PROFILE

I have 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 for the last four years in the Remote Sensing Lab, in Foundation for Research and Technology (FORTH). My goal is to create bridges between the *in-situ* local scale carbon dioxide fluxes and satellite imagery.

CONTACT

Mobile phone:
+306972736732

Tel:
+302810391807

EMAIL:
politakos@iacm.forth.gr

KONSTANTINOS POLITAKOS

Graduate student, Department of Physics, University of Crete
Member of Remote Sensing Lab, FORTH, Greece

EDUCATION

B.Sc. in Physics, DEPARTMENT OF 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
ECTS credits: 12 ECTS

SEMINARS

NO_2 pollution monitoring with Sentinel-5P data using Python & the Atmospheric toolbox (Rus-training / Rus-Copernicus)
[27/11/2020]
Subject:

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

DIGITAL SKILLS

Software: Microsoft office (Word Excel PowerPoint Outlook)/ Flux Footprint Models / Origin / QGIS / Open Office / Linux / Git
Programming Languages MATLAB / C++ / Python for S5p products analysis / Code development for Raspberry pi / Python for Machine Learning

Computational courses
Introduction to data science and machine learning I /
Introduction to data science and machine learning II /
Advanced Physics laboratories I /
Principles and Applications of Satellite Remote Sensing /
Introduction to C and C ++ programming languages
Uses of Computer 0 / FORTRAN / Computational Physics I / Numerical Analysis

LANGUAGE SKILLS

Mother tongue: Greek
Foreign Languages:

- Excellent knowledge of English (Proficiency Michigan 2018)
- Adequate knowledge of French (B1 Delf 2011)

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 – 30/04/2021]
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.

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 CO_2 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 – Present]
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

INTERNATIONAL AND EUROPEAN CONFERENCES

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
Konstantinos Politakos, Stavros Stagakis, Giorgos Kogxylakis, Christian Feigenwinter, Matthias Roth, Nektarios Chrysoulakis, 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
Konstantinos Politakos, Stavros Stagakis, Nektarios Chrysoulakis, 17 April 2021, EGU General Assembly 2021 (vpico, oral presentation)
Inter-annual variability of Eddy Covariance CO_2 flux measurements in the city center of Heraklion, Greece
Konstantinos Politakos, Stavros Stagakis, Nektarios Chrysoulakis, 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.
Stavros Stagakis, Nektarios Chrysoulakis, Konstantinos Politakos, March 2019, Seventh International Conference on Remote Sensing and Geoinformation of the Environment

CONTRIBUTIONS

Autonomous, integrated path differential absorption laser device for remote sensing of atmospheric CO_2, CH_4 and H_2O greenhouse gases
Panagiotis Siozos, Giannis Psyllakis, Peter C. Samartzis, Michalis Velegrakis

Urban water storage capacity inferred from observed1evapotranspiration 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