Abstract: "Linear quadratic optimal control: from deterministic to stochastic"

Richard Kalman's work on linear quadratic optimal control theory for ordinary differential equations is a milestone in the developments of deterministic optimal control theory. Its extension to stochastic differential equations is interesting both in theory and application, and has attracted a lot of attentions since early sixties in the last century. In this talk, I shall review some of these studies, expose some mathematical difficulties therein, and also give some unsolved problems.