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Analysis of the temperature changes in the Aburra Valley between 1995 and 2015 and model based on urban, meteorological and energetic parameters**Enrique Posada, Andrea Cadavid and David Robledo**
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There is a perception among the inhabitants of the Aburra Valley Region, that the zone has been suffering big temperature raises in the last years, especially in the last decade. To give perspective about this issue, the authors have gone through the available information about temperature changes on three meteorological stations and have correlated it with a set of variables of urban, climatic and energetic nature with the intention of developing an approximate model to understand the temperature changes. Raises in the mean temperature, based on the linear tendencies were estimated on 0.47°C for the 20 years between 1995 and 2015; 60% of the raise is due to the local activity and 40% due the impact of global warming. Nevertheless it is a complex behavior, which has oscillations. In order to visualize and model the changes, it was necessary to linearize the behavior and understand the relation between the measuring stations, its geographical position and their altitude above the sea level. On the most representative station of the urban impact, the linearized temperature behavior was correlated with the mentioned variables. The differences between the temperatures and their linearized changes were acceptably correlated with global and local climatic influences. Significant results allowed understanding the city impact and its energetic performance on the temperature.

Biography

Enrique Posada is a Mechanical Engineer, completed his Master's degree in ME from the University of Maine, USA (1973). He holds Master's degree in Film Critics and Diplomas in Technology Management at University of Sao Paulo, Brazil and in Corporate Environmental Management at CDG. He was the Director of Research and Development for Nubiola Colombia Pigmentos S.A., with responsibilities in environmental issues, the development of three new production plants and numerous studies and developments in the various chemical and physical processes. He has also worked at Hatch Indisa S.A., a project engineering company, as a Project Manager and Specialist in Environmental, Energy and Fluids Topics.

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