

# Race Car Suspension Design using MATLAB and MSC/ADAMS

## Abstract

The performance of the race vehicles on the circuit is very much dependant on its suspension design. The suspension not only isolate the driver from the road disturbances but also play a key role in the handling of these vehicle at high speeds. The transfer of these forces from one point to another, during the accelerating, braking and cornering manoeuvres, very much decide about vehicle's fate in a race.

The aim of this intern-ship is to introduce the student to the key concepts that matter during the design phase of the race cars. The student will be encouraged to choose the appropriate suspension type on the basis of a desired performance criteria. Further more he/she will be tasked to prepare a virtual model of the vehicle using MATLAB and ADAMS and evaluate the design performance. This exercise will lead to develop an optimum suspension design for a low budget race car.

## Skills Required

Interest in vehicle dynamics

Be able to demonstrate strength in Kinematics and Kinetics theory

Familiarity with Matlab and MSC/Adams environment