



PROFILE

I hold a B.Sc. in Physics from the University of Crete and have been working on the study of carbon dioxide fluxes in an urban environment at the Remote Sensing Lab, Foundation for Research and Technology (FORTH). Currently, I am continuing this line of research with as a MSc. Student at Wageningen University & Research (WUR) in Earth and Environment Studies. My goal is to integrate ground-based and remote sensing data to better understand and monitor GHG and pollutants, enabling insights that support climate and air quality solutions across scales.

CONTACT

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LANGUAGE SKILLS

Mother tongue: Greek

Foreign Languages:

Excellent knowledge of English
(Proficiency Michigan 2018)

Adequate knowledge of French (B1
Delf 2011)

IELTS (01/2025)

KONSTANTINOS POLITAKOS

Physicist, Department of Physics, University of Crete

Member of Remote Sensing Lab, FORTH, Greece

Manager of ICOS Associated flux towers GR-HeK & GR-HeM

MSc. Student Earth and Environment, spec: Meteorology and Air Quality

EDUCATION

B.Sc. in Physics, University of Crete

[09/2014 – 03/2021]

Final Grade: 6.94

Total ECTS credits: 300 ECTS

Bachelor's Thesis

Study of Carbon Dioxide Fluxes from the city of Heraklion on a local scale for a two years' period.

Department of Physics, University of Crete

[09/2018 – 10/2019]

Final Grade: 10.0

MSc. in Earth and Environment, Wageningen University & Research

Specialisation: Meteorology and Air Quality

[09/2025 – Present]

SEMINARS & TRAININGS

NO₂ pollution monitoring with Sentinel-5P data using Python & the Atmospheric toolbox (Rus-training / Rus-Copernicus)

[27/11/2020]

- Code Development for Python's algorithms using data derived from Sentinel-5p.
- Creation of satellite images for the detection of Nitrogen Dioxide above Crete

TRANS-ATLANTIC TRAINING (TAT-8) (NASA Land-Cover/Land-Use Change Program, ESA, SCERIN)

[01/06/2024-04/06/2024]

- Cloud-based methods for change detection: SAR & Optical data processing

Applications of Copernicus satellites (E MADRID04)

[28/06/2021-09/07/2021]

- Sentinel 1 SAR data to perform a coherence-based urban mapping, using Copernicus data, ESA's SNAP software package and python scripts

ECTS credits: 3 ECTS

DIGITAL SKILLS

Software: Flux Footprint Models / Origin / QGIS / Linux / Git

Programming Languages: MATLAB / C++ / Python for S5p products analysis / Code development for Raspberry pi / Python for Machine Learning

Out-of-Lab

Drama Performances, Board Games & Coffeeeee

PROFESSIONAL EXPERIENCE

Internship: Terra Solutions

[04/2019 – 06/2019]

Place: Heraklion, Crete, Greece

Subject:

- Study of Carbon Dioxide Fluxes from the city of Heraklion on a local scale.

Internship (Erasmus +):

University of Freiburg, Department of environmental meteorology

[01/02/2020 – 30/04/2020]

Place: Freiburg, Germany

Subject:

- Code development for the use of meteorological sensors applied on the Raspberry Pi ([project MobiMet](#))
- Code development for a prototype of a user interface on the Raspberry Pi ([project MeteoBike](#)).
- Creation of Github's inventories-repositories as documentation databases for the usage of plenty of meteorological sensors.
- Carbon dioxide fluxes' data analysis, using innovative filtering based on the Eddy Covariance method, in collaboration with the University of Basel, Switzerland.
- Code development for gap-filling methods on meteorological data based on the Eddy Covariance method (mLUT method), in collaboration with the University of Basel, Switzerland.

Undergraduate Research Fellow: Foundation for Research and Technology - Hellas (FORTH), Remote Sensing Lab ([rslab.gr](#))

[01/06/2020 – 30/02/2021]

Heraklion, Crete Greece

- Tactical maintenance of both of our flux towers (Eddy Covariance) in coordination with RSLab's technicians
- Installation of RSLab's newest flux tower.
- Analysis Eddy Covariance measurements
- Contributions to International Research Conferences and Research Projects

Research Assistant: Foundation for Research and Technology - Hellas (FORTH), Remote Sensing Lab ([rslab.gr](#))

[01/02/2021 – Present]

Additional tasks:

- Contribution to CoCO2 HORIZON project,
 - Analysis of Eddy Covariance measurements and coupling with global models (ECMWF), understanding on urban anthropogenic Carbon Dioxide fluxes.
- ICOS Associated Flux Towers' Manager
 - Supervision on both urban flux towers of RSLab (pre/post labelling)

RESEARCH PROJECTS

FORTH - Municipality of Heraklion, Crete

[06/2020 – 07/2022]

Monitoring of carbon dioxide (CO₂) emissions from the city center of Heraklion, Crete (3582/10)

Subject:

- Analysis of CO₂ emissions at different time and spatial scales and preparation of the technical report.
- Systematic analysis of the 30-minute step data, to obtain daily broadcast patterns for the center of Heraklion.
- Calculation of monthly and annual emissions.
- Evaluation study for the contribution of the center's renovation actions and traffic regulations to the reduction of CO₂ emissions.

