

8. China-Italy Science, Technology & Innovation Week, Beijing 11-16/11/2017

P. Di Carlo, *Nanoparticles in the atmosphere: multidisciplinary study on their cleaning capacity and impact on Health and Ecosystems.*

7. COP22, Climate Change Conference, Marrakech 08/11/2016

Side Event: Voluntary tools for local adaptation: the potential of river contracts.

P. Di Carlo, *River responses to Climate Changes*

6. EGU General Assembly, Vienna (Austria): 7-12 April 2013

Di Carlo P., E. Aruffo, M. Busilacchio, F. Giammaria, C. Dari-Salisburgo, F. Biancofiore, G. Visconti, J. Lee, S. Moller, C. E. Reeves, S. Bauguitte, G. Forster, R. L. Jones, B. Ouyang, P. I. Palmer, M. Parrington, J. McQuaid, R. Krejci, *Aircraft simultaneous measurements of NO₂, total peroxy nitrate, total alkyl nitrate, and HNO₃: observations and main results from UK, Boreal forest and Central Italy.*

5. ISTP meeting, L'Aquila: 3-7 September 2012

By Carlo P., E. Aruffo, C. Dari Salisburgo, F. Biancofiore, M. Busilacchio, F. Giammaria, C. Reeves, G. Forster, S. Moller, J. Lee, S. Bauguitte, C. Parcival, M. Le Breton, J. Muller, B. Ouyang, O. Kennedy, R. Jones, *Tropospheric ozone budget: nighttime observation during the RONOCO campaign on-board the BAe-146 aircraft.*

4. EGU General Assembly, Vienna (Austria): 4-8 April 2011

By Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Biancofiore, M. Busilacchio, F. Giammaria, C. Reeves, S. Moller, J. Lee, *Airborne Laser Induced Fluorescence system for simultaneous measurements of nitrogen dioxide and speciated NO_y. (ORAL PDC).*

3. OP3 science meeting at the University of Leeds, England: 27-28 November 2008

Di Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Giammaria - *Laser Induced Fluorescence observations of NO₂ ΣPNs (RO₂NO₂) and ΣANs (RONO₂) at Danum Valley.*

2. NO_y Meeting at the University of Leeds: 27 November 2008

Di Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Giammaria - *Laser Induced Fluorescence system for NO₂ ΣPNs (RO₂NO₂) and ΣANs (RONO₂) measurements.*

1. 1st Workshop on Science Technology Through Long Duration Ballons, Rome, June 3-4 2008

By Carlo P. and Visconti G., *Climatic Change and Atmospheric Composition Research via balloons.*

- **Frontal teaching: Courses held as a holder for assignment of which I had the responsibility and I was president of the examination commission**
(until A.Y. 2015-2016 at the University of L'Aquila, from A.Y. 2016-2017 at the University of Chieti-Pescara)

A.A.	Course	Degree Course	Credits/hours	TAF	Ssd
2025-2026	Elements of Climatology	Bachelor's Degree in Sustainable Habitat Sciences	12/96	A	FIS/06
2024-2025	Physics with notions of Mathematics	Bachelor's degree in Eco-sustainable technologies and environmental toxicology	6/48	A	FIS/06
	Elements of Climatology	Bachelor's Degree in Sustainable Habitat Sciences	12/96	A	FIS/06
2023-2024	Physics with notions of Mathematics	Bachelor's degree in Eco-sustainable technologies and environmental toxicology	6/48	A	FIS/06
	Elements of Climatology	Bachelor's Degree in Sustainable Habitat Sciences	12/96	A	FIS/07
2022-2023	Physics with notions of Mathematics	Bachelor's degree in Eco-sustainable technologies and environmental toxicology	12/96	A	FIS/06
	Elements of Climatology	Bachelor's Degree in Sustainable Habitat Sciences	12/96	A	FIS/07
	Geophysics	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
2021-2022	Physics with notions of Mathematics	Bachelor's degree in Eco-sustainable technologies and environmental toxicology	12/96	A	FIS/06
	Elements of Climatology	Bachelor's Degree in Sustainable Habitat Sciences	12/96	A	FIS/07
	Geophysics	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
2020-2021	Physics with notions of Mathematics	Bachelor's degree in Eco-sustainable technologies and environmental toxicology	12/96	A	FIS/06

	Physics of Atmosphere and Climate Change	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
	Geophysics and Laboratory	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
2019-2020	Atmosphere of the Planets and Climate Change	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
	Geophysics	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
	Geostatistics	Master's Degree in Geological Sciences and Technologies	3/30	B	INF/01
	Computer science	Occupational therapy	2/20	A	INF/01
	Information Processing Systems	Biomedical Laboratory Technicians	2/20	A	ING-INF/05
2018-2019	Atmosphere of the Planets and Climate Change	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
	Geophysics	Master's Degree in Geological Sciences and Technologies	6/60	B	FIS/06
	Geostatistics	Master's Degree in Geological Sciences and Technologies	3/30	B	INF/01
	Computer science	Occupational therapy	2/20	A	INF/01
	Information Processing Systems	Biomedical Laboratory Technicians	2/20	A	ING-INF/05
	Bioengineering Electronics and Informatics	Occupational therapy	2/20	A	ING-INF/05
2017-2018	Computer science	Occupational therapy	2/20	A	INF/01
	Information Processing Systems	Biomedical Laboratory Technicians	2/20	A	ING-INF/05
	Bioengineering Electronics and Informatics	Occupational therapy	2/20	A	ING-INF/05
2016/2017	Remote Sensing	Master's Degree in Geological Sciences and Technologies	3/30	B	GEO/02
2015/2016	Analysis of environmental data with laboratory	Science and Technology for the Environment	9/84	B	FIS/06
2014/2015	Electromagnetism and Optics	Physics and Mathematics	3/36	A	FIS/01

	Biodiversity Analysis and Statistical Inference	Environmental Biology	3/32	B	FIS/06
	Analysis of environmental data with laboratory	Science and Technology for the Environment	6/60	B	FIS/06
2013/2014	Electromagnetism and Optics	Physics and Mathematics	3/36	A	FIS/01
	Biodiversity Analysis and Statistical Inference	Environmental Biology	3/32	B	FIS/06
2012/2013	Biodiversity Analysis and Statistical Inference	Environmental Biology	3/32	B	FIS/06
2011/2012	Biodiversity Analysis and Statistical Inference	Environmental Biology	4/40	B	FIS/06
	General Physics I	Mathematics	3/30	A	FIS/01
2010/2011	Ecological Statistics	Environmental Biology	3/30	B	FIS/06
	Laboratory of Mechanics and Thermodynamics	Physics	3/30	B	FIS/01
2009/2010	Ecological Statistics	Environmental Biology	3/30	B	FIS/06
	Laboratory of Mechanics and Thermodynamics	Physics	3/30	B	FIS/01
2008/2009	Laboratory of Mechanics and Thermodynamics	Physics	3/30	B	FIS/01
2007/2008	Laboratory of Physics and Computer Science	Sciences	4/40	B	FIS/07

- **Further teaching activity**

- a.y. 2005/2006 Titular of a module of the course of Laboratory of Atmospheric Physics, CdL in Environmental Engineering and Territory, University of L'Aquila (12 hours).
- a.y. 2004/2005 Titolare di un modulo, corso di Laboratorio di Fisica Generale III CdL in Ingegneria Edile/Architettura e Fisica dell'atmosfera, Università dell'Aquila (16 hours).
- a.y. 2003/2004 Ti holder of a module, course of Laboratory of General Physics III CdL in Building Engineering / Architecture and Atmospheric Physics, University of L'Aquila (14 hours).

