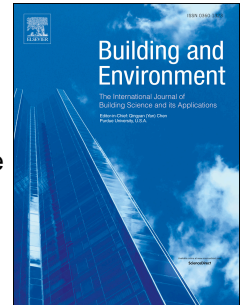


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# Surface Heat Assessment for Developed Environments: Optimizing Urban Temperature Monitoring

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## Abstract

The urban heat island effect, exacerbated by rising average surface temperatures due to climate change, can lead to adverse impacts on city populations. Fine resolution modeling of the spatial and temporal distribution of extreme heat risk within a city can improve the strategies used to mitigate this risk, such as the issuance of targeted heat advisories to city residents. In this paper, we combine a recently developed method for probabilistic modeling of urban temperatures with previously developed vulnerability assessments, and then implement sensor placement optimization techniques to guide temperature monitoring in urban areas. A variety of metrics are used to optimize the placement of temperature measures to best support decision-making for monitoring and responding to extreme heat risk. This optimal sensor

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