CoCO₂ - Prototype system for a Copernicus CO₂ emission monitoring service

The CoCO₂ project will contribute to the development of the European CO₂MVS capacity. CoCO₂ will deliver the prototype systems at the required spatial scales that will form part of the overall implementation in the Copernicus program.

<https://www.coco2-project.eu/>

[01/05/2021 – 31/10/2023]

Work Packages:

- WP3 Global Modelling and data assimilation
- WP7 Observations

This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement No. 958927

Deliverables contributed as co-author:

- [D7.10 New measurement and modelling methodologies for high resolution monitoring of urban anthropogenic and biogenic CO₂ fluxes](#)
- [D3.2 Recommendations on anthropogenic CO₂ emission modelling, evaluation, and optimization](#)
- [D7.7 Requirements for data streams from additional tracers and new instrumentation](#)

CLMS-Cities - Copernicus responding to EU Cities Mission

CLMS-Cities contributes to European strategic autonomy in developing global space-based infrastructures, services applications and data, fostering the EU's space sector competitiveness in Earth Observation. CLMS-Cities has received funding from the HORIZON Research and Innovation Actions under grant agreement No 101188032.

- Data Management Plan (April 2025)

SUMMER SCHOOLS

8th ICOS Summer School: "Challenges in measurements of greenhouse gases and their interpretation. Hyytiälä forestry field station in Finland. 5th to 15th May 2025.

INVITED SPEECHES

WEkEO 4 Atmosphere Monitoring

[Evaluation of Modeled Heating CO₂ Emissions \(MEHNDI - ECMWF\) Using an Urban ICOS Eddy Covariance Flux Tower in the CoCO₂ Project.](#)

INTERNATIONAL AND EUROPEAN CONFERENCES

[Dynamic changes in urban form and function affect Carbon Dioxide Fluxes in a Mediterranean city.](#)

Polidakos, K., Stagakis, S., Roth, M. and Chrysoulakis, N., Rotterdam & online | 7–11 July 2025 (oral presentation)

[Analysis of urban CO₂ and heat fluxes and evaluation of the SUEWS model using eddy covariance observations from two towers in Heraklion, Greece.](#)

Polidakos, K., Panagiotakis, M., Tsirantonakis D., Stagakis, S., Spyridakis N., Feigenwinter, C., Roth, M. and Chrysoulakis, N., 2024. Urban Greenhouse Gas Conference and Stakeholder Summit 2025, held in Geneva, Switzerland (Poster)

[Analysis of urban CO₂ and heat fluxes and evaluation of the SUEWS model using eddy covariance observations from two towers in Heraklion, Greece.](#)

Polidakos, K., Panagiotakis, M., Tsirantonakis D., Stagakis, S., Spyridakis N., Feigenwinter, C., Roth, M. and Chrysoulakis, N., 2024. ICOS Science Conference 2024, held in Versailles, France (Poster)

[Comparison of urban eddy covariance carbon dioxide and heat fluxes measured at two flux towers in a Mediterranean city.](#)

Polidakos, K., Stagakis, S., Feigenwinter, C., Roth, M. and Chrysoulakis, N., 2023. ICUC11 - 11th International Conference on Urban Climate, organized by University of New South Wales in Sydney, August 28 - September 1

[Dynamic changes in urban form and function affect Carbon Dioxide Fluxes in a Mediterranean city](#)

Polidakos, K., Stagakis, S., Feigenwinter, C., Roth, M. and Chrysoulakis, N., 2023. Joint Urban Remote Sensing Event JURSE 2023, held in Heraklion, Greece, May 17 – 19

[Tracking Changes in CO₂ Urban Emissions at Neighbourhoods Scale During the COVID-19 Waves Series and Beyond.](#)

Nicolini, G., Christen, A., Ciais, P., Feigenwinter, C., Gioli, B., Helfter, C., Matthews, B., Meier, F., Stagakis, S., Steeneveld, G.-J., Velasco, E., Vogt, R., Ward, H. C., Antoniella, G., Barlow, J. F., Carotenuto, F., Chrysoulakis, N., Duce, P., Graus, M., Heusinkveld, B. G., Järvi, L., Jasek-Kaminska, A., Karl, T., Marras, S., Masson, V., Nemitz, E., Politakos, K., Sabbatini, S., Scherer, D., Schume, H., Sirca, C., Vagnoli, C., Wang, Y., Zaldei, A., Zheng, B., Zimnoch, M. Papale, D., 2022. Abstract GC32B-03; Session: Global Environmental Change - Advances in Urban Climate and Biogeochemistry. American Geophysical Union (AGU) Fall Meeting 2022, Chicago, 12 - 16 December.

