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The Potential of Braking Energy Recuperation in a City Bus Diesel Engine in the Japanese JE05 Emission Test Cycle

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Abstract : This paper discusses a model of a bus-driving scheme. Rapid changes in speed result in a constantly changing kinetic energy accumulated in a bus mass and an increased fuel consumption due to hardly recuperated kinetic energy. The model is based on the results achieved from chassis dynamometer, airport and city street researches. The verified model was applied to simulate the mechanical energy recuperation during the Japanese JE05 Emission Test Cycle. The simulations were performed for several values of vehicle mass. The research results show that fuel economy is impacted by kinetic energy recuperation.

Keywords : heavy duty vehicle, city bus, Japanese JE05 test cycle, kinetic energy, simulations
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