

1135-60-2623

Mobolaji O Ogunsolu* (ogunsolu@usf.edu), Department of Mathematics and Statistics, University of South Florida, 4202 East Fowler Avenue, CMC 342, Tampa, FL 33620-5700, and **Gangaram S Ladde** (gladde@usf.edu), Department of Mathematics and Statistics, University of South Florida, 4202 East Fowler Avenue, CMC 342, Tampa, FL 33620-5700. *Nonlinear Levy-type Dynamic Modeling of Time-to-Event Process*. Preliminary report.

We initiate an innovative interconnected hybrid approach for modeling time-to-event processes under the influence of intervention processes. The model is described by a nonlinear Lévy-type stochastic differential equation. We establish the existence and uniqueness of the solution to our model. Well-known hazard and survival function models are presented to demonstrate usefulness of the approach. Moreover, state and parameter estimation problems are also investigated. A numerical approximation scheme is outlined to illustrate the presented results. (Received September 26, 2017)