

# Federico Dallo

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## *Postdoctoral Research Fellow*

I'm a highly motivated and independent scholar that is able to reach his objective. I'm a ductile person and I do not fear facing new challenges: I'm open to explore research fields that are distant from my background and I'm able to adapt my methodological approach when necessary. I never stop learning. This is how I obtained some significant professional and personal achievements: being able to start my independent research path attracting independent research funds and being considered a valuable resource in the research groups I've been collaborating. When working in team and when mentoring students I always do my best to help everyone expressing their potential: supporting diversity and inclusivity to create the best possible environment, necessary to achieve highest goals.

### Education

- 2021-current **Postdoctoral Scholar**, *University of California, Berkeley & Ca' Foscari University*. Marie Skłodowska-Curie Fellow looking for the development of low-cost sensors technologies and applications for Atmospheric and Climate Sciences. Core staff scientist at the Center for the Built Environment (CBE) collaborating on multiple industry-funded research project looking at improving Indoor Air Quality. Supervisor: [Carlo Barbante](#) & [Stefano Schiavon](#)
- 2017-2020 **Postdoctoral Scholar**, *Institute of Polar Science - CNR, Italy*. Development of hardware and software technologies for the environmental monitoring of remote alpine and polar areas. Supervisor: [Carlo Barbante](#)
- 2017 **PhD - Cum Laude**, *Ca'Foscari University of Venice, Italy*. Developing of a quantitative analytical method for the analysis of the diffusion of VOCs in the snowpack. Supervisor: [Carlo Barbante](#)
- 2013 **MSc**, *Dept. of Chemistry, University of Ferrara, Italy, 110/110&L*. Study of the electronic properties of homologous series of linear polyenes. Supervisor: [Prof. Celestino Angeli](#)
- 2011 **BSc**, *Dept. of Chemistry, University of Ferrara, Italy, 110/110&L*.

### Funding

- 2022-2026 **HORIZON-CL6-2022-GOVERNANCE-01-07**, *Horizon Europe. Proposal nr. 101086541*, Acronym: MISO, Funding amount: EUR 3.5M (USD 3.5M), 42-month. Development of new technology for acquiring in-situ observation datasets in remote polar areas to improve the assessment of  $CO_2$  and  $CH_4$  emissions sources
- 2020-2024 **Marie Skłodowska-Curie Actions**, *Horizon Europe. Proposal nr. 844526*, Acronym: [PIONEER](#), Funding amount: EUR 251K (USD 250k), 36-month. Postdoctoral Fellowship: establish an LCS wireless sensor network to assess the effectiveness of low-cost technologies in the study of transboundary transport of tropospheric ozone

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- 2021 **CITRIS and the Banatao Institute Seed Awards**, *UC Berkeley Grand Challenge Theme: Digital Health Innovation*, Project Title: Clearing the air, Funding amount: USD 50K, 12-month.  
Using smart thermostats to develop an automated solution that utilizes existing technologies to coordinate residential HVAC systems to minimize occupant exposure to  $PM_{2.5}$  during wildfires in California
- 2018 **Arctic Field Grant**, *The Research Council of Norway (RCN)*. Grant nr. 282613, Acronym: O3NET, Funding amount: NOK 68K (USD 8K).  
Assess the reliability of low-cost sensors for the determination of near-surface ozone mixing ratio in remote areas

## Teaching, Mentoring & Professional

- 2017-current **Technical Officer / Lab Manager**, *Institute of Polar Science - CNR*, Italy.  
Responsible for IT and sensory systems management of the Regional Station GAW-WMO 0-380-0-MRG. Col Margherita High Altitude Observatory
- 2022 **Lecturer in R Software**, *University of California, Berkeley*, Center of Environmental Design Research.  
Teaching and student mentorship at both PhD and postgraduate students enrolled in Building Science programs. ARCH 249 Module 3
- 2022 **Undergraduate Research Apprentice Program**, *University of California, Berkeley*, Center for the Build Environment.  
Supervision of three undergraduate students: Angela Kou, Aayushi Jain and Anusha Kansal; in a research-education project, promoting diversity and inclusion of Women in Science. The project, in which we developed a low-cost sensing system for indoor monitoring of  $PM_{2.5}$ , was financially supported by the CITRIS Clearing the air project. git/clearing-the-air
- 2021 **Undergraduate Research Apprentice Program**, *University of California, Berkeley*, Center for the Build Environment.  
Supervision of six undergraduate students: Janek de Silva, Pranav Kalra, Divya Malle-madugala, Jerry Zhang and Naichen Zhao; in a research-education project. Goal of the project was design a low-cost Personal Comfort System with IoT features (e.g. wireless connectivity, bluetooth interface) to be installed as add-on in Staples Hyken Mesh Chair to increase user thermal comfort and safe building energy. git/pcs-chair
- 2021 **Research-training "Alternanza Scuola-Lavoro" program**, *Institute of Polar Science - CNR & ITIS Max Plank*, Italy.  
The project started in January 2020 and continued throughout the Covid-19 pandemic, thanks to the great motivation of the students and techers, and was completed during the spring 2021. Goal of the project was to develop a low-cost wireless platform equipped with a LoRa technology to enable communication of measures from areas without network coverages. git/MRGLoRaNetwork
- 2017-current **Member of Scientific Board**, *Officina Scientific Journal*.  
OFFICINA is a magazine of Architecture, Technology and Environment born in 2014 in digital format (ISSN 2384-9029) and registered at the court of Treviso under the number n. 245/2017 as a print publication in 2017 (ISSN 2532-1218). OFFICINA is a Scientific Journal included in the ANVUR lists for Area 08 starting from issue 16 of 2017. As member of the scientific committee I volunteer in the peer-review evaluation of the quality of the content published in the journal

