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Rasitha Rangani Jayasekare*, rasitha.jayasekare@centre.edu, and **Ryan Gill** and **Kiseop Lee**. *Modeling Stock Price Changes using a Finite Mixture*.

Mixture models have attracted many different fields in recent decades. This presentation uses an application of mixture models to model discrete changes in the stock market price with respect to the ‘tick size’. We study how the changes in the stock price are associated with the order size of the transaction. The parameters are estimated using the Expectation - Maximization (EM) algorithm with a constant mixing probability as well as mixing probabilities which depend on order size. Consistency and asymptotic normality of a sequence of estimators are proved, and asymptotic confidence intervals for functions of the parameters are derived. The model is tested using stock transactions data from Federal Express. (Received September 04, 2014)