

Meeting: 1003, Atlanta, Georgia, SS 12A, AMS-SIAM Special Session on Stochastic, Large-Scale, and Hybrid Systems, I

1003-93-1445 **VijaySekhar Chellaboina*** (chellaboina@utk.edu), Mechanical, Aerospace, and Biomedical Engg, The University of Tennessee, Knoxville, TN 37996-2210, and **Wassim M Haddad** and **Jayanthi Ramakrishnan**. *On Equipartition of Energy in Linear Compartmental Dynamical Systems with Arbitrary Time-Delay.*

In this paper, we present sufficient conditions for semistability and equipartition of energy in linear compartmental systems with time-delay. This result provides an extension of existing work on linear compartmental dynamical systems in the absence of time-delay. Next, we extend this result to two-dimensional nonlinear compartmental dynamical systems with time-delay. Finally, we close the paper by presenting open problem in relation to the semistability of higher dimensional nonlinear compartmental systems with time-delay. (Received October 05, 2004)