

Chapter 7

VDMS Plotter and Output Variable List

7.1 Using the VDMS Plotter (GUI)

The VDMS package includes a GUI-based Matlab plotting program which provides easy access to approximately 50 commonly referenced plots of the simulation output. After a VDMS simulation has been run, type `vdmsp` at the Matlab command prompt to launch the VDMS Plotter.

Once started, the top level of the VDMS Plotter appears. Each button on the top level accesses a second level of pre-programmed plots. At this second level each button is associated with a particular plot. Specifically, the available plots are as follows:

Input Plots

- Steer Input
- Torque Input
- Speed Input
- Acceleration Input
- Simple Driver Model
- Path Following
- Path Following Error

Ground

- Friction Coefficient
- Elevation
- Lateral Inclination
- Longitudinal Pitch
- Local Friction
- Wheel Paths

Wheel Kinematics

- Slip Ratios
- Slip Angles
- Inclination Angles
- Steer Angles
- Camber Angles
- Loaded Radii
- Forward Velocities
- Rotational Velocities

- Rotational Accelerations
- Tire Forces
 - Normal Loads
 - Lateral Forces
 - Longitudinal Forces
 - Aligning Torques
 - Spin Axis Torques
- Suspension Plots
 - Suspension Position
 - Wheel Center Position
 - Spring Deflection
 - Wheel Center Velocity
 - Wheel Center Acceleration
 - Total Suspension Forces
 - Spring Forces
 - Bump/Rebound Stop Forces
 - Damper Forces
- Vehicle Response Plots
 - State Variables
 - g-g Plot
 - CN-Ay Plot
 - Vehicle Path
 - Lat. Acc. vs. Steer
- Sprung Mass Response Plots
 - Accelerations
 - Roll
 - Pitch
 - Roll Gradient
 - CG Height
- Differential Plots
 - Locked/Unlocked
 - Diff. Torque
 - Diff. Speed
 - Diff. Acceleration
- Miscellaneous Plots
 - Aerodynamic Forces
- Custom Plots
 - Custom 1...Custom 9