



BOSTON UNIVERSITY STATISTICS
AND PROBABILITY SEMINAR SERIES

The Lévy-driven continuous-time GARCH model

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Thursday, November 8, 2007, 4:00-5:00pm
Mathematics and Computer Science (MCS) Building, Room 149
111 Cummington Street, Boston

Tea and Cookies at 3:30pm in MCS 153

Abstract:

We introduce a continuous-time GARCH [COGARCH(1,1)] model which, driven by a single Lévy noise process, exhibits the same second order properties as the discrete-time GARCH(1,1) model. Moreover, the COGARCH(1,1) model has heavy tails and clusters in the extremes. The second order structure of the COGARCH(1,1) model allows for some estimation procedure based on the ARMA(1,1) autocorrelation structure of the model and other moments. The model can be fitted to high-frequency data, and the statistical analysis also provides an estimator for the volatility. The model shows certain similarities, but also differences, to the Lévy-driven Ornstein-Uhlenbeck model. We also discuss recent developments and extensions of our model.

For directions and maps, please see <http://math.bu.edu/research/statistics/statseminar.html>.