

GEO WEEK & MINISTERIAL SUMMIT 2023

Showcase session

#TheEarthTalks



Showcase session

National and EU initiatives' contribution for addressing human and environmental Health and Disaster Crisis

6 NOV / 1100h GMT/ UTC



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Evangelos Gerasopoulos



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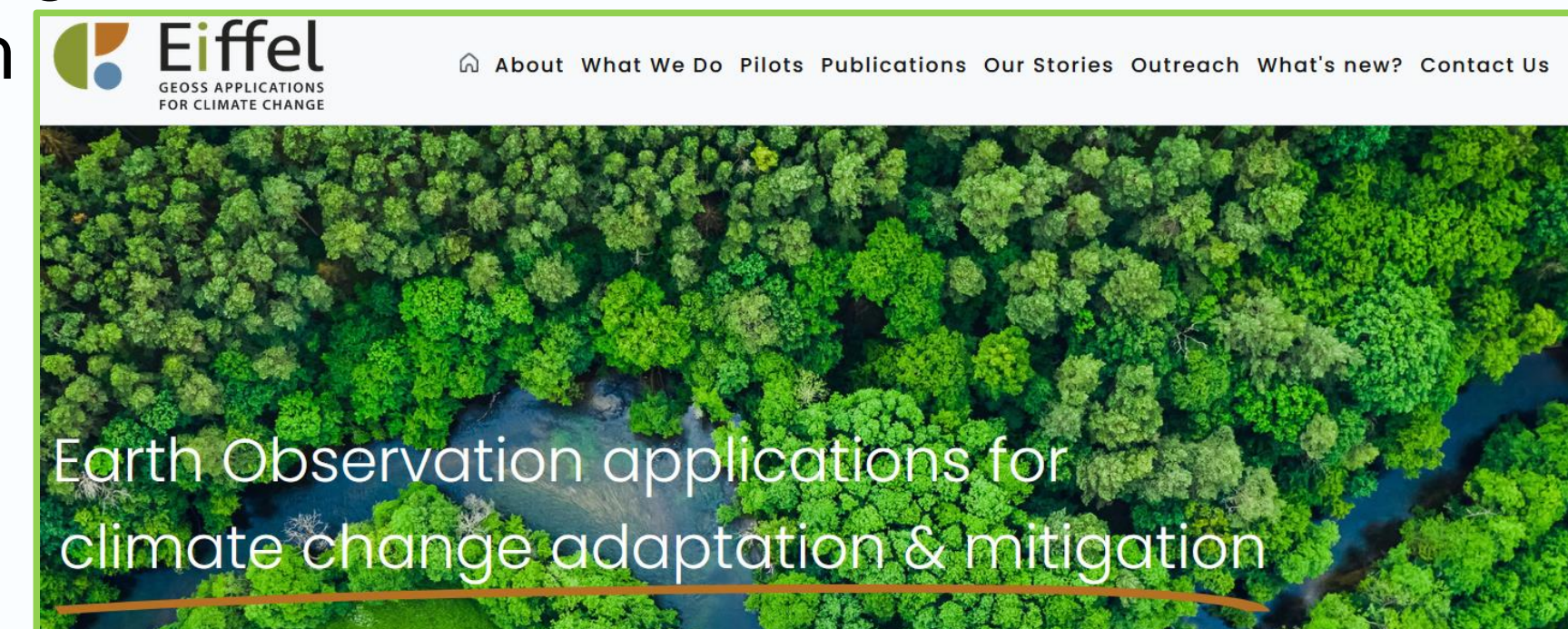
Giovanni Rum



Alexia Tsouni

Eleni Athanasopoulou

She is a research fellow at the National Observatory of Athens (Greece). Her expertise is atmospheric numerical modeling with focus on air quality. She is a core member of the Urban Resilience and Sustainable Urbanization Group of the Greek Geo Office. She had a research and coordinating role in SMURBS/ERA-PLANET, e-shape and several other EO-based EU funded projects, one of which



