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**M M Rahman\*** ([mrahman@unf.edu](mailto:mrahman@unf.edu)), Department of Mathematics and Statistics, University of North Florida, 4567 St. Johns Bluff Rd., S, Jacksonville, FL 32224. *Stochastic approximations of Volterra Integro-differential equation arising in neurosciences.*

This paper extends the results of synaptically generated wave propagation through a network of connected excitatory neurons to a continuous model, defined by a new Fredholm Volterra-integro differential, which includes memory effects of the past in the propagation. Stochastic approximation and numerical simulations are discussed. (Received September 27, 2005)