

## Beyond cooling: a comprehensive climatological and human health assessment of Augsburg's urban green spaces [Abstract]

Jonathan Simon, Max Stocker, Lisa-Marie Falkenrodt, Christoph Beck

### Angaben zur Veröffentlichung / Publication details:

Simon, Jonathan, Max Stocker, Lisa-Marie Falkenrodt, and Christoph Beck. 2025. "Beyond cooling: a comprehensive climatological and human health assessment of Augsburg's urban green spaces [Abstract]." In *12th International Conference on Urban Climate (ICUC12), Rotterdam, The Netherlands, 7–11 July 2025*, IUCUC12–679. Göttingen: Copernicus.  
<https://doi.org/10.5194/icuc12-679>.



ICUC12-679, updated on 20 Mar 2026

<https://doi.org/10.5194/icuc12-679>

12th International Conference on Urban Climate  
© Author(s) 2026. This work is distributed under  
the Creative Commons Attribution 4.0 License.



## **Beyond Cooling: A Comprehensive Climatological and Human Health Assessment of Augsburg's Urban Green Spaces**

**Jonathan Simon**, Max Stocker, Lisa-Marie Falkenrodt, and Christoph Beck

University of Augsburg, Institute of Geography, Chair of Physical Geography and Climate Science, Augsburg, Germany  
([jonathan.simon@uni-a.de](mailto:jonathan.simon@uni-a.de))

With two-thirds of the world's population expected to live in urban areas by 2050, the exacerbating urban heat island effect is a critical challenge, affecting thermal comfort, public health, and air quality. Urban green spaces (UGS) serve as a crucial tool for mitigating the adverse impacts of urbanisation by regulating microclimates through evapotranspiration and shading, improving air quality by reducing pollutant concentrations, and fostering biodiversity. Beyond these regulating ecosystem services (ES), different human-place concepts show that a close connection between humans and their natural environment is essential to people's well-being.

However, there is a paucity of research on how these ES vary across different UGS and under various meteorological conditions. This study, funded by the German Research Foundation under contract 471909988, aims to provide a climatological characterisation of six different UGS in Augsburg, Germany. These include an urban park, a mixed forest, a beech-dominated forest, a pine forest and a heath. A measurement network comprising 33 MX2301A HOBO loggers was established in late 2023 to quantify the climatic differences between the study sites. These ongoing stationary measurements thus cover one complete annual cycle and provide high-resolution air temperature and relative humidity data at the sub-hourly scale. The study uses, among other approaches, a two-way analysis of variance to quantify the effect of different forest characteristics on the local climatic conditions while considering large-scale weather types as an additional factor. Additionally, the study assesses the impact of seasonality, particularly summer heat stress.

This climatological characterisation of UGS provides a foundation for a more detailed analysis, incorporating thermal walks through the UGS, thereby collecting mobile climate data, human health signals and subjective perceptions. This allows for the potential determination of whether "climatic" forest types are also "human physiological" and "therapeutic" forest types.