- **Holder of a part of the following courses at the University of L'Aquila:**

- a.y. 2001-2002, 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007 Advisement of the Atmosphere CdL in Environmental Sciences, 6 hours for A.Y.
- a.y. 2007-2008 Introduction to cdL semiconductor physics in Physics, 20 hours per academic year
- a.y. 2004-2005 and 2006-2007 Introduction to cdL semiconductor physics in Physics, 16 hours per a.y.
- a.y. 2002-2003 and 2003-2004 Introduction to cdL semiconductor physics in Physics, 4 hours per a.y.

- **Trainer of the following courses at the University of L'Aquila:**

- a.y. 2002-2003 General Physics I, CdL in Building Engineering/Architecture, 7 hours.

a.y. 2000-2001 and 2001-2002 Atmospheric Physics, CdL Environmental and Terr. Engineering, 16 hours for a.y.

• **Supervisor of the following PhD students:**

- 2025-2027 Dr. Mariacarla Staropoli (Science and Technology for Sustainable Development, cycle XLI)
- 2023-2026 Dr. Marco Rapuano (Science and Technology for Sustainable Development, cyclepost XXXIX)
- 2022-2025 Dr.ssa Roberta Ranieri (Science and Technology for Sustainable Development, cycle XXXII)
- 2022-2025 Dr Lorenzo Gentile (Sustainable Development and Climate change, cycle XXXVIII). Dott. Nazionale IUSS Pavia.
- 2022-2025 Dr Chman Shahzadi (Sustainable Development and Climate change, cycle XXXVIII). Dott. Nazionale IUSS Pavia.
- 2021-2024 Dr.ssa Alessia D’Orazio (Science and Technology for Sustainable Development, cycle XXXII)
- 2020-2023Dr Mohshin Tariq (Earthquake and Environmental Hazard, cycle XXXV). PON fell.
- 2020-2023Dr Gamal Alam (Earthquake and Environmental Hazard, cycle XXXV). PON fell.
- 2019-2022Dr. Carlo Colangeli (Earthquake and Environmental Hazard, cycle XXXIV).
- 2017-2020Dr. Simone D’Incecco (Earthquake and Environmental Hazard, cycle XXXII). PON fell.
- 2017-2020 Dr. Alessandra Di Serafino (Earthquake and Environmental Hazard, cycle XXXII). PON fell.
- 2009-2011 Dr. Aruffo Eleonora (Physics, cycle XXV).
- 2009-2012 Dr. Fabio Biancofiore (Chemistry, cycle XXV).

• **Supervisor of the following degree theses:**

A.A.	Graduating student	Degree Course	University
2021-2022	Lorenzo Gentile	Physics	University of L'Aquila
2017-2018	Martina Reached	Master's Degree in Geology	University of Chieti-Pescara
	Rosanna Porcaro placeholder image	Bachelor's Degree in Occupational Therapy	University of Chieti-Pescara
	Gianluca Marzola	Master's degree in Psychology	University of Chieti-Pescara
2016/2017	St. Giansante	Bachelor's degree in Geology	University of Chieti-Pescara
2015/2016	Marco Rosciani placeholder image	Master's Degree in Physics	University of L'Aquila
	F. D'Alessandro	Bachelor's degree in Geology	University of Chieti-Pescara
	M. Jasmine	Bachelor's degree in Geology	University of Chieti-Pescara
2014/2015	Emanuele Avocone placeholder image	Bachelor's degree in Physics	University of L'Aquila

2013/2014	Gianni D'Amicodatri placeholder image	Bachelor's degree in Geology	University of Chieti-Pescara
2012/2013	G. Magrini	Bachelor's degree in Physics	University of L'Aquila
	R. De Feo	Bachelor's degree in Physics	University of L'Aquila
	Linda Boccacci	Master's degree in Environmental Biology	University of L'Aquila
2011/2012	Sara De Novellis placeholder image	Master's Degree in Physics	University of L'Aquila
2010/2011	M. Mill	Master's degree in Environmental Biology	University of L'Aquila
2009/2010	E. Cupri	Magistrale Environmental Sciences	University of L'Aquila
2008/2009	Eleonora Aruffo placeholder image	Master's Degree in Physics	University of L'Aquila
2006/2007	Pierluigi Casalena placeholder image	Degree in Environmental Sciences (V.O.)	University of L'Aquila
2005/2006	Marco Paglione	Triennale in Environmental Sciences	University of L'Aquila
		Triennale in Environmental Sciences	University of L'Aquila
2004/2005	M. La Barbera	Degree in Environmental Sciences (V.O.)	University of L'Aquila
2003/2004	Andrea Fasoli	Bachelor's degree in Physics	University of L'Aquila
2003/2004	Marco Barone placeholder image	Degree in Physics (V.O.)	University of L'Aquila
2001/2002	Antonella Taddei	Degree in Physics (V.O.)	University of L'Aquila

- **Tutor of the following students enrolled in the Degree Course in Physics, University of L'Aquila:**

a.y. 2014-2015 Pendola Beatrice,
a.y. 2012-2013 Mascetti Federico,
a.y. 2011-2012 Schiazza Anna Maria
a.y. 2010-2011 D'Olimpio Gianluca,
a.y. 2008-2009 Rampioni Cecilia

- **External Tutor School-Work Alternation Project (PCTO)**

a.y. 2021-2022 Project: 'Weather & Climate: observing phenomena, predicting events, understanding changes' between the University of Chieti-Pescara and Liceo Statale Marie Curie of Giulianova (TE).

- **School-Work Alternation Project Manager**

a.y. 2017-2018 Project: 'Bioengineering: Analysis of the 'Sit to stand' test with the use of the smartphone accelerometer' between the University of Chieti-Pescara and the Galileo Galilei Scientific High School of Lanciano (PE).

a.y. 2016-2017 Project: 'Climate change and the global balance of carbon dioxide between atmosphere, hydrosphere and lithosphere' between the University of Chieti-Pescara and the Galileo Galilei Scientific High School in Pescara.

- **Responsible for the following Scientific Degree Projects (PLS)**

a.y. 2016-2017 Project: 'Climate change and the earth system: role of CO₂ exchanges between the earth's crust, ocean and atmosphere' between the University of Chieti-Pescara and the Galileo Galilei Scientific High School in Pescara and the M. Curie High School in Giulianova.

a.y. 2015-2016 Project: 'Interactions between Atmosphere and Ocean: climatic laboratory on the Adriatic Sea' between the University of L'Aquila and the Galileo Galilei Scientific High School of Pescara.

a.y. 2014-2015 Project: 'Laboratory of electromagnetism and applications to the study of the atmosphere' between the University of L'Aquila and the Galileo Galilei Scientific High School of Pescara. Project concluded by accompanying 20 students to the Department of Chemistry of the University of Cambridge (UK) with student seminars.

a.y. 2013-2014 Project: 'Air quality in schools' between the University of L'Aquila and the Galileo Galilei Scientific High School in Pescara. Project concluded by accompanying 19 students to the Department of Chemistry of the University of Cambridge (UK) with student seminars.

a.y. 2012-2013 Project: 'Climate Change' between the University of L'Aquila and the Galileo Galilei Scientific High School in Pescara

a.y. 2012-2013 Project: 'The Pendulum of Foucault' between the University of L'Aquila and the Pescara 5 Comprehensive Institute of Pescara. The activity involved, among other things, the design and construction, on my part, of a pendulum of 8 m in height and mass of the sphere of 25 kg, installed in the atrium of the school.

- **Other educational activities**

a.y. 2013-2014 Responsible for two paths of excellence for students of the second year of the Degree Course in Physics, University of L'Aquila.

12/04/2014 Seminary: Air pollution and global warming, course of Applied Environmental Geochemistry of the CdL in Geology, University of Chieti-Pescara.

2008 Lessons for a total of 8 hours of Elements of Atmospheric Physics for the tutor training school of the Ludoteca di Teramo.

a.y. 2003-2004 Lessons for a total of 10 hours of Elements of Physics of the Earth and atmosphere in teaching practice, School of Specialization in Secondary Education, University of Chieti-Pescara.

