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The effect of a operating and structure parameters to energy consumption and dynamic of electric assisted bicycle.

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A study is conducted to investigate the dynamic characteristics and optimize the energy consumption of an electric assisted bicycle (EAB). A simulation study presents the dynamic and operating characteristic of an electric assisted bicycle base on variable the key input parameters such as gear speed, frontal area, and electric assisted bicycle mass. The MATLAB-Simulink program is used in simulation study. Through this simulation, an analysis is conducted to maximize the dynamic and energy consumption of electric assisted bicycle. From the achieved simulation results, the energy consumption can be optimized by changing the key input parameter mentioned above. The experimental study is conducted to examine the motion and energy consumption characteristic of electric assisted bicycle under real operating condition. The experiment and simulation results have same trend at the same initial condition.

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