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Département Epidémiologie et Systèmes de Santé

MARDI
12 MARS 2024
COLLOQUE

HEURE: 10H45 – 11H45
LIEU: **Salle Delachaux, Bâtiment Proline**
rte de la Corniche 10, 1010 Lausanne
& via WebEx

URBAN HEAT ISLANDS AND THEIR IMPACT ON TEMPERATURE-RELATED MORTALITY

SPEAKER

■ **DR. GARBIELE MANOLI**

Gabriele Manoli received a PhD in Civil and Environmental Engineering Sciences in 2014 from the University of Padova (Italy). From 2014 to 2016, he was a Postdoctoral Associate at the Nicholas School of the Environment at Duke University (USA) and, from 2016 to 2019, he was a Postdoctoral Fellow at the Institute of Environmental Engineering at ETH Zurich (Switzerland). In 2017 he was awarded a Branco Weiss Fellowship and in 2019 he joined University College London (UK) as a lecturer in Environmental Engineering. In September 2022 he was appointed Tenure-Track Assistant Professor at EPFL where he is now the director of the Laboratory of Urban and Environmental Systems (URBES). His research focuses on ecohydrology, urban climate, and the structure and dynamics of cities.

ABSTRACT

Non-optimal ambient temperatures, both heat and cold, are associated with elevated human mortality risk. Urbanization generally alter the local climate, causing the so-called urban heat island effect which can amplify the risk associated with extreme heat during summer, but also shield against extreme cold during wintertime. In this talk I will discuss the drivers of urban heat islands and present a monetized risk analysis for 85 European cities using high-resolution air temperature simulations and age-dependent exposure-response relationships. Results reveal a non-linear relation between the level of imperviousness and risk, with opposite trends for heat and cold. While extreme heat days increase the mortality costs in dense urban areas compared to the surrounding rural regions, on an annual basis UHIs have weak net protective effects due to the wintertime benefits. These results suggest that mitigation efforts should account for spatial heterogeneities of climate and vulnerability but also the seasonality of risk.

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