

**Clemson University and the University of Georgia present**

**Joint Statistics Seminar---Spring 2007**

**Heavy Tails and  
Financial Time Series Models**

**Richard A. Davis Colorado State University**

**Thursday, April 5, 4:30 pm, M--103 Martin Hall**

Abstract:

Multivariate regular variation is often used as a building block for modeling heavytailed multivariate phenomena. Interestingly, many time series models, such as GARCH and stochastic volatility (SV) models that are commonly used for modeling financial time series, have finite dimensional distributions which are regularly varying. The implication of this property, as applied to the limit theory for the sample mean, autocovariance and autocorrelation functions, and extremes for these models, will be described. While GARCH and SV models share many of the same properties---both are Martingale differences and exhibit heavy tails and volatility clustering---it turns out that the extremal behavior is quite different. Unlike a SV process, extremes cluster for a GARCH process. This provides a potential method for discriminating between SV and GARCH models from the data. (This is joint work with Thomas Mikosch.)

Refreshments will be served at 4:00 PM in O--112 Martin Hall.

Dinner:

All are invited to a catered barbeque dinner after the talk at Bob Taylor's home on Lake Hartwell. Please notify Alexander Aue or Xiaoqian Sun prior to Tuesday, April 3rd, if you wish to attend (Cost \$10).

To sign up send an email to [alexaue@clemson.edu](mailto:alexaue@clemson.edu) or [xsun@clemson.edu](mailto:xsun@clemson.edu).

Contact: [alexaue@clemson.edu](mailto:alexaue@clemson.edu), see also [www.math.clemson.edu/~alexaue/seminar.html](http://www.math.clemson.edu/~alexaue/seminar.html)