



## Department of Mathematical Sciences

### Seminar in Stochastic Systems

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*Nonparametric estimation of Lévy processes with a view towards  
mathematical finance*

Monday, March 8, 2004

3:00 pm

Pierce 218

*Abstract:* Accurate asset price models are of crucial importance in modern mathematical finance. Recent works have introduced asset price models driven by Lévy processes with superior performance compared to the classical Black-Scholes model. However, the high computational intensity involved in the calibration of such models has prevented them from being more widely used in practice. In this talk, novel methods of model selection and nonparametric estimation for Lévy processes are presented. The estimation relies on properties of Lévy processes for small time spans, on the nature of the jumps of the process, and on recent methods of estimation for spatial Poisson processes. The procedures are illustrated in the case of Gamma Lévy processes as well as variance Gamma processes, models of key relevance in asset price modeling.

José E. Figueroa-López is completing his PhD study at Georgia Tech. His research interests are in the area of stochastic processes, simulation, and estimation, mathematical finance, especially option valuation on risky assets, numerical methods, and calibration, as well as information and coding theory.

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Refreshments will be served at 3:00 pm.

For more information contact Prof. Darinka Dentcheva at [ddentche@stevens.edu](mailto:ddentche@stevens.edu) or call 201-216-5449.