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Significant Climatic Warming (1950-2012) in the Spanish Mediterranean: Natural Trend or Urban Heat Island

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This study completes the line of work initiated on the thermal evolution of the Mediterranean region (Autonomous Communities of Murcia and Valencia), for the Spanish National Climate Plan. That research analyzed the regional thermal series during 1950-1996 period, rigorously treated by the Standard Normal Homogeneity Test (MOBERG, A. ALEXANDERSSON, H., 1997). Sixteen years later, in 2012, it seems wise to check the validity of the trends and conclusions found in the regional climate offered in the late twentieth century. In the framework of the thermal evolution of the region during the period 1950-2012, this verification has received submissions from a pilot study whose goal was to analyze the thermal processes inherent in the effect of urban heat island (UHI). Though undeniable, this effect is very controversial about its importance. The results have shown both the nature of the phenomenon and its significant magnitude. Consequently, skipping this process can lead to a serious bias in the analysis of regional thermal evolution, affecting to conclusions about climatic change.

Key words: temperature, urban effect, urban heat island, homogeneity, climatic change