عنوان مقاله:

Effect of ground distance on aerodynamic performance of a Car

نویسندگان:

Hossein Afshar - *Mechanical Engineering Department, East Tehran branch, Islamic Azad University*

Alireza Fahimi - *Mechanical Engineering, MA student at Islamic Azad University, Center Tehran*

خلاصه مقاله:

In this investigation, flow field around the body of Pride vehicle in different distances from the ground (height) and different car velocities is studied using numerical method. The geometry is modeled in GAMBIT in two dimensions. The fluid flow equations including standard k-ε turbulence model are solved numerically using FULENT commercial software. Pressure and velocity fields and also lift and drag forces are obtained for each height and velocity separately. In order to minimize the drag force, optimum distance of the car for different velocities is introduced. The results are presented for five different heights including 80, 120, 160 (standard), 200 and 250 mm and different velocities including 10, 20, 33 and 40 m∕s for each height It is shown that lift and drag forces are highly related to the car distance from the ground. Drag force is increased at constant speed by increasing the height from 80 to 200 mm and for heights greater than 200mm, any increment in the height result a slight deduction in drag force. Also the Lift force is increased at constant speed with increasing the height from 80 to 120 mm and then it is decreased by increasing the distance of the car from the ground.

کلمات کلیدی:

Car aerodynamic, Surface effect, Pride vehicle

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/203508