- **Seminars and lectures by invitation in foreign and Italian universities.**

17/06/2022 University of Teramo. Seminar title: Models in climatology and climate change (Webinar: The frog in the boiling pot).

07/06/2021 University of Islamabad (Pakistan). Seminar title Earth Atmosphere: the climate challenges (Webinar online)

- 09/01/2020 University of L'Aquila – Cultural initiatives and integration of teaching, L'Aquila. Seminar title: Micro and nanoplastics in the earth system with a focus on those in the atmosphere
- 28/10/2015 University of Innsbruck, Institute of Atmospheric and Cryospheric Sciences. Seminar title: Reactive nitrogen oxide in the atmosphere: speciation using the TD-LIF technique on the ground and on board the BAe-146 aircraft.
- 05/02/2014 University of Chieti-Pescara, Department of Psychological, Humanistic and Territorial Sciences. Seminar title: Aircraft observations of reactive nitrogen species: Atmosphere and Man environment, health and cultural heritage.
- 23/10/2012 University of York, Department of Chemistry, England. Seminar title: Aircraft observations of reactive nitrogen species: TD-LIF system description and recent field campaigns results.
- 24/01/2011 Cambridge University, Department of Chemistry, England. Seminar title: Groundbase and aircraft LIF systems using thermal dissociation techniques: instrument description and field campaigns results.
- 06/12/2010 Tokyo Metropolitan University, Faculty of Urban Environmental Sciences. Seminar title: Aircraft LIF system for NO₂, ANs, PNs and HNO₃ observations: technique and field campaigns results.
- 26/11/2007 CNR, ISAC, Bologna,. Seminar title: Measurements of OH reactivity and OH, HO₂ and NO_x concentrations: role of biogenic emissions in troposphere chemistry.
- 26/11/2007 International Summer School on Atmospheric and Oceanic Sciences, L'Aquila, 2007. Lecture title: LIF (Laser Induced Fluorescence) and DOAS (Differential Optical absorption Spectroscopy) Systems.
- 16/03/2007 CNR, IBAF, Montelibretti (Rome). Seminar entitled: Oxidation of biogenic VOCs: analysis and implications of VOC-OH reactivity.

- ***Activities related to teaching: Orientation***

- 28/05/2022 Liceo Curie- Giulianova (TE). Seminar title: Climate change from the global scale to the local scale
- 20/05/2022 Liceo Curie- Giulianova (TE). Seminar title: Physical basis of climate change
- 22/04/2022 ITS Alessandrini, Teramo. Seminar title: Planet Earth: environmental emergencies and protection
- 21/04/2022 ITS Pomilio, Chieti. Seminar title: Climate Change: impacts and actions
- 20/04/2022 Liceo Masci, Chieti. Seminar title: Climate Change: impacts and actions
- 17/03/2022 Convitto Nazionale "G.B. Vico" Chieti. Seminar title: Climate Change: what future?
- 01/03/2021 Technical Institute R. Mattioli San Salvo (CH). Seminar title: Europe towards the Green deal (online event).
- 09/12/2020 Technical Institute R. Mattioli San Salvo (CH). Seminar title: The environment and man: from climate change to plastics at sea (online event).
- 23/05/2020 Liceo Scientifico Galilei, Pescara. Seminar title: Relationship between man and nature: environmental changes induced by human activities and consequences (online event).
- 18/01/2020 Liceo Scientifico Galilei – Science by Night, Pescara. Seminar title: Observing Climate Change: Opportunities and Challenges for Research
- 25/11/2019 Liceo Artistico N. From Guardiagrele, Chieti. Seminar title: Climate change and global warming

27/09/2019 Night of the researchers, Centro Storico Chieti Represents the GdL Clima of the University of Chieti-Pescara with demonstrations and instrumentation of the PLAMAR³ Project.

29/04/2019 Exarchus Ureaster Technical Institute, Pescara. Seminar title: We and the air: the atmosphere, its constituents, critical issues and the role of man

27/04/2019 Manthone Technical Institute, Pescara. Seminar title: We and the air: the atmosphere, its constituents, critical issues and the role of man

06/04/2019 Istituto Tecnico Volta, Pescara. Seminar title: We and the air: the atmosphere, its constituents, critical issues and the role of man

23/02/2019 Liceo Scientifico Galilei, Pescara. Seminar title: Pescara's air pollution, between real dangers and possible solutions

5/04/2019 Liceo Classico d'Annunzio, Pescara, Seminar title: Climate Change: Physical Bases and Impacts on the territory and on Man

28/03/2019 Technical Institute R. Mattioli San Salvo (CH). Seminar title: Sustainability

15/03/2019 Istituto Comprensivo Collecervino (PE). Seminar title: Climate Change: Impacts on land and man

9/11/2018 Agricultural Institute C. Ridolfi, Scerni (CH). Seminar title: Climate Change and Adaptation: from the global to the regional scale

16/02/2018 Liceo Scientifico Galilei, Pescara. Seminar Title: Climate Change

28/09/2018 Night of the researchers, Centro Storico Chieti Represents the DISPUTER-University of Chieti-Pescara with demonstrations and instrumentation of Atmospheric Physics.

30/09/2016 Night of the researchers, Palazzo Aurum Represents the DISPUTER-University of Chieti-Pescara with demonstrations and instrumentation of Atmospheric Physics.

29/04/2015 Earning point University of L'Aquila entitled: Laser-induced spectroscopy and fluorescence on board instrumented aircraft.

18/05/2014 Open day Laboratori Nazionali del Gran Sasso, Assergi (L'Aquila). He represents the Department of Physical and Chemical Sciences with experiments and demonstrations in Physics.

11/03/2014 Liceo Scientifico Galilei, Pescara, Seminar entitled: Chemistry of the atmosphere: fundamentals of air quality and climate change.

04/04/2013 Project Secondary School I, Città Sant'Angelo (Pescara). Seminar entitled: Mediterranean Basin effects of climate change.

17/01/2012 Liceo Scientifico Galilei, Pescara. Seminar entitled: Observations Chemical Composition and Atmospheric Physics.

2008 Department of Physics, University of L'Aquila. Seminar entitled: Evolution of the LIF-CETEMPS system: measurements of NO₂, HNO₃, RONO₂, RO₂NO₂ for OP3 campaign and DLR Falcon.

08/11/2007 State Commercial Institute "B. Pascal", Montorio al Vomano (TE). Seminar entitled: CO₂ why is it a problem?

23/03/2004 Scientific Day at the University of L'Aquila. Seminar entitled: Are trees bad for health? The chemistry of urban air.

2004 Department of Physics, University of L'Aquila. Seminar entitled: Direct measures of reactivity of the OH radical in the forest: evidence of highly reactive biogenic VOCs emissions.

2001 Department of Physics, University of L'Aquila. Seminar entitled: Tropospheric oxidants: Measurements of OH, HO₂ in the TexAQS and PROPHET 2000 measurement campaigns.

2000 Department of Physics, University of L'Aquila. Seminar entitled: Measurement of Hydroxyls atmosphere their influence in the chemistry of the Troposphere.

1999 Department of Physics, University of L'Aquila. Seminar entitled: The CASIMIR effect.

1999Classification Course in Environmental Physics, University of L'Aquila. Seminar entitled: LIDAR-element techniques.

