

STATISTICS DEPARTMENT



SEMINAR

TITLE: **CHANGE-POINT MONITORING IN LINEAR MODELS
WITH CONDITIONALLY HETEROSKEDASTIC ERRORS**

SPEAKER: Alexander Aue
University of Utah



TIME: 4:00 P.M.

DATE: Wednesday, February 1, 2006

ROOM: 140 BARDEEN

ABSTRACT:

We discuss three monitoring schemes designed to detect a possible change in the regression parameter of an underlying linear model with possibly heteroskedastic innovations which are described by an augmented GARCH process. The test statistics under consideration are based on the CUSUM of residuals, the CUSUM of recursive residuals and the squares of prediction errors, respectively. All methods require a training sample of size m .

We derive various limit theorems, as m tends to infinity, for these monitoring schemes. In particular, we show that all have correct asymptotic size and detect a change with probability approaching unity. The results are accompanied by illustrative simulation studies and applications to financial data.

Coffee and Cookies at 3:30 p.m. in Room 1210 MSC