

EGU22-2929

<https://doi.org/10.5194/egusphere-egu22-2929>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Possible Contributions of Citizen Science in the Development of the Next Generation of City Climate Services

Peter Dietrich^{1,2}, Uta Ködel¹, Sophia Schütze¹, Felix Schmidt¹, Fabian Schütze¹, Aletta Bonn^{3,4,5}, Thora Herrmann^{3,5}, and Claudia Schütze⁶

¹Department of Monitoring and Exploration Technologies, Helmholtz Centre for Environmental Research GmbH - UFZ, Leipzig, Germany (peter.dietrich@ufz.de)

²Center for Applied Geoscience, University of Tübingen, Tübingen, Germany (peter.dietrich@ufz.de)

³Department of Ecosystem Services, Helmholtz Centre for Environmental Research GmbH - UFZ, Leipzig, Germany (aletta.bonn@ufz.de)

⁴Institute of Biodiversity, Friedrich Schiller University Jena, Jena, Germany (aletta.bonn@ufz.de)

⁵German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, Leipzig, Germany (aletta.bonn@ufz.de)

⁶Department of Computational Hydrosystems, Helmholtz Centre for Environmental Research GmbH - UFZ, Leipzig, Germany (claudia.schuetze@ufz.de)

Human life in cities is already affected by climate change. The effects will become even more pronounced in the coming years and decades. Next-generation of city climate services is necessary for adapting infrastructures and the management of services of cities to climate change. These services are based on advanced weather forecast models and the access to diverse data. It is essential to keep in mind that each citizen is a unique individual with their own peculiarities, preferences, and behaviors. The base for our approach is the individual specific exposure, which considers that people perceive the same conditions differently in terms of their well-being. Individual specific exposure can be defined as the sum of all environmental conditions that affect humans during a given period of time, in a specific location, and in a specific context. Thereby, measurable abiotic parameters such as temperature, humidity, wind speed, pollution and noise are used to characterize the environmental conditions. Additional information regarding green spaces, trees, parks, kinds of streets and buildings, as well as available infrastructures are included in the context. The recording and forecasting of environmental parameters while taking into account the context, as well as the presentation of this information in easy-to-understand and easy-to-use maps, are critical for influencing human behavior and implementing appropriate climate change adaptation measures.

We will adopt this approach within the frame of the recently started, EU-funded CityCLIM project. We aim to develop and implement approaches which will explore the potential of citizen science in terms of current and historical data collecting, data quality assessment and evaluation of data products. In addition, our approach will also provide strategies for individual climate data use, and the derivation and evaluation of climate change adaptation actions in cities.

In a first step we need to define and to characterize the different potential stakeholder groups

involved in citizen science data collection. Citizen science offers approaches that consider citizens as both organized target groups (e.g., engaged companies, schools) and individual persons (e.g. hobby scientists). An important point to be investigated is the motivation of citizen science stakeholder groups to sustainably collect data and make it available to science and reward them accordingly. For that purpose, strategic tools, such as value proposition canvas analysis, will be applied to tailor the science-to-business and the science-to-customer communications and offers in terms of the individual needs.