

- Two SAE papers on tire grip prediction and steering shimmy analysis are currently under progress.
- Received Mahindra innovation spot certificate for projects on vibration reduction of scooter handle bar, automation of durability loads and MBD correlation analysis of Dead man loader test.
- Methods creation appreciation award for creating a template to estimate the steering effort on a steady state CRC test.
- Two times winners for global simulating reality contest 2014 & 2016 conducted by MSC for all industries.
- Won second prize in MSC user conference 2014 for seat base plunger design simulation for scooters.
- Winner for Mahindra rise awards(Only winner from R&D) in two wheeler sector.

## **8. Project Details**

### **Plugin GUI creation(Integrated durability toolkit) in MBS for static and dynamic loads**

**(Software Used- Adams car+ Adams command language scripting)**

Fatigue requirements of files, folders containing the component hardpoints, load history, statistical data has been auto generated by just selecting the number of components for life estimation from dynamic simulation. Files for static loads has also been auto generated.

### **Auto generation of kinematic table for 15 D.O.F vehicle model simulation**

**(Software Used- Adams car+ Adams command language scripting+ LMS Amesim)**

The kinematic tables for metrics such as toe angle, camber angle, longitudinal recession, lateral recession and side view angle against suspension and steering inputs from Adams half vehicle analysis has been auto generated to serve as an input for Amesim full vehicle handling simulation.

### **Mechanical and power steering of tractor correlation for performance and loads prediction**

**(Software Used- Adams View+ Excel calculation)**

The steering performance metrics such road wheel angles for Ackermann, TCD and steerability has been correlated with laboratory testing. This also includes the correlation of steering loads for left and right turn of steering.

### **Cabin door operating effort optimization**

**(Software Used- Adams View)**

The cabin door operating effort on modifying the gas strut design with force requirements