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- 2017 **Founder of the Venice Climate Lab, Italian Cultural Association.**  
The Venice Climate Lab (VCL) is a group of experts in climate change who recognizes art and creativity as powerful connectors between people and science. We organize and promote events at the intersection of art and climate science to build opportunities to communicate the consequences of climate change on society, economy and the environment
- 2015-2016 **Member of the “Committee on self-managed activities by students”, Ca’Foscari University, Venice.**  
The committee is formed by Professors and students of Ca’ Foscari and has the role of promote and financing student’s projects and provides a total amount of about 40 000 euros per year.
- 2015-2016 **Academic Tutor in Statistics, Dept. Environmental Sciences, Informatics and Statistics, Ca’Foscari University.**  
Class for solving exercises in descriptive statistics, probability, inference in support of the course in statistics of the bachelor degree in Environmental Sciences. The course includes programming with R. Supervisor: Prof. Carlo Gaetan
- 2014-2016 **Academic Tutor in Physics, Dept. Molecular Sciences and Nanosystems, Ca’Foscari University.**  
Class for solving exercises in electromagnetism and waves in support of the course in physics of the bachelor degree in Chemistry. Supervisor: Prof. Battaglin Giancarlo
- 2015 **Academic Tutor in Earth’s Climate: Past, Present and Future, Ca’Foscari - Harvard Summer School, Venice.**  
This course deals with past present and future climate changes as evinced from the most recent studies on palaeoclimate archives, such as marine sediments and ice cores. Supervisor: Carlo Barbante
- 2014 **National Habilitation in Chemistry, Italy.**  
Qualification for professional practice as a chemist

## Publications

**Dallo, Federico**, Daniele Zannoni, Jacopo Gabrieli, Paolo Cristofanelli, Francescopiero Calzolari, Fabrizio de Blasi, Andrea Spolaor, Dario Battistel, Rachele Lodi, Warren Raymond Lee Cairns, et al. Calibration and assessment of electrochemical low-cost sensors in remote alpine harsh environments. *Atmospheric Measurement Techniques*, 14(9):6005–6021, 2021.

Luca Naitza, Paolo Cristofanelli, Angela Marinoni, Francescopiero Calzolari, Fabrizio Roccato, Maurizio Busetto, Damiano Sferlazzo, Eleonora Aruffo, Piero Di Carlo, Mariantonia Bencardino, **Dallo, Federico**, et al. Increasing the maturity of measurements of essential climate variables (ecvs) at italian atmospheric wmo/gaw observatories by implementing automated data elaboration chains. *Computers & Geosciences*, 137:104432, 2020.

Elena Barbaro, Elisa Morabito, Elena Gregoris, Matteo Feltracco, Jacopo Gabrieli, Massimiliano Vardè, Warren RL Cairns, **Dallo, Federico**, Fabrizio De Blasi, Roberta Zangrando, et al. Col margherita observatory: A background site in the eastern italian alps for investigating the chemical composition of atmospheric aerosols. *Atmospheric Environment*, 221:117071, 2020.

Andrea Spolaor, Elena Barbaro, David Cappelletti, Clara Turetta, Mauro Maz-

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zola, Fabio Giardi, Mats P Björkman, Federico Lucchetta, **Dallo, Federico**, Katrine Aspö, Pfaffhuber, et al. Diurnal cycle of iodine, bromine, and mercury concentrations in svalbard surface snow. *Atmospheric Chemistry and Physics*, 19(20):13325–13339, 2019.

