Title   : Asymptotic Properties of Non-linear Filters

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Time   : 04:00 PM

Venue   : Online seminar (Please use this link to join the seminar - https://guest.lifesize.com/672942. Google chrome is preferred)

Abstract : In practice, state of many systems of interest is accessible only through indirect noisy observations. Stochastic filtering theory deals with estimating the state of the system at a particular instant given some noisy observations of the system up to that instant. As it turns out, the state estimation depends on the initial condition of the system, in addition to the observations. Since, in practice, we may not have the knowledge of the initial condition, it is desirable to have the state estimator (filter) behave asymptotically independent of the initial condition. This is referred to as filter stability. In this seminar, we will introduce the formulation of stochastic filtering theory and its problem of stability. We will discuss the stability results when the system is deterministic. Since the system is deterministic, we will see that the stability of the filter depends on the characteristics of the dynamics such as the attractor.