

Optimization of Vertical Axis Wind Turbine

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Abstract : Present study concerns the optimization of a new vertical axis wind turbine system associated to a dynamoelectric motor. The system is composed by three Savonius wind turbines, arranged in an equilateral triangle. The idea is to propose a new concept of wind turbines through a technical approach allowing find a specific power never obtained before and therefore, a significant reduction of installation costs. In this work different wind flows across the system have been simulated, as well as precise definition of parameters and relations established between them. It will allow define the optimal rotor specific power for a given volume. Calculations have been developed with classical Savonius dimensions.

Keywords : VAWT, savonius, specific power, optimization, weibull

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