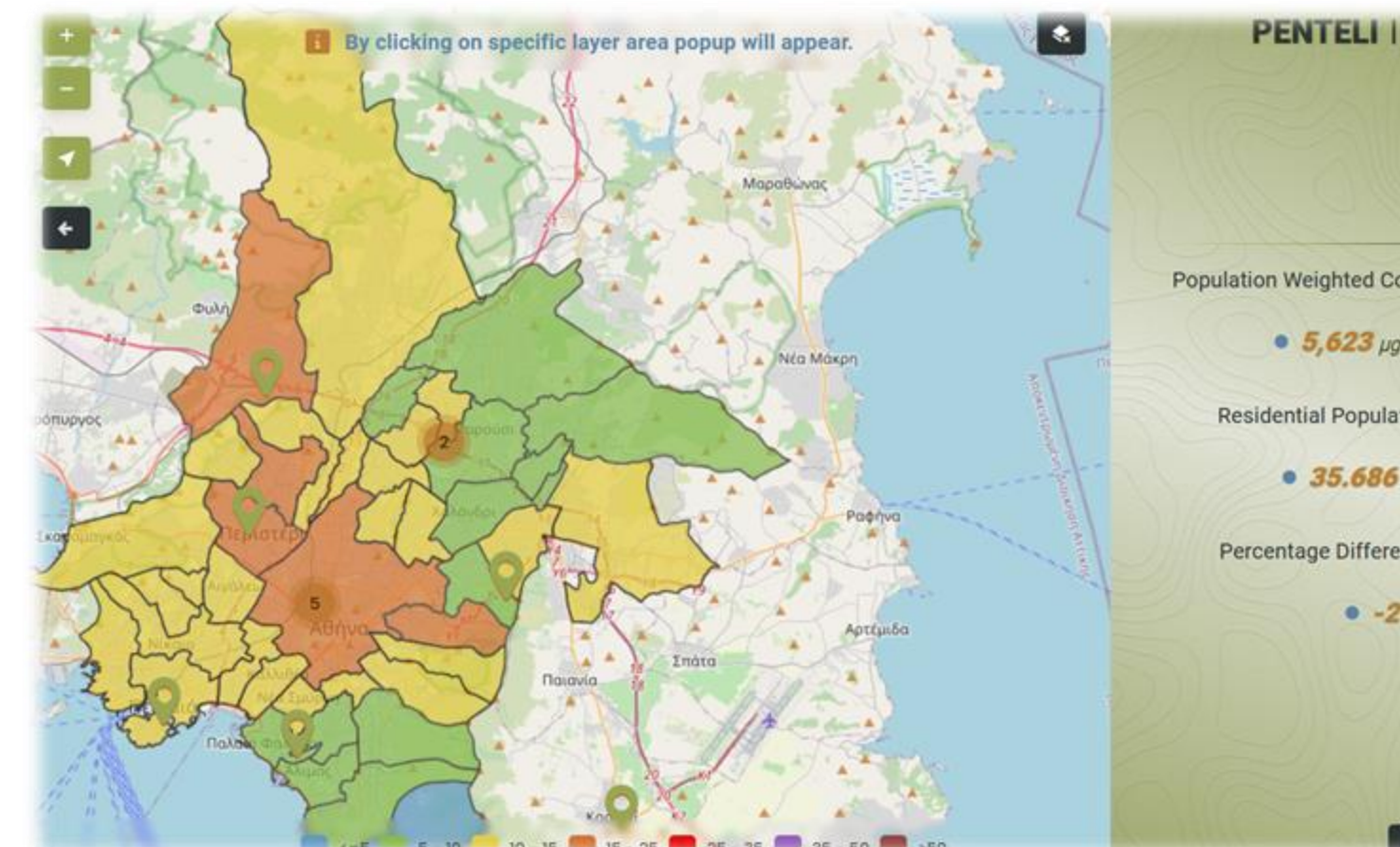
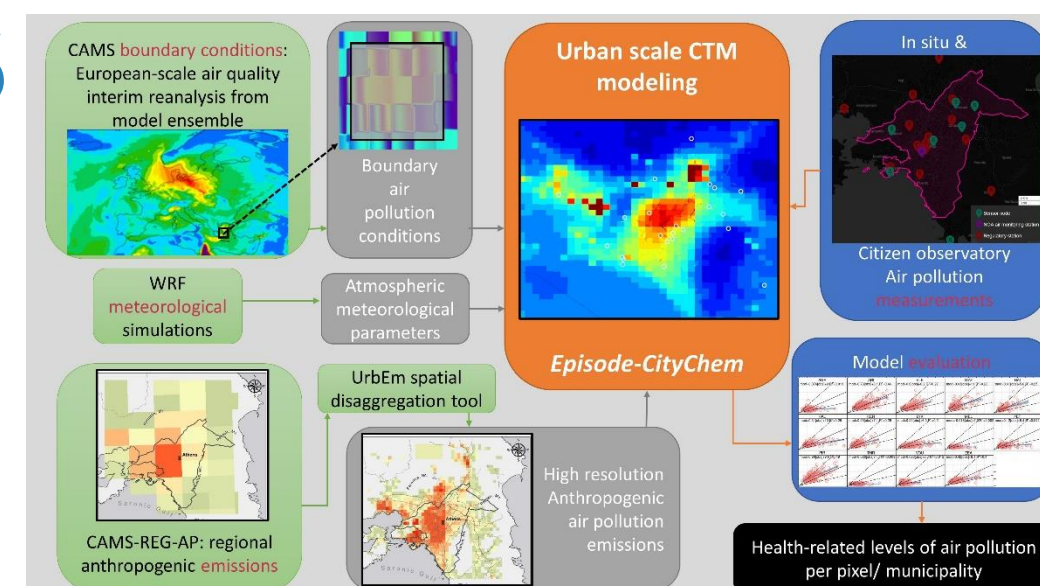
Health co-benefits from mitigating climate change in cities

