

Accepted Manuscript

Title: Towards a satellite based monitoring of urban air temperatures

Authors: Benjamin Bechtel, Klemen Zakšek, Jürgen Oßenbrügge, Giedrius Kaveckis, Jürgen Böhner



PII: S2210-6707(16)30756-9
DOI: <http://dx.doi.org/doi:10.1016/j.scs.2017.05.018>
Reference: SCS 664

To appear in:

Received date: 18-1-2017
Revised date: 14-4-2017
Accepted date: 23-5-2017

Please cite this article as: Bechtel, Benjamin., Zakšek, Klemen., Oßenbrügge, Jürgen., Kaveckis, Giedrius., & Böhner, Jürgen., Towards a satellite based monitoring of urban air temperatures. *Sustainable Cities and Society* <http://dx.doi.org/10.1016/j.scs.2017.05.018>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Towards a satellite based monitoring of urban air temperatures

Benjamin Bechtel¹, Institute of Geography, University of Hamburg, (Germany)

Klemen Zakšek, Zentrum für Telematik, (Germany)

Jürgen Oßenbrügge, Institute of Geography, University of Hamburg, (Germany)

Giedrius Kaveckis, Institute of Geography, University of Hamburg, (Germany)

Jürgen Böhner, Institute of Geography, University of Hamburg, (Germany)

¹ *Corresponding Author: benjamin.bechtel@uni-hamburg.de*

Highlights

- We used dense time series of LST to estimate air temperature in urban and rural areas.
- The annual and diurnal cycles were well represented by the empirical models.
- Multi-temporal predictors considerably improved the results.
- They also enhanced the representation of the diurnal cycle, which is essential for UHI monitoring.

ABSTRACT

Timely meteorological data of high accuracy and spatiotemporal resolution can contribute to sustainable urban planning and management in terms of human thermal comfort, heat wave warning, air pollution prediction, as well as building and transport management among others. Today, the scientific knowledge about the specific urban climate is not fully

Download English Version:

<https://daneshyari.com/en/article/4928169>

Download Persian Version:

<https://daneshyari.com/article/4928169>

[Daneshyari.com](https://daneshyari.com)