

Il Dipartimento di Economia Organizza il Seminario

LATENT VARIABLE MODELS FOR LONGITUDINAL DATA **FRANCESCO BARTOLUCCI**

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Abstract

I briefly review two approaches for the analysis of longitudinal data, which are based on a common root: using a sequence of latent variables to model the unobserved heterogeneity between sample units. The first approach is based on assuming that the latent variables are discrete-valued and then the resulting latent process follows a Markov chain. The second approach is based on assuming, instead, a latent AR(1) process. After a brief discussion of the pros and cons of the two approaches, I propose a third approach based on assuming that the latent process follows a mixture of AR(1) models. The advantage is an improvement in the fit (close to that reachable by a latent Markov model), while retaining a parsimonious structure (close to that of the latent AR(1) model). For the latent mixture AR(1) model based on the proposed approach, I illustrate how to perform maximum likelihood estimation by an Expectation-Maximization algorithm implemented by well-known recursions in the hidden Markov literature. The use of the model is illustrated by an application involving a longitudinal dataset coming from the Health and Retirement Study, about the self-reported health status by a sample of subjects aged 50 and over.

Mercoledì 1° febbraio 2012
ore 14.30 – Aula 20

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La partecipazione è aperta a tutti gli interessati