E. Athanasopoulou with contributions from D. Karagiannis, P. Koutsantoni, N. Roukounakis, S. Tsalageorgos and O. Speyer

Health co-benefits from mitigating climate change in cities



Requirement	Eiffel ATTICA-FR-5
Title	Quantification of GHG mitigation measures' impacts on AQ and exposure
Description	AQ concentration fields, population exposure are visualized on the map as well as their difference to the baseline
Category	Priority
Functional	M
Status: Buildings	The quantification of the 1 st GHG mitigation scenario is performed, i.e. the co-benefit of buildings electrification (100%) for air quality has been quantified
PV potential:	Ongoing
COPERT:	Ongoing
Justification:	Regarding Buildings, discussions could take place in the next period to investigate what is possible to be done within the framework of EIFFEL AQ. Mean monthly model outputs for AQ



1. Athens Pilot: Sustainable Urban Development

Urban GHG mitigation scenarios for building energy efficiency, photovoltaic penetration & adoption of e-mobility

2. Climate App CoP Requirements for urban air quality

Quantification of measures' impacts on AQ & exposure
Comparison between municipalities
Assessment of compliance with AQ limits
Identification of hot-spots necessitating action

3. EO-based atmospheric numerical modeling system

Inputs heavily supported by Copernicus/GEOSS data
Supportive measurement data from 24 in situ stations
High-resolution (100m) urban mapping of health-related pollutants (PM_{2.5}, NO₂, O₃)

4. DSA for urban CC mitigation measures



PM_{2.5}: The positive impact of the electrification of buildings is pronounced in the suburban residential area (15-20% decrease). The combination of scenarios/sectors extend this impact within the urban core (high vehicle emission).

NO₂: The impact of electrification is more pronounced, with e-mobility co-benefits at the inner-city center by 20-25%. Combined with zero combustion buildings, decreases reach 35%.

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6-10 NOVEMBER
CAPE TOWN, SOUTH AFRICA



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