

# ON EXPONENTIAL STABILITY IN MEAN SQUARE OF STOCHASTIC DIFFERENTIAL SYSTEMS WITH DELAY

Le Trung Hieu

*Department of Mathematics Teacher Education, Dong Thap university, Vietnam.*

Email: lthieu@dtu.edu.vn.

**Abstract.** In this talk, we present a novel approach to the mean square exponential stability of stochastic differential systems with delay. Consequently, we obtain some new explicit criteria for the mean square exponential stability of general nonlinear time-varying stochastic differential systems with bounded time-varying delay. Both delay-independent and delay-dependent stability criteria are given. Some examples are provided to illustrate the obtained results. *This research is supported by Ministry of Education and Training, Vietnam under the project B2020.SPD.04.*

**Keywords:** Mean square exponential stability; stochastic differential system with delay; stochastic delay neural network.