THIRD MISSION ACTIVITIES

Seminars for scientific dissemination

57. Conference Global warming and ecological transition, Sala Consigliare Comune di Petacciato (CB), 17/07/2022. Seminar Title: Climate Change.
56. Adriatic Seaside Festival – Torre di Cerrano (TE), 16/06/2022. Seminar title: Impact of climate change on water resources: from the global to the local scale
55. World Water Day – Polo. Santo Spirito Museum, Lanciano (CH), 22/03/2022. Seminar title: Climate change and impact on water resources.
54. Conference Molise quale energia - Auditorium del Consorzio per lo Sviluppo Industriale della Valle del Biferno Termoli (CB), 5/03/2022. Seminar Title: Climate Change.
53. Cetacean Center – Museo Genti d'Abruzzo Pescara, 11/12/2022. Seminar title: Climate change and consequences on the marine ecosystem.
52. Conference: Impact of climate change on ecosystems and human health- Castello Orsini-Colonna di Avezzano (AQ), 11/12/2021. Seminar title: Impact of climate change on agriculture and productions of excellence in Abruzzo
51. Ecomondo – Rimini, 29/10/2021. Seminar title: The value of the Network for the territory: case studies on strategic issues of the RUS working groups
50. HackForThePlanet 2021 Theater of the Muses of Ancona, 3/10/2021. Seminar Title: Climate Change: Impacts and Opportunities.
49. Researchers' Night, University Campus – Chieti, 24/09/2021. Seminar title: Beauty of territories and product quality at the time of climate change
48. Teatro Sulmona (AQ), 18/09/2021. Seminar title: Climate Change, Air Quality and SNAM Power Plant: focus on the Peligna valley
47. Event for journalists organized by the WWF Museum Univ. Chieti, 8/09/2021. Seminar title: Climate Change: Physical bases, communication and fake news
46. SNAM Central Event – University of Annunzio Pescara, 9/07/2021. Seminar title: Direct and indirect emissions of climate-altering gases from methane infrastructures: compatibility with green new deal and PNRR
45. CAST-cycle seminars CEA University of Chieti-Pescara, 04/02/2021. Seminar title: Bioinformation processing systems: from big data to machine learning.
44. Teatro Marruccino (Chieti), Architecture Festival, 02/10/2020. Seminar title: Observations of the changing climate and impacts on HABITAT
43. Online conference closing of the Tourist project, 22/05/2020. Seminar title: Ud'A for Plastics at Sea: Collection, Research, Recycling
42. Event Viva la Vite – Aurum, Pescara, 17/02/2020. Seminar title: Impact of climate change and change in precipitation intensity on viticulture: analysis of 200 years of climate data and early harvest of the Valentini Winery in Loreto Aprutino (PE)
41. Conference order of Architects Peoples (PE), 7/02/2020. Seminar title: Understanding climate change as the first tool for defending communities
40. WWF Event – University Museum, Chieti, 10/12/2019. Seminar title: Climate Change and Glaciers
39. Auditorium Petruzzi – Event Istituto Alberghiero De Cecco, Pescara, 11/11/2019. Seminar title: We will save the Planet: interview on climate
38. Meeting as part of the initiative: The words of the Majella, Palena (CH), 10/11/2019. Seminar title: Climate change impact on the Majella

37. LegaAmbiente Regional Congress, Pescara, 9/11/2019. Seminar title: Perspectives on climate and energy
36. Torre del Cerrano, Pineto (TE), 7/11/2019. Seminar title: Climate change: the role of protected areas between adaptation and mitigation
35. Sala Consigliare - Planet Earth Day, Vasto (CH), 19/10/2019. Seminar title: Climate change and global warming
34. Sala Confindustria- Planet Earth Day, Chieti, 19/10/2019. Seminar title: Perspectives of global to local climate change
33. Fondazione Lombardia per l'Ambiente, Seveso (MI), 3/10/2019. Seminar title: From the Alps to the Apennines: adaptation in mountain areas
32. Prima Secca il food festival, Giulianova (TE), 31/08/2019. Seminar title: Climate change between sky, sea and land. The influence of man.
31. Urban Planning Course, Pescara, 28/02/2019. Seminar title: Introduction to the physical fundamentals of the climate system and observed changes
30. University Museum, Chieti, 29/11/2018. Seminar title: The consequences of the changing climate and the role of man
29. AURUM - CReIAMOPA Conference, Pescara 6/11/2018. Seminar title: Adaptation to regional climate change
28. Auditorium Sant'Agostino, Atri (TE), 20/10/2018. Seminar title: Regional Climate Change Adaptation Plan.
27. Circolo Nautico Silvi (CH), 12/10/2018. Seminar title: Climate change: the role of protected areas between adaptation and mitigation
26. Complex Sant'Anna-CEA Ortonamare, Ortona (CH), 8/09/2018. Seminar title: Climate change and PACC project
25. Teatro Comunale- Corso E.C.M., Città Sant'Angelo (PE), 26/05/2018. Seminar title: Climate change observed in the last 100 years
24. Council Room Municipality of Pianella (PE), 7/04/2018. Seminar title: Climate change in Abruzzo: focus on local effects.
23. University Museum, Chieti – Darwin Day, 13/01/2018. Seminar title: Climate change: what future awaits us?
22. Giardino dei semplici- Workshop: integrated supply chain and scientific research, Chieti, 20/12/2018. Seminar title: Climate trends in Abruzzo in the last 100 years: effects on biodiversity
21. Palazzo Silone, Abruzzo Region, L'Aquila, 22/11/2017. Seminar title: Climate profile of the Abruzzo Region: focus on mountain areas
20. Sala della Provincia, Teramo, 27/10/2017. Seminar title: Climate profile of the Abruzzo Region: focus on the Teramo area
19. Palazzo Aurum, Pescara, 20/10/2017. Seminar title: Climate profile of the Abruzzo Region: global trends
18. Council Room Municipality of Vasto, 06/10/2017. Seminar title: Climate profile of the Abruzzo Region: focus on coastal areas
17. Council Room Municipality of Sulmona, 22/09/2017. Seminar title: Climate profile of the Abruzzo Region: focus on Sulmona and the Peligna Valley
16. International Workshop 'From Reuse to Self-Construction' 2017 L'Aquila 02/10/2017. Seminar title: Climate Change
15. Earth Hour 2016, Vasto (CH), 19/03/2016. Seminar organized by WWF at Bottega Mondo Allegre. Title: "Climate change in a changing world".
14. Protected area of the Tower of Cerrano. 25/11/2016Thitem seminar: Estimation of CO2 flows Pineta-duna-mare of the Marine Protected Area Torre del Cerrano

13. Abruzzo Region V Council Commission (Health, Social Security, Culture, Training and Work), 20/04/2016. Seminar title: The phenomenon of thermal inversion and the repercussions on air quality.
12. Francavilla al mare (CH), 19/02/2016. Seminar organized by the Tasso Barbasso Ecological Association, at the Michetti Museum. Title: "Global warming and climate change".
11. Conference for the thirtieth anniversary of the Centro Studi Cetacei Onlus, Pescara, 21/11/2015. Seminar entitled: Climate Change: the atmosphere and the sea.
10. Aeronautica Militare, Rome 12/10/2015. Seminar entitled: Instrumented aircraft: from research to meteo-environmental monitoring
9. University Museum, Chieti. WWF meetings. 08/08/2015. Title of the seminar: Atmosphere and Fires: The Colle Marcone landfill – Chieti
8. Pineto, Villa Filiani, 10/07/2015. Seminar entitled: Monitoring of gases emitted by mud volcanoes: The CENERONE of Pineto.
7. Spoltore (Pescara), 18/12/2012. Seminar within the City Council open to students, entitled: We and the world around us: the changing environment
6. Santo Stefano di Sessanio (AQ), 10/08/2012. Seminar entitled: Observatories in the high mountains: privileged sites to observe climate change.
5. Rifugio Duca degli Abruzzi, Campo Imperatore (AQ), 29/07/2012. Seminar as part of the event open shelters, entitled: Climatic observations in the high mountains: from Everest to the Apennines.
4. Campidoglio, Rome, 2009. Seminar entitled: SHARE Italia: the Gran Sasso L'Aquila station.
3. Department of Physics, University of L'Aquila, 2009. Seminar entitled: SHARE Italia: the Campo Imperatore station, between research and future.
2. Collegio Nuovo - Fondazione Sandra e Enea Mattei, Pavia, 2008. Seminar entitled: The weather that makes: scientific forecasts and social implications.
1. Sala Consigliare di Loreto Aprutino (PE), event *Lauretum vinum et oleum*, 2008. Seminar entitled: Climate change and effects on viticulture and olive growing in Abruzzo.

