FOSSEE, IIT Bombay

OpenFOAM Research Migration Project

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Aerodynamic analysis of Ahmed Body

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Synopsis

Ahmed body is a generic car body (a simplified car model) i.e the flow of air around the Ahmed body captures the essential flow features around an automobile. It allows us to capture characteristic features that are relevant to bodies in the automobile industry.

In this project, The airflow over the ground vehicle is analysed, and the coefficient of drag is calculated using OpenFOAM. The Ahmed body is made up of a round front part, a movable slant plane placed in the rear of the body to study the separation phenomena at various slant angles, front radii and ground clearance. These geometrical parameters are varied and their effect on drag coefficients and velocity contours are observed.

The project was migrated from the following paper.

Khan, Rehan & Umale, Sudhakar. (2014).
CFD Aerodynamic Analysis of Ahmed Body.
International Journal of Engineering Trends and Technology.
18. 301-308. 10.14445/22315381/IJETT-V18P262.