

ABSTRACT

This project is study about the effect of aerodynamic changed for a car caused by another in its proximity. When the cars are moving near each other like moving back to back, aerodynamic of the fluid surrounding two vehicles are changing. The changes of aerodynamic can generate severe force variation on the vehicles and these forces can have an adverse effect on vehicle handling and stability. Aerodynamic changes are studied on models of vehicle using Computer Fluid Dynamic (CFD). The aim is to validate the CFD models against experiment data which were carried out previously at UTP. The model of the car and simulation will be carried out by using Gambit and Fluent software. The simulations include different experimental cases with varying the separating distance between the car models. Once the CFD simulations are validated, more case can be simulated and extended conclusions can be drawn out. The study is focusing on the drag force and lift force as result of aerodynamic changes when the vehicles in specific position. The results from the simulations show that, the best position for aerodynamically which is less Drag force and safety condition was directly behind the other cars which at one and half width distance (18.75 cm).