Media citations of research activities

Following relevant scientific work or having been contacted by the press to comment on topics related to my research activities, I have received interviews, participated in television broadcasts or written articles in newspapers and periodicals. The main ones:

04/03/2024	Interview Tgr Abruzzo
13/01/2024	Interview RaiNews24 trasmissione 'Cammina Italia'
15/12/2023	Interview Tg Leonardo
13/12/2023	Interview Tgr Abruzzo
09/12/2023	Participate in the studio TgR Abruzzo
17/03/2023	Participate in the studio TV6
22/02/2023	Participate Buongiorno Regione Abruzzo
29/01/2023	Interview Tgr Abruzzo
20/01/2023	Participate Buongiorno Regione Abruzzo
19/01/2023	Interview Tgr Abruzzo
22/03/2022	Interview Tgr Abruzzo
18/07/2022	Interview Tgr Molise
19/11/2021	Participate in the Transmission Facts and Opinions Network 8
10/08/2021	Participate in the studio at Tgr Abruzzo
21/06/2021	Interview with Tgr Abruzzo
03/03/2021	Participate in the transmission Buongiorno Regione Tgr Abruzzo

05/12/2020Participation in Trasm. Facts and Opinions - Climbing for Cimate Rete 8
 12/02/2020Participates in the transmission Buongiorno Regione Tgr Abruzzo
 05/12/2019Interview with RaiNews24 and Tgr Abruzzo
 29/11/2019Participates in the transmission Facts and Opinions Network 8
 15/11/2019Interview with Tgr Abruzzo
 27/06/2019Article on the supplement Science of the newspaper La Repubblica
 13/06/2019Interview with Tgr Abruzzo
 10/06/2019Article in the newspaper Il Centro
 03/10/2018Interview and service on Tgr Abruzzo
 26/06/2018Interview and report on Tgr Abruzzo
 14/02/2018Article in the newspaper Il Centro
 30/01/2018Article in the newspaper Il Centro
 27/10/2017Participates in the broadcast Facts and Opinions Network 8
 05/03/2017Article in the newspaper Il Centro
 01/03/2017Article in the newspaper Il Centro
 01/02/2016Article in the newspaper Il Centro.
 27/05/2015Interview and report on Tgr Abruzzo
 31/10/2014Interview and report on Tgr Abruzzo
 10/01/2014Article in the newspaper Il Centro.
 20/07/2012Interview and report on Tgr Abruzzo
 18/08/2011Interview and report on Tgr Abruzzo
 17/09/2010Service on Tgr Abruzzo
 06/03/2009Article in the newspaper Il Centro
 05/03/2009Article on the online newspaper Secolo Nuovo
 28/10/2009Article in the online magazine 'Save the forests'
 26/09/2008Service on Tgr Abruzzo
 23/09/2008Article in the newspaper Il Centro
 29/07/2008Service and interview on Tgr Abruzzo
 19/06/2008Article in the newspaper Il Centro
 28/07/2004Article and interview on the online monthly Newton
 18/06/2004Article in the American weekly ScienceWeek
 20/05/2004Service and interview on the online weekly Heos
 03/05/2004Interview in the radio broadcast 'The flight of the Geese' on Radio24
 July 2004Article and interview on the monthly La macchina del tempo
 30/04/2004Article and interview on Corriere della sera
 30/04/2004Service and interview on Tg3, Tg2, Tgr Abruzzo, Tg Leonardo

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Articles on international reviews indexed on SCOPUS and/or WoS

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- 92 Shahzad, C., L. Aielli, E. Costantini, M. Reale, **P. Di Carlo**, Breaching Barriers: Microplastic Translocation into Human Body Through Food and Implications for Neurodegeneration, *Current Pollution Reports*, 11:58, 0123456789, <https://doi.org/10.1007/s40726-025-00386-2>, 2025.
- 91 Di Cintio, F., A. G. Ruggieri, C. De Simone, **P. Di Carlo**, M. Ronci, V. Perrotti, M. Sallèse, Polystyrene microplastics are internalized by human gingival fibroblasts, enhance cell motility and induce molecular changes revealed through proteomic analysis, *Scientific Reports*, 15, 35128, 2025.
- 90 Chiacchiaretta, P., F. Prestileo, E. Maria Stella, E. Aruffo, P. Simeone, P. Lanuti, S. Di Lodovico, M. Di Giulio, S. Guarnieri, P. Del Boccio, G. Spalluto, M. C. Cufaro, V. Gatta, F. Anaclerio, C. Alisi, S. Dietrich, **P. Di Carlo**, A. Mascitelli, Impact of Climate Change on Cyanobacteria Growth: A Case Study of Lama Dei Peligni Rock Paintings Conservation (Majella Massif—Abruzzo Region, Italy), *Sustainability*, 17(23), 10861; <https://doi.org/10.3390/su172310861>, 2025.
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- 88 Tariq, M., E. Aruffo, P. Chiacchiaretta, **P. Di Carlo**, Hydro-Climatic Trends in Central Italy: A Case Study from the Aterno-Pescara River Watershed, *Sustainability*, 17(2), 493; <https://doi.org/10.3390/su17020493>, 2025.
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82. Chiacchiaretta, P., Tumini, S., Mascitelli, A., Sacrini, L., Saltarelli, M. A., Carabotta, M., Osmelli, J., **Di Carlo P.**, Aruffo, E., The Impact of Atmospheric Temperature Variations on Glycaemic Patterns in Children and Young Adults with Type 1 Diabetes, *Climate*, 12, 121, 2024.
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- 72 Colangeli C., S. Palermi, S. Bianco, E. Aruffo, P. Chiacchiaretta, **P. Di Carlo**, The Relationship between PM2.5 and PM10 in Central Italy: Application of Machine Learning Model to Segregate Anthropogenic from Natural Sources, *Atmosphere* 13, 3, <https://doi.org/10.3390/atmos13030484>, 2022.
- 71 Colafarina S, **Di Carlo P**, Zarivi O, Aloisi M, Di Serafino A, Aruffo E, Arrizza L, Limongi T, Poma A. Genotoxicity Response of Fibroblast Cells and Human Epithelial Adenocarcinoma In Vitro Model Exposed to Bare and Ozone-Treated Silica Microparticles. *Cells*. 11, 226. doi: 10.3390/cells11020226, 2022.
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4 M. Iarlori, V. Rizi, **P. Di Carlo**, G. Visconti and F. Masci, Raman Lidar observation of tropospheric water vapour and cloud droplets, *Proceeding of the 20th International Laser Radar Conference*, 2000.

3 V. Rizi, F. Masci, **P. Di Carlo**, M. Iarlori, G. Redaelli and G. Visconti, Lidar observations of Shishaldin volcano aerosols, *Proceeding of the 20th International Laser Radar Conference*, 2000.

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1. **P. Di Carlo**, V. Rizi, and G. Visconti, Observations of mesospheric sodium over Italy, *Proc. 19th. Int. Laser Radar Conference, Ed. U. N. Singh and S. Ismail, NASA Langley, Hampton Virginia, NASA/CP-1998-207671/PT1*, p.541-543, 1998.

Works published in National Journals

5 Editorial for the Rivista D'Abruzzo n 132, 2020

4 Maria Teresa Melis, Francesco Dessì, Marcella Busilacchio, **Piero Di Carlo**, Elisa Vuillermoz, Paolo Bonasoni, SHARE GeoNetwork portal: a shared catalog of metadata at the service of high-altitude searches, *GEOMEDIA*, 3, 6-10, ISSN: 1128-8132, 2011.

