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Wind Speed Study and Persistence Analysis for a Set of 18 Weather Stations Located on the Colombian Caribbean Region

Jonathan Fabregas Villegas^{1*}; Guillermo Valencia Ochoa²; and Marley Vanegas Chamorro³

¹MSc. Ing. Mecánico, Grupo Interdisciplinario de Investigación en Energía y Medio Ambiente, GIIMA, Facultad de Ingeniería, Universidad Autónoma del Caribe., Colombia

²MSc. Ing. Mecánico, Grupo de Investigación Gestión eficiente de energía, Kaí, Facultad de Ingeniería, Universidad del Atlántico, Colombia

³ PhD. Ing. Químico, Grupo de Investigación Gestión eficiente de energía, Kaí, Facultad de Ingeniería, Universidad del Atlántico, Colombia

Abstract : A wind behavior study was carried out on the Colombian Caribbean Region using data recorded by the Colombian Hydrology, Meteorology, and Environmental Studies Institute (IDEAM) from 2003 and 2013. In order to provide an analysis of the existing wind potential in the Colombian Caribbean region, sensitizing the rational use of energy from renewable energy sources and not depending on the use of sources of energy conversion due to the burning of hydrocarbons which Affect the environment. The study involved a statistical analysis of the wind speed behavior using the auto correlation function and wind persistence, for the stations located in the Departments of Atlántico, Bolívar, Cesar, Córdoba, La Guajira, Magdalena, Sucre, San Andrés y Providencia. Obtaining by means of illustrations and data analysis the behavior of wind speed, wind direction and the persistence of wind in the studied stations.

Keywords : Auto correlation function, wind persistence, wind roses, wind speed, wind persistence, weather stations.

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