



# Hamilton Institute

## Selected Problems in Automotive Vehicle State Estimation

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### *Abstract*

Estimating vehicle dynamic states like speed, side slip angle and external disturbances such as road bank is an important problem in automotive control. A number of novel safety features and driver assist systems would benefit from the availability of reliable state estimates. However, in a production cars there are only a few sensors on which state estimation can be based. These are mainly wheels speeds, steer angle, yaw rate, longitudinal and lateral acceleration.

In this talk we present methods for estimating the speed and side slip of a vehicle using production type sensor equipment. The problem of detection of road bank and cross wind disturbances will also be addressed. The benefits of the state estimation approach will be demonstrated using experimental results from driving tests.

**Venue:** Seminar Room, Hamilton Institute, Rye Hall,  
NUI Maynooth

**Time:** 1.00 - 2.00pm (followed by tea/coffee)

Travel directions are available at [www.hamilton.ie](http://www.hamilton.ie)



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