SEOUL NATIONAL UNIVERSITY
DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

CONTROL SYSTEM THEORY	**Fall 2010**
HW#6	**Assigned: November 28(We)**
	Due: December 13 (Mo)

1. Describe following in one page each

   (1) White Gaussian random variables

   (2) Kalman filters

   (3) Lyapunov function

   (4) Riccati equation

   (5) Local stability, global stability, Lyapunov stability

2. Using 3 dof planar vehicle model shown in the figure below, design a tire-road friction identifier. You may use either Dugoff tire model, Pacejka tire model or the brush tire model. Assume that longitudinal speed is constant, longitudinal velocity, lateral acceleration, steering angle, yaw rate, and wheel angular speeds ate measured.