

Mechanic and Thermal Analysis on an 83 kW Electric Motorcycle: A First-Principles Study

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Abstract : This paper presents a preliminary prototype of an 83 kW all-electric motorbike since, nowadays, electric motorbikes have advanced drastically in their technology in such a way that lately, there has been a boom in the field of competition of medium power electric vehicles. The field of electric vehicle racing mainly pursues the aim of obtaining an optimal performance of all the motorbike components in order to obtain a safe racing vehicle fast enough while looking for the stability of all the systems onboard. A general description of the project is given up to date, detailing the parts of the system, integration, numerical estimations, and a rearrangement proposal of the actual prototype with the aim to mechanically and thermally improve the vehicle.

Keywords : electric motorcycle, thermal analysis, mechanic analysis, electric vehicle

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