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Maria C.A. Leite* (Maria.Leite@utoledo.edu), **Nikola P. Petrov .Petrov** and **Ensheng Weng Weng**. *Stationary distributions of semistochastic processes with disturbances at random times and with random severity.*

We consider a semistochastic continuous-time continuous-state space random process that undergoes downward disturbances with random severity occurring at random times. Between two consecutive disturbances the evolution is deterministic, given by an autonomous ordinary differential equation. The times of occurrence of the disturbances are distributed according to a general renewal process and at each disturbance the process gets multiplied by a continuous random variable (severity). The inter-disturbance time intervals and the severities are assumed to be independent random variables that also do not depend on the history. I will discuss, in the context of carbon content of an ecosystem, the derivation of explicit expressions for the conditional density connecting two consecutive post-disturbance levels and for the stationary distribution of the random process. (Received September 08, 2011)