Real time vehicle state estimator

- **Motivation:**

  Provision of additional vehicle state data which **cannot be measured directly** for the secondary chassis control systems.

- **Problem:**

  How can the vehicle state be determined in a stable and reliable way in realistic and especially critical driving situations (e.g. slow increase of sideslip angle), influenced by disturbance variables (e.g. road bank angle, μ split etc.)?

- **Objective:**

  Robust real-time estimation of the vehicle state:

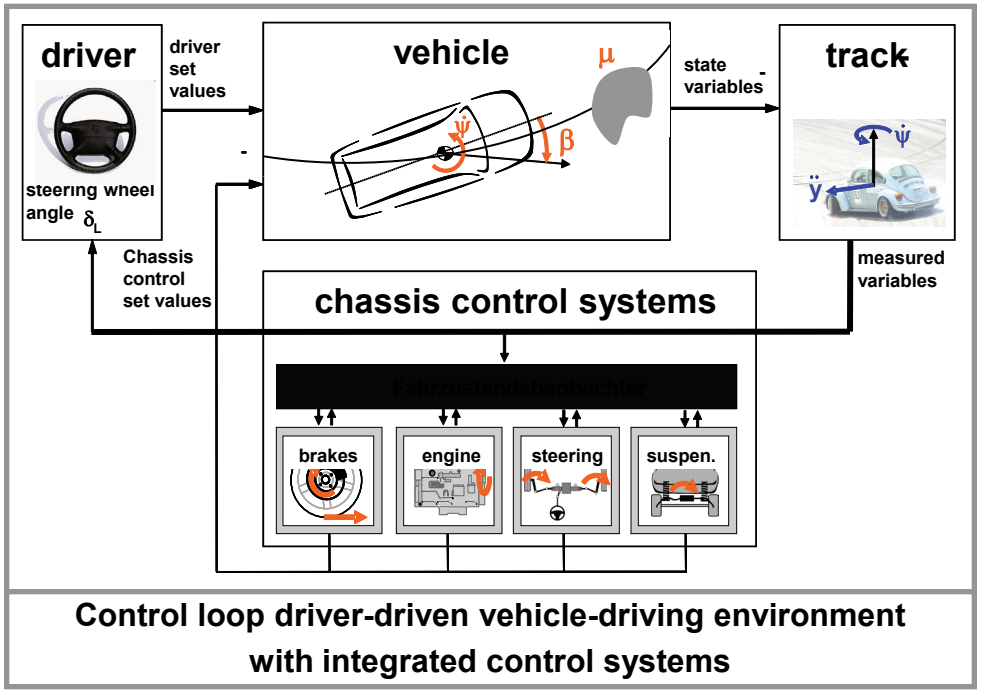
  -Sideslip angle

  -Estimation of lateral dynamic friction factor

  -Inclination compensation

- **Solution:**

  Development of a non-linear two-track vehicle model based on an extended discrete Kalman filter (EKF) with primary disturbance variable estimator.



Control loop driver-driven vehicle-driving environment with integrated control systems