

## **A remote-sensing method of selecting reference stations for evaluating urbanization effect on surface air temperature trends**

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In the global lands, the bias of urbanization effect still exists in the surface air temperature series of many city weather stations in certain extent. Reliable reference climate stations need to be selected for the detection and correction of the local man-made warming bias. The underlying image data of remote-sensing retrieval is adopted in this study to obtain the spatial distribution of surface brightness temperature, and the surface air temperature reference stations are determined based on the locations of the weather stations in the remote-sensing surface thermal fields. Among the 672 national reference climatic and national basic weather stations of mainland China, for instance, 113 surface air temperature reference stations are selected applying this method. Compared with the average surface air temperature series of the reference stations obtained by a more sophisticated method developed in China, this method is proven to be robust and applicable, and can be adopted for the evaluation and adjustment study on the urbanization bias of the currently used air temperature records of surface climate stations in the global lands.