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## **ECONOMETRICS RESEARCH SEMINAR**

- November 5, 2009, 11.15 am
- HS II (lecture room II, groundfloor)  
Institut für Höhere Studien  
Stumpergasse 56, 1060 Wien

**Michael Eichler,**  
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### **“Causal Inference from Time Series: what can be learned from Granger Causality?”**

#### **ABSTRACT**

In time series analysis, inference about cause-effect relationships among multiple time series is commonly based on the concept of Granger causality, which exploits temporal structure to achieve causal ordering of dependent variables. One major and well known problem in the application of Granger causality for the identification of causal relationships is the possible presence of latent variables that affect the measured components and thus lead to so-called spurious causalities. In this paper, we present a new graphical approach for describing and analyzing Granger-causal relationships in multivariate time series that are possibly affected by latent variables. We show how such representations can be used for inductive causal learning from time series and discuss the underlying assumptions and their implications for causal learning.