[Five years of urban eddy covariance CO₂ emissions correlated with dynamic shifts in urban structure and traffic regulations in the city center of Heraklion, Greece](#)

Polidakos, K., Stagakis, S., Kogxylakis, G., Feigenwinter, C., Roth, M. and Chrysoulakis, N., 2022., 14 September 2022, ICOS Science Conference 2022, Utrecht (oral, presentation)

[Carbon dioxide emissions variability monitoring, based on four years of Eddy Covariance measurements in a typical Mediterranean city](#)

Polidakos, K., Stagakis, S. and Chrysoulakis, N., 2021, 17 April 2021, EGU General Assembly 2021 (vpico, oral presentation), Geophysical Research Abstracts Vol. 22, EGU2021-7723

[Inter-annual variability of Eddy Covariance CO₂ flux measurements in the city center of Heraklion, Greece](#)

Polidakos, K., Stagakis, S. and Chrysoulakis, N., 2020, 14 September 2020, ICOS Science Conference 2020 (oral presentation)

[Interconnections between urban form and CO₂ emissions assessed by Eddy Covariance and remote sensing: the case study of Heraklion, Greece.](#)

Stagakis, S., Politakos, K. and Chrysoulakis, N., 2019. March 2019, Seventh International Conference on Remote Sensing and Geoinformation of the Environment, held in Paphos, Cyprus, March 18 - 21.

PUBLICATIONS IN CONFERENCE PROCEEDINGS

[A web-based tool for supporting USM in Heraklion.](#)

Panagiotakis, E., Kochilakis, G., Tsirantonakis, D., Poursanidis, D., Politakos, K. and Chrysoulakis, N., 2023. In Proceeding of Joint Urban Remote Sensing Event JURSE 2023, held in Heraklion, Greece, May 17 - 19. IEEE Xplore doi: 10.1109/JURSE57346.2023.10144144.

PUBLICATIONS IN WORKSHOPS

[Use of hyperspectral measurements for Sentinel-2 image classification for the regions of Berlin and Heraklion](#)

Lantzanakis, G., Pynirtzi, N., Panagiotakis, E., Politakos, K., Poursanidis, D. and Chrysoulakis, N., 2022. In Abstracts of the 2nd Workshop on International Cooperation in Spaceborne Imaging Spectroscopy, organized by the European Space Agency (ESA) in Frascati, Italy, October 19 - 21.

[Development of a Multitemporal Urban Spectral Library for a Typical Mediterranean City.](#)

Panagiotakis, E., Tsirantonakis, D., Lantzanakis, G., Politakos, K., Spyridakis, N., Poursanidis, D. and Chrysoulakis, N., 2022. In Abstracts of the 2nd Workshop on International Cooperation in Spaceborne Imaging Spectroscopy, organized by the European Space Agency (ESA) in Frascati, Italy, October 19 - 21.

[Development of a multitemporal urban spectral library for a typical Mediterranean city.](#)

Tsirantonakis, D., Lantzanakis, G., Panagiotakis, E., Politakos, K., Spyridakis, N., Poursanidis, D. and Chrysoulakis, N., 2022. In Book of Abstracts of the 12th EARSeL Workshop on Imaging Spectroscopy (EARSeL Special Session 8: Unlocking the potential of generic spectral libraries for remote sensing applications) held in Potsdam, Germany, June 22 - 24.

CONTRIBUTIONS

[Autonomous, integrated path differential absorption laser device for remote sensing of atmospheric CO₂, CH₄ and H₂O greenhouse gases](#)

Panagiotis Siozos, Giannis Psyllakis, Peter C. Samartzis, Michalis Velegrakis

[Urban water storage capacity inferred from observed evapotranspiration recession](#)

H.J. Jongen, G-J. Steeneveld, J. Beringer, A. Christen, K. Fortuniak, J.Hong, J-W. Hong, C.M.J. Jacobs, L. Järvi, F. Meier, W. Pawlak, M.Roth, N.E. Theeuwes, E. Velasco, and A.J. Teuling

[A Low-Cost Sensor Network for Real-Time Thermal Stress Monitoring and Communication in Occupational Contexts](#)

Markus Sulzer , Andreas Christen and Andreas Matzarakis