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**Robert B Lund\*** (lund@clemson.edu), Department of Mathematical Sciences, Clemson University, Clemson, SC 29634-0975. *Changepoint Detection in Autocorrelated Series*.

This talk overviews techniques to detect an undocumented mean shift (change point) in time series data. Change points are ubiquitous features in climatic series, occurring whenever stations relocate or gauges are changed. As positively autocorrelated series have long sojourns above and below mean levels (and hence mimic a mean shift), applying IID change point detection methods to correlated series can produce radically spurious results. CUSUM, likelihood ratio, and  $F_{\max}$  statistics have been previously proposed to detect change points in correlated settings. We quantify the asymptotic distributions of these tests and connect and contrast the three methods. We find that CUSUM procedures work best when the change point is near the center of the data record, and  $F_{\max}$  procedures are better otherwise. The methods are illustrated in several applications. (Received June 26, 2009)