

## **The influence of park size and form on micro climate and thermal comfort**

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The population of urban areas will increase in the next decades and it leads to higher fraction of sealed areas, which will increase the urban heat island intensity. In addition, climate model projections also show that the frequency and the intensity of heat waves and the related heat stress will be higher in the future. Urban Parks are the best key to mitigate the urban heat island and to minimize the local climate change. Due to the lack of free spaces which can be converted to green spaces, this study investigates the influence of urban park forms on the micro climate and thermal comfort.

In this study, a central big park has been compared to different numbers of small parks in terms of the cooling effect and thermal comfort. Five different park forms with the same total size have been considered. The results show that the park cooling effect depends not only on the park form, but also on the arrangement of the vegetation inside the park and wind speed and direction. Grassy areas (with 10 and 50 Cm grass), shrubs and hedges as well as trees with small and big canopies have been considered for the simulation. ENVI-MET and Rayman models have been used to simulate the cooling effect, cooled area size, PET and UTCI, respectively. The results for a hot day in Berlin on three different times during day and night will be shown and compared to each other. The effects of Sky view factor and soil humidity (irrigation) have also been discussed.