

Abstract Submitted
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Large-eddy simulation of a turbulent flow over a heavy vehicle with drag reduction devices¹ SANGSEUNG LEE, MYEONGKYUN KIM, DONGHYUN YOU, Pohang University of Science and Technology — Aerodynamic drag contributes to a considerable amount of energy loss of heavy vehicles. To reduce the energy loss, drag reduction devices such as side skirts and boat tails, are often installed to the side and the rear of a heavy vehicle. In the present study, turbulent flow around a heavy vehicle with realistic geometric details is simulated using large-eddy simulation (LES), which is capable of providing unsteady flow physics responsible for aerodynamic in sufficient detail. Flow over a heavy vehicle with and without a boat tail and side skirts as drag reduction devices is simulated. The simulation results are validated against accompanying in-house experimental measurements. Effects of a boat tail and side skirts on drag reduction are discussed in detail.

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