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Paris Urban Heat Island from Crowdsourced Data

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The Urban Heat Island is one of the main factors of the urban climate, which corresponds to a temperature difference between urban and surrounding rural areas and was defined firstly from the temperatures measured in the conventional network weather stations. In this proposition, our aim is to study the intensity and the delimitation of the night Urban Heat Island over the Paris metropolitan area from crowsourced data. We used temperatures from the NetAtmo network, which were collected hourly since summer 2017. These non-homogenized data required a strong pre-treatment to extract meaningful outside air temperatures. They showed clearly an UHI with a time variability due to atmospheric conditions and the setting up of the night-time UHI for some dates (clear sky and windless conditions). Finally, we propose a delimitation of the UHI using directional transect bands and compare with Local Climate Zones.