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Statistical Analysis for Optimal Wind Turbine Design

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Author Note: Architect since 2001, Master in Management of construction since 2006, both from the Universidad Autonoma de Nuevo Leon, currently studying the Graduate Sisemas with an emphasis on computation and Mechatronics PhD level, my studies took place at the Faculty of Engineering mechanical and Electrical. I am Head of Academy of Metrology and Computer Aided Drawing on Machines and Tools Coordination and furthermore I am a professor at the Faculty of Mechanical and Electrical Engineering. It has a publication in Congress International Conference on Industrial Engineering Theory, Applications and Practice with the following article LINEAR REGRESSION MODELING TO PREDICT TEMPERATURE IN MACHINING OF TI 6AL 4V ALLOY. I always appreciate the support given me at the Faculty of Mechanical and Electrical Engineering that allowed this here imparting my knowledge and development that I'm having in this research.

Abstract: Fossil fuels currently supply most of the world's energy needs, and however unacceptable their long-term consequences, the supplies are likely to remain adequate for the next few generations. The production of electrical energy from wind is one of the most important projects to reduce the emissions of carbon dioxide for preserve the environment. Wind energy is a reliable, natural and renewable electrical power supply. The high installed capacity of today's wind turbines and decreasing plant costs have shown that wind power can be competitive versus conventional heavily polluting fuels, in the long term. Knowing the best way to use the materials for turbine design, as well as the profile and the optimal number of blades is one of the most important challenges for a designer, this paper presents an analysis methodology that allows the designer conceptualize their designs efficiently using statistical models.

Keywords: wind, blades, turbines