The University of Chicago

Department of Statistics

Seminar

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"Antedependence Models for Continuous Longitudinal Data"

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ABSTRACT

Antedependence (AD) models are a useful, albeit not widely known, class of models for the covariance structure of continuous longitudinal data. Like stationary autoregressive models, AD models allow for serial correlation within subjects while prescribing a certain form of conditional independence structure. However, AD models are more general in the sense that they do not stipulate that the variance is constant over time nor that correlations between measurements equidistant in time are equal. In this talk, unstructured AD models are briefly reviewed, and some recently proposed structured (more parsimonious) AD models are described. Estimation of model parameters by maximum likelihood is presented, and a new graphical diagnostic for AD model specification, the PRISM (Partial Regression on Intervenors Scatterplot Matrix), is proposed. AD model fitting and specification are illustrated using data from a cattle growth study and a 100-km race.
