



Investigating urban growth dynamic – land surface temperature relationship

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Global forecasts for the growth of urban agglomerations and the expected effects of ongoing climate changes highlight the need to reflect on urban and regional planning issues.

The real challenge is to combine urban growth with adequate density and compactness to prevent and contain land use change, loss of productive land and reduction of ecosystem services.

The city is therefore observed because its compact or dispersed form and its regulation through appropriate planning tools can make an important contribution both in terms of mitigation and adaptation to climate change, and in limiting future impacts.

The present work aims to provide a useful methodology to investigate the relationship between the increase of urbanized areas and their growth dynamics, and the surface temperatures variation recorded within urban, peri-urban and rural contexts.

The building environment evolution and the Land Surface Temperatures (LST) time series surveyed by Modis satellites are jointly analyzed in the context of the Basilicata region.

The results show a strong relationship between the increase in recorded minimum temperatures and urban areas expansion, especially where the main growth dynamics is compaction.