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# Aerodynamic Investigation of Rear Vehicle by Geometry Variations on the Backlight Angle

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**Abstract :** This paper shows simulation for the prediction of the flow around the backlight angle of the passenger vehicle. The CFD simulations are carried out on different car models. The Ahmed model “bluff body” used as the stander model to study aerodynamics of the backlight angle. This paper described the airflow over the different car models with different backlight angles and also on the Ahmed model to determine the trailing vortices with the varying backlight angle of a passenger vehicle body. The CFD simulation is carried out with the Ahmed body which has simplified car model mainly used in automotive industry to investigate the flow over the car body surface. The main goal of the simulation is to study the behavior of trailing vortices of these models. In this paper the air flow over the slant angle of 0,5o, 12.5o, 20o, 30o, 40o are considered. As investigating on the rear backlight angle two dimensional flows occurred at the rear slant, on the other hand when the slant angle is 30o the flow become three dimensional. Above this angle sudden drop occurred in drag.

**Keywords :** aerodynamics, Ahemd vehicle , backlight angle, finite element method
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