3 **By Carlo P.**, Air quality and new technologies, Safety 2.0, *Ideat.it*, 34-35, 2011

2 Giammaria F., L. Rossi, C. Dari Salzburg, E. Aruffo, **P. Di Carlo**, Measurements of Air Pollutants at Altitude, *Labview World Magazine*, 17, 30-31, February 2011.

1 **By Carlo P.** Visconti G., Climate Change and atmospheric composition research via balloons, *Memorie della Società astronomica italiana*, 79, 3, 846, , ISSN: 1824-016X, 2008.

Thesis

Doctoral Thesis

- Production and Loss of hydroxyl radical in a forest and in a city, **P. Di Carlo**, XIV PhD Cycle in General Physics, Tutor Prof. G. Visconti, Department of Physics, University of L'Aquila, Italy, October 2001.

Graduation Thesis

- Observation of sodium in the upper atmosphere with LIDAR techniques, **P. Di Carlo**, Speakers Prof. G. Visconti and Dr. V. Rizi, Department of Physics, University of L'Aquila, Italy, June 1997.

Participation in Conferences (by invitation)

- 5 Invited speaker at the International Symposium on Sustainable Urban Environment 2010, Tokyo, Japan, 10-11 December 2010. Title of the presentation: Observations of atmospheric species for pollution studies and possible link with other environmental researches.
- 4 Invited speaker at the EUFAR Expert Working Group workshop: Gas Phase Chemistry, Toulouse, France, 25-29 October 2010. Presentation title: Laser Induce Fluorescence Observation of NO₂, Peroxy Nitrates (PNs), Alkyl Nitrates (ANs) and HNO₃ on the BAE146.
- 3 Invited speaker at the EUFAR Expert Working Group workshop: Instrument Design and Installation, Exeter, UK, 21-23 November 2007. Title of the presentation: Development of Laser Induced Fluorescence instrument for NO₂, NO, alkyl nitrates, peroxy nitrates and HNO₃ detection.
- 2 Invited speaker at the Gordon Conference on Biogenic Chemistry & The Atmosphere, Ventura, California, USA February 25 – March 2, 2007. Presentation title: Oxidation of Biogenic VOC: analysis and implications from direct OH reactivity measurements.
- 1 Invited speaker at ACCENT workshop, Julich, Germany, 20-21 November 2006. Presentation title: LIF Instrument for NO₂ detection.

Participation in International Conferences (Abstracts of Poster and/or Oral presentations)

POSTER=poster presentation

ORAL=oral presentation

ORAL PDC=oral presentation by Piero Di Carlo

69. European Meteorological Society Annual Meeting, Bonn (Germany), 4-9 September 2022
Frangipani C., Cordero R., Di Carlo P., Gulisano A. M., Lupi A., Ochoa H. A., Rowe P., Vitale V., Zardi F., Broadband radiation data in the Antarctic Peninsula and preliminary estimation of cloud cover from two different methods. (**Poster**)
68. EGU General Assembly, Vienna (Austria): 23–27 May 2022
Aruffo, E., Wang, J., Ye, J., Ohno, P., Qin, Y., Stewart, M., McKinney, K., **Di Carlo, P.**, and Martin, S. T.: Impact of NO_x in SOA and organonitrates production, EGU22-12952, <https://doi.org/10.5194/egusphere-egu22-12952>, 2022. (**ORAL**)
67. Polar Night Week 2022, virtual conference, January 26, 2022
Boyan P., V. Vitale, P. di Carlo, M. Mazzola, A. Lupi, O. Drofa, D. Mastrangelo, Arctic ozone depletion and its impact on mid-latitudes. (**ORAL**)
66. 2022 Padua Days on Muscle & Mobility Medicine: 2 April 2022
Di Carlo P. Heatwaves in a warming climate: overview and impacts (**ORAL PDC**)
65. 16th World Congress on Public Health, online, 12-16 October 2020
Falcone L, Aruffo E., **by Carlo P.**, Del Boccio P. Cufaro M.C., Pesce M., Patrino A., Ballerini P., Ozone effect on inflammatory and proteomic profile of human macrophages and airway epithelial cells (**ORAL**)
64. 2nd Conference on Sustainability in Civil Engineering (CSCE'20), Islamabad Pakistan, 07 August 2020
Tariq M, Owais M. Z., **By Carlo P.**, Shah S.T.U., Kashif M., Rehman A., The Use of PALSAR (D.E.M.) for Mega Fracture Analysis of Dabbar Anticline, Sulaiman Fold Belt, Pakistan (**ORAL**)
63. COP25, Climate Change Conference, Madrid 06/12/2019 Side Event: Local adaptation to climate change in mountain municipalities: principles and practices from the territory.
By Carlo P., From Budoia to Appenines Charter for local adaptation to climate change in the mountains (**ORAL PDC**).
62. COP25, Climate Change Conference, Madrid 05/12/2019 Side Event: Sustainability, adaptation and resilience The strategy of Abruzzo, Marche and Umbria regions.

By Carlo P., Agriculture and adaptation to climate change: the experience of a winery in central Italy (ORAL PDC).

61. 7th SISC Annual Conference, Trento (Italy): 23-25 October 2019

By Carlo P., E. Aruffo, W.H. Brune, Impact of warming climate and changes of precipitation intensity on early grape-harvest of premium wine in Italy (ORAL PDC).

60. 6th Carpathian Convention on Climate Change meeting, Budapest (Hungary): 9 October 2019

By Carlo P., Cooperation with the Alpine Convention – experience sharing on adaptation to climate change in the Alps (ORAL PDC).

59. EGU General Assembly, Vienna (Austria): 7-12 April 2019

By Carlo P., E. Aruffo, W. H. Brune, Comparison between local and global climate parameters in driving earlier grape harvests for a premium Italian wine (POSTER).

58. EGU General Assembly, Vienna (Austria): 7-12 April 2019

D'Incecco S., E. Aruffo, M. Achieved, **P. Di Carlo**, Development of an analytical Instrument for soil gas fluxes measurements (**POSTER**).

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Aruffo E., **P. Di Carlo**, F. Biancofiore, A. D'Altorio, P. Cristofanelli, P. Bonasoni, NO source in a high mountain site: investigation using a neural network (**POSTER**).

56. The 24th International Sustainable Development Research Society, Messina (Italy): 13-15 June 2018

Aruffo E., **P. Di Carlo**, Regional Climate Trends: analysis of the temperature and precipitation measured in the last 100 years in the Abruzzo Region (Central Italy) (**Oral**)

55.China-Italy Science, Technology & Innovation Week, Beijing 11-16/11/2017
Smart Cities & Communities Session.

P. Di Carlo, Nanoparticles in the atmosphere: multidisciplinary study on their cleaning capacity and impact on Health and Ecosystems (**ORAL PDC**).

54.COP22, Climate Change Conference, Marrakech 08/11/2016

Side Event: Voluntary tools for local adaptation: the potential of river contracts.

P. Di Carlo, River responses to Climate Changes (**ORAL PDC**).

52. Atmospheric Composition and the Asian Summer Monsoon conference. Bangkok (Thailand) 8-10 June 2015

Putero D., P. Cristofanelli, A. Marinoni, B. Adhikary, R. Duchi, S.D. Shrestha, G.P. Verza, T.C. Landi, F. Calzolari, M. Busetto, F. Biancofiore, P. Di Carlo, M. Rupakheti, A. Panday, and P. Bonasoni, Seasonal variation of short-lived climate forcers/pollutants at Paknajol, an urban area in the city of Kathmandu, Nepal (**POSTER**).

51. EGU General Assembly, Vienna (Austria): 27 April-2 May 2013

Busilacchio M., **P. Di Carlo**, E. Aruffo, F. Biancofiore, F. Giammaria, S. Bauguitte, J. Lee, S. Moller, A. Lewis, M. Parrington, P. Palmer, C. Dari Salisburgo, Total peroxy nitrates and ozone production : analysis of forest fire plumes during BORTAS campaign (**POSTER**).