**Dallo, Federico**, Dario Battistel, Rossano Piazza, Jacopo Gabrieli, Jean-Jacques Filippi, Nicolas Baldovini, and Carlo Barbante. Direct immersion solid-phase microextraction with gas chromatography and mass spectrometry for the determination of specific biomarkers of human sweat in melted snow. *Journal of separation science*, 39(7):1300–1309, 2016.

Celestino Angeli, Renzo Cimiraglia, **Dallo, Federico**, Riccardo Guareschi, and Lorenzo Tenti. Dependence of the population on the temperature in the boltzmann distribution: a simple relation involving the average energy. *Journal of chemical education*, 90(12):1639–1644, 2013.

2019 **Anteferma Editore, ISBN 9788832050059, Monograph.**

**Dallo Federico.** "Ritorno nella notte artica"

2016 **Incipit Editore, ISBN 9788885446038, Monograph.**

**Dallo Federico.** "Nella notte artica"

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## Scientific Expeditions

2017-  
Jan/Feb **Scientific survey at Ny-Alesund (Svalbard), IDPA-CNR, Ny-Alesund, Scientific research mission.**

Project ASIHAD (<http://www.researchinsvalbard.no/project/7062>) for the study of post depositional processes on the surface of the winter snow in order to evaluate the accumulation and release to the atmosphere of pollutants in the absence of light conditions. For the monitoring of air/aerosol particulate in winter conditions of absence or minimum production of compounds derived from primary oceanic production. For the evaluation of the chemical composition of the winter snow cover at high altitude, at medium altitude and close to Ny-Alesund.

2016-Aug **Scientific survey at Mont Blanc, CNR-IDPA, Chamonix.**

We have extracted ice cores from the "Col du Dome" (4304 m) glacier as part of the "Ice Memory project" in Chamonix, near the Mont-Blanc peak in eastern France. The goal, born out of the threat of global warming, is to build the world's first library of glacier ice that will be preserved in Antarctica. (<https://www.theguardian.com/science/2016/sep/04/protecting-data-stored-in-ice-mont-blanc-terrawatch>)

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## Organization of Event & Conference

2022-Oct-20 **University of California, Berkeley, Oral contribution, Center for the Built Environment.**

Presenting the results of the Clearing the air project at the annual meeting of the industrial research partners

2022-Jul-21 **2022 WebValley FBK summer school, Oral contribution, Italy.**

Invited speaker at the Fondazione Bruno Kessler summer school for dissemination of interdisciplinary research.

2021-Dec **American Geoscience Union, Poster Session, New Orleans (US).**

Presentation of the analytical performances of the original open-source low-cost sensor (LCS) system developed to measure tropospheric  $O_3$  in remote alpine environment

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- 2021-Apr-9 **Venice Climate Lab**, *Streaming: Terre Altre*.  
Final event of the school-work alternation project for the dissemination of technical skills for monitoring the territory, to increase technological interest in the service of the environment. During the event some of the students involved in the project were presenting their experiences
- 2017-Oct-21 **University Ca' Foscari**, *Organizing Committee*, Venice-Mestre, Italy, GUIT meeting 2017.  
XIV L<sup>A</sup>T<sub>E</sub>X meeting of the italian T<sub>E</sub>X User Group.  
<https://www.guitex.org/home/en/meeting>.
- 2017-Sep-11 **Antarctic Research (PAIS)**, *Organizing Committee*, Trieste, Italy, APECS-Italy Space.  
Science Communication & Social Media.  
<http://www.apecsitaly.it/social-media-and-science-communication/>
- 2017-Jun-14 **University Ca' Foscari**, *Speaker*, Goldoni Theatre - Venice, PhD Graduation Ceremony.  
<https://www.linkedin.com/in/federico-dallo-b351a582/>
- 2017-Sep-09 **WIRED**, *Interview*.  
It's too late to save the glaciers, but scientist are saving some pieces in an Antarctic vault  
<https://www.wired.com/2016/09/late-save-glaciers-scientists-saving-pieces-antarctic-vault/>

## Computer skills \*/\*\*\*

- Operating systems GNU-Linux\*\*\*, OSX\*\*\*, Windows\*\*
- Program Languages R\*\*\* (including Sweave and Shiny), LabView\*\*\*, Python\*\*, Java\*\*, Bash\*\*, C\*\*, FORTRAN\*\*
- GIS Softwares QGIS\*\*
- Graphical Software Gimp\*\*\*, PremierePro\*\*\*, Blender\*
- CAD Softwares KiCad\*\*
- Other softwares Latex\*\*\*, Vim\*\*\*, Arduino & Processing IDE\*\*\*

## Languages

- Italian Mother tongue
- English C1
- Spanish B1
- French A2