

Climate Zone Classification of India Using New Base Temperature

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Abstract

The development of building codes for energy efficiency depends on climate zones. National Building Codes of India prescribes five climate zones in India. This classification does not consider fluctuations of outdoor conditions and its effect on indoor comfort conditions. The indoor comfort conditions can be incorporated by using Heating Degree Day (HDD) and Cooling Degree Day (CDD) analysis. Additionally, this classification used mean monthly temperature which cannot capture extreme conditions of the month while the degree day can account for fluctuations in the outdoor temperature and eliminate those periods when heating or cooling systems do not need to operate for a day. This study proposes a new climate zones classification based on hierarchical cluster analysis on 60 Indian locations. The analysis uses climate indices such as HDD, CDD and annual mean relative humidity as variables for clustering analysis. The 60 locations are grouped into 8 climate zones. Three climate zones have only one city as they are distinct from the other location in terms of climate. This updated climate classification may improve the accuracy of the energy conservation codes and building design.

Full paper: Paper link not yet available

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