1109-60-83 **Tyrone E. Duncan***, duncan@ku.edu. *Explicit Optimal Controls for Some Stochastic Control Problems.*

A family of control problems for linear and nonlinear systems with their cost functionals are described that can be solved directly to obtain explicit optimal controls. These systems include linear systems with arbitrary fractional Brownian motion noise processes, linear systems with state and /or control dependent Brownian motions, nonlinear systems in rank one symmetric spaces with Brownian motions and linear stochastic partial differential equations with Brownian motions. Some related problems for stochastic differential games can also be explicitly solved. (Received January 23, 2015)