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CAMPUS

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Vertical wind profiles of Trinidad and Tobago: A remote sensing study



Presenter: Mr. Mohammed Shaddy

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ABSTRACT

Trinidad and Tobago has long enjoyed the benefits of its indigenous hydrocarbon resources, which have allowed the country to prosper economically and maintain a high degree of energy security. Due to the realities of climate change and Trinidad and Tobago's dwindling resources of fossil fuels, the country is now required to transition to more sustainable forms of energy. Wind energy has emerged as a promising option for utility scale power generation, however the process of setting up a wind farm requires significant preliminary work, most significant of which is a wind resource assessment.

This process has already begun in Trinidad, with the government of Trinidad and Tobago utilizing remote sensing devices known as LIDAR's. These remote sensing devices however have various sources of uncertainties and are known to be sensitive to multiple atmospheric variables. As such, these devices need to be validated for use in Trinidad and Tobago before we can fully trust their measurements. This project will address this by seeking to validate remote sensing devices for use in Trinidad and Tobago.

Additionally, this project also seeks to determine a vertical wind model specifically to better estimate the annual energy production of wind farms in the island state of Trinidad and Tobago.