

ABSTRACT

In the car following there are several models to implement it, one of them is the Adaptive Cruise Control (ACC). Adaptive Cruise Control (ACC) is the development of a model that already existed, Intelligent Driver Model (IDM). IDM cause extreme deceleration and it will be fixed on the ACC model. Adaptive Cruise Control (ACC) has one parameter which is different from the IDM model parameter, it is parameter c that can be interpreted as a coolness factor. Adaptive Cruise Control (ACC) requires Heuristic Constant Acceleration as an indicator to determine whether the IDM model will be cause too high deceleration or not. In this final project the author simulates the flow of car following using Adaptive Cruise Control (ACC) model with three homogeneous vehicles and one lane, there are four scenarios in this research to get the best car following. The result of ACC deceleration is lower than the IDM deceleration.

In the research has the output of the trajectory graph of the ACC acceleration, IDM acceleration and speed of car following simulation using ACC model. From the simulation we get 89.06% accuracy, accuracy value was obtained from the comparison of vehicle speed on simulation with vehicles speed on real data when they already following.

Keyword : Car-following models, Intelligent Driver Model (IDM), Adaptive Cruise Control (ACC)