



EGU23-2898

<https://doi.org/10.5194/egusphere-egu23-2898>

EGU General Assembly 2023

© Author(s) 2023. This work is distributed under the Creative Commons Attribution 4.0 License.



How will the Surface Urban Heat Island respond to changes in climate?

Sarah Berk et al. ▶

The Surface Urban Heat Island (SUHI), known as the difference in land surface temperature (LST) created by the presence of a city, is impacted by both the climate and morphology of the city in question. Subsequently, a changing climate would be expected to result in consequences for characteristics of the SUHI. Modelling the future climate of cities remains a challenge as resolution of global climate models is too coarse to capture the scale of a city, and regional climate models are computationally expensive. In order to address these issues, statistical models can be used. Using a dataset of cities selected based on similar characteristics such as population, variation of elevation within the city and surrounding area, and proximity to water bodies, satellite data is used to quantify the SUHI magnitude. A statistical model is fitted to current observations using predictive variables based on climate. The model shows promising performance for the majority of cities in the dataset and results are discussed.

How to cite: Berk, S., Joshi, M., Nowack, P., and Goodess, C.: How will the Surface Urban Heat Island respond to changes in climate?, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-2898, <https://doi.org/10.5194/egusphere-egu23-2898>, 2023.



Supplementary materials

[Supplementary material file](#)