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Biancofiore F., M. Verdecchia, **P. Di Carlo**, B. Tomassetti, E. Aruffo, M. Busilacchio, S. Bianco, S. Di Tommaso, C. Colangeli, 7-year of surface ozone in a coastal city of central Italy: Observations and models (**POSTER**).

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Aruffo E., **P. Di Carlo**, A. D'Altorio, M. Busilacchio, F. Biancofiore, F. Giammaria, F. Del Grande, P. Bonasoni, P. Cristofanelli, E. Vuillermoz, The first one year measurements at the Monte Portella (Italy) climate high altitude station (**POSTER**).

48. Gas Instrumentation Sandpit Workshop, Catania, 2 - 5 September 2013

Rosatelli G., **P. Di Carlo**, F. Giammaria, E. Aruffo, F. del Grande, F. Stoppa, G. Visconti, GEO-TALPA, Gas micro-analyser (**ORAL**)

47. EGU General Assembly, Vienna (Austria): 7-12 April 2013
Di Carlo P., E. Aruffo, M. Busilacchio, F. Giammaria, C. Dari-Salisburgo, F. Biancofiore, G. Visconti, J. Lee, S. Moller, C. E. Reeves, S. Bauguitte, G. Forster, R. L. Jones, B. Ouyang, P. I. Palmer, M. Parrington, J. McQuaid, R. Krejci, Aircraft simultaneous measurements of NO₂, total peroxy nitrate, total alkyl nitrate, and HNO₃: observations and main results from UK, Boreal forest and Central Italy. (**ORAL PDC**).
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 E. Aruffo, **P. Di Carlo**, C. Dari-Salisburgo, F. Biancofiore, F. Giammaria, M. Busilacchio, J. Lee, S. Moller, S. Bauguitte, D. O'Sullivan, W. Morgan, B. Ouyang, O. Kennedy, R. Jones, G. Forster, C. Reeves, S. Vaughan, D. Heard, Aircraft observations above London city during a day and a night: ozone and alkyl nitrate formation. (**ORAL**).
45. EGU General Assembly, Vienna (Austria): 7-12 April 2013
 E. Aruffo, **P. Di Carlo**, M. Busilacchio, F. Biancofiore, C. Dari Salisburgo, F. Giammaria, Stephene Bauguitte, James Lee, Sarah Moller, Ally Lewis, Mark Parrington, Paul Palmer, Airborne observations of total alkyl nitrates during BORTAS campaign: analysis of the impact of forest fire emission on the Ox budget. (**POSTER**).
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 Biancofiore F., **P. Di Carlo**, E. Aruffo, C. Dari-Salisburgo, M. Busilacchio, F. Giammaria, C. Reeves, S. Moller, J. Lee, M. Evans, D. Stone, R. L. Jones, B. Ouyang, Role of aerosol uptake in controlling the oxidation of isoprene through reaction with NO₃: model analyses of aircraft observations during RONOCO campaign. (**ORAL**).
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42. International Congress of Trufficulture, Teurel (Spain), 5-8 March 2013
 Pacioni G., Leonardi M., **Di Carlo P.**, De Laurentiis G., Monitoring the birth and development of thuffles in tuber melanosporum orchads. (**ORAL**).
41. AGU meeting, San Francisco (USA): 3-7 December 2012
 Morgan W.T., J. D. Allan, E. Aruffo, M. Le Breton, **Di Carlo P.**, O. J. Kennedy, D. Lowe, J. B. A. Muller, B. Ouyang, R. Jones, G. B. McFiggans, C. J. Percival and H. Coe, Influence of aerosol chemical composition on N₂O₅ uptake: Airborne regional measurements in North-Western Europe. (**POSTER**).
40. ISTP meeting, L'Aquila: 3-7 September 2012
By Carlo P., E. Aruffo, C. Dari Salisburgo, F. Biancofiore, M. Busilacchio, F. Giammaria, C. Reeves, G. Forster, S. Moller, J. Lee, S. Bauguitte, C. Parcival, M. Le Breton, J. Muller, B. Ouyang, O. Kennedy, R. Jones, Tropospheric ozone budget: nighttime observation during the RONOCO campaign on-board the BAe-146 aircraft. (**ORAL PDC**).
39. ISTP meeting, L'Aquila: 3-7 September 2012
 Biancofiore F., **Di Carlo P.**, E. Aruffo, C. Dari Salisburgo, M. Busilacchio, F. Giammaria, C. Reeves, G. Forster, S. Moller, J. Lee, S. Bauguitte, C. Parcival, M. Le Breton, J. Muller, B. Ouyang, O. Kennedy, R. Jones, NO₃ oxidation of isoprene: model analyses of aircraft observations during RONOCO campaign. (**POSTER**).
38. ISTP meeting, L'Aquila: 3-7 September 2012
 Aruffo E., **Di Carlo P.**, C. Dari Salisburgo, F. Biancofiore, F. Giammaria, S. Moller, J. Lee, S. Bauguitte, S. Vaughan, W. Morgan, R. Jones, G. Forster, C. Reeves, Aircraft Observations of NO_y above UK during RONOCO campaign: implication for ΣANS and ozone production. (**POSTER**).
37. ACCENT meeting, Urbino (Italy):13-16 September 2011

- By Carlo P.**, E. Aruffo, C. Dari Salisburgo, F. Biancofiore, F. Giammaria, S. Moller, J. Lee, S. Bauguitte, C. Parcival, M. Le Breton, J. Muller, J. Hopkins, B. Ouyang, O. Kennedy, R. Jones, G. Forster, C. Reeves, Aircraft total alkyl nitrates observations during RONOCO campaign: implication for the odd-oxygen budget. (**POSTER**).
36. ACCENT meeting, Urbino (Italy):13-16 September 2011
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Biancofiore F., **P. Di Carlo**, C. Dari Salisburgo, E. Aruffo, F. Giammaria, S. Moller, J. Lee, M. J. Evans, J. Hopkins, C. Jones, A. R. MacKenzie, C. N. Hewitt, Analysis of the total peroxy nitrates and total alkyl nitrates observed above a tropical rain forest. (**ORAL**).
34. EGU General Assembly, Vienna (Austria): 4-8 April 2011
By Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Biancofiore, M. Busilacchio, F. Giammaria, C. Reeves, S. Moller, J. Lee, Airborne Laser Induced Fluorescence system for simultaneous measurements of nitrogen dioxide and speciated NO_y. (**ORAL PDC**).
33. ESA-iLEAPS-EGU joint Conference ESA-ESRIN, Frascati, Italy, 3-5 November 2010
By Carlo P., C. Dari-Salzburg, E. Aruffo, F. Biancofiore, F. Giammaria, J. Lee, S. Moller, B. Langford, J. Dorsey, M. Evans, LIF Observations of NO₂, peroxy nitrate and alkyl nitrate concentration, and NO₂ flux, in the Borneo forest during OP3 campaign (**POSTER**)
32. EGU General Assembly, Vienna (Austria): 2-7 May 2010
Di Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Giammaria, J. Lee, S. Moller, and G. Mills, Observations of NO_x, peroxy nitrate and alkyl nitrate during OP3 campaign in the Borneo rain forest: diurnal cycles and the role in ozone production. (**POSTER**).
31. EGU General Assembly, Vienna (Austria): 2-7 May 2010
Hewitt N., J. Lee, A. R. MacKenzie, P. By Carlo, C. F. Di Marco, J. R. Dorsey, M. Evans, D. Fowler, M. W. Gallagher, J. R. Hopkins, C. E. Jones, B. Langford, A. C. Lewis, S. F. Lim, J. McQuaid, P. Misztal, S. J. Moller, P. S. Monks, E. Nemitz, D. E. Oram, S. M. Owen, G. J. Phillips, T. A. M. Pugh, J. A. Pyle, C. E. Reeves, J. Ryder, J. Siong, U. Skiba, and D. J. Stewart. , Nitrogen management is essential to prevent tropical oil palm plantations from causing ground-level ozone pollution. (**POSTER**).
30. EGU General Assembly, Vienna (Austria): 2-7 May 2010
Dari Salzburg C., **P. Di Carlo**, E. Aruffo, B. Langford, J. Dorsey, and F. Giammaria, NO₂ flux evaluation using laser induced fluorescence measurements and eddy covariance technique, in the Borneo forest during OP3 campaign. (**POSTER**).
29. AGU Fall Meeting at San Francisco, USA: 15-19 December 2008
Di Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Giammaria - *The Behavior of the Nitrogen Dioxide, Total Peroxy Nitrates, and Total Alkyl Nitrates in the Borneo Forest During 2008 OP3 campaign.* (**POSTER**).
28. Atmospheric Chemical Mechanism Meeting, Davis, USA: 10-12 December 2008
Di Carlo P., E. Aruffo, C. Dari-Salisburgo, F. Giammaria - *Observations of Nitrogen Dioxide, Total Peroxy Nitrates and Total Alkyl Nitrates in the Borneo Forest During 2008 OP3 campaign.* (**POSTER**).
27. OP3 science meeting at the University of Leeds, England: 27-28 November 2008
Di Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Giammaria - *Laser Induced Fluorescence observations of NO₂ ΣPNs (RO₂NO₂) and ΣANs (RONO₂) at Danum Valley.* (**ORAL PDC**).
26. NO_y Meeting at the University of Leeds: 27 November 2008
Di Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Giammaria - *Laser Induced Fluorescence system for NO₂ ΣPNs (RO₂NO₂) and ΣANs (RONO₂) measurements.* (**ORAL PDC**).
25. 1st Workshop on Science Technology Through Long Duration Ballons, Rome, June 3-4 2008

- By Carlo P.** and Visconti G., Climatic Change and Atmospheric Composition Research via balloons, (**ORAL PDC**).
24. IGAC 10th International Conference in Annecy, France: 7-12 September 2008
Di Carlo P., C. Dari-Salisburgo, E. Aruffo, F. Giammaria - *Laser Induced fluorescence instrument for tropospheric NO₂, Peroxy Nitrates, and Alkyl Nitrates measurements.* (**POSTER**).
23. Gordon Conference on Atmospheric Chemistry Big Sky, Montana, USA 4 – 9 September 2005
Piero Di Carlo, Cesare Dari-Salzburg, Alfonso D'Altorio, Guido Visconti, Long Path DOAS system for tropospheric radicals measurements. (**POSTER**).
22. The 29th International Cosmic Ray Conference July 31-August 7, Pune, India, 2005
 F. Arciprete_, M. Bohacova_, B. Buonomo_, R. Caruso, **P. Di Carlo**_, M. Doubrava, A. Esposito_, P. Facal, A. C. Fauth, C. Goletti_, M. Hrabovsky_, M. Iarlori_, B. Keilhauer, E. Kemp, H. O. Klages, M. Kleifges, S. Klepser_, G. Mazzitelli_, A. Morozov_, L. Nozka_, M. Palatka_, S. Petrera_, P. Privitera_, P. Proposito_, J. Ridky_, V. Rizi_, F. Salamida_, A. Salamon_, G. Salina_, P. Schovaneck_, A. Ulrich_, V. Vacek, V. Verzi_, T. Waldenmaier, AIRFLY: Measurement of the fluorescence yield in atmospheric gases. (**POSTER**).
21. EGU General Assembly, Vienna (Austria) 25-28 April 2005
Piero Di Carlo, Massimiliano Barone, Ermanno Pietropaolo, Alfonso D'Altorio, and Guido Visconti, High resolution spectrometer for atmospheric studies: Filling in observation of sky spectra absorption lines, (**POSTER**).
20. ACCENT workshop: "Free-radicals in the troposphere", Leeds (England) 13-15 April 2005
Piero Di Carlo, Cesare Dari-Salisburgo, Alfonso D'Altorio, and Guido Visconti, DOAS SYSTEM University of L'Aquila CETEMPS, (**POSTER**).
18. Gordon Conference on Atmospheric Chemistry Big Sky, Montana, USA 7 - 14 September 2003
 Greg J. Frost, M. Martinez, H. Harder, W. H. Brune, **P. Di Carlo**, E. J. Williams, D. Hereid, B. T. Jobson, W. C. Kuster, J. M. Roberts, M. Trainer, F. C. Fehsenfeld, S. Hall, R. Shetter, T. Karl, E. Apel, D. Riemer, A. Geyer, J. Stutz, K. Baumann, Model-Measurement Comparisons of [OH], [HO₂], and O₃ Production Rate at , Houston, during the 2000 Texas Air Quality Study La Porte Airport. (**POSTER**).
17. The 28th International Cosmic Ray Conference July 31-August 7, Tsukuba, Japan, 2003
 F. Archpriest, M. Bohacova, J. Bluemer, E. Bollmann, R. Caruso, **P. Di Carlo**, C. Escobar, A. Esposito, P. Facal, A. C. Fauth, C. Goletti, M. Hrabovsky, E. Kemp, H.O. Klages, M. Kleifges, S. Klepser, M. Iarlori, G. Matthiae, G. Mazzitelli, H. Nogima, M. Palatka, S. Petrera, P. Privitera, P. Proposito, J. Ridky, V. Rizi, G. Salina, L. Santos, P. Schovaneck, V. Vacek, P. Valente, V. Verzi, V. Vins, M. Vlcek, T. Waldenmaier, AIRFLY: air fluorescence induced by electrons in a Wide Energy Range. (**POSTER**).
16. AGU 2002 Fall Meeting San Francisco, CA, USA, 6-10 December 2002
 G J Frost, E Williams, D Hereid, B T Jobson, W Kuster, J Roberts, M Trainer, F C Fehsenfeld, M Martinez, H Harder, W Brune, **P Di Carlo**, S Hall, R Shetter, T Karl, E Apel, D Riemer, A Geyer, J Stutz, K Baumann, Model-Measurement Comparisons of [OH], [HO₂], and P(O₃) in Houston. (**ORAL**).
15. AGU 2002 Fall Meeting San Francisco, CA, USA, 6-10 December 2002
 M Martinez, H Harder, W Brune, **P Di Carlo**, E Williams, D Hereid, T Jobson, W Kuster, J Roberts, M Trainer, F Fehsenfeld, S Hall, R Shetter, E Apel, D Riemer, A Geyer, J Stutz, K Baumann, The Behavior of the Hydroxyl and Hydroperoxyl Radicals During TexAQS2000. (**POSTER**).
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P Di Carlo, M Martinez, H Harder, R Leshner, J Simpas, J Bassis, W Brune, The Behavior of the Hydroxyl and Hydroperoxyl Radicals During PROPHET2000. (**POSTER**).
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Fusero p., **Di Carlo p.**, Mantelli M., Massimiano L., Rinaldi T., Facing the complexity of climate change Urban planning Informazioni.

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By Carlo P., The phenomenon of thermal inversion and the repercussions on air quality
11. Accademia dei Lincei, Environment Day, Conference "Evolution and control of air quality on the Italian territory", Rome, 17 October 2014
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10. 14th ASITA National Conference, Brescia 9-12 November 2010
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8. Worldwide conference on virtual instrumentation NIdays, Assago (MI) 25 February 2009
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The undersigned Di Carlo Piero aware that false declarations involve the application of criminal sanctions provided for by art. 76 of Presidential Decree 445/2000, declares that the information and data contained in the curriculum vitae are true.

Pescara, 19/02/2026

Piero Di Carlo

